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May 19, 2022

Transmitted Via: Email (Jamie.Lancaster1@dnr.ga.gov)

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

Subject: *Revised MLUP, Water Management Pond Documents, and Revised Groundwater Withdrawal Permit Application
Twin Pines Minerals, LLC
Saunders Demonstration Mine
Charlton County, Georgia
EPD Mine ID No. 2073*

Dear Ms. Lancaster:

Transmitted herewith is a copy of the Mining Land Use Plan (MLUP) that has been revised to provide responses to the Georgia Environmental Protection Division's (EPD's) letter dated December 7, 2021 and additional information requested during a February 23, 2022 meeting. The documents included in this submittal consist of the following:

- Revised MLUP Permit Application,
- Revised MLUP,
 - Exhibit J - Water Management Ponds (Engineered Drawings) (prepared by Wood),
 - Exhibit K - Water Management Ponds Hydrology & Hydraulic Analysis (prepared by Wood),
 - Exhibit L - Water Use Management Plan (prepared by Wood),
 - Exhibit M - Technical Specifications (prepared by Wood), and
- Revised Groundwater Withdrawal Permit Application.

Attached to this transmittal letter are:

- A summary of revisions to the MLUP sheets
- A summary of revisions to the Groundwater Withdrawal Permit Application
- Checklists prepared by Wood

Please contact the undersigned with any questions.

Sincerely,
TTL, Inc.

Sheryle G. Reeves, P.E.
Vice President/Principal Engineer

James R. Smith, P.G.
Senior Project Professional

Summary of Revisions to the MLUP Sheets

- Total number of sheets reduced from 17 to 15. The following sheets that were included in the November 2021 MLUP submittal have been removed:
 - Sheet 6 Pond Design Details & Notes
 - Sheet 7 Storage Volume Calculations and Process Description

Summary of Revisions to May 2022 MLUP Submittal

- Sheet 1 – Updated Table of Contents
- Sheet 2 – Updated legend
- Sheet 3 – Updated layout for water management ponds. Added letter/numerical labels for water management ponds (M1 through M4) and process water ponds (P1 through P4)
- Sheet 4 – No changes
- Sheet 5 – Revised process flow diagram and updated notes and references to sheet numbers
- Sheet 6 – Renumbered (formerly Sheet 8). Updated pond layouts
- Sheet 7 – Renumbered (formerly Sheet 9). No changes
- Sheet 8 – Renumbered (formerly Sheet 10). No changes
- Sheet 9 – Renumbered (formerly Sheet 11). Updated references to sheet numbers
- Sheet 10 – Renumbered (formerly Sheet 12). Updated references to sheet numbers
- Sheet 11 – Renumbered (formerly Sheet 13). Updated references to sheet numbers
- Sheet 12 – Renumbered (formerly Sheet 14). Updated references to sheet numbers
- Sheet 13 – Renumbered (formerly Sheet 15). Updated references to sheet numbers
- Sheet 14 – Renumbered (formerly Sheet 16). Updated references to sheet numbers
- Sheet 15 – Renumbered (formerly Sheet 17). Updated pond identifiers, references to sheet numbers, and added Exhibits J and M to Section 11 - Attachments

A summary of Revisions to the Groundwater Withdrawal Permit Application

Previous application was submitted in December 2020

- Application updated to:
 - Depict the current proposed permit area layout/acreage,
 - Include information regarding the water management ponds,
 - Add letter/numerical labels for water management ponds (M1 through M4) and process water ponds (P1 through P4),
 - Add Figure 6 – Conceptual Construction Detail of Upper Floridan Aquifer Well, and
 - Add Attachment C – Analysis to Quantify the Impact to the Surficial Aquifer at the Edge of the OWR As a Result of the Floridan Aquifer Maximum Drawdown Scenario

Saunders Demonstration Mine

Checklist for Surface Mining Land Use Plan Development
May 2022

Checklist for Surface Mining Land Use Plan Development

References: Georgia Surface Mining Act, O.C.G.A. 12-4-1, et seq., as amended
Rules and Regulations for Surface Mining, Chapter 391-3-3, as amended.

Subject: Saunders Demonstration Mine (2073)

	NO.	ITEM / NOTES
		Section I. Mine Information [ref. Chapter 391-3-3-.05]
1.	Requirement:	Provide the mine's name, address, latitude and longitude (decimal degrees accurate to 0.0001°), directions from the nearest interstate, and contact information for the on-site representative.
	<i>Response:</i>	<i>Refer to Sheet 15 of the Surface Mine Land Use Plan (SMLUP)</i>
2.	Requirement:	Indicate whether this SMLUP is for a new mine or for the re-permitting of an existing mine (the existing mine may be in operation under another permit or previously permitted).
	<i>Response:</i>	<i>This is a new mine</i>
		Section II. Operator and Owner Information [ref. Chapter 391-3-.05]
3.	Requirement:	Part A: Provide the name of the mining company, address, telephone number, e-mail address, and type of business. List the corporate officials and partnership members.
	<i>Response:</i>	<i>Refer to the application</i>
4.	Requirement:	Part B: List the lessees and/or owners of all properties that are in the affected acres of the requested permit area. The total acreage listed as "Affected Acres" is equivalent to "Permitted Acres" shown on the SMLUP maps, therefore these numbers should match exactly.
	<i>Response:</i>	<i>Refer to the application</i>
		Section III. General Mining Information
5.	Requirement:	Part A: Name the mineral or material that will be extracted by the surface mining operation and describe the particular method or technique of surface mining.
	<i>Response:</i>	<i>Refer to the application</i>
6.	Requirement:	Part B: Provide a brief description of the characteristics of the land proposed to be affected by the mining and a brief description of the characteristics of the surrounding lands and community in the vicinity of the mine site (e.g., rural, urban, industrial, agricultural, residential, isolated, sparsely populated), including properties on the National Register of Historic Places located within one mile of the proposed mining site.

	Response:	<i>Refer to Sheet 15 of the SMLUP</i>
7.	Requirement:	Part C: Provide the anticipated dates to begin and complete mining and reclamation. Please note the final reclamation date should include two growing seasons (approximately 24 months) 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.
	Response:	<i>Refer to the application</i>
		Section IV. Information on Other Permits
8.	Requirement:	Part A: List any previous Georgia Surface Mining Permit, by permit number, which has been revoked, suspended, or for which bond was forfeited.
	Response:	<i>None, Not Applicable</i>
9.	Requirement:	Part B: Specify other applicable state and/or federal environmental permits for which you are applying in relation to this surface mining operation. Note that most surface mines do require coverage under the NPDES Industrial Storm Water General Permit. Please attach a copy of the Notice of Intent if you file for coverage under this permit.
	Response:	<i>Refer to the application</i>
10.	Requirement:	List all local government approvals and/or permits required and applied for regarding this surface mining operation.
	Response:	<i>Not Applicable</i>
		Section V. Performance Criteria for Mining Plan and Mining Activities
11.	Requirement:	Please review the criteria for plan drawings with careful consideration for site survey control. Permanent accessible benchmarks and markers are expected to delineate all permitted areas and to be maintained to facilitate both permitting and compliance evaluations. Please provide detailed descriptions of all identifiers and their location. Site inspections will evaluate markers and survey control before recommending issuance of a Surface Mining Permit.
	Response:	<i>Permanent accessible benchmarks and markers have been established that delineate all permitted areas and will be maintained to facilitate both permitting and compliance evaluations. Refer to the Sheet C-200 of the engineering drawings for benchmark and marker locations and descriptions as well as the SMLUP.</i>
12.	Requirement:	Part 1. Details to Be Included on Maps/Drawings and Supporting Documentation [ref. Chapter 391-3-3-.07] This section explains what is generally expected to be on the maps submitted as part of this SMLUP. These maps can be broken down into three categories:

		Boundary and Landmark, Erosion and Sediment Control, and Reclamation. Additional submissions may be required by EPD prior to approval of the plan.
	<i>Response:</i>	<i>All maps/drawings have been prepared as described below and included as part of this SMLUP.</i>
		Surface Mining SMLUPs are prepared to show:
13.	Requirement:	<ul style="list-style-type: none"> Map/drawing scales; north arrow; title block with Mine ID No.; 24-hour contact and telephone number; seals and signatures of plan preparers;
	<i>Response:</i>	<i>Maps/drawings submitted with this SMLUP include scales, north arrow, title block with Mine ID, seals and signatures plan preparers. 24-hr contact and telephone number are included on Sheet 1 of the SMLUP.</i>
14.	Requirement:	Location sketch of the project relative to roadways, municipalities, major streams, and other identifiable landmarks;
	<i>Response:</i>	<i>Refer to Sheets 3 and 14 of the SMLUP and sheet C-100 of the engineering drawings</i>
15.	Requirement:	<ul style="list-style-type: none"> A boundary line map of the property to be mined, the "permit boundary" locating lands within the boundary to be affected by mining and buffers; metes and bounds;
	<i>Response:</i>	<i>Refer to sheet 14, Vicinity Map of the SMLUP</i>
16.	Requirement:	25-foot minimum buffer between the affected area and property line and/or 50-foot minimum buffer if affected area is adjacent to a public road or occupied structures;
	<i>Response:</i>	<i>Refer to sheet 6 of the SMLUP</i>
17.	Requirement:	<ul style="list-style-type: none"> Contours, existing and proposed, for that portion of the area being mined. The following are recommended contour intervals:
	<i>Response:</i>	<i>Refer to sheet 6 of the SMLUP</i>
18.	Requirement:	<ul style="list-style-type: none"> Streams, lakes or ponds, drainage areas, flood prone areas, wetlands, vegetation, and existing structures;
	<i>Response:</i>	<i>Refer to sheet 3 of the SMLUP</i>
19.	Requirement:	<ul style="list-style-type: none"> The proposed alteration of the area, including limits of clearing and grading, access and haul roads, stockpiles, overburden storage, buildings, and other structures;
	<i>Response:</i>	<i>Refer to sheet C-200 of the engineering drawings</i>
20.	Requirement:	<ul style="list-style-type: none"> Location and extent of erosion and sedimentation control measures, including both vegetative and structural measures;
	<i>Response:</i>	<i>Refer to sheets C-400 to C-442 of the engineering drawings</i>
21.	Requirement:	Mining advancement or phases;
	<i>Response:</i>	<i>Refer to sheet 4 of the SMLUP</i>

22.	Requirement:	Drainage ditches, pipes, cross-drains, swales and diversion berms;
	Response:	<i>Refer to sheet C-300 of the engineering drawings</i>
23.	Requirement:	<ul style="list-style-type: none"> • Provide cross sections and plan drawings where necessary to detail activities;
	Response:	<i>Refer to sheet 5 of the SMLUP as well as sheets C-601 through C-714 of the engineering drawings</i>
24.	Requirement:	<ul style="list-style-type: none"> • Pit pump-out discharge details if proposed;
	Response:	<i>Refer to Sheet 15 of the SMLUP Section 5.1.2</i>
25.	Requirement:	<ul style="list-style-type: none"> • Reclamation plan with estimated final contours and the following notes: All mining equipment and refuse will be removed from the mine in accordance with state rules and regulations All slopes will be reclaimed to a slope of 3:1 or flatter. The mine pit will be either left as a lake or permanently vegetated.
	Response:	<i>Refer Sheet 9 of the SMLUP and to the Water Use Management Plan</i>
26.	Requirement:	Supportive documentation (general) shall include engineering drawings and specifications, calculations, charts, graphs, maps, and other data and information used in the design and layout of the measures installed.
	Response:	<i>Refer to the Water Management Ponds engineering drawings, technical specifications and water use calculations associated with the management ponds</i>
27.	Requirement:	All maps/drawings and supporting documents shall be listed by title and page count on the final page of the plan as enclosures/attachments.
	Response:	<i>Refer to Sheet 15 of the SMLUP</i>
		Part 2: Site Survey Control [ref. Chapter 391-3-3-.05]
28.	Requirement:	Provide details of survey and boundary control markers (e.g., identifier-IP = iron pin, CP = concrete post, color of flagging, etc.; location-page 3 of the attached drawings). Permanent accessible benchmarks and markers are expected to delineate all permitted areas and to be maintained to facilitate both permitting and compliance evaluations. Please provide detailed descriptions of all identifiers and their location. Site inspections will evaluate markers and survey control before recommending issuance of a Surface Mining Permit.
	Response:	<i>Refer to Sheet 3 of the SMLUP</i>
29.	Requirement:	Parts 3-10: The sections are self-explanatory and require no written entry on the form. The maps, drawings, and supporting documentation shall address the "plan of action" to control potential erosion and sedimentation problems. The site-specific section will address any items that are unique to the particular site. The operator will coordinate with the consulting mining engineer and the EPD

		permitting officer to identify any special site items required for approval.
	<i>Response:</i>	<i>Refer to sheet 6 and 7 of the SMLUP and sheets C-400 through C-442 of the engineering drawings</i>
		Section VI. Performance Criteria for Reclamation
30.	Requirement:	This section is self-explanatory and requires no entry on the form. The maps, drawings, and supporting documentation must address the intended reclamation objectives. The reclamation page of the drawings must include the Reclamation Notes: all mining equipment and refuse will be removed from the mine in accordance with state rules and regulations; all slopes will be reclaimed to a slope of 3:1 or flatter; and the mine pit will be either left as a lake or permanently vegetated.
	<i>Response:</i>	<i>Refer to Sheet 9 of the SMLUP</i>
		Section VII. Additional Operator Submissions
31.	Requirement:	Part 1: Bonding [ref. OCGA 12-4-75(2)] This section is self-explanatory and advises the mining company of its obligations regarding bonding of lands to be affected by surface mining. The required bonding formats are available for download at www.epd.georgia.gov/surface-mining-forms . The bond rate is currently set at \$2,500 per acre for quarries and \$1,500 per acre for all other mining.
	<i>Response:</i>	<i>Bonding will be completed upon approval of this application for surface mining.</i>
		Part 2: Annual Permit Status Report
32.	Requirement:	This section is self-explanatory and requires no entry on the form. The Annual Permit Status Report form can be found at www.epd.georgia.gov/surface-mining-forms and should be submitted every year until the mine is released.
	<i>Response:</i>	<i>Annual status reports will be prepared by the Operator and submitted to the Division, as required.</i>
		Part 3: Amendment to Plan [ref. OCGA 12-4-75(2)]
33.	Requirement:	This section is self-explanatory and advises the mining company of procedures necessary should the operator decide to change or vary from the approved plan. The operator is required to contact EPD for forms and instructions if a change is proposed. Amendment forms are available at http://epd.georgia.gov/surface-mining .
	<i>Response:</i>	<i>The Operator will submit any future proposed changes in this proposed plan to the Division for approval.</i>

		Part 4: Change of Ownership of Mining Operation [ref. OCGA 12-4-75(2)]
34.	Requirement:	This section is self-explanatory and advises the operator of requirements to be met should a change in ownership take place. The Surface Mining Permit is not transferrable.
	Response:	<i>Should a change of ownership of this mining operation occur, the new owner(s) will submit a new application and a new bond within 60 days from the date of consummation of the ownership change.</i>
35.		Section VIII Attachments
	Response:	<i>See Sheet 15, Section 11 Attachments of the SMLUP</i>

Minutes of 23 February 2022 Meeting with GA EPD

References: Georgia Surface Mining Act, O.C.G.A. 12-4-1, et seq., as amended
 Rules and Regulations for Surface Mining, Chapter 391-3-3, as amended.

Subject: Saunders Demonstration Mine (2073)

NO.	ITEM / NOTES
	100% Plans and Specifications for the Process Water Ponds to include:
Requirement:	<p>a. Drawings:</p> <ul style="list-style-type: none"> i. Plan view of each pond ii. Typical Cross-sections and details iii. Liner Details iv. Piping and Pump Details v. Overflow alarms, pumping schemes, and generator locations/sizes <p>b. Specifications:</p> <ul style="list-style-type: none"> i. 312000 Earth Moving ii. 331166 Site Water Distribution Piping iii. 334713 Pond and Reservoir Liners <p>(A detailed specification for pumps is not necessary if the pump number, type, and capacity are shown on the drawings.)</p>
<i>Response:</i>	<i>See engineering drawings and technical specifications</i>
Requirement:	<p>2. In addition, EPD would like to see changes to the Mine Land Use Plan to incorporate:</p> <ul style="list-style-type: none"> a. Water balance calculations for pond sizing including detention time in each pond b. Contingency plan for managing process water c. Water Use Management/Operation Plan addressing <ul style="list-style-type: none"> i. Schedule for onsite personnel and activities ii. Dredging of ponds. Include schedule, discussion of where dredged material will be stored and/or disposed of iii. Operation and Maintenance standard operating procedures that will specify step by step details for maintaining freeboard. Include discussion for management before, during, and after adverse weather, such as hurricanes,

NO.	ITEM / NOTES
	tropical storms, etc. iv. Groundwater management plans during and after construction of the ponds. v. Liner flotation vi. Disposition of liner at project closeout vii. Removal of statements required additional design to be performed by "the Engineer of Record" as the additional specifications will be included in the Land Use Plan.
	<i>Response: See engineering drawings and Water Use Management Plan</i>
Requirement:	3. Remediation & abandonment plan a. Including disposition of remaining water in ponds. b. Include the timeline for final closure of the ponds as discussed in the remediation plan.
	<i>Response: See engineering drawings and Water Use Management Plan</i>

Once the above items have been received and reviewed and EPD has no follow up questions to the documentation received, EPD will be ready to proceed to Public Notice with the MLUP.