CEDAR LAKE MINING, INC.

LITTLE SPRING CREEK - EAST MINE, P-3968

ALABAMA SURFACE MINING COMMISSION

SURFACE MINING PERMIT APPLICATION

PART III

OPERATION PLAN

Prepared by:

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PART III OPERATION PLAN

A. General Operation Information

1. Describe the type and method of coal mining procedures and major equipment to be used. (780.11)

   See Attachment III-A-1

2	Backhoe Excavators	2	Drills
4	Loaders	2	Fuel and Service Truck
3	Dozers	3	Rock Trucks
2	Coal Crushers (Portable)	2	Coal Tandems

2. Describe the sequence and timing of increments to be mined (as shown on permit map) over the total life of the permit. (780.11)

   See Permit Map and Operations Map.

   The timing of increments are as follows:

Increment	Acres	Date	
		From	To
1	212.0	Effective Date*	12 Months After
2	89.0	Inc 1 Completion	12 Months After
3	98.0	Inc 2 Completion	12 Months After
4	164.0	Inc 3 Completion	12 Months After
5	2.0	Life of Mine	n/a

* The Effective Date depends on the permit date of issuance.

The sequence of mining operations will be generally as follows:

1. Construction of Sediment Control Structures
2. Clearing and Grubbing
3. Topsoil Removal, if required
4. Overburden Drilling and Blasting
5. Overburden Removal
6. Coal Recovery
7. Grading
8. Revegetation

ATTACHMENT III-A-1

OPERATION PLAN

The surface mining method of area mining will be used at this mine site. Preparation will consist of removing timber, topsoil removal (if required), drilling and blasting of overburden, overburden removal, coal removal, regrading, topsoil replacement (if required), and revegetation. See Operations Map.

NOTES: Increment No. 1 and Increment No. 5 will be bonded concurrently prior to commencement of any mining operations. Primary Road PR-01 will be constructed to provide access to Increment No. 1 and a coal stockpile/staging area will be constructed on Increment No. 1 to store, process and load trucks for shipment to markets.

Due to limited spoil area, Basins 001P, 002P, 003P and 004P will be submitted to the regulatory authority for simultaneous approval and construction.

The initial spoil area for this surface coal mine consists of extremely flat flood plain areas along the main channel of Little Spring Creek. To maintain positive drainage flows and to protect Little Spring Creek, a drainage control berm has been designed connecting the four (4) proposed down-stream basins and ties into high ground at Basin 001P and into high ground along the boundary line between Increment No. 1 and Increment No. 3. This berm is designed to be approximately seven (7') feet above existing ground level and will control/convey drainage to the sediment basins. The drainage control berm will seamlessly connect to the basin embankements and concrete spill-ways will be constructed at the proper elevation within this berm to comply with basin design criteria. Profiles have been constructed showing existing ground and top of berm (projected at approximately seven (7') feet above existing ground). The drainage control berm will be constructed fifteen (15') in width with maximum side slopes of two (2) horizontal to one (1) vertical. (See Typical Drainage Control Berm for construction specifications.) Silt fence, Mirafi 100X or equivalent, shall be installed at the outside toe on the Little Spring Creek side of the Drainage Control Berm. (See Silt Fence Detail for installation specifications.)

Drainage Control Berm Drawing Index

Drainage Control Berm - Plan/Profile Sheet 1of 4
Cross-Sections Sheet 2 of 4 Station 1+30.33 to Station 12+00
Cross-Sections Sheet 3 of 4 Station 12+50 to Station 23+50
Cross-Sections Sheet 4 of 4 Station 24+00 to Station 35+00

ATTACHMENT III-A-1(cont.)

There now exists four (4) unnamed tributaries that provide drainage from the proposed mine area to Little Spring Creek. These un-named tributaries have been designated as UNT01, UNT02, UNT03 and UNT04. Name designations for the un-named tributaries correspond to the sediment basin into which they drain, e.g., UNT01 flows to Sediment Basin 001P. To insure that upstream drainage is not impounded during mining operations and that these drainways remain open and functional, these stream channels have been profiled and the final stream channels and/or diversion ditches have been projected to show a reasonable best-guess of the location and elevation of the final channel configuration at reclamation. This was accomplished be projecting the toe-of-spoil location in Increment No. 1 and projecting the final stream/diversion elevation based on a 30% swell factor. Stream channels and/or diversion ditches will be constructed at their approximate pre-mining horizontal location but will reflect increased elevations at the vertical location to compensate for the 30% swell factor. Stream channels will be constructed using a flat-bottomed grass-lined channel four (4') feet in width for UNT01 and UNT02 and fifteen (15') in width for UNT03 and UNT04. All channels shall be constructed with maximum side slopes of three (3) horizontal to one (1) vertical extending, along said slope to tie to final reclamtion grades. All stream channels will be constructed to tie seamlessly to upstream channels at the permit boundary or where final cuts terminate to allow uninterrupted flows. (See Typical Stream Channel for construction specifications.)

Stream Channels Drawing Index

Stream Channel UNT01 - Plan/Profile Sheet 1of 2
Cross-Sections Sheet 2 of 2 Station 0+00 to Station 13+79.96

Stream Channel UNT02 - Plan/Profile Sheet 1of 2
Cross-Sections Sheet 2 of 2 Station 0+00 to Station 13+34.61

Stream Channel UNT03 - Plan/Profile Sheet 1of 4
Cross-Sections Sheet 2 of 4 Station 0+00 to Station 18+00
Cross-Sections Sheet 3 of 4 Station 20+00 to Station 36+00
Cross-Sections Sheet 4 of 4 Station 38+00 to Station 48+00

Stream Channel UNT04 - Plan/Profile Sheet 1of 5
Cross-Sections Sheet 2 of 5 Station 0+00 to Station 22+00
Cross-Sections Sheet 3 of 5 Station 24+00 to Station 40+00
Cross-Sections Sheet 4 of 5 Station 42+00 to Station 60+00
Cross-Sections Sheet 5 of 5 Station 62+00 to Station 76+69.34

ATTACHMENT III-A-1(cont.)

INCREMENT NO. 5

Increment No. 5 will be bonded initially and utilized as follows:

Increment No. 5 will initially consist of primary and ancillary roads. As mining and reclamation progress, sediment basins will be added by revision to this increment in reclaimed increments. Increment No. 5 will be bonded prior to the issuance of the permit and will remain active for the life of the mine to facilitate the mining of the other bonded increments.

INCREMENT NO. 1

Increment No. 1 will be initially be bonded and mined as follows:

Mining will commence along the Black Creek Coal outcrop in the south/southwest portion of Increment No. 1 and will advance to the north/northeast with cuts generally aligned from the northwest to southeast. Material will be spoiled to the south/southwest off coal. Mining will then advance into the next cut. The initial cuts will be widened and narrowed within Increment No. 1 to trend the cut alignment west-east and advancing to the north. A stream offset of seventy-five (75') feet will be maintained from the western-most unnamed tributary UNT04 to facilitate positive water flow from both mined and unmined upstream areas up to the point where the coal outcrop goes beneath the stream channel. At this point the western terminus of all succeeding cuts will be left open to facilitate positive drainage and to allow spoil room for future mining cuts. A letter requesting a delay in contemporaneous reclamation has been sent to the director of the regulatory authority to accommodate the western terminus of these proposed cuts. Mining will continue in this manner advancing to the north with cuts generally aligned from west to east and spoiling into previously mined cuts to the south until mining is completed in Increment No. 1

An Operations Map is submitted showing the alignment and direction of mining.

The Black Creek seam will be mined in Increment No. 1.

ATTACHMENT III-A-1(cont.)

INCREMENT NO. 2

Increment No. 2 will be bonded and mined as follows:

Increment No. 2 will be mined by continuing the mining sequence from Increment No. 1. Mining will advance to the north with cuts generally aligned from west to east. The western terminus of all succeeding cuts will be left open to facilitate positive drainage from mining operations and to allow spoil room for future mining cuts. At the completion of mining of Increment No. 2 an open highwall will be left along the western boundary line of Increment No. 2 and along the eastern boundary line of Increment No. 4 to the point where the outcrop of the Black Creek Coal seam goes under un-named tributary UNT04. A letter requesting a delay in contemporaneous reclamation has been sent to the director of the regulatory authority to accommodate the western terminus of the proposed cuts of Increment No. 2. Mining will continue in this manner advancing to the north with cuts generally aligned from west to east and spoiling into previously mined cuts to the south until mining is completed in Increment No. 2

An Operations Map is submitted showing the alignment and direction of mining.

The Black Creek seam will be mined in Increment No. 2.

INCREMENT NO. 3

Increment No. 3 will be initially be bonded and mined as follows:

Mining will commence along the Black Creek Coal outcrop in the south portion of Increment No. 3 and will advance to the north with cuts generally aligned from east to west. The western terminus of all succeeding cuts will be left open to allow spoil room for future mining cuts leaving an open highwall along the western boundary line of Increment No. 3. A letter requesting a delay in contemporaneous reclamation has been sent to the director of the regulatory authority to accommodate the western terminus of the proposed cuts of Increment No. 3. Material will be spoiled to the south off coal. Mining will then advance into the next cut. Mining will continue in the manner advancing to the north with cuts generally aligned from east to west and spoiling into previously mined cuts to the south until mining is completed in Increment No. 3.

An Operations Map is submitted showing the alignment and direction of mining.

The Black Creek seam will be mined in Increment No. 3.

ATTACHMENT III-A-1(cont.)

INCREMENT NO. 4

Increment No. 4 will be initially be bonded and mined as follows:

Increment No. 4 will be mined by continuing the mining sequence from Increment No. 3. Mined overburden materials will be spoiled south into the final cut developed in the mining of Increment No. 3 and spoiled east into the highwall left at the western terminus of cuts developed in Increment No. 2. Materials will be spoiled south and east off coal with the western terminus of these cuts left open. A letter requesting a delay in contemporaneous reclamation has been sent to the director of the regulatory authority to accommodate the western terminus of the proposed cuts of Increment No. 4. Material will be spoiled to the south off coal. Mining will then advance into the next cut. Mining will continue in this manner advancing to the north with cuts generally aligned from east to west and spoiling into previously mined cuts until mining is completed in Increment No. 4.

An Operations Map is submitted showing the alignment and direction of mining.

The Black Creek seam will be mined in Increment No. 4.

3. Attach a narrative explaining the construction modification, use, maintenance, and removal of the following facilities: (780.11)

   (a) Coal removal, handling, storage, cleaning and transportation structures and facilities.

   See Attachment III-A-3, Part III-A-5 & Part III-B-5

   (b) Spoil, coal processing waste and non-coal waste removal, handling, storage, transportation and disposal structures and facilities.

   See Attachment III-A-3 & III-B-2-A, Part III-B-4 & Part III-B-5

   (c) Mine facilities; and

   See Attachment III-A-3

   (d) Water pollution control facilities

   See Attachment III-A-3 & III-B-2-A

4. Describe the means to be used to maximize the use and conservation of coal reserves in the permit area. (780.18, 816.59)

   Maximizing the use and conservation of coal reserves in the proposed permit area will be accomplished by:

   1.) Utilizing the most current and efficient mining practices for removal of coal reserves.

   2.) Maintaining the most efficient explosive breakage to maximize overburden removal efficiencies and minimizing the toe areas of highwalls.

   3.) Maintaining maximum efficient cut widths to minimize coal loss in the spoil toe.

   4.) Rehandling overburden where required to maximize coal recovery normally lost in the spoil toe.

   5.) Mining the deepest overburdens that are economically feasible.

   6.) Periodically sending coal waste materials to outside coal preparation facilities for extraction of salable coal when feasible.

   7.) Blending and processing coals to enhance marketability of lower quality seams.

5. Describe measures to be taken to ensure that all debris, acid forming and toxic-forming materials and materials constituting a fire hazard are disposed of (include contingency plans to prevent sustained combustion of material). (780.18)

Any acid and/or toxic forming materials encountered in the mining processes will be segregated by selectively placing these materials within the area of the mine excavations a minimum of ten (10') feet away from the highwall, a minimum of ten (10') feet above the pit floor and a minimum of fifty (50') feet from any major drainage courses. These acid and/or toxic forming materials will be covered with a minimum of four (4') feet of the best available non-acid, non-toxic and non-combustible materials.

A BMP (Best Management Plan) shall be instituted specifically for the site which will outline minimum housekeeping standards for any materials such as oil, grease, used rags, etc. that may present a fire hazard to be properly stored on site in appropriate temporary containers that will avoid spontaneous combustion and/or leakage and disposed of in a timely manner in an approved landfill.

Any non-coal waste generated at the mining site or in the process of mining operations will be disposed of in a timely manner at approved off-site landfills that meet all applicable local, state and federal requirements.

Areas outside the immediate pit excavation areas such as coal stockpiles, that may generate combustible, acid and/or toxic forming materials, the following measures will be performed: After all coal has be removed and the coal stockpile area will no longer be used for coal storage, the base material of the stockpile will be removed and placed within the pit excavation area, a minimum of ten (10') feet up from the pit floor, and a minimum of fifty (50') feet away from any major drainage courses. These acid and/or toxic forming materials will be covered with a minimum of four (4') feet of the best available non-acid, non-toxic and non-combustible materials.

ATTACHMENT III-A-3

COAL REMOVAL, HANDLING, STORAGE, CLEANING AND TRANSPORTATION STRUCTURES AND FACILITIES

Coal removal will occur in the sequence as described in the Operations Plan (Part III-A-1). Once uncovered, the coal will be broken by loader and transported to the coal stockpile area for both temporary storage and/or processing as deemed necessary. Any coal processing operations such as crushing and screen that might be required for market requirements will be accomplished utilizing portable plants transported via truck to the site of the coal stockpile area. While crushing and/or screening plants are portable, they generally will remain on site for extended periods and are stabilized by either wood cribbing, concrete blocks or concrete footings. When crushing and/or screening plants are set up, they should be located such that all drainage from the site is routed through an approved sediment basin prior to leaving the permit area where chemical treatment may be performed as necessary to meet State and Federal water discharge quality limits. In addition, a BMP (Best Management Practice) plan should be implemented to maintain good housekeeping and proper handling of oils and lubricants to prevent groundwater and/or surface water contamination. When these equipment units are removed from the site, all stabilizing appliances will be removed from the site to be reused or disposed of in an approved landfill.

The location for coal stockpiles will be carefully selected so as to minimize contact and contamination of local surface and groundwater at the site. To facilitate this, coal stockpiles will be constructed on hilltop and ridgetop sites to minimize surface drainage entering the stockpile area. When conditions prevent placement of coal stockpile areas on high ground, the coal stockpile will be sloped during construction to channel any sheet flow of surface water into diversions constructed to channel all surface drainage away from the coal stockpile area. Diversions will be constructed as outlined in Part III-3-B of this application. All surface runoff from stockpile areas will diverted to approved sediment basins where chemical treatment may be added as necessary to comply with State and Federal water quality parameters.

Stockpile construction will be accomplished by the following: The proposed area will be cleared and grubbed of all organic material, removing and protecting all topsoil that might be encountered in accordance with Rules 880-X-10C-.07 thru 880-X-10C-.11. The stockpile subgrade will be graded to a relatively level state (1% - 3% slope) to provide positive drainage and minimize surface infiltration. Upon completion of the subgrade, a relatively impervious pad and/or liner will be constructed to a minimum thickness of twelve (12") inches. The pad or liner will be laid above the finished subgrade and will be made of the best available on-site clay material with a permeability coefficient of 1 X 10-6 cm/sec or less and shall be placed in six (6") inch lifts and compacted to ninety-five (95%) percent of the standard proctor density. Upon final compaction and completion of the impervious clay pad, a top cap will be constructed made of compacted coal of necessary thickness to carry the weight of processing, loading and transportation equipment. Maintenance of stockpile areas shall be conducted as required to maintain proper drainage controls. Modifications to enlarge stockpile areas shall be handled in the same manner as outlined in initial construction.

ATTACHMENT III-A-3

COAL REMOVAL, HANDLING, STORAGE, CLEANING AND TRANSPORTATION STRUCTURES AND FACILITIES (cont'd)

Coal will be loaded from the stockpile area into highway transport trucks for shipment to final markets. Gravel pads will be constructed to prevent tracking at any point where haul roads from coal stockpile and/or mine areas access state or county roads. These gravel pads shall be constructed of coarse aggregate of 2" to 3" in diameter with a minimum width of eighteen (18') feet, a minimum of six (6") inches in thickness and shall extend a minimum of 100 feet from the existing paved road.

Coal stockpiles, sediment basins and diversions needed for proper operation of coal stockpiles shall be maintained until removal. After all coal has been removed from a permitted site and the coal stockpile is no longer required, the base material will be removed and handled as toxic and acid forming material. The base material from the stockpile site will be removed until no additional carbonaceous material is present and the minimum of ten (10') feet away from the highwall, a minimum of ten (10') feet up from the pit floor, and a minimum of fifty (50') feet away from any major drainage courses. These acid of toxic forming material with a minimum of four (4') feet of the best available non-acid, non-toxic and non-combustive materials. The stockpile area(s) will then be graded to match the existing approximate original site contours and all disturbed areas will be vegetated with appropriate combinations of grasses and legumes as stated in the reclamation plan. Disturbed areas will then be fertilized and mulched to ensure permanent diverse vegetative covers.

Any materials such as oil, grease, rags, etc. that may present a fire hazard will be properly disposed of in an approved landfill. Any non-coal waste will be disposed of at approved off-site landfills that meet all applicable local, state and federal requirements.

All transportation facilities such as haul roads, access roads, etc. will be constructed and maintained to meet minimum design criteria including but not limited to the following: Existing roads that meet minimum requirements and design criteria of the Regulatory Authority will be used if possible to eliminate additional disturbance. New roads will be located on ridges or on the most suitable slopes for stability. The minimum width for any proposed roads will be cleared, grubbed and all topsoil removed (if required) and stockpiled for protection. Road beds will be constructed by placing and compacting lifts of suitable material to form an adequate sub-grade. The road will then be capped with a minimum of four (4") inches of compacted base material such as gravel, crushed stone, rock, chert or other suitable material (as approved by the Regulatory Authority) sufficient for its intended use. Routine maintenance such as resurfacing, upgrading and maintenance of drainage controls may be required in the course of mining to keep the roadways in adequate condition. All roads, existing or created for use in this mining operation, will have adequate sediment control facilities, such as silt fences, hay bale berms and/or excavated sediment trap sumps constructed where necessary to effectively catch and control sediment from disturbed areas. All materials used in the construction of the transportation facilities will be non-toxic and non-combustible. Where required, drainage control devices will be installed such that they are placed below the sub-grade, using standard engineering practices to design and construct said structures.

ATTACHMENT III-A-3

**COAL REMOVAL, HANDLING, STORAGE, CLEANING
AND TRANSPORTATION STRUCTURES AND FACILITIES (cont'd)**

Drainage control will be accomplished by the use of drain pipes, ditches, cross drains and ditch relief drains. No sustained grades in excess of ten (10%) percent will be constructed unless prohibited by existing conditions, to which sediment control facilities such as silt fences, hay dams and rock check dams will be installed at strategic locations to prevent erosion and insure stability. Grades greater than fifteen (15%) percent will require ditch relief drains, cross over drains and road drainways installed at a minimum of three hundred fifty (350') feet apart. All disturbed areas adjacent to newly constructed roads will be revegetated in accordance with the approved Reclamation Plan (PartIV-C-5) immediately following construction. Routine vegetative maintenance will be administered when necessary to maintain a vegetative cover. Maintenance of drainage control facilities including: cleaning of road ditches, removal of sediment from structures and minor repairs may be required periodically. Road that are not to be left permanently, at the landowners request, will be removed in the following manner: the base material will be re-established by regrading and reshaping to blend with the immediate surrounding area. To prevent erosion and provide long term stability, terraces, cross drains, berms, etc. will be constructed where deemed necessary. Sediment control measures for all disturbed areas created or existing in the construction or use of proposed or existing haulroads will include but not be limited to the construction or installation of hay dams, silt fences, rock check dams, etc. and will be constructed in strategic locations as required.

Required sediment control facilities will be constructed or installed promptly following the construction of said haulroads, access roads, etc. Immediately following all construction activity, disturbed areas will be vegetated in accordance with the approved Reclamation Plan (Part IV-C-5).

Routine inspections and maintenance (such as regrading, resurfacing, maintenance of sediment control structures, spot revegetation and dust control) will be conducted regularly during the life of each road to ensure that each structure continually meets design and performance standards. Dust control will be achieved by the periodic application of water, chemical binders and/or dust suppressants. Any road damaged by a catastrophic event, such as a flood or earthquake, will be repaired as soon as practicable after the damage has occurred.

Routes of travel that are temporarily utilized within the mine area will be constructed to be compatible with its intended use. Temporary routes of travel will be maintained and routinely inspected to insure that they do not constitute a safety or environmental hazard. Dust control will be achieved by the periodic application of water, chemical binders and/or dust suppressants.

See Part III-B-5 for the primary and ancillary road layout, design, construction, maintenance requirements and specifications.

ATTACHMENT III-A-3

SPOIL, COAL MINE WASTE AND NON-COAL MINE WASTE REMOVAL, HANDLING, STORAGE, TRANSPORTATION AND DISPOSAL STRUCTURES AND FACILITIES

No coal mine waste will be present at this mining facility. No excess spoil disposal areas will be necessary at this mining facility. All non-coal mine waste will be transported by truck to the nearest applicable landfill.

MINE FACILITIES

Mine facilities will consist of one or more dry van type truck trailers for storage of spare parts, maintenance equipment and supplies, one or more equipment service trucks and fuel trucks with mounted storage tanks, one large bulk fuel tank (approximately 10,000 gallon capacity), one office trailer and two (2) Type 2 portable magazines for storing explosives. Bulk explosive tanks may be installed by outside contractors for storage of explosive materials to facilitate efficient blasting operations. All mine facilities will be located within the permit area and changes and maintenance such as enlargement and additions to these facilities. All previously listed facilities are portable and will be transported onsite at the start of mining operations and will be transported offsite after completion of operations. Equipment storage areas, which may consist of an equipment maintenance shop building, will be constructed as necessary for the operation. The purpose for these areas is to store equipment not in service or waiting for maintenance or repair. In the event a maintenance shop is deemed necessary, the shop building will be constructed of sheet metal covering a wooden frame built in such a manner as to facilitate quick and easy disassembly when no longer required at the site. Removal of shop facilities will be accomplished by systematically disassembling the structure and framing. If a concrete building slab has been utilized for the shop foundation, the slab shall be removed to an approved applicable landfill. Any contaminated soils will be removed and disposed in an approved landfill. All parts of the building structure that is reusable will be removed from the site and all disturbed areas will be graded to match the existing approximate original site contours and all disturbed area will be vegetated with appropriate combinations of grasses and legumes as stated in the reclamation plan. Disturbed areas will then be fertilized and mulched to ensure permanent diverse vegetative covers.

When mine facilities are not further needed, the areas disturbed by these facilities will be regraded to the approximate original contour, scarified and revegetated in accordance with the approved Reclamation Plan (Part IV-C-5). Equipment storage areas, constructed within the permit area, will be graded to a mild grade. Runoff from these areas will be diverted to and controlled by sediment basins proposed under this permit. Modifications to these areas will consist of regrading as necessary to maintain adequate surface conditions and removal will be part of the reclamation process. The area will be scarified, fertilized, limed as necessary, seeded and mulched in accordance with the Reclamation Plan (Part IV-C-5) approved in the permit.

ATTACHMENT III-A-3

WATER POLLUTION CONTROL FACILITIES

Water pollution control facilities, sediment basins, berms, diversions and drainage ditches shall be constructed prior to mine operation disturbance in particular increments and according to approved plans. Sediment basins will be constructed, prior to any disturbance in its respective drainage area, to collect sediment from the disturbed areas and shall remain operational during all actual mining phases and during the reclamation and restabilization phases. Sediment basins will be constructed under the supervision of a qualified Registered Professional Engineer or by a qualified person under his direct supervision. All sediment basins will be certified to the Regulatory Authority upon completion of construction as having been constructed in accordance with the approved design plans.

Areas where sediment basin embankments are to be built will be cleared and grubbed with the topsoil removed and stockpiled (if required). The basins will be constructed by bringing in the best available soil material based on soil strength parameters and permeability and compacting it in lifts until the construction specifications are met. Drainage structures will be installed as per approved design plans with any necessary erosion control and/or stabilization procedures such as riprap, concrete, drop structures, energy dissipaters, etc. being implemented as deemed necessary by the project engineer. Upon completion of construction the entire disturbed area will be revegetated in accordance with the approved Reclamation Plan (Part IV-C-5).

ATTACHMENT III-A-3

MAINTENANCE

Sediment basins will be inspected semi-monthly for erosion, instability, proper operation, etc. until basin removal or until a Phase III Bond Release. Any minor instance of erosion, instability, improper operation, etc. will be repaired immediately. Routine maintenance of sediment basins shall include: spot seeding, fertilization and mulching to insure a good vegetative cover is maintained on the dam and areas around the basin, repair and stabilization of rills and gullies, regrading and repair of slope failures, repairs to discharge structures and erosion protection structures, cleaning and/or removing debris obstructing pipes and/or spillways to restore proper operation and the removal of stored sediment from the basins prior to it reaching the maximum level indicated on the approved plans. Any parameters observed during routine inspections that require major construction repairs and result in hazardous conditions will be reported to the Regulatory Authority for further consultation and/or instructions. All basins will be examined by a qualified person quarterly for weakness, instability, excessive erosion, etc. with regular routine maintenance performed as necessary. Formal inspections will be made annually with any reports or modifications being filed with the Regulatory Authority along with a certification from a Registered Professional Engineer that the basin has been maintained in accordance with the approved plans and 880-X-10C-.20[1(j)] of the Alabama Surface Mining Regulations.

REMOVAL

All sediment basins constructed during mining operations and not being left as permanent water impoundments shall, upon completion of mining, reclamation, restabilization and effluent standards compliance, be removed in the following manner: Upon written approval from the Regulatory Authority of the basin removal plans, the impoundment will be dewatered in a controlled manner by either pumping or siphoning. Upon successful dewatering, a determination will be made as to the level of retained sediment in the basin. Upon determining the retained sediment level, a permanent channel will be cut into the embankment down to the retained sediment level on the side of the embankment deemed most suitable to reach natural ground without encountering prohibiting rock. The embankment material removed from the newly constructed channel will be spread and compacted over the previous impoundment (wet area) to prevent erosion and insure restabilization. The newly constructed channel will be of adequate design (width, depth and grade) to cause all surface drainage to travel across this area as sheetflow with low flow velocities to minimize the possibility of erosion. Also, where deemed necessary, hay dams will be strategically located across the width of the channel to retain sediment and slow the water velocity down to a favorable rate. Where anticipated discharge velocities require further attention, energy dissipaters such as rock check dams, concrete flumes, sacrete bags, etc. will be installed or constructed at the exit section of the newly constructed permanent channel. Upon removal of the embankment section, the remaining embankment material will be graded to the approximate original contour. All disturbed areas will be graded in such a manner to insure slope stability, successful restabilization and to minimize erosion. All disturbed areas will be seeded, fertilized and mulched in accordance with the approved Reclamation Plan (Part IV-C-5). No slope existing or created in the removal of the basin will be left on a grade that may slip or slough.

6. Give a description, including appropriate cross-sections and maps, to measure to be used to seal or manage mine openings, bore holes, wells and other openings within the proposed permit area. (780.18, 816.13-816.15)

Mine openings within the permit area (other than blast holes) will be eliminated in the following methods:

1) Exploration Holes - Exploration holes will be backfilled with the drill cuttings and capped with two (2) feet of clay.

SEE ATTACHMENT III-A-6-1

2) Monitoring Wells - Groundwater monitoring wells will be cased using PVC pipe of equal diameter of the drilling bit used. This casing will extend a minimum depth equal to the depth necessary to reach competent rock material to prevent collapse of the well. The casing depth may vary depending upon the depth of the aquifer being targeted for monitoring and will be installed with an anchoring/stabilizing shale trap collar with a bentonite plug locked in the competent rock strata. Groundwater monitoring wells may be temporarily sealed using a PVC cap of equal diameter as casing requires.

SEE ATTACHMENT III-A-6-2

Groundwater monitoring wells will be sealed at the time of abandonment with a concrete cap (2.0'x2.0'x.5').

SEE ATTACHMENT III-A-6-2

3) Mine Openings - Old works (abandoned underground mines) which may be encountered during the mining operation will be eliminated by the following process:

Prior to the backfilling or shooting of the final highwall all mine openings will be sealed with a clay material having a permeability ranging between 0.00001 and 0.000001 cm/sec. This clay material will be compacted in six (6) inch lifts to ninety-five (95%) percent of the standard proctor density, a minimum of five (5) feet above the top of the opening.

SEE ATTACHMENT III-A-6-3

4) Gas & Oil Wells – There are no gas or oil wells within the proposed permit area.

7. Give a description of steps to be taken to comply with applicable water quality laws, regulations and health and safety standards. (780.18)

Water Quality Laws - Positive drainage measures will be taken to divert and/or route all surface drainage from the proposed mining areas through an approved sediment structure for monitoring and treatment purposes. Monitoring and Reporting will take place as set forth in the approved Monitoring Plan (Part III-D & Part III-E) and NPDES requirements. When necessary, drainage will be chemically treated for pH adjustment or Iron precipitation with hydrated lime or caustic soda. Other treatment such as floating silt fences or flocculation bricks may be administered for Total Suspended Solids. These measures will be taken to remain in compliance NPDES requirements.
Health & Safety Standards - Applicable approvals will be received prior to the construction of any sanitary absorption lines for bathhouse and offices. MSHA guidelines and regulations will be followed in all operations.

All dust, noise, and other required control testing will be current and performed by certified MSHA personnel as required.

Certification and training of all mine personnel will be current and updated by attending MSHA classes at the Walker Technology School, in Sumiton, Alabama.

All records will be maintained at the mine and available for inspection as required.

8. Is surface mining to be conducted within 500 feet of an underground mine? (780.27, 816.79)
( ) YES (X) No

If yes, describe measures to be used (816.79). Attach a map showing the location and extent known workings. (780.14(a) (13)) Attach a copy of MSHA approval.

Not Applicable

CEDAR LAKE MINING, INC.

LITTLE SPRING CREEK - EAST MINE, P-3968

ALABAMA SURFACE MINING COMMISSION

SURFACE MINING PERMIT APPLICATION

PART III - B

Engineering Plans

Prepared by:

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B. Engineering Plans

All cross sections, maps and plans related to operations, reclamation and structures must comply. Plans, appropriate calculations and conclusions shall be presented in a clear and logical sequence and shall take into account all applicable factors necessary to evaluate the proposed plan or design. (780.10)

1. Existing Structures. (780.12, 786.21)

   (a) Describe each existing structure to be used, its location, current condition, approximate dates of construction and evidence (including relevant monitoring data) showing whether or not the structure meets the performance standards and demonstrate whether or not the use of existing structures will pose a significant harm to the environment of public health or safety.

   Not Applicable

   (b) If an existing structure requires modification or reconstruction to meet the performance standards, attach a compliance plan which includes design specifications, construction schedule, monitoring procedures, and evidence that the risk of harm to the environment or public health or safety is not significant during modification or reconstruction.

   Not Applicable

2. Ponds, impoundments, banks, dams, and embankments. (780.25)

   (a) Submit a general plan for each proposed sedimentation pond, water impoundment, and coal processing waste bank, dam or embankment to be located within the proposed permit area. (780.25(a)(1))

   See Attachment III-B-2-A

   (b) Submit detailed design plans for each sedimentation pond (780.25(a)(2)(3)) (816.46)to be constructed on the increment you currently propose to mine. If the sediment pond is to remain as a permanent water impoundment, design plans shall also comply. (816.49)

   See Attachment III-B-2-A

   (c) Submit detailed design plans which comply for each temporary or permanent water impoundment (780.25(a)(2&3) (816.49) to be constructed on the increment you currently propose to mine.

   See Attachment III-B-2-A

2. Ponds, impoundments, banks, dams, and embankments. (780.25) (Cont'd)

(d) Submit detailed design plans, which comply for each coal processing waste bank to be constructed on the increment you currently propose to mine. (780.25(a)(2&3)) (816.81-816.85)

NONE PROPOSED

(e) Submit detailed design plans which comply for each coal processing waste dam and embankment to be constructed on the increment which you currently propose to mine. (780.25(a)(2&3)) (816.91-816.93)

NONE PROPOSED

GENERAL ENGINEERING PLANS

GENERAL ENGINEERING PLAN CERTIFICATION STATEMENT

I, Jerry W. Williams, a registered professional engineer, hereby certify that the information, cross-sections, data, maps, etc., contained in this general plan in Attachment III-B-2-A is true and correct to the best of my knowledge and belief.

TASK Engineering Management Inc.

Jerry W. Williams, P.E.
Alabama Reg. No. 12739

05-28-2013
Date

ATTACHMENT III-B-2-A

GENERAL PLAN - SEDIMENT BASINS

The general plan for Little Spring Creek East consists of constructing five (5) sediment basins (001, 002, 003, 004 and 005). These basins will be designed and constructed to the specifications of the Regulatory Authority and with proper on-going maintenance by the operator will be adequate to control all surface runoff for the entire life of the proposed surface mine.

Approved detailed design plans for Sediment Basin 001, Sediment Basin 002, Sediment Basin 003 and Sediment Basin 004 are attached. Prior to any mining operations, Sediment Basins 001, 002, 003 and 004 along with the proposed Drainage Control Berm will be constructed and certified to the Regulatory Authority. Approved detailed design plans for the Drainage Control Berm and Associated Diversions are attached.

Detailed design plans for all remaining sediment basins will be submitted to the Regulatory Authority prior to disturbance within their respective drainage areas. Upon written approval of these detailed design plans from the Regulatory Authority, all sediment basins will be constructed and certified to the Regulatory Authority prior to any mining disturbance within their respective drainage areas. See Watershed Map and NPDES Permit Map for watershed drainage patterns and basin locations.

General design data (basin locations, property descriptions and drainage areas) for all sediment basins are included. See attached (General Design Data Table) and watershed map for locations of sediment basins and preliminary hydrologic information. All sediment basins are proposed as temporary and detailed removal plans will be submitted and approved by the Regulatory Authority prior to a Phase II bond release.

Geologic investigations of the proposed mine site indicate typical Pottsville formations of alternating sequences of sandstone and shales with sandstone streaks and minor formations of bituminous coal and underclays (fireclays). The coal to be mined by Cedar Lake Mining, Inc. at the Little Spring Creek Mine is the Black Creek Coal seam. No underground mines have been developed within or adjacent to the permit boundary and there will be no effects of subsidence on any of the proposed sediment structures. There are, however, several displacement faults (See Hydro-Geo Map) on the proposed site but none will impact any sediment structure as based on best efforts to locate these faults. In the event a localized fault is encountered during construction, construction will halt and the Regulatory Authority notified. New plans and/or additional stability studies will be performed prior to commencement of construction activities.

ATTACHMENT III-B-2-A

GENERAL PLAN - SEDIMENT BASINS CONT'D

All surface drainage from the proposed mining area drains to Little Spring Creek.

All diversions are temporary and will be graded and vegetated. (See Diversion Ditch and Diversion Berm Design and Construction Specifications).

Proposed sediment basins are located in Walker County, Alabama and as shown on the Manchester and Sunlight USGS Quadrangles.

See Watershed Map and NPDES Permit Map for subwatershed drainage areas and basin locations.

GENERAL DESIGN DATA

Sediment Basin	Location	Drainage Area Acres
001P	SE/SE Section 03, T13S, R7W	65.5
002P	NE/SE Section 03, T13S, R7W	61.0
003P	NE/SE Section 03, T13S, R7W	194.8
004P	NW/SE, SW/NE Section 03, T13S, R7W	414.2
005P	SE/NW Section 03, T13S, R7W	79.6

ATTACHMENT III-B-2-A
SEDIMENT BASIN CONSTRUCTION SPECIFICATIONS

Sediment basins (temporary or permanent) will be designed and constructed using the following as minimum specifications:

EMBANKMENT REQUIREMENTS

1) The minimum width of the top of the embankment structure will be under no circumstance be less than twelve (12') feet.

2) Front and back slopes of the embankment structure will be no steeper than the slopes listed on the detailed design sheet.

3) The foundation area of the embankment structure will be cleared and grubbed of all organic matter with no surface slope steeper than 1v:1h. The entire wet area, as measured from the upstream toe of the embankment to the normal pool level, will be cleared of trees and large brush.

4) The embankment structure shall be constructed with a cutoff trench along the centerline of the structure to anchor the core which will be constructed of relatively impervious material.

5) The foundation and abutments for the embankment structure will be designed and constructed to be stable under normal construction and operating conditions, with a minimum static safety factor of 1.5 and a minimum seismic safety factor of 1.2, at normal pool level with a steady seepage saturation condition.

6) Construction of the embankment structure shall be undertaken only when the moisture content of fill materials will permit satisfactory compaction. The embankment material will be placed in layers of twelve (12") inches or less and compacted to ninety-five (95%) percent of the standard proctor density, per ASTM requirements. The embankment construction material will be free of sod, roots, stumps, rocks, etc., which exceed six (6") inches in diameter.

7) The final embankment structure height will be a minimum of five (5%) percent higher than the approved design height to allow for settling over the life of the embankment.

8) All sediment basins shall be equipped with a primary decant system and a secondary emergency decant system. All primary decant systems will be equipped with a device and/or constructed to ensure subsurface withdrawal is the standard de-watering system to prevent discharge of floating solids.

9) For sediment basins built in series, the combined total decant system for each shall be designed to accommodate the entire contributing drainage area.

ATTACHMENT III-B-2-A (cont.)

10) The height of the embankment structure for both temporary and permanent sediment basin impoundments will be a minimum of one (1') foot above the maximum water runoff elevation from a Ten (10) Year - Twenty-four (24) Hour or a Twenty-five Year - Six (6) Hour precipitation event (whichever is greater).

11) Point source discharge embankment structures shall be constructed with abutments keyed into undisturbed virgin ground if possible. If undesirable materials are encountered and this cannot be achieved, additional design and construction specifications will be submitted to the Regulatory Authority in the Detailed Basin Design Plans.

12) The embankment structure and adjacent areas disturbed during construction will be seeded with a mixture of perennial and annual grasses, fertilized and mulched to prevent erosion and ensure site stabilization. Hay dam, silt fences, rock check dams, etc. will be installed, as required for additional erosion prevention measures.

DISCHARGE STRUCTURE REQUIREMENTS

1) Primary spillways for sediment basins will be designed to accommodate the anticipated peak runoff from a Ten (10) Year - Twenty-four (24) Hour precipitation event. The combination primary and secondary (emergency) spillway system will be designed to safely accommodate the anticipated peak runoff from a Twenty-five (25) Year - Six (6) hour precipitation event. Sediment basins proposed in the drainage course of a public water supply will be equipped with spillway systems designed and constructed to adequately carry the runoff from a Fifty (50) Year - Twenty-four (24) Hour precipitation event.

2) When pipe is utilized as the primary spillway, said pipe shall be installed according to Class "C" pipe installation for embankment structure.

3) When pipe is utilized as the primary spillway, a splash pad or riprap velocity dissipater may be required under the discharge of said pipe where necessary to insure that the discharge does not erode the embankment structure.

4) Secondary (emergency) spillways shall be trapezoidal, open channels and constructed in consolidated, non-erodible material and planted with a mixture of both annual and perennial grasses being predominantly fescue and bermuda. In the event that the spillway cannot be constructed in said consolidated, non-erodible material, the spillway will be lined with riprap, concrete, asphalt or durable rock (See Detailed Design Plans for Spillway Lining).

5) Sediment basins utilizing a single spillway system shall be an open channel constructed in consolidated, non-erodible material and lined with riprap, concrete, asphalt or durable rock (See Detailed Design Plan for Spillway Lining).

6) The primary spillway will be designed and constructed with an apparatus to eliminate floating solids from leaving the impoundment. Such apparatus will consist of a ninety (90°) degree elbow for pipe spillways and a skimmer system for an open channel spillway.

ATTACHMENT III-B-2-A (cont.)

INSPECTION, MAINTENANCE AND CERTIFICATION REQUIREMENTS

1) A qualified registered professional engineer or other qualified person under the direction of a professional engineer shall conduct regular inspections during the construction of sediment basins. Upon completion of construction, said sediment basin will be certified, by a qualified registered professional engineer, to the Regulatory as having been constructed in accordance with the approval detailed design plans.

2) Sediment basins will be inspected for stability, erosion, excessive leakage, etc. two (2) times a month until removal of the structure or until a Phase III Bond release.

3) Sediment basins shall be inspected quarterly for structural weakness, instability, erosion, or other hazardous conditions and maintenance performed as necessary. Annual inspections will be performed by a qualified registered professional engineer or other qualified person under the direction of a professional engineer, the results of which shall be reported, including any reports or modifications, in accordance with 880-X-10C-.20[1(j)] of the Alabama Surface Mining Regulations.

4) Maintenance repairs shall be conducted immediately and shall be on-going during the life of the mine or until the basin is removed or until a Phase III Bond release. Standard on-going anticipated maintenance shall include repairing rills and gullies, repairing slope failures, re-seeding areas of failed and/or spillways, etc. Hazardous conditions observed during inspections will be reported immediately to the Regulatory Authority for further consultation or instruction.

5) Accumulated sediment will be removed from each sediment basin when the sediment level reached the maximum allowable sediment volume (pond storage elevation) as set forth in the detailed design plans.

ATTACHMENT III-B-2-A (cont.)

BASIN REMOVAL REQUIREMENTS

1) All sediment basins constructed during mining operations and not being left as permanent water impoundments shall, upon completion of mining, reclamation, stabilization and effluent standards compliance, be removed in the following manner:

   Upon written approval from the Regulatory Authority of the basin removal plans, the the impoundment will be dewatered in a controlled manner by either pumping or siphoning. Upon successful dewatering, a determination will be made as to the level of retained sediment in the basin. Upon determining the retained sediment level, a permanent channel will be cut into the embankment down to the retained sediment level on the side of the embankment deemed most suitable to reach natural ground without encountering prohibiting rock. The embankment material removed from the newly constructed channel will be spread and compacted over the previous impoundment (wet area) to prevent erosion and insure restabilization. The newly constructed channel will be of adequate design (width, depth and grade) to cause all surface drainage to travel across this area as sheet flow with low flow velocities to minimize the possibility of erosion. Also, where deemed necessary, hay dams will be strategically located across the width of the channel to retain sediment and slow the water velocity down to a favorable rate. Where anticipated discharge velocities require further attention, energy dissipaters such as rock check dams, concrete flumes, sacrete bags, etc. will be installed or constructed at the exit section of the newly constructed permanent channel. Upon removal of the embankment section, the remaining embankment material will be graded to the approximate original contour. All disturbed areas will be graded in such a manner to insure slope stability, successful restabilization and to minimize erosion. All disturbed areas will be seeded, fertilized and mulched in accordance with the approved Reclamation Plan (Part IV-C-5). No slope existing or created in the removal of the basin will be left on a grade that may slip or slough.

ATTACHMENT III-B-2-A (cont.)

PERMANENT WATER IMPOUNDMENT REQUIREMENTS

1) Prior to a request for a Phase II Bond Release, all sediment basins being left as permanent water impoundments will have supplemental data submitted to the Regulatory Authority concerning water quality, water quantity, size, depth, configuration, post mining land use, etc.

2) Final grading slopes of the entire permanent water impoundment are will not exceed a slope of 2 Horizontal to 1 Vertical to provide for safety and access for future water users.

TYPICAL DRAWINGS FOR EMBANKMENT TYPE BASINS

Typical Pond Plan View

Typical Embankment Cross Section

Typical Clay Liner

3. Diversions (780.29, 816.43, 816.44)

Are diversions of overland flow or stream channel diversions proposed?

(X) YES ( ) NO

See attached approved designs of Drainage Control Berm and Associated Diversions.

If yes, complete the following:

(a) Is the diversion to be permanent? ( ) YES (X) NO

Drainage Control Berm Drawing Index

Drainage Control Berm - Plan/Profile Sheet 1of 4
Cross-Sections Sheet 2 of 4 Station 1+30.33 to Station 12+00
Cross-Sections Sheet 3 of 4 Station 12+50 to Station 23+50
Cross-Sections Sheet 4 of 4 Station 24+00 to Station 35+00

(b) Describe in detail the proposed diversion and include plans, maps and cross-sections. (816.43, 816.44)

See Attachment III-B-3, Watershed Map, and Typical Diversion Ditch Cross Section

See attached Detailed Design Plans for Drainage Control Berm and Diversion Ditches No. 1 through No. 4.

(c) If diversions are temporary, enclose plans for removal including a timetable and plans for restoration of vegetation, channel characteristics, etc.

See Attachment III-B-3

(d) Enclosed approvals of the other governmental agencies where required.

NOT REQUIRED

ATTACHMENT III-B-3
DIVERSION DITCH AND DIVERSION BERM
DESIGN AND CONSTRUCTION SPECIFICATIONS

1) Temporary diversions will be designed and constructed to pass safely the peak runoff from a Two (2) Year - Six (6) Hour precipitation event.

2) To protect fills and property and to avoid danger to public health and safety, permanent diversions will be designed and constructed to safely channel the peak runoff from a Ten (10) Year - Six (6) Hour precipitation event. Permanent diversions shall be constructed with gently sloping banks that are stabilized by vegetation.

3) Diversions shall be designed, constructed, and maintained in a manner which prevents additional contributions of suspended solids to stream flow and to runoff outside the permit area, to the extent possible using the best technology currently available. Appropriate sediment control measures for these diversions may include, but not be limited to, maintenance of appropriate gradients, channel lining, revegetation, roughness structures, and detention basins.

4) No diversion shall be located so as to increase the potential for landslides. No diversions shall be constructed on existing landslides, unless approved by the Regulatory Authority.

5) When no longer needed, each temporary diversion shall be removed and the affected land regraded, topsoiled, and revegetated in accordance with Rules 880-X-10C-.10, 880-X-10C-.11, 880-X-10C-.52 thru 880-X-10C-.58, 880-X-10C-.60 and 880-X-10C-.62.

6) Channel linings, for diversions with slopes of three (3%) percent or less, will consist of a mixture of both annual and perennial grasses being predominantly fescue and bermuda. Channel linings, for diversions with slopes greater than three (3%) percent, will consist of riprap or other non-erodible material or cut into non-erodible material.

7) Adequate freeboard will be provided for protection for transition of flow and critical areas such as swales and curves along the entire diversion length.

8) At discharge points, where diversions intersect with natural streams or exit velocities of the diversion are greater than that of the receiving streams, energy dissipaters will be installed when deemed necessary.

9) Topsoil removed from the diversion area (if required) will be handled in accordance with Rules 880-X-10C-.07 thru 880-X-10C-.11.

10) Excess material excavated in the construction of the diversion, not needed for diversion channel geometry or the regrading of the channel, will be disposed of in accordance with Rule 880-X-10C-.36.

ATTACHMENT III-B-3 (Cont'd)

11) Diversions will not be designed or constructed to divert water into underground mines without written approval from the Regulatory Authority.

12) Energy dissipaters shall be installed, when required, at discharge points where natural streams and exit velocity of diversion ditch flow is greater than that of the receiving stream.

13) The entire area in which a diversion berm is proposed will be cleared and grubbed of all organic material, scarified, and no surface slopes will be left steeper than 1V:1H.

14) Diversion berms will be constructed with desirable material, free of sod, stones, roots, limbs, etc. over six (6") inches in diameter. The material will be spread in layers no greater than twelve (12") inches in thickness and compacted to ninety-five (95%) percent of the standard proctor density, as outlined a ASTM, until the design height is reached.

15) Upon completion of construction of diversion ditches or diversion berms, all disturbed areas will be seeded with a mixture of both annual and perennial grasses, fertilized, and mulched in order to minimize erosion and ensure restabilization.

16) All diversions (berms or ditches) will be examined quarterly for erosion, instability, structural weakness, or other hazardous conditions and maintenance performed as necessary.

4. Disposal of excess spoil. (780.35, 816.71)

( ) YES (X) NO

If yes, complete the following:

(a) Show on a map the location of all proposed fills and provide cross-sections of the proposed site and the design of the disposal structures.

(b) Include the results of the geotechnical investigation showing:

(1) A description of physical characteristics of bedrock and geologic conditions in the disposal area; and

(2) A determination of possible adverse affects from subsidence due to past, present or future underground mining.

(3) Location of springs, seeps or other ground water observed or anticipated in the disposal area;

(4) A technical description of the rock to be used in construction of rock chimney cores or rock drainage blankets, if applicable;

(5) Results of stability analysis including strength parameters, pore pressure and long term seepage conditions; and

(6) Engineering design assumption, calculations, and any alternatives considered.

(c) Describe the construction, operation, maintenance and removal (if applicable) of the structure.

(d) Include a surface water drainage and control plan for the fill.

(e) Are rock-toe buttresses or keyway cuts to be used?

( ) YES (X) NO

If yes, describe or show:

(1) The number, location and depth of testing borings or pits used pits used in describing subsurface conditions; and

(2) Engineering specifications used in the design.

5. Transportation Faculties (780.33, 780.37)

See Primary Road Map. See attached detailed design plans for Primary Road PR-01.

(a) Describe the measures to be taken to ensure the interest of the public and landowners affected are protected if disturbance within 100 feet of the right-of-way or relocation of a public road is proposed.

(1) Appropriate warning signs will be posted along the road right-of-way a minimum of five hundred (500') feet from the entrance of the proposed disturbance.

(2) Appropriate advertisements, informing the public and affected landowners, will be run in the local newspaper prior to any disturbance within the one hundred (100') feet setback of the relocation of any public road right-of-way.

(3) All safety requirements of the appropriate Federal, State, County, or Local governments, concerning public health and safety, will be followed.

(4) In areas where disturbance is proposed within one hundred (100') feet of the road right-of -way, earthen berms, guard rails, or barricades will be constructed as necessary to prevent accidental entrance into the mine area and to prevent safety hazards.

(b) Describe any unique design, feature, or structure which is necessary for the road to meet the performance standards (Subchapter K) using any necessary maps, plans or cross-sections.

See Attachment III-B-5

(c) Describe, in detail, the measures to be taken during constructions, maintenance and use of the transportation facilities to prevent damage to fish and wildlife and their habitat; public and private property; and erosion, siltation, and pollution of water.

(1) To ensure environmental protection and safety appropriate for their planned duration and use, including consideration of the type and size of equipment used, the design and construction or reconstruction of roads shall incorporate appropriate limits for grade, width, surface materials, surface drainage control, culvert placement, culvert size, and any necessary design criteria established by the Regulatory Authority.

(2) Control or prevent erosion, siltation and the air pollution attendant to erosion, including road dust as well as dust occurring on other exposed surfaces, by vegetating or otherwise stabilizing all exposed surfaces in accordance with current, prudent engineering practices;

(3) All roads shall be maintained throughout their life to meet the performance standards specified by the Regulatory Authority.

(4) Any road damaged by a catastrophic event, such as a flood or earthquake, shall be repaired as soon as practical after the damage has occurred.

(5) A road not to be retained for use under an approved post-mining land use shall be reclaimed in accordance with the approved reclamation plan immediately after it is no longer needed for mining and reclamation operations.

ATTACHMENT III-B-5

DESIGN, CONSTRUCTION, MAINTENANCE AND RECLAMATION SPECIFICATIONS FOR ANCILLARY ROADS

LOCATION

1) Ancillary roads will be located on ridges or high areas or on the most stable available slopes so as to control and prevent erosion, siltation, flooding, and adverse impacts to fish and wildlife, or their habitat and related environmental values, to the extent possible.

2) No part of any ancillary road will be located in the channel of an intermittent or perennial stream without written approval from the Regulatory Authority. (880-X-10C-.12 thru 880-X-10C-.14, 880-X-10C-.28).

3) Roads shall be located to minimize downstream sedimentation and flooding. If at all possible, ancillary roads will be located upstream of sediment basins to prevent, control and minimize additional contributions of suspended solids to stream flow or runoff outside the permit area, the violation of applicable State or Federal water quality standards, seriously altering the normal flow of water in stream-beds or drainage channels, and damage to all public or private property.

4) In instances where it is not possible to locate ancillary roads in the above manner, sediment control will be achieved by the use of silt fences, rock check dams, hay bale berms, etc.

DESIGN REQUIREMENTS

1) Ancillary roads will be designed, constructed, reconstructed and maintained to have adequate drainage control structures to safely pass the peak runoff anticipated from a Ten (10) Year - Six (6) Hour precipitation event.

CONSTRUCTION REQUIREMENTS

1) Prior to construction, the foundation area of the roadbed will be cleared and grubbed of all organic material and the topsoil will be removed. The disturbed area will be kept to the minimum necessary to accommodate the roadbed and/or associated drainage ditch construction.

2) Roads will be constructed of suitable subgrade material, free of sod, roots, stumps, etc., and will not contain rocks which will exceed twelve (12") inches in diameter. The road construction material will be placed in layers of twelve (12") inch maximum thickness and compacted to ninety-five (95%) percent of the standard proctor density, as set forth in ASTM.

ATTACHMENT III-B-5 (Cont'd)

3) The minimum top width of ancillary roads will under no circumstance be less than ten (10') feet and will be of maximum width necessary to facilitate the largest equipment using the road.

4) Roadbeds for ancillary roads will cut into consolidated, non-erodible material or will be surfaced with sufficiently durable, non-toxic, non-acid forming material as needed for the anticipated duration and frequency of use of the road. Because of the short term duration and infrequency of use of most ancillary roads, sufficiently durable mine overburden material from the mine site will be used for surfacing material, placed and compacted on the roadbed surface a minimum depth of four (4") inches. In instances where ancillary roads are proposed for an extended duration or heavy usage is anticipated, then durable, non-toxic, non-acid forming material, such as chert crushed limestone, redrock, and/or crushed sandstone will be placed and compacted on the roadbed surface a minimum depth of four (4") inches.

5) Ancillary roads will be constructed with no sustained grades of ten (10%) percent, unless unavoidable. If unavoidable, sediment control facilities such as silt fences, hay dams and/or rock check dams will be installed at strategic locations to prevent erosion and insure stability. Grades greater than fifteen (15%) percent will require ditch relief drains, cross over drains and road drainways at a minimum of three hundred (300') feet apart.

DRAINAGE AND SEDIMENT CONTROL REQUIREMENTS

1) Ancillary roads will be constructed, reconstructed, and maintained to have adequate drainage control, using structures such as, but not limited to bridges, culverts, drainage pipes, ditches, cross drains, and ditch relief drains designed to safely pass the peak runoff anticipated from a Ten (10) Year - Six (6) Hour precipitation event. All drainage control structures will be designed and constructed in such a manner whereas, to allow a free and operating conditions to prevent, control, and minimize erosion at the inlets and outlets.

2) Culverts shall be designed, installed, and maintained to sustain the vertical soil pressure, the passive resistance of the foundation, and the weight of vehicles using the road. All culverts or drainage pipes with diameters of forty-eight (48") inches or less will be covered with a minimum of one (1') foot and the maximum cover will not exceed fifty-seven (57') feet of desirable compacted material. All culverts or drainage pipes with diameters greater than forty-eight (48") inches will be covered with a minimum of two (2') feet and the maximum cover will not exceed forty-one (41') feet of desirable compacted material.

3) Culverts and drainage pipes will be designed and installed with adequate freeboard to prevent overtopping of the embankment.

ATTACHMENT III-B-5 (Cont'd)

4) Drainage pipes and culverts shall be installed/constructed to avoid plugging or collapse and erosion at inlets and outlets.

5) Drainage ditches, cross drains, and ditch relief drains will be constructed and maintained, as needed, to prevent, uncontrolled surface drainage over the road surface and roadway embankment.

6) Drainage ditches will be constructed with no sustained grades greater than five (5%) percent, unless unavoidable. If ditches must be constructed with grades in excess of five (5%) percent, drainage ditches will be lined with suitable liner material, such as, riprap, concrete, asphalt or durable rock, to prevent erosion and insure stabilization.

7) Sediment control will be achieved by the use of silt fences, rock check dams, hay bale berms, etc. in strategic locations, where necessary.

8) Upon completion of construction of ancillary roads, the side slopes of the roadway cut and fill sections, including all borrow areas formed in the construction, areas used for disposal of excess material, ditches, etc. will be seeded with a mixture of perennial and annual grasses, fertilized and mulched to prevent erosion and ensure restabilization. Grass mixtures will include, but not limited to, fescue, bermuda, rye grass, browntop millet, clover and sericea.

INSPECTION AND MAINTENANCE REQUIREMENTS

1) Routine inspections and maintenance (such as regrading, resurfacing, maintenance of sediment control structures, spot replanting, and dust control) will be conducted regularly during the life of each road to ensure that each road continually meets design and performance standards.

2) Dust control will be achieved by the periodic application of water, chemical binders and/ or other dust suppressants.

3) Any road damaged by a catastrophic event, such as a flood, or earthquake, will be repaired as soon as is practicable after the damage has occurred.

4) A road shall be maintained throughout its life to meet the performance standards of this part and any additional criteria specified by the Regulatory Authority.

ATTACHMENT III-B-5 (Cont'd)

REMOVAL AND RECLAMATION REQUIREMENTS

All roads not to be retained under an approved post-mining land use will be removed and reclaimed in accordance with the approved grading and reclamation plans as soon as practicable after it is no longer needed for mining and reclamation purposes. The removal and reclamation will include:

1) Closing the road to traffic;

2) Removing all bridges, culverts, drainage pipes, and other drainage control structures, unless otherwise approved as part of the post-mining land use;

3) Removing and/or otherwise disposing of road surfacing materials, that are not compatible with the post-mining land use and revegetation requirements, onsite or removed and stored for re-use;

4) Reshaping and regrading cut and fill slopes as necessary to be compatible with the post-mining land use and to compliment the natural drainage pattern of the surrounding terrain;

5) Protecting the natural drainage patterns by installing dikes or cross drains as necessary to control surface runoff and erosion.

6) Scarifying or ripping the roadbed, replacing topsoil or substitute material, and revegetating the entire disturbed area in accordance with the approval reclamation plan.

TYPICAL ROADBED CONFIGUARATION

See attached Typical Ancillary Road Drawing for an illustration of the typical roadbed configurations.

ATTACHMENT III-B-5 (Cont'd)

DESIGN, CONSTRUCTION, MAINTENANCE, AND RECLAMATION SPECIFICATION FOR PRIMARY ROADS

LOCATION

1) Primary roads will be located on ridges or high areas or on most stable available slopes so as to control and prevent erosion, siltation, flooding, and adverse impacts to fish and wildlife, or their habitat and related environmental values, to the extent possible.

2) No part of any primary road will be located in the channel of an intermittent or perennial stream without written approval from the Regulatory Authority. (880-X-10C-.12 thru 880-X-10C-.14, 880-X-10C-.28).

3) If at all possible, all primary roads will be located upstream of sediment basins to prevent, control and minimize additional contributions of suspended solids to stream flow or runoff outside the permit area, the violation of applicable State or Federal water quality standards, seriously altering the normal flow of water in stream-beds or drainage channels, and damage to all public or private property.

4) In instances where it is not possible to locate primary roads in the above manner, sediment control will be achieved by the use of silt fences, rock check dams, hay bale berms, etc.

DESIGN REQUIREMENTS

1) Primary roads will be designed by or under the direct supervision of a qualified registered Professional Engineer experienced in the design and construction of roads, in accordance with the ASMC rules and regulations, and current, prudent engineering practices. No Primary Road grade will be steeper than seventeen (17%) percent.

2) All primary roadway embankments will be designed and constructed to be stable under normal construction and operating conditions, with a minimum static safety factor of 1.3.

3) All primary roads will be designed, constructed, reconstructed and maintained to have adequate drainage control structures to safely pass the peak runoff anticipated from a Ten (10) Year - Six (6) Hour precipitation event.

ATTACHMENT III-B-5 (Cont'd)

CONSTRUCTION REQUIREMENTS

1) The foundation area of the roadbed will be cleared and grubbed of all organic material and the topsoil will be removed. The disturbed area will be kept to the minimum necessary to accommodate the roadbed and/or associated drainage ditch construction.

2) The road construction material will be suitable subgrade material, free of sod, roots, stumps, etc., and will not contain rocks which exceed twelve (12") inches in diameter. The road construction material will be placed in layers (12 inch maximum thickness) and compacted to ninety-five (95%) percent of the standard proctor density, as set forth in ASTM.

3) The minimum top width of primary roads will under no circumstances be less than eighteen (18') feet and will be a maximum width necessary to facilitate the largest equipment using road.

4) All slopes (cut and fill) will be no steeper than 2 horizontal to 1 vertical, unless specified otherwise in the detail design.

5) Roadbeds will be cut into consolidated, non-erodible material or will be surfaced with durable, non-toxic, non-acid forming material. In most instances, durable sandstone overburden material from the mine site will be used for surfacing material. In instances where durable sandstone overburden material from the site is not available or suitable, then durable, non-toxic, non-acid forming material, such as chert, crushed limestone, redrock, and/or crushed sandstone will be hauled in from off site, placed and compacted on the roadbed surface a minimum depth of four (4") inches.

6) Primary roads will be constructed with grades as shown on the Detailed Primary Road Design Plans as approved by ASMC. No Primary Road grade will be steeper than seventeen (17%) percent.

ATTACHMENT III-B-5 (Cont'd)

DRAINAGE AND SEDIMENT CONTROL REQUIREMENTS

1) Primary roads will be constructed, reconstructed, and maintained to have adequate drainage control, using structures such as, but not limited to bridges, culverts, drainage pipes, ditches, cross drains, and ditch relief drains designed to safely pass the peak runoff anticipated from a Ten (10) Year - Six (6) Hour precipitation event. All drainage control structures will be designed and constructed in such a manner whereas, to allow free and operating conditions to prevent, control, and minimize erosion in the inlets and outlets.

2) Culverts shall be designed, installed, and maintained to sustain the vertical soil pressure, the passive resistance of the foundation, and the weight of vehicles using the road and to provide adequate support for the load of the largest equipment using the road. For design purposes, "H-20" (live load + impact) will be used. All culverts or drainage pipes with diameters of forty-eight (48") inches or less will be covered with a one (1') foot and the maximum cover will not exceed fifty-seven (57') feet of desirable compacted material. All culverts or drainage pipes with a diameter greater than forty-eight (48") inches will be covered with a minimum of two (2') feet and the maximum cover will not exceed forty-one (41') feet of desirable compacted material. See Detailed Primary Road Design Plans for actual depth of material proposed above each culvert or drainage pipe.

3) Culverts and drainage pipes will be designed and installed to allow adequate freeboard to prevent overtopping of the embankment.

4) Drainage pipes and culverts will be installed/constructed to avoid plugging or collapse and erosion at inlets and outlets.

5) Drainage ditches, cross drains, and ditch relief drains will be constructed and maintained to prevent uncontrolled surface drainage over the road surface and roadway embankment. Trash racks and debris basins shall be installed in the drainage ditches where debris from the drainage area may impair the functions of drainage and sediment control structures.

6) Drainage ditches will be constructed with no sustained grades greater than five (5%) percent, unless unavoidable. In the event ditches must be constructed with grades in excess of five (5%) percent, drainage ditches will be lined as specified on the Primary Road Detailed Design Plans.

7) Sediment control will be achieved by the use of silt fences, rock check dams, hay bale berms, etc. in strategic locations, to prevent excessive siltation to the receiving streams.

8) Upon completion of construction of all roads, the side slopes of the roadway cut and fill sections, including all borrow areas formed in the construction, areas used for disposal of excess material, ditches, etc. will be seeded with a mixture of perennial and annual grasses, fertilized and mulched to prevent erosion and ensure restabilization. Grass mixtures will include, but not limited to, fescue, bermuda, rye grass, browntop millet, clover and sericea.

ATTACHMENT III-B-5 (Cont'd)

INSPECTION AND MAINTENANCE REQUIREMENTS

1) Routine inspections and maintenance (such as regrading, resurfacing, maintenance of sediment control structures, spot replanting, and dust control) will conducted regularly during the life of each road to assure that each road continually meets design and performance standards.

2) Dust control will be achieved by the periodic application of water, chemical binders and/or other dust suppressants.

3) Any road damaged by a catastrophic event, such as a flood, or earthquake, will be repaired as soon as it is practicable after the damage has accrued.

CERIFICATION REQUIREMENTS

1) The design and construction or reconstruction of primary roads shall be under the supervision of a qualified Registered Professional Engineer based on current, prudent engineering practices and any design criteria established by the Regulatory Authority. Primary roads will be designed by or under the direct supervision of a qualified Registered Professional Engineer experienced in the design and construction of roads, in accordance with the ASMC rules and regulations, and current, prudent engineering practices. Each design will be certified by a Registered Professional Engineer as being designed in accordance with the Regulations of the Alabama Surface Mining Commission, Chapter 880-X-10.

2) Upon the completion of the construction of each section of the primary road, as set forth in the detailed design plans, the construction will be certified by a Registered Professional Engineer, to the Alabama Surface Mining Commission, as being constructed in accordance with the approved detailed design plans.

3) In the event that a primary road is mined through in the mining process and must be reconstructed, the newly constructed primary road will be reconstructed to the minimum design criteria within the detailed design plans and the construction will be certified by a registered Professional Engineer, to the Alabama Surface Mining Commission, as being constructed in accordance with the approved detail design plans.

ATTACHMENT III-B-5 (Cont'd)

REMOVAL AND RECLAMATION REQUIREMENTS

1) All primary roads which are not mined through and remain after the completion of mining may be left as permanent roads for landowners access, if there is no opposition by said landowner.

2) All primary roads which are not mined through and remain after the completion of mining which are not to be retained as permanent for landowner access will be removed and reclaimed in accordance with the approved grading and reclamation plans as soon as practicable after it is no longer needed for mining and reclamation purposes. This removal and reclamation will include:

   a) Closing the road to traffic

   b) Removing all bridged, culverts, drainage pipes, and other drainage control structures, unless otherwise approved as part of the post mining land use;

   c) Removing and/or otherwise disposing of road surfacing materials, that are not compatible with the post-mining land use and revegetation requirements, onsite or removed and stored for re-use;

   d) Reshaping and regrading cut and fill slopes as necessary to be compatible with the post-mining land use and to compliment the drainage pattern of the surrounding terrain;

   e) Protecting the natural drainage patterns by installing dikes or cross drains as necessary to control surface runoff and erosion;

   f) Scarifying or ripping the roadbed, replacing topsoil or substitute material, and revegetating the entire disturbed area in accordance with the approved reclamation plan.

TYPICAL ROADBED CONFIGURATION

See attached Typical Primary Road Drawing for an illustration of the typical roadbed configurations.

CEDAR LAKE MINING, INC.

LITTLE SPRING CREEK-EAST MINE, P-3968

ALABAMA SURFACE MINING COMMISSION

SURFACE MINING PERMIT APPLICATION

PART III - C

BLASTING PLAN

PREPARED BY:

Billy W. Armstrong

Billy W. Armstrong
Alabama Certified Blaster #02348
Date: September 30, 2013

III. C. Blasting Plan

1. Ground vibration and air blast control

(a) Check which of the following procedures will be used to limit ground vibration.

☐ Maximum Peak Particle Velocity

Distance from Shot to Site	Maximum Peak Velocity
0- 300 Feet	1.25 Inches/Second
301-5,000 Feet	1.00 Inches/Second
5,001- Beyond	0.75 Inches/Second

All Shots must be Seismographed.

☒ Scaled Distance Factor

Distance from Shot to Site*	SD Factors
0- 300 Feet	50
301-5,000 Feet	55
5,001- Beyond	65

Seismograph Monitoring is not Required.

☐ Modified Scaled Distance Factor, approval from the Commission is required before this method can be used.

☐ Blasting-level chart, approval from the Commission is required before this method can be used.

* Identify the structure used for measuring the scale distance.

Note: (Little Spring Creek-East Mine), will use the Scaled Distance Factor method to limit ground vibrations caused by blasting operations. If blasting is done within 500 feet of an occupied dwelling the Maximum Peak Particle Velocity method will be used. Blast monitoring equipment as shown in Part III-C-(a) will be used.

III. C. <u>Blasting Plan</u> (Cont'd)

1. Ground vibration and air blast control (cont'd)

   (b) Check which of the following maximum levels and corresponding microphone lower frequency limitations will be used.

   [ ] 105 dB peak -c-weighted - slow response *

   [ ] 129 dB peak - 6 Hz or lower

   [X] 133 dB peak - 2 Hz or lower

   [ ] 134 dB peak - 0.1 Hz or lower *

* Only with the approval of the Commission.

2. Describe what variation will be made in the blasting operations to control and correct adverse effects due to blasting.

   SEE ATTACHMENT III-C-2

ATTACHMENT III-C-2

Measure to be employed in an effort to protect the public from adverse affects due to blasting will include the following:

Air Blasts and Flyrock will be minimized by:

(1) Covering all surface-detonating cords with earthen material to confine their blasts.

(2) Maintaining a stemming that will control the fly rock and air blast. The stemming material will consist of the cuttings from the borehole or crushed stone. Critical areas will be surveyed and adjustments will be made to ensure fly rock is controlled.

(3) Burden distance will be maintained at the designed amount to ensure no face blowouts occur causing air blasts.

(4) Drill patterns will be drilled accurately ensuring that the proper burden and spacing is maintained.

(5) Blasting during times of temperature inversions during the early morning and late afternoons will be limited.

(6) Delays will be varied to allow for good fragmentation with minimum air blasts and no fly rock.

(7) Prior to drilling a blast pattern, the bench will be inspected to determine if any geologic inconsistencies are present which could result in weaker zones thus causing a blowout and fly rock. The drill pattern will be altered as needed.

(8) Prior to the charging of a blast pattern, the drill operator will be consulted to determine if any inconsistencies were encountered during the drilling of the blast pattern. If inconsistencies are found, the charging sequence will be altered to accommodate these inconsistencies to prevent blowouts.

(9) The charge column of the blast hole will be closely monitored to ensure that the amount of blasting agents are not in excess of the allowable design.

(10) Prior to detonation of blasts, the blast area will be patrolled, regulated and blocked off by employees to prevent unauthorized entry. Blast warnings will be given prior to each blast; three longs for a five (5) minute warning, two (2) longs for a shooting signal, one (1) long for all clear signal once the blaster in charge determines that to be the case. Each blast will be visibly monitored to determine whether or not fly rock occurred. All public roads within 1000 feet of the blast will be blocked prior to detonation of the blast.

ATTACHMENT III-C-2(cont.)

Ground Vibrations will be minimized by:

(1) Maintaining the designed blast hole patterns.
(2) Limiting the charge weight by the scaled distance factor.
(3) Maintain the proper delays between rows and blast holes.
(4) The delay sequence will be adjusted as needed to control ground vibrations.

III. C. <u>Blasting Plan</u> (Cont'd)

3. Blast Monitoring

(a) Describe the blast monitoring equipment to be used (make and model, and sensitivity). Will it monitor ground vibrations, air blasts, or both?

Nomis 5200 - 2 Hz - Both or Equal Equipment
Nomis 5300 - 2 Hz - Both or Equal Equipment
SSU 1000 D - 2 Hz - Both or Equal Equipment

(b) How will monitoring equipment be installed and activated?

Equipment will be installed on a temporary basis for one individual shot or on a semi-permanent basis for 24-hour monitoring. The equipment will be activated by an individual or will be triggered by the ground vibrations or air blasts. Transducers will be buried.

(c) Show the location of blast monitoring stations on the permit map or on a separate map with a scale of 1:24000 or smaller.

The seismograph will be located at the nearest occupied dwelling when shots are being monitored.

4. Is blasting proposed to be conducted within 500 feet of an active underground mine?

( ) YES (X) NO

If <u>yes</u>, concurrence from MSHA is required.

III. C. <u>Blasting Plan</u> (Cont'd)

5. Will blasting be conducted within 500 feet of an abandoned underground mine or within 1,000 feet of an occupied dwelling, church, school, community or institutional building?

   (X) YES ( ) NO

   If <u>yes</u>, provide the following information, either as a part of the permit application or at a later date, but before reaching the distance given above.

   (a) A sketch showing the drill patterns to be used;

   (b) Critical dimensions, i.e., burden, spacing, stemming, drill hole diameter, etc.;

   (c) Delay periods;

   (d) Amount of decking;

   (e) Type and amount of explosives to be used, including the loading weight (lbs. per foot of drill hole);

   (f) Location and general description of the structures to be protected;

   (g) Discuss the measures to be used in the blasting operations to protect the public from the adverse effects of blasting;

   (h) The plans are to be prepared and signed by a Certified Blaster.

6. At what times will blasting operations be conducted?

   Monday through Saturday. Sunrise to Sunset.

7. Will basting operations be conducted within 300 feet of an occupied dwelling, church, school, community or institutional building?

   ( ) YES (X) NO

ATTACHMENT III-C-5

Typical Blast Design
Inside 1000 Feet

Diameter of boreholes: 6-3/4 inches, 7-3/8 inches and 7-7/8 inches

Explosives: ANFO with average density of 0.82 (12.70 lbs/ft up to 17.31 lbs/ft)
25/75 blend density of 1.12
40/60 blend density of 1.34
50/50 blend density of 1.32
BLENDS with density up to 1.34 (20.76 lbs/ft up to 28.26 lbs/ft)

Size of drill patterns will vary from as small as fifty (50) feet to as much as four hundred (400) feet in length. Width of the bench will typically be one hundred (100) feet. Burden distances will be between eight (8) and fifteen (15) feet and spacing will be between ten (10) and twenty (20) feet for overburden less than twenty (20) feet. Burdens will between twelve (12) and twenty (20) feet and spacing will range from fourteen (14) to twenty-four (24) feet for overburden in excess of twenty (20) feet and up to forty (40) feet. Overburden in excess of forty (40) feet, the burden will range from fourteen (14) to twenty-five (25) feet and spacing will range from sixteen (16) to twenty-eight (28) feet. If at all possible, the hole depth to burden ratio will be kept above 1.5 to 1.0.

Stemming will be calculated using the ash formula of (0.7 to 1.3) X the burden. Example 16B X 0.7 = (11'2" minimum stemming), if the ash formula is not used then 85% of the borehole will be inherit material.

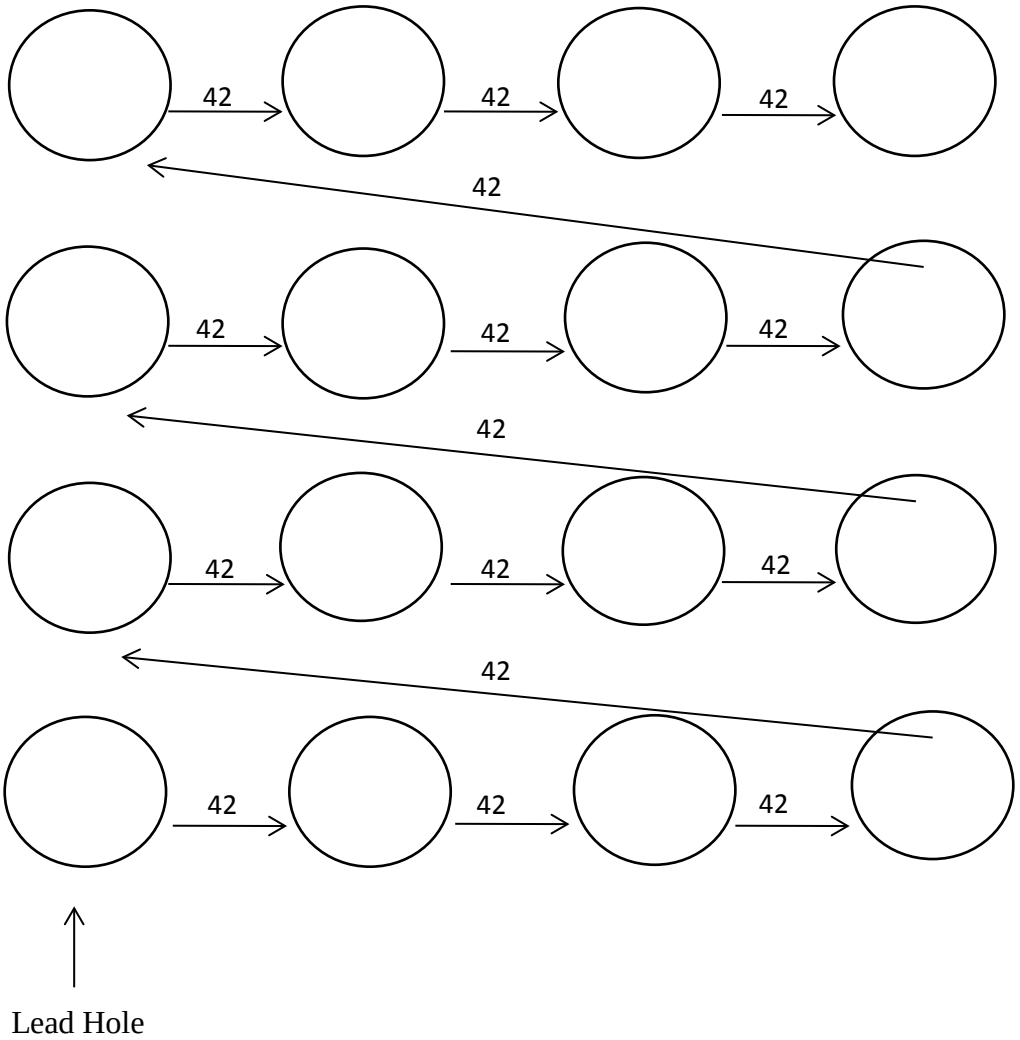
Insert Decking will range from five (5) to Eight (8) feet of inert material.

The scale distance formula will be utilized on all shots to determine the amount of explosives detonated in any eight (8) millisecond time frame.

(1) Prior to drilling a blast pattern, the bench will be inspected to determine if any geologic inconsistencies are present which could result in weaker zones thus causing a blowout and flyrock. The drill pattern will be altered as needed.
(2) Prior to the charging of a blast pattern, the drill operator will be consulted to determine if any inconsistencies were encountered during the drilling of the blast pattern. If inconsistencies are found, the charging sequence will be altered to accommodate these inconsistencies to prevent blowouts.
(3) The charge column of the blast hole will be closely monitored to ensure that the amount of blasting agents are not in excess of the allowable design.
(4) Prior to detonation of blasts, the blast area will be patrolled, regulated and blocked off by employees to prevent unauthorized entry. Blast warnings will be given prior to each blast; three longs for a five (5) minute warning, two (2) longs for a shooting signal, one (1) long for all clear signal once the blaster in charge determines that to be the case. Each blast will be visibly monitored to determine whether or not fly rock occurred. All public roads within 1000 feet of the blast will be blocked prior to detonation of the blast.

ATTACHMENT III-C-5

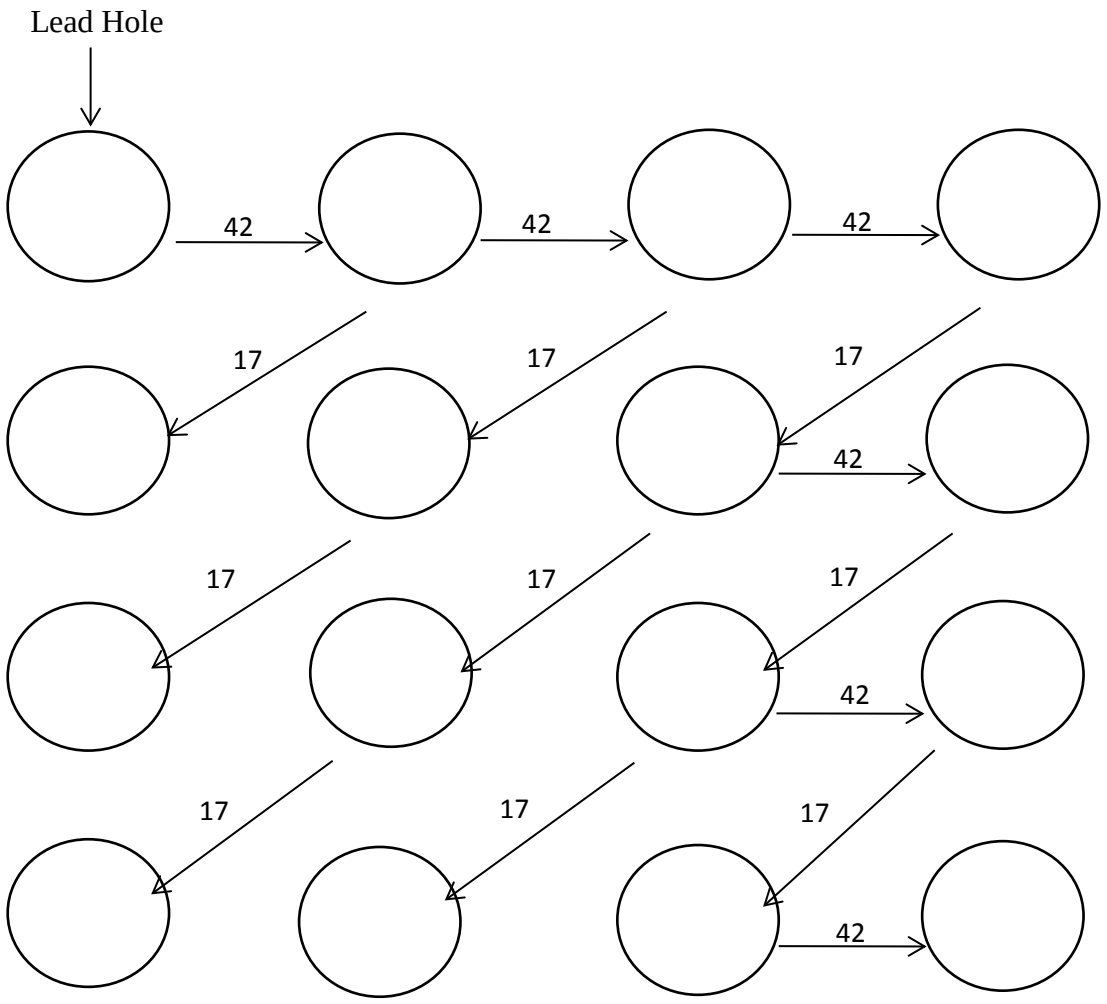
Typical Drill Pattern/and Delay Pattern



Firing will be Non-Electric. The typical surface delays for shots will be 9, 17, 42 or 100 ms delays. The typical in hole delay will be Nonel down lines 400, 425, 450, 475 or 500 ms delays as needed. Other delay patterns in the Ensign Bickford delay book may be used is a different delay pattern is needed. Rows of holes and number of holes will vary depending on pit widths and burden and spacing.

ATTACHMENT III-C-5

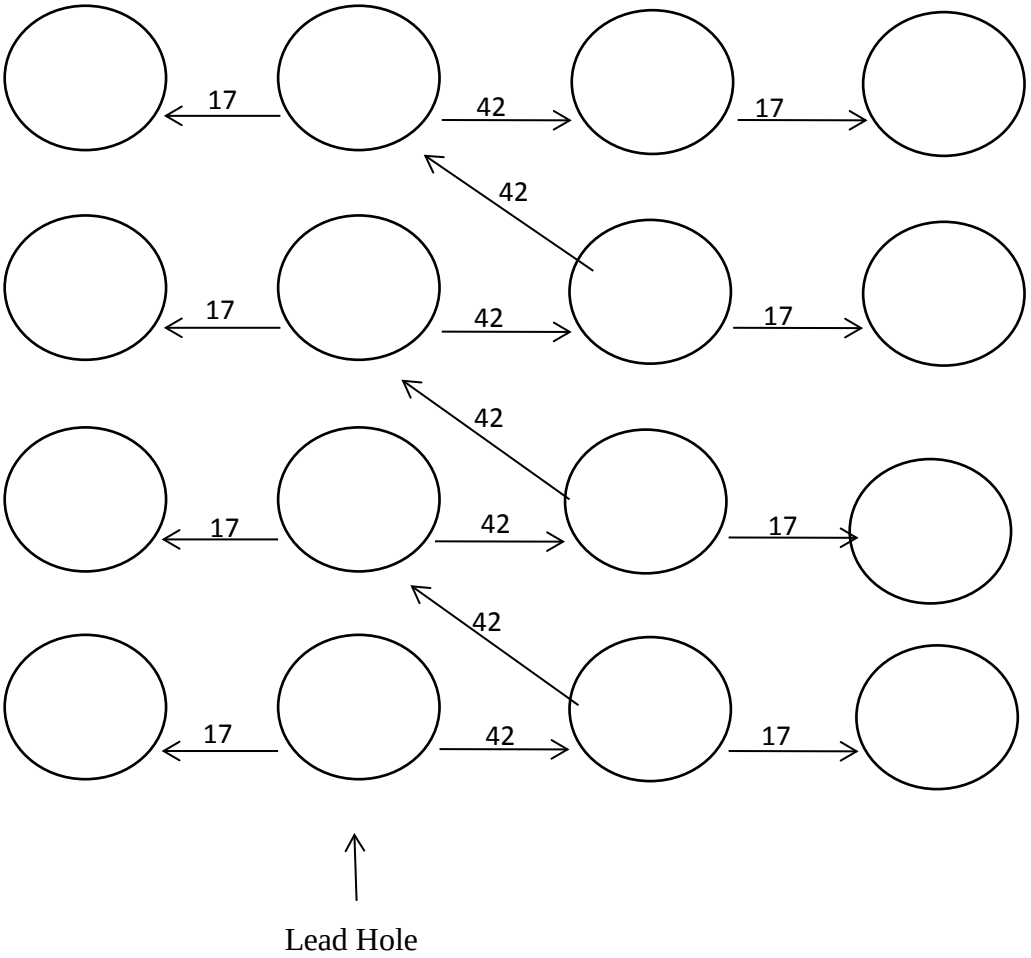
Typical Drill Pattern/and Delay Pattern



Firing will be Non-Electric. The typical surface delays for shots will be 9, 17, 42 or 100 ms delays. The typical in hole delay will be Nonel down lines 400, 425, 450, 475 or 500 ms delays as needed. Other delay patterns in the Ensign Bickford delay book may be used is a different delay pattern is needed. Rows of holes and number of holes will vary depending on pit widths and burden and spacing.

ATTACHMENT III-C-5

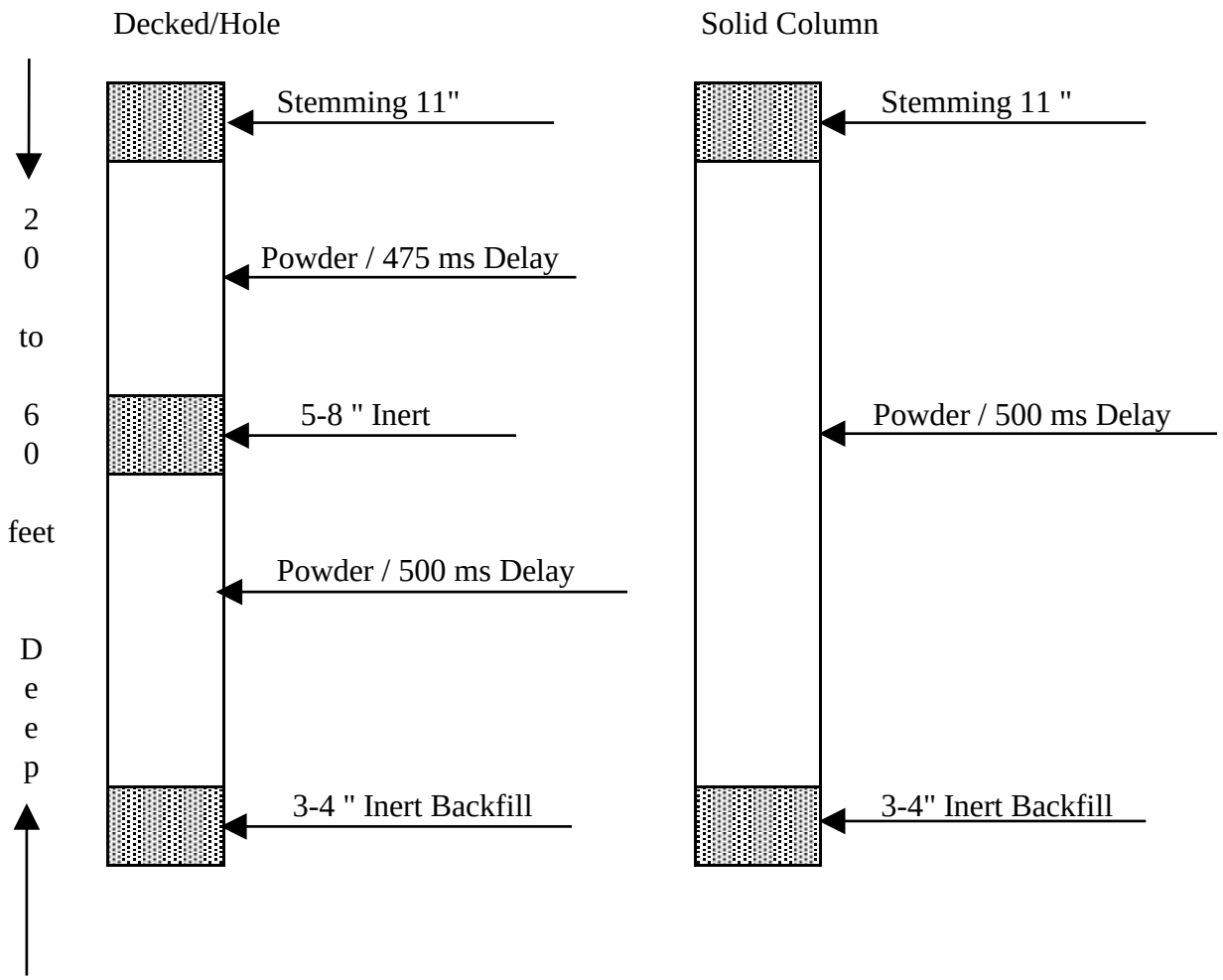
Typical Drill Pattern/and Delay Pattern



Firing will be Non-Electric. The typical surface delays for shots will be 9, 17, 42 or 100 ms delays. The typical in hole delay will be Nonel down lines 400, 425, 450, 475 or 500 ms delays as needed. Other delay patterns in the Ensign Bickford delay book may be used is a different delay pattern is needed. Rows of holes and number of holes will vary depending on pit widths and burden and spacing.

ATTACHMENT III-C-5

Typical Borehole



If holes have over three charges in them we will initiate the holes from the top down to help on vibration.

CEDAR LAKE MINING, INC.

LITTLE SPRING CREEK - EAST MINE, P-3968

ALABAMA SURFACE MINING COMMISSION

SURFACE MINING PERMIT APPLICATION

PART III - D & E

HYDROLOGIC MONITORING PLAN

Prepared by:

TASK Engineering Management Inc.
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Birmingham, Alabama 35266-0548
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HYDROLOGIC MONITORING PLAN

1. Attach the plan for the monitoring of surface water including those parameters and sampling frequencies required to meet the specifications of the NPDES permit. If a perennial or intermittent stream flows through the proposed permit or potentially impacted off-site areas, develop and attach monitoring plans which logically relates base-line or pre-mine quantity conditions with those to be monitored during surface mining and reclamation operations.

   At minimum, the plan shall include:
   (i) Sample frequency
   (ii) Site location
   (iii) Parameters to be monitored; and
   (iv) Appropriate maps which comply with requirements

   If the predictive evaluation of the groundwater indicates that adverse on-site or off-site impacts may occur to an aquifer, the applicant shall develop a groundwater plan which logically relates the analysis of base line or pre-mining conditions to approved post-mining land use. The plan shall list:

   (i) Parameters to be monitored, including water levels;
   (ii) Sample frequency
   (iii) Site locations; and
   (iv) Appropriate maps and cross sections which comply with requirements.

   If according to the results of the PHC it is determined that groundwater monitoring may not be necessary, the applicant shall submit with the permit application sufficient documentation, including geologic and hydrologic relations, to enable the commission to make a decision regarding a waiver of the monitoring of the groundwater.

F. **SURFACE AND GROUNDWATER DRAINAGE CONTROL PLAN**

The permit application shall contain a plan describing how the applicant intends to control surface and groundwater drainage into, through and from the proposed permit area in accordance with the required plans.

G. SURFACE WATER TREATMENT PLAN

When the PHC determination indicates the need for treatment of surface water leaving the proposed permitted area, the applicant shall submit a plan for such treatment with the permit application which describes how such treatment will be accomplished to meet applicable State and Federal effluent limitation standards.

H. RESTORATION OF RECHARGE PLAN

Attach the plan describing how the approximate recharge capacity of the disturbed area will be restored according to the requirements.

I. PLANS FOR RECORDING AND REPORTING DATA

Describe how surface and groundwater quantity and quality will be collected, recorded and reported to the regulatory authority.

J. PERMANENT ENTRY SEALS AND DOWN SLOPE BARRIERS

Describe in detail, with appropriate maps, plans and cross sections, permanent entry seals and down slope barriers used to ensure hydraulic stability after mining has ceased.

PART III HYDROLOGIC MONITORING PLAN

COMPANY NAME: Cedar Lake Mining, Inc. PERMIT NO.: P-3968

MINE NAME: Little Spring Creek East Mine COUNTY: Walker

*A MAP SHOWING ALL MONITORING POINTS MUST ACCOMPANY THIS PLAN

I. Surface Water Monitoring Program: (Discharge Points)

Discharge points will consist of Sediment Basins 001P, 002P, 003P, 004P and 005P.

Discharges shall be limited and monitored by the Permittee as specified below per ADEM Specifications:

Parameter	Discharge Limitations			Monitoring Requirements		Type[1,2]
	Daily Minimum	Monthly Average	Daily Maximum	Sample Type	Measurement Frequency	
Specific Conductance 00095	****	Report µS/cm	Report µS/cm	Grab	2/Month	Active Mining, Post Mining & Precipitation Event Exemption
Sulfate (As S) 00154	****	Report mg/L	Report mg/L	Grab	2/Month	Active Mining, Post Mining & Precipitation Event Exemption
pH 00400	6.0 s.u.	****	9.0 s.u.	Grab	2/Month	Active Mining, Post Mining & Precipitation Event Exemption
pH 00400	6.0 s.u.	****	10.5 s.u.	Grab	2/Month	Active Mining
Solids, Total Suspended 00095	****	35.0 mg/L	70.0 mg/L	Grab	2/Month	Active Mining
Solids, Settleable 00545	****	****	0.5 mL/L	Grab	2/Month	Post Mining & Precipitation Event Exemption
Iron, Total (As Fe) 01045	****	3.0 mg/L	3.0 mg/L	Grab	2/Month	Active Mining
Iron, Total (As Fe) 01045	****	****	3.0 mg/L	Grab	2/Month	Precipitation Event Exemption[4]
Manganese, Total (As Mn)[5] 01055	****	2.0 mg/L	4.0 mg/L	Grab	2/Month	Active Mining
Flow, In Conduit or Thru Treatment Plant 50050	****	Report MGD	Report MGD	Instantaneous	2/Month	Active Mining, Post Mining & Precipitation Event Exemption
Toxicity, Ceriodaphnia Acute[6] 61425	****	****	0 pass(0)/fail(1)	Grab	1/Quarter	Active Mining
Toxicity, Pimephales Acute[6] 61427	****	****	0 pass(0)/fail(1)	Grab	1/Quarter	Active Mining
Solids, Total Dissolved (TDS) 70296	****	Report mg/L	Report mg/L	Grab	1/Quarter	Active Mining, Post Mining & Precipitation Event Exemption

[1] See Part IV.C. for Precipitation Event Discharge Limitations.
[2] The measurement frequency for Post-Mining monitoring requirements shall be once per month, except for Total Dissolved Solids. See Part IV.D for Post-Mining Discharge Limitations.
[3] See Part IV.E. for pH Exemption Discharge Limitations.
[4] The discharge limitation for Total Iron as (Fe) is only applicable for precipitation events less than or equal to a 2-year, 24-hour precipitation event.
[5] See Part IV.F. for Manganese Exemption Discharge Limitations.
[6] See Part IV.G. for Effluent Toxicity Limitations and Biomonitoring Requirements for Acute Toxicity.

PART III HYDROLOGIC MONITORING PLAN (Cont'd)

A. Reporting and Recording Specifications

a) NPDES outfalls

Reporting as required for NPDES permit to Alabama Department of Environmental Management plus a simultaneous Notice of Filing to ASMC containing the following:

1) Name of Company
2) Name of Mine
3) ASMC permit number
4) NPDES number
5) Sampling period covered by report
6) List of discharge points sampled
7) Date the report was filed with ADEM

b) Other:

B. Non-Compliant Discharge Reporting:

Reporting as required by the NPDES permit to Alabama Department of Environmental Management plus simultaneous copy (indicating ASMC permit number) to ASMC.

II. Other Surface Water Monitoring : Bodies of water receiving discharge from the mine.

List Monitoring Points and indicate type or describe location	List Parameters to be Sampled	Frequency	Duration of Monitoring
SW-1 (Downstream) SW-2 (Upstream) SW-3 (Upstream)	pH Conductivity Iron (Fe) Manganese (Mn) Sulfates Discharge	Quarterly	Until Phase III Release

PART III HYDROLOGIC MONITORING PLAN (Cont'd)

A. Reporting and Recording Specifications:

1) Frequency of Reporting: Quarterly

2) Contents of Report: Name of Company, mine name, ASMC permit number and for all monitoring locations, the dates samples were taken and sample results for each parameter.

III. Monitoring requirements for removal of sediment ponds and other treatment facilities:

One (1) sample of inflow to sediment basin proposed for removal shall be collected within 48 hours after commencement of a 24 hour precipitation event. Monitoring data will be submitted to ASMC with application to remove the facility. Monitoring sites shall be located to sample water entering the facility (i.e., untreated drainage). Show proposed locations on the monitoring location map. Parameters to be sampled shall be those required by the NPDES permit.

IV. A. Monitoring Requirements for Phase II bond release:

List Monitoring Sites Inflow into the following basins:	NPDES Parameters	Sample Frequency	Duration of Monitoring
Sediment Basins: 001P, 002P, 003P, 004P, 005P	pH Iron (Fe) Total Suspended Solids (TSS) Manganese (Mn)	Monthly	No less than monthly for the previous 6 months prior to application for Phase II Bond release**

**For the Increment within which the respective basin is bonded, or the respective basin's drainage is located.

B. Reporting:

Reports shall be submitted with application for Phase II Bond Release indicating: sample location number, monitoring period, analysis results, date for each sample, plus sampling and analytical data. A map showing location of the sample sites should be included.

V. Groundwater Monitoring:

List Monitoring Points and indicate type or describe location	List Parameters to be Sampled	Frequency	Duration of Monitoring
MW-1 MW-2 MW-3 MW-4	pH Conductivity Iron (Fe) Manganese (Mn) Sulfates Water Level	Quarterly	Until Phase III Release

If any wells listed above are destroyed or mined through, it (or they) will be re-drilled at its (their) approximate original location(s) and will be drilled to the approximate same depth as the original well(s). Replacement of the well(s) will be conducted in a manner which will not interrupt the quarterly monitoring of these groundwater sites. The well casing(s) will be installed in such a manner to prevent surficial contamination. A lithologic log of the re-drilled well(s), along with casing specifications, will be submitted to the Regulatory Authority with the first post-restoration sample.

If, according to the results of the PHC, it is determined that groundwater monitoring may not be necessary, the applicant shall submit with the permit application sufficient documentation, including geologic and hydrologic relations, to enable the Commission to make a decision regarding a waiver of the monitoring of the groundwater.

PART III HYDROLOGIC MONITORING PLAN (Cont'd)

A. Reporting and Recording:

Reports to be filed with ASMC quarterly supply the following information: Company name, mine name, permit number and for each monitoring site, the date and sample results for each parameter. Include sampling and analytical information for all samples.

VI. Maintenance of records and Availability for Inspection:

A. Active Mining - copies of all monitoring records shall be maintained at the mine office.

B. During periods of temporary cessation of operations and after active mining, all monitoring records will be kept at:

Cedar Lake Mining, Inc. (Office)

2600 Warrior Jasper Road (Address)

Warrior, Alabama 35180 (City, State, Zip)

Freddy Hunt (Custodian of Records)

C. All monitoring records will be made available upon request to ASMC Personnel for inspection.

VII. Describe how the data obtained from the performance monitoring may be used to determine the impacts of the operation upon the hydrologic balance. Describe how parameters to be monitored relate to the suitability of the surface and groundwater for current and approved post-mining land use.

The performance monitoring as proposed for this site will provide more than sufficient data to determine any alterations and/or variations in the hydrologic balance as impacted by the proposed mining operations. Maintaining an on-going data base and adequate/efficient records will be necessary to generate base-line, production and post-production data.

Surface water monitoring station SW-1 is located downstream and SW-2 is located upstream respectively of any mining to be conducted by Cedar Lake Mining, Inc., Little Spring Creek East Mine. SW-3 was added after the mine acreage was reduced from 1149 acres to 565 acres to add additional baseline data of upstream flow to more accurately document the new mining area. Premining baseline analyses can be compared to production data once active mining is commenced to determine the impact to Little Spring Creek once mining begins. Monitoring wells MW-1, MW-2,MW-3 and MW-4 will monitor the characteristics of the groundwater within the proposed permit site. Data from these wells can be compared to baseline sample results to determine potential impacts to the groundwater and can be compared to predictions made in the PHC.

In the event that major changes to the surface water and ground water regimes are observed during the sampling periods, additional parameters may be monitored and the hydrologic monitoring plan will be revised, with appropriate approvals from the Regulatory Authority, to address said changes.

VIII. PLEASE NOTE: ALL PERFORMANCE MONITORING REPORTS should be submitted in duplicate. For companies with multiple permits, each permit should have a corresponding monitoring report. Sites serving multiple permits should be included in all pertinent monitoring reports.

IX. If a waiver is requested for a particular water-bearing stratum, give details.
880-X-8H.06(1)(h)(2)

X. Plans for Recording and Reporting Data: (779.13):

Describe how surface and groundwater quantity and quality data will be collected, recorded and reported to the Regulatory Authority.

All samples shall be taken according to Standard Methods 1060 and "Collection and Preservation of Samples" or the equally valid approved methods.

Surface water samples shall be taken by the "grab" method.

Flowrate measurement of surface water samples shall be according to ASTM D3858 "Standard Practice for Open Channel Flow Measurement of Water by Velocity - Area Method" or other equally approved methods.

The pH of all samples will be measured in the field (within two (2) hours). The sample will be stored in ice or near 4º C and all other parameters will be analyzed within twenty-four (24) hours . If samples cannot be analyzed within twenty-four (24) hours, after the pH has been measured, the pH will be adjusted to 2.0 s.u. or less with Nitric Acid (about 2 ml per liter) which allows samples to be stored up to 6 months at room temperature. Prior to analyzing other parameters, the pH was re-adjusted to between 4.0 and 5.0 s.u. with 0.1 N Sodium Hydroxide. Samples for TSS and Sulfates that were not run within twenty-four (24) hours were refrigerated near 4º C and TSS analyzed within seven (7) days and Sulfates within twenty-eight (28) days. Sample preservation if used was in accordance with Table 1060:I (Summary of Special Sampling or Handling Requirements) from Standard Methods for the Examination of Water and Wastewater 17th Edition 1989 (pages 1-37).

Groundwater samples shall be taken by the hand-dip "grab" method as defined by the 17th Edition of Standard Methods for the Examination of Water and Wastewater.

The quantity of the water will be determined by comparing the depth to the bottom of the well and to the depth to the water. Appropriate adjustments will be made for well casing "stick-up" to determine correct ground-surface elevation.

The sampling methods for pH, Fe, Mn and SO_4 are to be sampled in accordance to Hach Water Analysis Handbook. These methods are EPA approved and are adapted from Standard Methods for the Examination of Water and Wastewater.

Sampling will be recorded and reported to the Regulatory Authority as outlined in Part III - D & E of this application.