# CEDAR LAKE MINING, INC.

# LITTLE SPRING CREEK - EAST MINE, P-3968

ALABAMA SURFACE MINING COMMISSION

SURFACE MINING PERMIT APPLICATION

## PART IV

## RECLAMATION PLAN

Prepared by:

**TASK Engineering Management Inc.**
P.O. Box 660548
Birmingham, Alabama 35266-0548
Telephone 205.978.5070
Email: jw-task@charter.net

# IV. RECLAMATION PLAN

## A. **Postmining Land Use.**

1) Describe the proposed post-mining land use(s) for the permit area. If more than one land use is proposed, show on a map and give acreage for each use. Include comments from the legal owner of record concerning the proposed land use. (780.23, 816.133)

| Increment | Area | | Land Use |
|---|---|---|---|
| 1 | 212.0 | Acres | Undeveloped/No Current Use |
| 2 | 89.0 | Acres | Undeveloped/No Current Use |
| 3 | 98.0 | Acres | Undeveloped/No Current Use |
| 4 | 164.0 | Acres | Undeveloped/No Current Use |
| 5 | 2.0 | Acres | Undeveloped/No Current Use |
| **Total** | **565.0** | **Acres** | |

IV. RECLAMATION PLAN

2) Is the proposed land use different from the current land use? (780.23, 816.133)

( ) Yes ( X ) No

If yes, complete the following:

(a) Is the area zoned for the proposed land use?

( ) Yes ( ) No ( X ) N/A

(b) Is the proposed use compatible with adjacent land uses and applicable local and state land use policies?

( X ) Yes ( ) No

(c) Explain the feasibility of the proposed land use as related to land use trends, and explain how the land will be developed, achieved and sustained.

**Land Use Letters Attached.**

(d) Include letters of commitment from outside parties ensuring the provision of any necessary public facilities and any state and local government agencies which have to initiate, implement, approve or authorize the proposed land use.

**Land Use Letters Attached.**

(e) Enclose design plans for the proposed post-mining land use, if applicable.

NOT APPLICABLE

# IV. RECLAMATION PLAN

## B. **Grading and Contouring**

1) Enclose detailed plans with appropriate cross sections or maps. (780.18(b)(3&4)

See Attached Permit Map, Reclamation Cross-Section A-A', Reclamation Cross-Section B-B', Reclamation Cross-Section C-C' and Reclamation Cross-Section D-D'.

2) Complete the following timetable: [780.18(b)(1)]

| Increment | # of months after operation begins | % of increment or permit which will be graded and contoured |
|---|---|---|
| 1 | 1.0 months | 0% |
| | 3.0 months | 25% |
| | 6.0 months | 50% |
| | 9.0 months | 75% |
| | 12.0 months | 100% |

| Increment | # of months after operation begins | % of increment or permit which will be graded and contoured |
|---|---|---|
| 2 | 12.0 months | 0% |
| | 15.0 months | 25% |
| | 18.0 months | 50% |
| | 21.0 months | 75% |
| | 24.0 months | 100% |

IV. RECLAMATION PLAN

B. **Grading and Contouring (Cont'd)**

2) Complete the following timetable: [780.18(b)(1)]

| Increment | # of months after operation begins | % of increment or permit which will be graded and contoured |
|---|---|---|
| 3 | 24.0 months | 0% |
| | 27.0 months | 25% |
| | 30.0 months | 50% |
| | 33.0 months | 75% |
| | 36.0 months | 100% |

| Increment | # of months after operation begins | % of increment or permit which will be graded and contoured |
|---|---|---|
| 4 | 36.0 months | 0% |
| | 39.0 months | 25% |
| | 42.0 months | 50% |
| | 45.0 months | 75% |
| | 48.0 months | 100% |

IV. RECLAMATION PLAN

B. **Grading and Contouring (Cont'd)**

2) Complete the following timetable: [780.18(b)(1)]

| Increment | # of months after operation begins | % of increment or permit which will be graded and contoured |
|---|---|---|
| 5 | 48.0 months | 0% |
| | 51.0 months | 25% |
| | 54.0 months | 50% |
| | 57.0 months | 75% |
| | 60.0 months | 100% |

NOTE: Grading and contouring overburden of each increment shall follow coal removal by no more than 180 days.

IV. RECLAMATION PLAN

B. **Grading and Contouring (Cont'd)**

3) On appropriate map(s), show representative values for the following: [780.18(b)(3), 816.102]

(a) Percent of slope before mining;

Increment No. 1

Average Slope - 10.3%
Maximum Slope - 14.3%

Increment No. 2

Average Slope - 9.6%
Maximum Slope - 9.8%

Increment No. 3

Average Slope - 7.5%
Maximum Slope - 9.3%

Increment No. 4

Average Slope - 5.8%
Maximum Slope - 7.5%

IV. RECLAMATION PLAN

B. **Grading and Contouring (Cont'd)**

3) On appropriate map(s), show representative values for the following: [780.18(b)(3), 816.102]

(b) Proposed post-mining slope including slope of the highwall(s) in percent.

Increment No. 1 - 11.0%

Increment No. 2 - 8.0%

Increment No. 3 - 9.0%

Increment No. 4 - 6.0%

Final Highwall Slope - 10.0%

4) Complete the following:

(a) Is the mining operation to be conducted on a pre-existing (prior to August 3, 1977) highwall?

( ) Yes ( X ) No

(b) Is the operation of such limited slope as to not generate enough material to completely backfill the re-affected or enlarged highwall?

( ) Yes ( X ) No

If yes, provide analysis to show maximum extent of backfilling possible.

IV. RECLAMATION PLAN

## OVERBURDEN RESTABLIZATION PLAN

Overburden shall be backfilled, completed and graded so that the post-mining slope shall approximate the original pre-mine slope of 10.3% for Increment No. 1, 9.6% for Increment No. 2, 7.5% for Increment No. 3 and 5.8% for Increment No. 4. The mining method of area ,mining will be utilized at this proposed mine site. Backfilling, compacting and grading, of the final highwall slope only, will be done using dozers, farm-type tractors will then be used to disc the overburden to its final contour, decrease compaction, and increase the mechanical breakage of the surface layer. The disturbed area, excluding the final highwall slope, will be graded no steeper than the approximate original contour. Rocks 24" in diameter that remain upon the surface, if any, will be collected and buried. At this time the following criteria will be used to evaluate the textural quality of the graded overburden:

(a) Rocks of a size larger than ten (10") inches shall not exceed ten (10%) percent by volume of the substitute material, and no rocks larger than twenty-four (24") inches can be included in the substitute material.

(b) Rocks between three (3") inches and ten (10") inches in size shall not exceed fifteen (15%) percent by volume of the topsoil substitute material.

(c) The substitute material shall not contain more than fifty (50%) percent by volume of materials greater than 0.75 inches in size.

(d) At least forty (40%) percent by volume of the substitute material shall be less than two (2) millimeters in size.

If the above criteria cannot be met, the Applicant shall redisc the overburden and resample. If increasing the mechanical breakage will not enhance the graded overburden to a satisfactory level, additional soil will be hauled and spread on site until the above criteria is achieved.

Stabilization of the final highwall material shall be achieved by the planting of warm or cool season perennials as outlined in Part IV-C-5 of the permit application and as outlined in Section 816.06 if necessary.

# IV. RECLAMATION PLAN

## C. **Revegetation**

1) Outline procedures for soil testing required to determine type and amount of soil amendments to be applied and to evaluate results of topsoil handling and replacement.

Topsoil or topsoil substitute material will be sampled and sent to Auburn University Soil Testing Laboratory for analyses to determine what is required to maintain and promote vegetative growth.

The soil will be tested for the following chemical parameters: pH, total sulfur, phosphorus, potassium, magnesium, calcium, alkalinity and $NO_3N$. The physical parameters, percent sand, silt, clay, textural classification and available water capacity. Recommendations for limestone, nitrogen, $P_2O_5$ and $K_2O$ that will be added to the topsoil or topsoil substitute.

2) Are selected overburden materials to be used as a supplement or substitute for topsoil?

( X ) Yes ( ) No

If yes, provide results of analysis, trials and tests required under Section 816.22(e). (779.21)

See Attachment IV-C-2. Topsoil Variance Approved by Regulatory Authority on August 6, 2013. Topsoil variance approval letter and Topsoil variance application attached.

3) Are commercial or introduced species to be used?

( ) Yes ( X ) No

If, yes, give a narrative with supporting references which show that the species meet the requirements of Section 816.112. [780.18, 816.112]

IV. RECLAMATION PLAN

C. **Revegetation Cont'd)**

4) Is the area to be reclaimed for fish and wildlife habitat?

( ) Yes ( X ) No

If yes, list the species of plants to be used with a brief description of how they meet the criteria of Section 816.97(d)(6). [780.18(b)(5 & 6), 816.97(d)(6)].

1. During the reclamation process the disturbed area will be regraded in such a manner at to create numerous small water holding depressions approximately 1/4 acres is size with a maximum depth of 2 feet to enhance the area for fish and wildlife.

2. Various herbaceous species including, but not limited to, Browntop Millet, Kobe and Sericea Lespedeza, Hairy Vetch, Ryegrass and Wheat will be planted in scattered and random locations to provide food and cover for wildlife that will closely resemble pre-mining conditions. These plants will be added in addition to the vegetation proposed in Part IV of this permit application.

3. As determined by the post mining land use, all reclaimed areas greater than fifty (50) acres will be broken up by vegetation to provide maximum variation.

4. Sediment basins will be left as permanent water impoundments, with appropriate landowner and Regulatory Authority approvals.

   The proposed post mining landuse for this permit area will be undeveloped/no current land use. In this instance, areas along drainage courses, areas along the permit boundary and areas around the proposed water holding depressions to be left in the regrading process will be planted with trees and shrubs, such as willow, loblolly pine, honey suckle, sawtooth oak, etc., to increase diversity of food and cover for wildlife.

IV. RECLAMATION PLAN

C. **Revegetation Cont'd)**

5) Complete the following schedules for each increment or sub-area of the permit. [780.18(b)(5)]

**VEGETATION SCHEDULE**

Increments No. 1 - 5

**Temporary Vegetation**

| Species | Planting Rate | Planting Methods | Planting Dates | Areas to be Planted |
|---|---|---|---|---|
| Rye Grass | 10 Lbs/Acre | Broadcast | Fall | All Disturbed Areas |
| Browntop Millet | 10 Lbs/Acre | Broadcast | Spring | All Disturbed Areas |

IV. RECLAMATION PLAN

C. **Revegetation Cont'd)**

## VEGETATION SCHEDULE

Increments No. 1 - 5

**Permanent Vegetation**

| Species | Planting Rate | Planting Methods | Planting Dates | Areas to be Planted |
|---|---|---|---|---|
| Common Bermuda Grass (Hulled) | 10 Lbs/Acre | Broadcast | Spring | All Disturbed Areas |
| Kobe Lespedeza | 30 Lbs/Acre | Broadcast | Spring | All Disturbed Areas |
| Fescue | 50 Lbs/Acre | Broadcast | Spring/Fall | All Disturbed Areas |
| Serala Sericea | 35 Lbs/Acre | Broadcast | Spring/Fall | All Disturbed Areas |
| Crimson Clover | 15 Lbs/Acre | Broadcast | Fall | All Disturbed Areas |
| Yuche Arrow-Leaf Clover | 10 Lbs/Acre | Broadcast | Fall | All Disturbed Areas |

NOTE: After grading is completed, planting of the above schedule will begin in the next planting season.

IV. RECLAMATION PLAN

C. **Revegetation Cont'd)**

6) Describe in detail, proposed husbandry practices to be used. [780.18(b)(5), 805.13(b)(3)]

Husbandry practices will include, but will not be limited to, seeding spot areas to increase cover and the addition of proper nutrients where required to achieve successful vegetation. Suitable mulch shall be used on all regraded and topsoiled areas to control erosion, promote germination of seeds and increase the moisture retention capability of the soil. A minimum of 1 1/2 tons per acre and a maximum of 3 tons per acre of hay will be used as mulch.

7) Describe, in detail, the measures and sampling methods to be used to determine and demonstrate the success of revegetation and the productive capacity of reconstructed prime farmland. [780.18, 816.116]

Systematic sampling will be utilized to determine the degree of revegetation success. Site surveys will be conducted and further qualified by aerial photography if required. Sampling of the appropriate area to determine vegetative success will be at a minimum of the one (1) percent level with higher levels utilized if necessary.

Systematic sampling shall consist of randomly selecting one (1) sampling site per five (5) reclaimed acres. Each site shall be located on a topographic map and field traversed (paced with hand-held compass). Samples shall then be taken at each randomly located area.

In addition to the previously listed methods of determining the success of ground cover. "Productivity of Revegetation" will be determined in accordance with the ASMC Technical Manual #1 (Approved Statistical Analysis and Sampling Techniques for Determining Revegetation Success on Surface Mined Lands in Alabama).