Salt Ranch – Topsoil Importation and Topsoil Protection Plan

Prepared for:
Upland Exploration, LLC

Prepared by:
H2 Enterprises, LLC

September 2023

TOPSOIL IMPORTATION PLAN
SALT RANCH – UPLAND EXPLORATION, LLC

All information pertaining to topsoil salvage, site characterization and conditions, approved seed mix, and work done to-date was provided by Ardor Environmental, LLC on behalf of Upland Exploration, LLC.

Site Description

Salt Ranch access road location is in Section 7-10 and 18, Township 11N, Range 64W in Weld County, Colorado (Figure 1). Soils within the proposed facility location are mapped primarily as the Epping silt loam (27, Loamy, mixed, superactive, calcareous, *mesic, shallow Ustic Torriorthents*) soil series (0-9% slopes), Ascalon fine sandy loam (4, *Fine-loamy, mixed, superactive, mesic Aridic Argiustolls*) soil series (0-6% slopes), Haverson loam (29, Fine-loamy, mixed, superactive, calcareous, mesic Aridic Ustifluvents) soil series (0-3%), and Platner loam (54, Fine, smectitic, mesic Aridic Paleustolls) soil series (0-3%) (Figure 3).

Topsoil Plan of Intent

ECMC requested Upland to repair areas of the access road in the first 1.9 miles that were disturbed greater than 22' in width due to surface owner accusations. The access road was originally cut in by former operator CCRP. Upland had a professional survey conducted by Lat40 of the entire road given the surface owner's accusation to determine disturbance areas that potentially spanned further than the allotted 22-foot on-center width (see Appendix A). With information from the survey and NRCS soil data, on the concerned landowner's property, the number and approximate locations of soil profile tests were determined for the four major soil types as well as the reference sample locations. Both the pre-determined sample locations and reference sample locals are overlaid on the NRCS soil map (Figure 4). The proceeding plan of action is to determine topsoil depths and agronomic properties of samples and topsoil import.

The pre-determined sample location soils will be evaluated to establish topsoil depths across the site to ensure that they are suitable for reclamation. Topsoil consists of the surface horizon of soil that has properties suitable for reclamation. During the field sampling, a CPSS will determine the depths containing the most valuable soil resources, which may include the A, Ap, AB, and BA horizons, depending on soil characteristics. Topsoil depths will be collected using a Giddings mechanized probe to determine soil profiles and visual evaluation using the following characteristics:

- Horizon depths;
- Soil color;
- Plow depth layer;
- Soil texture and structure;
- Redoximorphic features; and,
- Effervescence.

In addition to the in-field evaluation, soil analytical tests for the following agronomic properties will be provided for reclamation suitability: Sodium Adsorption Ratio (SAR), Electrical Conductivity (EC), CEC, ESP %, pH, % Organic Matter, Ammonium-Nitrogen, Phosphorus (P), Potassium (K), Zinc (Zn), Iron (Fe), Manganese (Mn), Copper (Cu), Chloride (Cl), %CaCO3, texture, and Boron (B). If topsoil importation is required, the topsoil too shall be tested for all the agronomical properties previously listed and held in comparison to native soil tests.

If topsoil is deemed necessary to import, a map will be provided of areas where topsoil will be applied and at what depth (in inches) it will be applied as well as analytes on topsoil source. Proceeding importation, landowner approved seed mix from March 24, 2023 (Shortgrass Seed Mix: Blue Grama, Sideoats Grama, Prairie Junegrass, and Sand Dropseed) will be planted in correspondence with soil stabilization such as straw mulch and crimp or soil binder (i.e. hydro-seeding).

An approximate schedule is provided in Figure 5. Please note that these dates are not relevant, but merely to show time periods in which each action item will take.

Figure 1. Salt Ranch location.

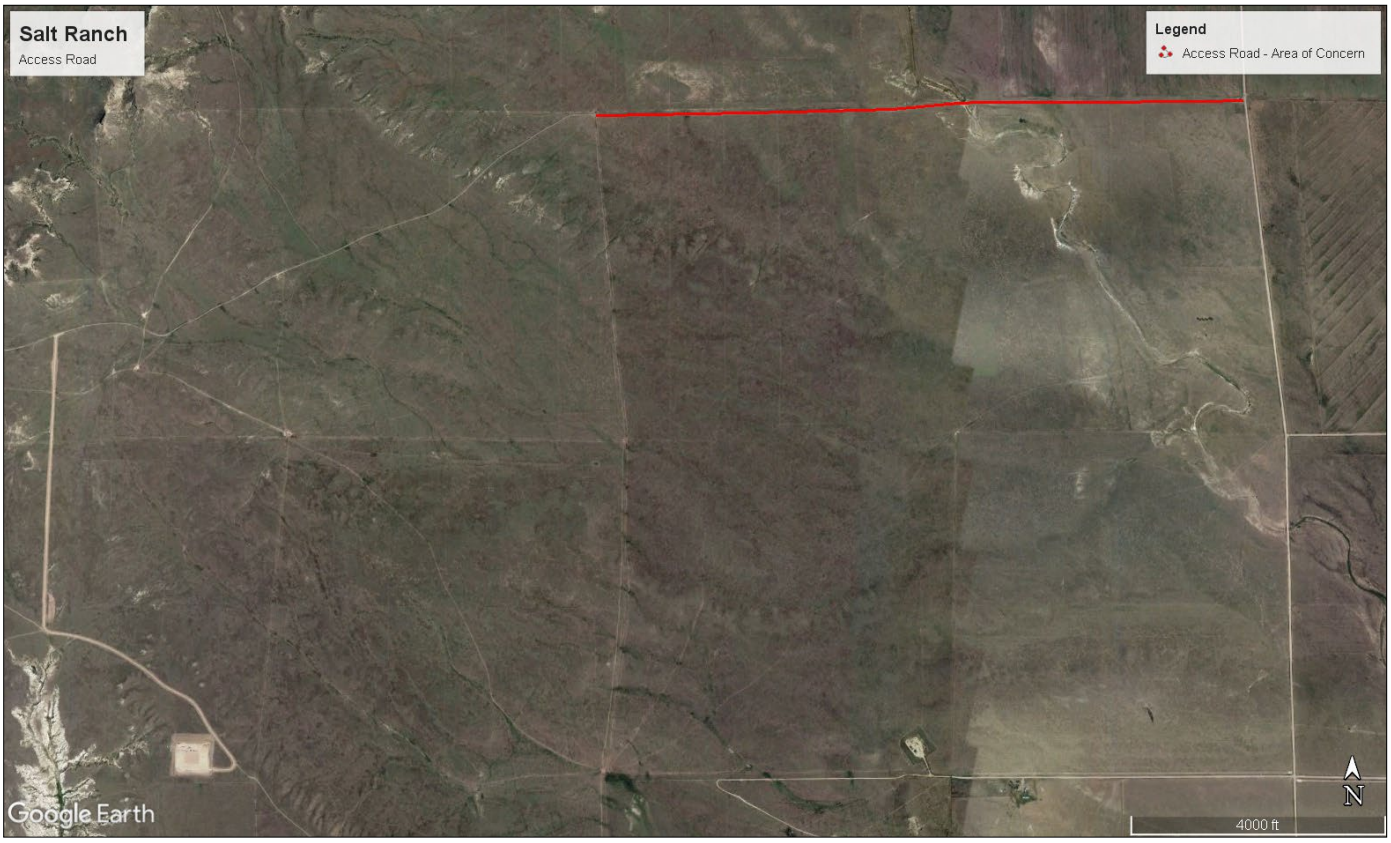

Figure 2. Salt Ranch - Salo access road area of concern.

Figure 3. Salt Ranch - Salo access road area of concern with NRCS soil map.

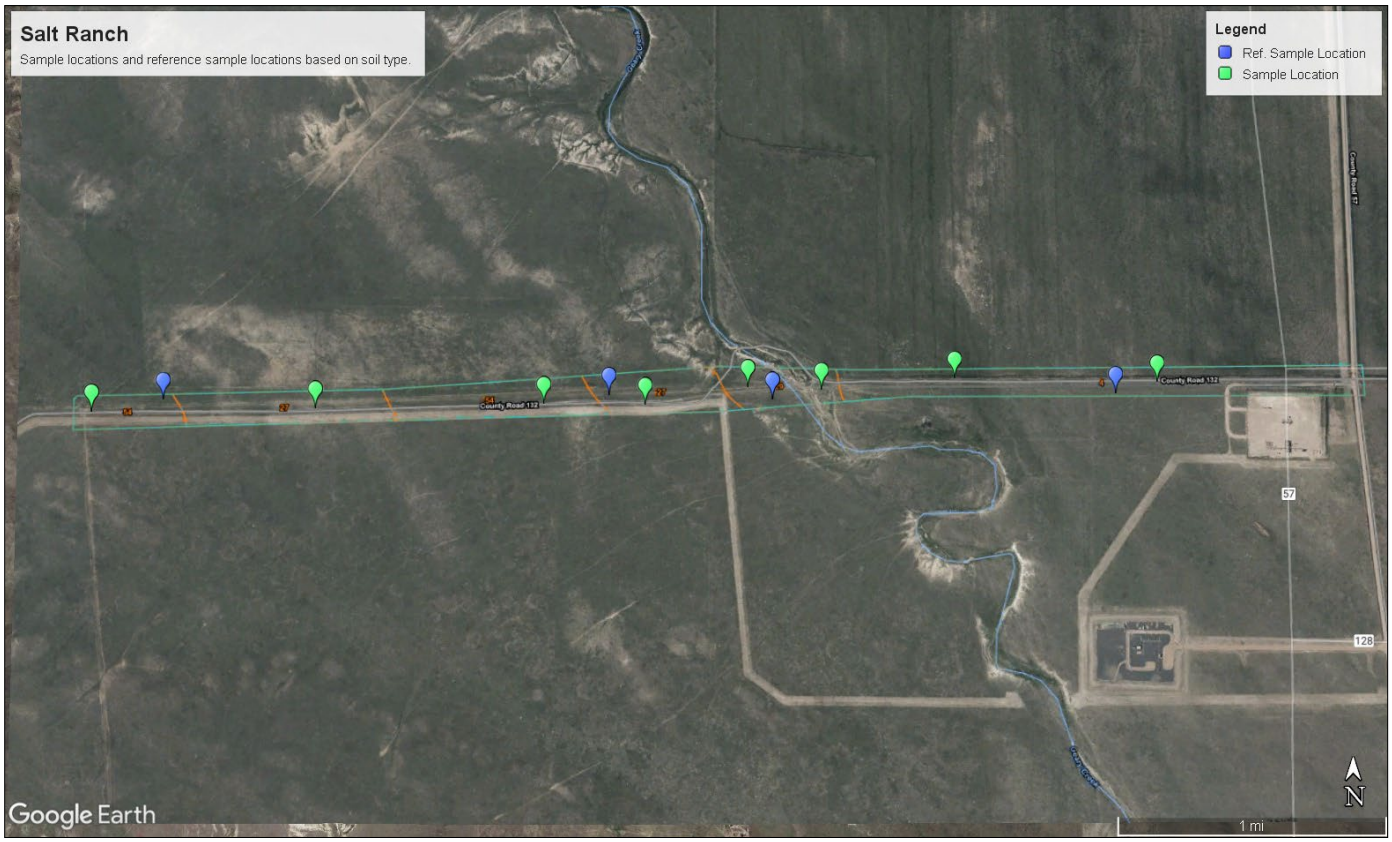

Figure 4. Salt Ranch - Salo access road with pre-determined sample and reference sample locations for major soil types.

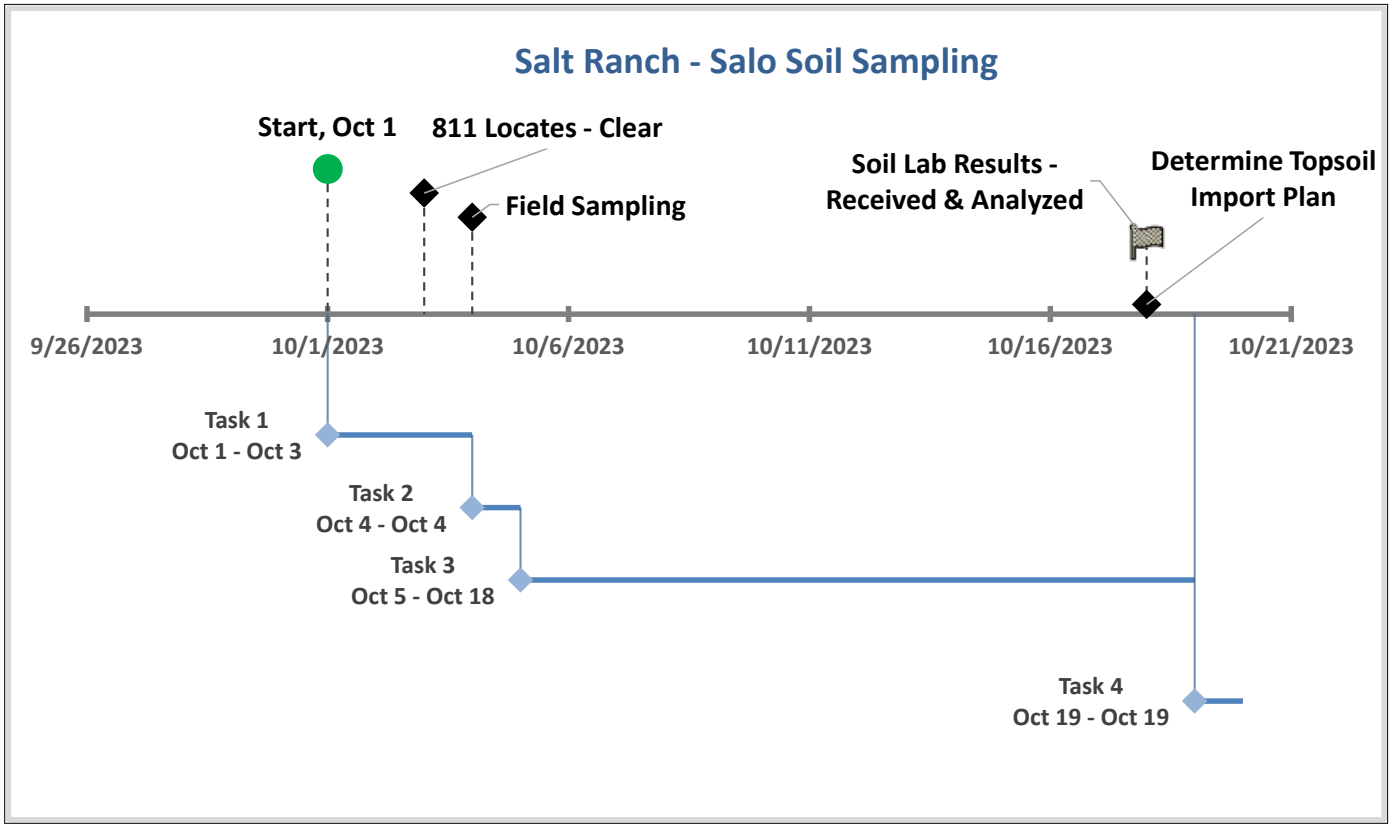

*Figure 5. Salt Ranch - Salo project schedule. *Note: These dates are not relevant to project start, they are examples of duration of each task to be performed.*

TOPSOIL PROTECTION PLAN
SALT RANCH - UPLAND EXPLORATION, LLC

The importance surrounding the protection of topsoil resources has increased given the value of topsoil during interim and final reclamation efforts. By protecting and utilizing onsite topsoil resources for reclamation, the likelihood of reclamation success will be significantly increased. The rules put in place by the ECMC regarding topsoil protection are to give operators the best chance of completing interim and final reclamation in the most timely and cost-efficient manners.

Protection of Soils

Currently, Upland Exploration has salvaged and stockpiled the available topsoil and is storing it in a designated area within the location's boundary. The topsoil is stockpiled at minimal heights to limit the potential for anaerobic conditions, which can impact soil microbial activity in the center of the stockpile. Upland Exploration seeded the topsoil stockpile with a landowner approved Shortgrass Seed Mix containing species Blue Grama, Sideoats Grama, Prairie Junegrass, and Sand Dropseed. Plant roots will increase the soil gaseous and moisture exchange between the center and the surface of the topsoil stockpile. Germination is present on topsoil stockpile. To maintain vegetation establishment through the duration of interim and final reclamation, if topsoil sample results show that soil amendments and fertilizers are needed to increase reclamation success or germination of perennial seed lacks, annual species that are quick to establish should be utilized to further protect the surface of the topsoil stockpile. Erosion control parameters in the form of Jute Mat have been installed on the topsoil stockpile. Upon continued germination and proliferation of the native species, Upland Exploration monitors and maintain the vegetation on the topsoil stockpiles to promote native vegetation and to suppress invasive and noxious weeds.

Along the 1.5-mile section of windrowed topsoil, seed (Shortgrass Seed Mix) should be planted, straw should be crimped into the surface to better regulate soil moisture, temperature, and increase surface infiltration while decreasing potential of erosion or the use of soil binder could be implemented. Depending on the size of the windrowed topsoil piles, erosion control measures will be evaluated for implementation to deter sedimentation on other portions of the drill pad. Upon germination and proliferation of the native species, Upland Exploration will monitor and maintain the vegetation on the topsoil piles to promote native vegetation and to suppress invasive and noxious weeds. To keep weed pressure to a minimum. However, over application of herbicides should be avoided on windrowed topsoil to preserve topsoil resources.

Upland Exploration has repaired areas where vehicle traffic went out of access road boundaries by alleviating compaction and performing revegetation efforts specified above.

It is best to preserve and protect topsoil, as it can significantly increase your chances of reclamation success. Utilizing quality, native topsoil for establishing vegetation is generally preferred and more successful than either purchasing soil amendments and/or hauling in topsoil from outside resources.

Appendix A: Salt Ranch Survey – Access Road Asbuilt

ACCESS ROAD WIDTH AS-BUILT

SALT RANCH

SEE SHEET 2 FOR STATION WIDTH DETAILS

EDGE OF GRAVEL ROAD

GRAVEL ROAD AREA OVER 22' WIDE

ROAD STATION STAKED AT 22' WIDE

SURVEY NOTES:

1. Field work completed on 4/7/2023.

N

0 600 1200 1800

SCALE - 1"=600'

SHEET SIZE: 24X36

COLORADO LICENSED KYLE E. RUTZEN 38307 PROFESSIONAL LAND SURVEYOR 4/18/2023

Sheet 1 of 2

Kyle E. Rutzen on behalf of Lat40°, Inc.
Colorado Licensed Professional
Land Surveyor No. 38307

LAT40°, Inc.
Professional Land Surveyors
6250 W. 10th Street, Unit 2
Greeley, CO 80634
O: 970-515-5294

REVISIONS	
DESCRIPTION:	DATE:

ACCESS ROAD AS-BUILT
UPLAND EXPLORATION
SALT RANCH
S18-T.11N.-R64W.
COUNTY OF WELD COLORADO

DRAWN BY: KER	SCALE: 1" = 600'	DATE: 4/7/2023
CHECKED BY: KER	PROJECT #: 2023113	SHEET: 1 OF 2