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334-244-0766
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June 19, 2020

Ms. Jamie Lancaster
Georgia Environmental Protection Division
Surface Mining Unit
4244 International Parkway, Suite 104
Atlanta, Georgia 30354

**Re: *Surface Mining Permit Application
Proposed Saunders Demonstration Mine
Charlton County, Georgia
TTL Project No. 000180200804.00***

Dear Ms. Lancaster:

TTL, Inc. (TTL), on behalf of Twin Pines Minerals, LLC, respectfully submits the enclosed Surface Mining Permit Application for a proposed demonstration heavy mineral sands mining operation located near St. George, in Charlton County, Georgia. Included herein is the Application for Surface Mining Permit and supporting Surface Mining Land Use Plan. Also included for reference is the U.S. Army Corps of Engineers Individual Permit Application for this project.

We look forward to working with you on this important project. Please contact the undersigned at (334) 244-0766, or Mr. Mark Fowler with Twin Pines Minerals at (205) 435-0001.

Sincerely,
TTL, Inc.

Sheryle G. Reeves, P.E.
Principal Engineer

T. West White
Project Professional

Enclosure: Surface Mining Permit Application Package

cc: Steven R. Ingle, President – Twin Pines Minerals, LLC

**APPLICATION FOR SURFACE MINING PERMIT
TWIN PINES MINERALS, LLC
SAUNDERS DEMONSTRATION MINE**



Twin Pines Minerals, LLC

Submitted To:

Georgia Department of Natural Resources
Environmental Protection Division
Surface Mining Unit
4244 International Parkway, Suite 104
Atlanta, GA 30354

Prepared for:

Twin Pines Minerals, LLC
2100 Southbridge Parkway, Suite 540
Birmingham, AL 35209

Prepared by:

TTL, Inc.
2743B Gunter Park Drive West
Montgomery, Alabama 36109

TTL Project No. 000180200804.00

June 19, 2020

TTL

DEPARTMENT OF NATURAL RESOURCES
 ENVIRONMENTAL PROTECTION DIVISION
 LAND PROTECTION BRANCH
 SOLID WASTE PROGRAM

Surface Mining Unit
 4244 International Parkway
 Suite 104
 Atlanta, Georgia 30354
 404-362-2537

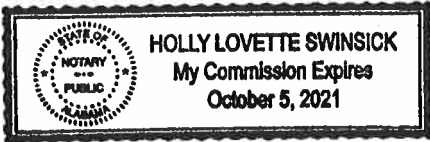
APPLICATION FOR SURFACE MINING PERMIT

Submittal Instructions: An application for a permit must include the Mining Operator's Mining Land Use Plan and both must be factual and complete. The Application and Mining Land Use Plan (original and one copy) must be submitted to the address shown above.

Pursuant to the requirements of the Georgia Surface Mining Act, O.C.G.A. § 12-4-70, et seq., and the Rules of the Georgia Department of Natural Resources, Chapter 391-3-3, Surface Mining, both as amended, the undersigned hereby:

1. applies for a permit to conduct a surface mining operation as represented in the attached Mining Land Use Plan;
2. specifically grants to the Environmental Protection Division or any authorized representative of the Director the right of entry and travel upon affected lands;
3. certifies that the Mining Operator is the rightful owner and/or the Mining Operator holds a valid lease on or option to purchase or lease said lands which, at a minimum, extends two (2) years beyond the final reclamation date shown in the Mining Land Use Plan; and,
4. certifies that the information provided in or submitted by the Mining Operator as a part of this Application and Mining Land Use Plan is true and correct, and as the Mining Operator agrees to comply with provisions of this Mining Land Use Plan, provisions of the Act and Rules, and conditions of permitting.

Affix Notary or Corporate Seal Here



Holly Lovette Swinsick
 Attested by Notary
 Or Corporate Secretary

[Signature] 6-18-20
 Signature Date
 Steven R. Ingle
 Name
 President
 Title
 Twin Pines Minerals, LLC
 Company
 2100 Southbridge Parkway, Suite 540
 Address
 Birmingham AL 35209
 City State ZIP
 205-545-8759
 Telephone Ext.
 single@twinpinesminerals.com
 Email Address

The approval of this Application and Mining Land Use Plan does not relieve the Mining Operator of any obligation or responsibility for complying with the provisions of any other laws or regulations of any local, federal or state authority.

FOR DIVISION USE ONLY

Application and Land Use Plan Recommendation:

Approval

Disapproval

Reviewer: _____

Date: _____

Manager: _____

Date: _____

Bond Requirements

Number of Acres: _____ Bond Amount/Acre: _____ Total Bond Amount: _____
Date of Bond Notice: _____ Date of Bond Received: _____ Bond Approved by: _____
Date Permit Issued: _____

**ENVIRONMENTAL PROTECTION DIVISION
SURFACE MINING APPLICATION AND LAND USE PLAN**

I. MINE INFORMATION

Mine Name: Saunders Demonstration Mine

Mine Address: State Route 94

City, State, ZIP St. George, GA 31562

County: Charlton

Site Latitude (decimal degrees): 30.521458

Site Longitude (decimal degrees): -82.10593

Directions from Nearest Interstate: From I-10 in Macclenny, Florida, take exit 335 onto FL/GA 121, travelling north. Go approximately 13 miles on Hwy 121 to St. George, GA. Turn left onto GA 94. Go approximately 5 miles. Site is located on both sides of GA 94, near intersection of Trail Ridge Road.

Onsite Manager/Representative: Mark Fowler

Environmental Contact Name: Mark Fowler

Title: Environmental Manager

Telephone Number: 205-435-0001

Email Address: mfowler@twinpinesminerals.com

Is this application for: a new mine an existing mine (re-permitting)

II. OPERATOR AND OWNER INFORMATION

A. Description of Mining Operator's Company (hereinafter "Operator")

Name of Company: Twin Pines Minerals, LLC

Address: 2100 Southbridge Parkway, Suite 540

City, State, ZIP Birmingham, Alabama 35209

Telephone: 205-545-8759

Email Address: single@twinpinesminerals.com

Type of Business:
(e.g., Corporation, Partnership,
Proprietorship, etc.) LLC

B. Land Ownership

(if additional space is needed, please attach a separate sheet)

	Trail Ridge Land			Number of	
Owner	Company	Owned <input checked="" type="checkbox"/>	Leased <input type="checkbox"/>	Affected Acres	<u>745</u>
Address	<u>2100 Southbridge Pkwy, Suite 540</u>				
City, State, ZIP	<u>Birmingham, Alabama 35209</u>				

	TIAA Timberlands I, LLC			Number of	
Owner	C/O Greenwood Resources, Inc.	Owned <input type="checkbox"/>	Leased <input checked="" type="checkbox"/>	Affected Acres	<u>243</u>
Address	<u>1500 South First Avenue, Suite 1150</u>				
City, State, ZIP	<u>Portland, Oregon 97201</u>				

	Rodney & Sidney Bell and Eli L. & Sharon Padgett			Number of	
Owner	Padgett	Owned <input type="checkbox"/>	Leased <input checked="" type="checkbox"/>	Affected Acres	<u>53</u>
Address	<u>10624 Hillside Drive</u>				
City, State, ZIP	<u>Maccleny, Florida 32063</u>				

Total Affected Acres to be Permitted by This Application: 1041

Note: "Affected Acres" is equivalent to "Permitted Acres"

III. GENERAL MINING INFORMATION

A. Mineral or Material to be Mined and Method of Mining

Mineral/ Material: Heavy Mineral Sands SIC Code: 1099

Method of Mining (e.g., excavation, dredge, etc.) Drag line, Excavation

B. Classification of Lands in Vicinity of the Mine Site:

Agricultural

C. Schedule for Mining and Reclamation:

Anticipated Date to Begin Mining: September/2020 (month/year)

Anticipated Date to Complete Mining: March/2026 (month/year)

Anticipated Date of Final Reclamation: July/2028 (month/year)

Please note the final reclamation date should include two growing seasons past the completion date.

If mining is completed prior to the above stated date, the Operator shall complete the reclamation in accordance with this Plan within 24 months of completion of mining.

IV. INFORMATION ON OTHER PERMITS

- A. List any Georgia Surface Mining Permits suspended, revoked, or for which bond was forfeited:
None
- B. List other environmental permits being applied for in relation to this operation:
COE 404 Individual Permit, NPDES Permit, Air Permit, Groundwater Extraction Permit
 (Please submit a copy of the NOI for GAR050000 Industrial Stormwater Permit, if applicable.)
- C. List other local permits being applied for in relation to this operation:
Charlton County Land Disturbance Permit

V. PERFORMANCE CRITERIA FOR MINING PLAN AND MINING ACTIVITIES

- 1. Plan Drawings shall show but are not limited to the metes and bounds of the property to be mined, the limits of the affected acreage, the natural drainage features and water disposal, the initial mining and overburden (spoil) area(s), the erosion and sedimentation controls, the ingress/egress area(s), the direction and schedule of mining advancement, the area to be left undisturbed (buffer) where necessary, and the plan that shows projected final reclamation of the site.
- 2. The Operator will implement site survey control to ensure that all acres affected by the mining operation will be on permitted lands. Survey control will be accomplished through the use of permanent accessible benchmarks, survey control stakes, and/or boundary markers which designate and/or delineate all permitted acreage. Survey control shall be as indicated on the boundary survey, drawings, maps, etc. included as part of this Plan. Where necessary for construction or operation proposes, vertical as well as horizontal survey control will be established and maintained.

Means	Identifier / Location (e.g., type of stakes, color of flagging, etc.)
Property Boundary Markers	Fence Post/Stake - Red
Affected/Permitted Acreage Markers	Fence Post/Stake - Green
Buffer Boundary Markers	Fence Post/Stake - Blue
Dredge Limits	Fence Post/Stake - Orange
Clearing Limits	Fence Post/Stake - Orange
Other -	NA
Permanent Survey Control Markers	Fence Post/Stake - Yellow
Vertical: (Identifier & Location)	NA
Horizontal: (Identifier & Location)	NA
Known Elevation	NA
Assumed Elevation	NA

3. The Operator will ensure that all measures and facilities for control of erosion and sedimentation during site preparation, operation, and/or reclamation activities shall adhere to the following:
 - A. Erosion and sedimentation control measures and facilities will be employed prior to or concurrent with clearing, grading, overburden removal, access or other land disturbing activities for preparation or operation of the site for mining. Provisions will be made for treatment or control of any source of sediments.
 - B. All erosion and sedimentation control measures or facilities, whether temporary or permanent, shall be continuously maintained by the Operator, so as to be effective.
 - C. Sediment in surface runoff water shall be trapped by use of debris basins, sediment basins, silt traps, sediment barriers or similar structures.
 - D. Permanent vegetation shall be installed as soon as possible. Temporary vegetation and/or mulch shall be employed where necessary to protect exposed critical areas until permanent vegetation or stabilization is attained.
 - E. Natural vegetation shall be retained, protected and supplemented wherever feasible to provide for natural buffer areas.
 - F. Diversions, dikes, and berms shall be employed to retain, direct and control surface water runoff from affected areas into sediment control structures.
 - G. All surface water discharges shall be controlled and released at a nonerosive velocity onto stabilized areas or into stabilized channels.

NOTE: The Operator may attain conformance through the use of design criteria in the "Manual for Erosion and Sedimentation Control in Georgia," published by the State Soil and Water Conservation Commission as a guide or through the use of alternate design criteria which conform to sound conservation and engineering practices.

4. All permanent landform changes including, but not limited to, berms, drainage structures, surface water channel modifications, etc. shall be constructed in a manner to protect against failure, subsidence and/or erosion and will be permanently stabilized upon completion of construction.
5. Whenever a mining site lies contiguous to any waters of the State or whenever, in the judgement of the Division, proposed mining at such site will adversely affect any portion of a watershed of the State, the Operator will follow sound engineering and conservation measures to provide protective barriers, such as dams, berms, silt ponds, or other similar structures, between the land to be affected and waters or watersheds involved. All such structures are to be approved by the Division as a part of this Plan and are to be substantial for the protection of contiguous natural resources of the State. All structures referred to above are to be constructed a reasonable distance from waters of the State, or that portion of a watershed of the State that may be adversely affected, as determined by the Division. Surface mining, if conducted within the 100 year floodplain, shall be done in accordance with any applicable local floodplain management ordinance, if any. Where a local floodplain management ordinance does not exist, the Operator shall ensure that the mining activities are conducted so as to minimize flooding, erosion and/or sedimentation on adjacent upstream or downstream properties.

6. Before natural creeks, streams, rivers, lakes, or other bodies of water may be altered in course or relocated by the Operator, the plan for such alteration or relocation must be approved in accordance with all applicable laws and regulations and by the Division as a part of this Plan.
7. The Operator shall obtain all required permits and maintain compliance with the Rules and Regulations of the State of Georgia, including but not limited to the Water Quality Control Rules, Chapter 391-3-6-.16.
8. Where properties on the National Register of Historic Places are located within one mile of any portion of the proposed mining operation, the Operator shall provide, as an attachment to this Plan, documentation which demonstrates the following have been adequately considered:
 - A. alternatives or measures to avoid or reduce effects on the historic properties;
 - B. determinations of effects on alteration to features of the property's location, setting, or use;
 - C. determinations of adverse effects which may diminish the integrity of the property's location, design, setting, materials, workmanship, or other structural detail.

Adverse effects on historic properties include, but are not limited to:

- A. physical destruction, damage, or alteration of all or part of the property;
- B. isolation of the property from or alteration of the character of the property's setting when that character contributes to the property's qualification for the National Register;
- C. introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting.

Adverse effects from the introduction of atmospheric elements shall be defined as repetitive non-conformance with the National Ambient Air Quality Standards (NAAQS) regarding fugitive dust particles of 10 microns and smaller which may leave the subject property as set forth by the Environmental Protection Agency.

Adverse effects from the introduction of audible elements shall be defined as repetitive noncompliance with the Georgia Blasting Standards Act (State of Georgia House Bill 824) regarding atmospheric overpressure limits as governed by the Department of the Fire Marshal for the State of Georgia. Avoidance of adverse effects by the introduction of visual elements shall be accomplished wherever practical by maintaining visual barriers, either by undisturbed buffer areas or manmade structures such as berms, as outlined in the approved Mining Land Use Plan.

It is incumbent upon the Operator to provide satisfactory evidence to the Director that alternatives have been considered and this plan contains appropriate measures to provide for minimizing and/or mitigating any adverse effects. If after the mining operation begins adverse effects become evident, the Director will give the Operator written notice of the occurrence of such adverse effects. The Operator will then have sixty (60) days to mitigate the adverse effects. If during the sixty day period no successful action is taken by the Operator to mitigate the adverse effects, the Operator upon notice from the Director will cease operations. The Operator will then provide to the Director within ten (10) days an assessment of the effects and a plan to mitigate the impact. Upon approval by the Director, the Operator may be allowed to resume mining operations.

9. The Operator shall post an identification sign which shall display the Operator's Name, Mine Name, and Permit Number at the entrance of the property.
10. In the event the Operator ceases active mining, all exposed critical disturbed areas will be stabilized and all measures employed for erosion and sedimentation control will be maintained by the Operator. Should extraction of mineral or material cease prior to completion of the mining Plan, the Operator shall complete the reclamation as provided for in this Plan within twenty-four (24) months from date of cessation or shall request an "Inactive Status" as provided for in the Permit for this surface mining operation.

VI. PERFORMANCE CRITERIA FOR RECLAMATION

1. All applicable parts of Part 3. Erosion and Sedimentation Control, listed in the previous Section, apply including the following:
 - A. Reclamation shall be concurrent with mining activity as lands become available.
 - B. Reclamation objectives as shown on Surface Mining Land Use Plan will be achieved unless Operator submits an amendment.
 - C. Following the removal or disposal of all structures, equipment, stockpiles, mining refuse, and all other materials associated with surface mining, the Operator will reclaim all affected land in accordance with the provisions of this Plan. All lands except those specifically exempted in this Plan will have a neat, clean appearance and contain a high quality permanent vegetative cover.
 - D. Vegetative Stabilization (planting) Requirement: The Operator will provide a high quality, enduring vegetative ground cover of properly planted and nurtured perennial vegetative species suited for the specific planting zone involved. The perennial vegetative species shall provide a complete, thorough stabilization by providing root mass and cover for the total disturbed area. If forest land is the reclamation objective, a vegetative ground cover will also be provided prior to or concurrent with tree seeding or the planting of tree seedlings.
 - E. Structural Stabilization: Permanent structural control measures, i.e. stone riprap, ditches, berms, paved chutes, or piped down drains, etc, shall be utilized to convey concentrated storm flows down slopes to stable outlets. These measures are necessary in areas where concentrated stormflow velocities may cause erosion.
2. Specific requirements the Operator will adhere to:
 - A. The Operator shall grade all peaks, ridges, and valleys resulting from surface mining and backfill all pits and trenches resulting from same in a manner to minimize any hazardous effects of mining adjacent to any State or county maintained public road.
 - B. All affected lands requiring backfilling as stated in the Reclamation Objective of this Plan shall be backfilled utilizing overburden, spoil material, and/or borrow from affected (permitted) land unless approval from the Division is obtained to utilize other materials. Sound engineering principles shall be applied to ensure that affected lands, as reclaimed, meet the intended use.
 - C. Immediate erosion control measures shall be applied to protect the topsoil cover until an adequate vegetative cover is established.

- D. All highwalls occurring in unconsolidated materials shall be reduced by grading to blend in with the existing original site topography. Highwalls occurring in consolidated material shall be reduced as much as may be practicable. A constructed bench with reverse slope to the wall shall be provided at the top of highwalls which are to remain. Any remaining highwalls of fifty (50) feet or greater shall be fenced or bermed at the top beyond the initial bench. Such fencing or berm shall be sufficient to provide an adequate degree of protection or warning to foot traffic.
- E. All affected land, unless otherwise specified in this Plan, shall be graded into a rolling topography and blended in with the existing landscape. All graded areas shall be free of debris, stockpiled materials, boulders, etc. that would interfere with the intended use and/or maintenance of the area.
- F. Constructed slopes shall not exceed three horizontal to one vertical (3:1) except where may be approved otherwise in this Plan. Fill and cut slopes shall be designed and constructed to prohibit slumping or shear failures. Prior to final grading, all slopes will be blended in with the original existing topography. Slope grades shall be uniform. Mechanical or vegetative or both stabilization measures shall be employed as soon as practical to prevent erosion.
- G. Overburden, spoil or refuse, when used as backfill material, for berm or other construction, shall be segregated as necessary, emplaced and compacted in accordance with sound engineering practices to provide for the purpose intended. Refuse does not include any material which may be classified as solid waste under provisions of the Georgia Comprehensive Solid Waste Management Act.

All new landform structures created with the use of overburden (spoil) or refuse materials shall be constructed in a manner to protect against failure, subsidence and/or erosion and will be permanently stabilized upon completion of construction.

- H. When lakes/ponds are proposed, the minimum acceptable design criteria shall meet or exceed that criteria in: *Agriculture Handbook Number 590, Ponds - Planning, Design, Construction* published by the United States Department of Agriculture, Soil Conservation Service, latest issue. When the dam structure proposed is 35 feet or higher, other acceptable design criteria shall be used.

Water shall be of a quality suitable for the intended use. The lake/pond shall have a safe access and be free of underwater hazards. All above water portions of the lake/pond site development shall be revegetated with an enduring permanent vegetative cover.

Under provisions of the Georgia Safe Dams Act, no permit shall be required to be obtained by the Operator if a dam is constructed with or incidental to "surface mining" as defined in the Georgia Surface Mining Act. If the dam so constructed is classified by the Director as a Category I dam the Operator shall, upon the completion of the mining activity in connection with which such dam was constructed, either drain and reclaim the impoundment formed by such dam or stabilize such impoundment as a lake. If the impoundment is reclaimed as a lake and the dam which created the impoundment remains in place as a Category I dam, then, before such lake is deemed acceptable reclamation and the Operator is released from his obligations under the Georgia Surface Mining Act, as amended, the Operator will obtain a permit for such dam under the Safe Dams Act.

- I. Any proposal for the construction of wetlands as a reclamation objective shall be consistent with accepted practices utilizing the best available technology (BAT) and include the best management practices (BMP's) to attain the desired result. The proposal shall be attached to and be a part of this Plan subject to approval by the Division.
- J. The Operator shall file a Final Reclamation Report and Request for Release upon completion of reclamation responsibilities on affected acreage. A report may be filed on reclamation activities which partially completes the Operator's full responsibilities for total acreage affected. Said report and request shall be on forms as provided by the Division.

VII. ADDITIONAL OPERATOR SUBMISSIONS

1. BONDING

Upon approval by the Director of this Plan and/or any amendment to this Plan, the Operator shall, unless having been exempted by the Director, file the appropriate bond with the Director within sixty (60) days after the date of being furnished the approved forms. Bonding shall be in the form of a surety bond, government securities, letter of credit, cash or a combination thereof. Any bond filed with the director shall be written by a surety authorized to do business in Georgia.

If the Operator files a letter of credit in lieu of a surety bond pursuant to O.C.G.A. § 7-1-290(d) and the Director accepts same, the Operator shall be obligated to maintain such letter of credit in force and effect at all times until reclamation of lands affected under this Plan, as it now exists or is hereafter amended, shall have been completed or the full amount of such letter of credit shall be subject to forfeiture. But if the issuer of such letter of credit shall, by certified mail, serve notice of its intent to terminate or not to extend such letter of credit, Operator shall file a bond authorized by O.C.G.A. § 12-4-75(c) or another acceptable letter of credit as a substitute for the expiring letter of credit with the Division within sixty (60) days after receipt of such notice by the Division. Upon Operator's failure to do so, Operator shall be in default of this Plan and such default shall constitute authority for the Division to draw upon such letter of credit.

If the Operator is granted an exemption from bonding and subsequently violates any of the provisions of O.C.G.A. § 12-4-70, et seq., or the Rules and Regulations for Surface Mining, Chapter 391-3-3, both as amended, or this Plan or Approved Amendments, the Operator is subject to civil penalties and may be required by the Director to post a bond.

The Director shall review and reevaluate, at least every five years, the site operation, objective of this Plan, and estimated cost factors for completion of this Plan and shall require adjustments to bonding amounts as may be necessary to ensure adequate funding for site reclamation.

2. ANNUAL PERMIT STATUS REPORT

An Annual Permit Status Report shall be submitted by the Operator on forms provided by the Division. This report will be due on or before April 1 of each year, covering the prior calendar (Jan.- Dec.) year.

3. AMENDMENTS TO PLAN

The Operator shall submit any proposed changes in this Plan to the Division for approval as an amendment to this Plan prior to changing or varying from this Plan. Request for Amendment shall be submitted on forms provided by the Director and the amended plans will be complete in all details necessary to show the new plan of action and all lands to be affected and reclaimed. Any surface mining activity approved under amendment shall be contingent upon receipt of appropriate bonding as may be necessary.

4. CHANGE OF OWNERSHIP OF MINING OPERATION

Should a change in Operator ownership of this mining operation occur, the new owner(s) may continue such operation on condition that a new application, Mining Land Use Plan with updated maps/aerial photo, which include currently affected areas, and a new bond sufficient as to form and content for final approval are placed on file with the Director within sixty (60) days from date of consummation of the ownership change.

In the event the new owner(s) fail to place on file with the Director the necessary documents for permitting within said sixty (60) day period, all mining activities for this operation shall cease.

This Plan constitutes an agreement between the Operator and the Environmental Protection Division as a means to ascertain compliance in accordance with the provisions of the Georgia Surface Mining Act.

Upon approval, the Operator is responsible for completion of this Plan [Ref: Code § 12-4-75(2)].

The permit is conditioned upon the Operator's compliance with this Plan. [Ref: Code § 12-4-75(1).]

Mining by the Operator on an unpermitted site constitutes prima facie evidence of violation of this Plan. [Ref: Code § 12-4-77.]

VIII. ATTACHMENTS

List all enclosures and attachments by title and page count submitted with this Application and Mining Land Use Plan.

Attachment No.:	Title:	Page Count:
1	Surface Mining Land Use Plan	32
2	USACE Individual Permit Application, Update, and Aquatic Features Jurisdictional Review	294