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# TOPSOIL PROTECTION PLAN

**BNL** | ENTERPRISE

**BBB 33 SESE 2860**

Sec. 33 T28S R60W (SE/4 SE/4)

Las Animas County, Colorado

Surface: Fee

Submitted as an accompaniment to the Form 2A Application, this  
Topsoil Protection Plan is consistent with the requirements of Rule 1002.c.

May 4, 2022

Revised: August 29, 2022

## **BNL (Enterprise) Inc. Las Animas County, Colorado**

### **Topsoil Protection Plan**

#### **Project Summary:**

BNL (Enterprise) Inc.'s ("BNL's") proposed BBB 33 SESE 2860 "Location" is in Sec. 33 T28S R60W in Las Animas County, Colorado. BNL plans to drill and test one *helium* well. If the well produces commercial quantities of helium the well will be shut-in for a period of six to nine months until helium production/processing facilities can be constructed at an offsite facility location. The helium facility will be on lands outside of the Oil and Gas Development Plan. The facility will be constructed on private surface. The landowner agreement provides for the installation of the gas gathering line. The production/processing facilities will not require an Oil and Gas Development Plan. BNL will use a 130-mil rig liner during the drilling and testing of the well. The rig liner will be placed under critical wellsite components including the rig and any diesel motors. The entire location will not be lined. Minimal soil will be disturbed during this time. The well will be drilled vertically to no more than 2,500 feet and will not require hydraulic fracturing. The proposed location is fee surface and fee minerals with a total pad disturbance of  $\pm 1.2$  acres. During the drilling and testing phase, the existing access road will be minimally upgraded to allow for construction and, if needed, emergency vehicles. If the well proves to be of commercial quantities, the road will be crowned and ditched, in consultation with the private surface owner and any other owners along the access route. The graded site elevation is expected to be approximately 5,424'. No federal lands or minerals are involved in this project. All operations would be conducted in compliance with all federal, state, and local applicable laws, rules, and regulations.

#### **Plan**

##### **Purpose:**

Topsoil protection and stabilization is key to successful reclamation. The objective of BNL's topsoil protection and stabilization is to ensure as much topsoil can remain intact with minimal erosions caused by wind, storm events, traffic, and other activities that might cause topsoil erosion or degradation. Good topsoil protection and stabilization ensures successful reclamation and the restoration of the natural vegetative community, hydrology, and wildlife habitats. Salvaging and reuse of all topsoil in a timely manner will not only maintain viable topsoil but will allow for successful reclamation. Best Management Practices (BMPs), where applicable, mixed with other protection and stabilization measures ensure topsoil is maintained in its best condition to be used for both interim and final reclamation.

In areas that are disturbed by construction, topsoil will be stripped and stockpiled near the site. All brush, limbs, and other woody material will be stockpiled separately from the topsoil. Soil materials will be managed so that erosion and sediment transport are minimized.

##### **BBB 33 SESE 2860:**

Topsoil will be monitored throughout all phases of the helium project, including construction, production, and reclamation. The surrounding topography is relatively flat. As construction progresses, BMPs will be assessed, installed, and/or replaced as needed.

During active construction and drilling the following BMPs will be implemented on the BBB 33 SESE 2860 Location:

- Silt Fence: There shall be a silt fence installed on the northeast corner, east side and the southeast portion of the location to control run-on to the pad, and any stormwater flow to runoff the pad uncontrolled.
- Rock Rip-Rap: Rock rip-rap placed on both sides of the entrance road to the pad will slow/filter any stormwater runoff from the road itself.
- Mulch/Seed: Topsoil stockpiles that will be exposed for more than six months will be mulched and/or seeded as a stabilization technique to control sediment loss.
- Portable containment liners will be used under the drilling rig during drilling activities. The rig liner will be placed under critical wellsite components including the rig and any diesel motors. The entire location will not be lined. This liner will protect the underlying soils and vegetation from potential spills surrounding the rig during drilling and negate any topsoil clearing. Any liquid release will be vacuumed up from the liner. Upon completion of drilling activities, the liner will be removed.
- An 18" culvert, if needed, will be placed at the proposed access road into the wellpad.
- New roads will be minimally constructed until the well is drilled and tested.
  - New access - ±1,870' (2.1 acres)
  - Total road for productive well - ±1,870' x 50' ROW = 2.1 acres
- During wellpad construction topsoil should be piled no higher than 3 to 5 feet high and slopes of the stockpiles should not exceed 2:1 (horizontal:vertical) to minimize erosion potential and facilitate interim stabilization. Perimeter control measures such as sediment control logs, rock socks, straw bales, ditch and/or berm with sediment trap(s) or sand bags will be used around the base of unstabilized stockpiles or where there is potential for sediment to come in contact with run off and leave the site
- The working pad surface area is 250' x 170'. Please see wellsite diagrams. Topsoil material will be placed on the northwestern and southwestern portions of the cleared pad and will be approximately 1,560 CY.
- Topsoil stockpiled for more than six months will be seeded and mulched with a temporary grass cover or will be stabilized using structural and/or non-structural control measures.
- To negate surface disturbance 12" x 12" test pits will be dug in the northwest and the southwest corners of the wellpad. The pits will be dug in a manner prior to wellpad construction so that will not require any compaction post construction.
- Training: Those persons responsible for inspections and monitoring will be trained on the contents of the Plan and the requirements herein.
- Minimize Compaction: BNL will limit traffic outside of the well pad footprint but within the disturbed area, to the extent possible, to reduce compaction.
- Stockpile Tracking: To prevent erosion, stockpiles will be tracked perpendicular to runoff direction.

### **General Construction Guidelines for Producing Well**

No facilities will be on location until after the well has been drilled and tested. If the well is deemed a “dry hole” the well will be plugged within six months. If the well is favorable for completion and production, the well will be shut in for a period of six to nine months until production facilities have been procured and installed. At this point, the wellpad and road will be fully constructed with gravel to protect the surface and all topsoil. If the well is a dry hole, the access road will be left in its original state and per surface use agreement.

Following the drilling and completion activities, the well pad may be reduced, thus minimizing the area of disturbance for the production life of the well. The pad will be recontoured, topsoil reapplied, and the reduced area stabilized with seed, hydro-seed, bonded fiber matrix, mulch, etc. as deemed appropriate for the site.

- To negate topsoil erosion from storm events, the first site inspection must be completed within seven (7) calendar days of the commencement of construction activities.
- Active construction sites will be inspected at one of the two following frequencies:
  - At least one inspection every 7 calendar days;
  - At least one inspection every 14 calendar days, if post-storm event inspections are conducted within 24 hours after the end of any precipitation or snowmelt event that causes surface erosion. Note that post-storm inspections may be used to fulfill the 14-day routine inspection requirement.

Wellpad and access road construction will be performed using conventional cut and fill construction. BNL will begin with the clearing of vegetation and removal of available topsoil material to a depth of six inches or maximum available. Basic construction activities conducted during this phase include clearing and grubbing, grading and excavation, compaction, final grading and contouring, and installation of surfacing materials such as gravel or road-base.

To the extent feasible, surface vegetation would be cleared by mowing, raking, and burning in preference to scraping to facilitate topsoil protection and stabilization and reclamation potential. If removed, topsoil will be windrowed on either side of the alignment adjacent to the construction limits as staked. Upon commencement of road construction, the topsoil will be replaced in the borrow ditches. Removed soil and overburden would be stored for reclamation purposes. No removed soil or overburden would be pushed into drainages or stored where transport into drainages could occur.

The wellpad may be recontoured, topsoil reapplied, and the reduced area stabilized with seed, hydro-seed, bonded fiber matrix, mulch, etc. as deemed appropriate for the site. The borrow ditches will be reseeded to promote topsoil stabilization and will reduce the area utilized by this location. All seed mix will be done per surface owner request.

Topsoil would be segregated from cut areas for use in reclamation.

Salvaging and spreading topsoil will not be performed when the ground or topsoil is frozen or too wet to adequately support construction equipment. If such equipment creates ruts more than four inches deep, the soil will be deemed too wet.

The wellpad would be constructed of native materials with application of gravel as required to allow all-weather operations. Signs will be placed on the topsoil pile and the pile will be clearly separated. Topsoil not needed for interim reclamation on wellpads with favorable wells will be seeded and crimped with straw to promote vegetative growth until final reclamation. All seed mix will be done per surface owner request.

Test pits for topsoil determination will be hand dug to a depth of one-foot or less. Topsoil in this area is not expected to exceed six-inches.

### **NRCS Information**

#### **TsD – Travessilla sandy loam, 1 to 9 percent slopes**

Soils are comprised of 75% of Travessilla and similar soils and 25% of minor components; drainage class is “Well Drained” with a (0.06 to 0.20 in/hr) capacity to transmit water; restrictive bedrock can be found anywhere from 80” or more in depth. Please see NRCS attachments.

The Travessilla predominant plant species includes Sideoats grama (20%), Blue grama (15%), Little bluestem (15%), Prairie junegrass (5%), Black grama (5%), Needleandthread (5%), Sand dropseed (5%), Western wheatgrass (5%), Big bluestem (5%), True mountain mahogany (3%), Twoneedle pinyon (2%), and Oneseed juniper (2%).

#### **Typical profile/horizon**

- A - 0 to 5 inches: sandy loam
- AC - 5 to 11 inches: sandy loam
- Bk - 11 to 14 inches: sandy loam
- R - 14 to 79 inches: bedrock

#### **WV – Almagre-Villedry complex, 1 to 4 percent slopes**

Soils are comprised of 47% of Almagre and similar soils, 35% of Villedry and similar soils, and 18% minor components.

Almagre drainage class is “Well Drained” with a (0.06 to 0.20 in/hr) capacity to transmit water; lithic bedrock can be found anywhere from 40-59” in depth. Please see NRCS attachments.

The Almagre predominant plant species includes Blue grama (35%), Western wheatgrass (20%), Galleta (10%), Green needlegrass (5%), Fourwing saltbush (5%), Threawn (5%), Winterfat (5%), Plains pricklypear (3%), and Tree cholla (2%).

#### **Typical profile**

- A - 0 to 5 inches: silt loam
- BA - 5 to 9 inches: silt loam
- Bt - 9 to 23 inches: silty clay loam
- Btk - 23 to 30 inches: silty clay loam
- Bk1 - 30 to 40 inches: silt loam
- Bk2 - 40 to 50 inches: loam
- R - 50 to 79 inches: bedrock

Villedry drainage class is "Well Drained" with a (0.06 to 0.20 in/hr) capacity to transmit water; lithic bedrock can be found anywhere from 40-59" in depth. Please see NRCS attachments.

The Villedry predominant plant species includes Blue grama (35%), Western wheatgrass (20%), Galleta (10%), Threeawn (5%), Winterfat (5%), Fourwing saltbush (5%), Green needlegrass (5%), Plains pricklypear (3%), and Tree cholla (2%).

**Typical profile**

- A - 0 to 4 inches: silt loam
- BA - 4 to 7 inches: silt loam
- Bt - 7 to 15 inches: silty clay loam
- Btk - 15 to 25 inches: silty clay loam
- Bk1 - 25 to 33 inches: clay loam
- 2Bk2 - 33 to 38 inches: gravelly loam
- R - 38 to 70 inches: bedrock

**Additional Best Management Practices that may be used for General Topsoil Protection and Stabilization:**

- Employee Training
- Seeding
- Mulching
- Mulch Tackifier
- Soil Binder
- Construction Phasing/Sequencing
- Rock Sock
- Rolled Erosion Control Products
- Silt Fence
- Stockpile Management
- Erosion Bale
- Grading Techniques
- Surface Roughening
- Berm/Diversion
- Temporary Drainage Swale
- Temporary and Permanent Seeding
- Terracing
- Vegetative Buffer
- Wind Erosion/Dust Control

Topsoil Horizon Exhibit



UNGRADED ELEVATION: 5425.0'

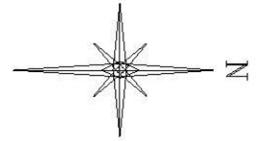
FINAL ELEVATION: 5424.2'

PROPOSED AREA OF DISTURBANCE: 1.2± ACRES

DRAINS NORTHERLY TO TIMPAS CREEK

AREA OF WORKING PAD SURFACE: 1.0± ACRES

ROAD DISTURBANCE: 2.1± ACRES



12" x 12" x 12"  
test pit for Topsoil  
determination

OIL AND GAS LOCATION DISTURBANCE BOUNDARY

12" x 12" x 12"  
test pit for Topsoil  
determination

6'x40'x4' DEEP  
CUTTINGS TRENCH

TOPSOIL PILE

BBB 33 SESE 2860

WORKING PAD  
SURFACE

CUT  
FILL

SILT FENCE OR  
STRAW WATTLES

SILT FENCE OR  
STRAW WATTLES

SILT FENCE OR  
STRAW WATTLES

PROPOSED 33 2860  
PIPELINE

PROPOSED ACCESS



BEFORE DIGGING  
CALL FOR  
UTILITY LINE LOCATION

BBB 33 SESE 2860

**DRG** RIFFIN & ASSOCIATES, INC.  
(307) 962-6028 1414 ELK ST., ROCK SPRINGS, WY 82901

**STORMWATER AND EROSION CONTROL PLAN**  
**BNL (ENTERPRISE) INC.**  
**BBB 33 SESE 2860**  
**SESE, SECTION 33, T. 28 S., R. 60 W., 6th P.M.,**  
**LAS ANIMAS COUNTY, COLORADO**

DRAWN: 2/7/22 - JMB

SCALE: 1" = 40'

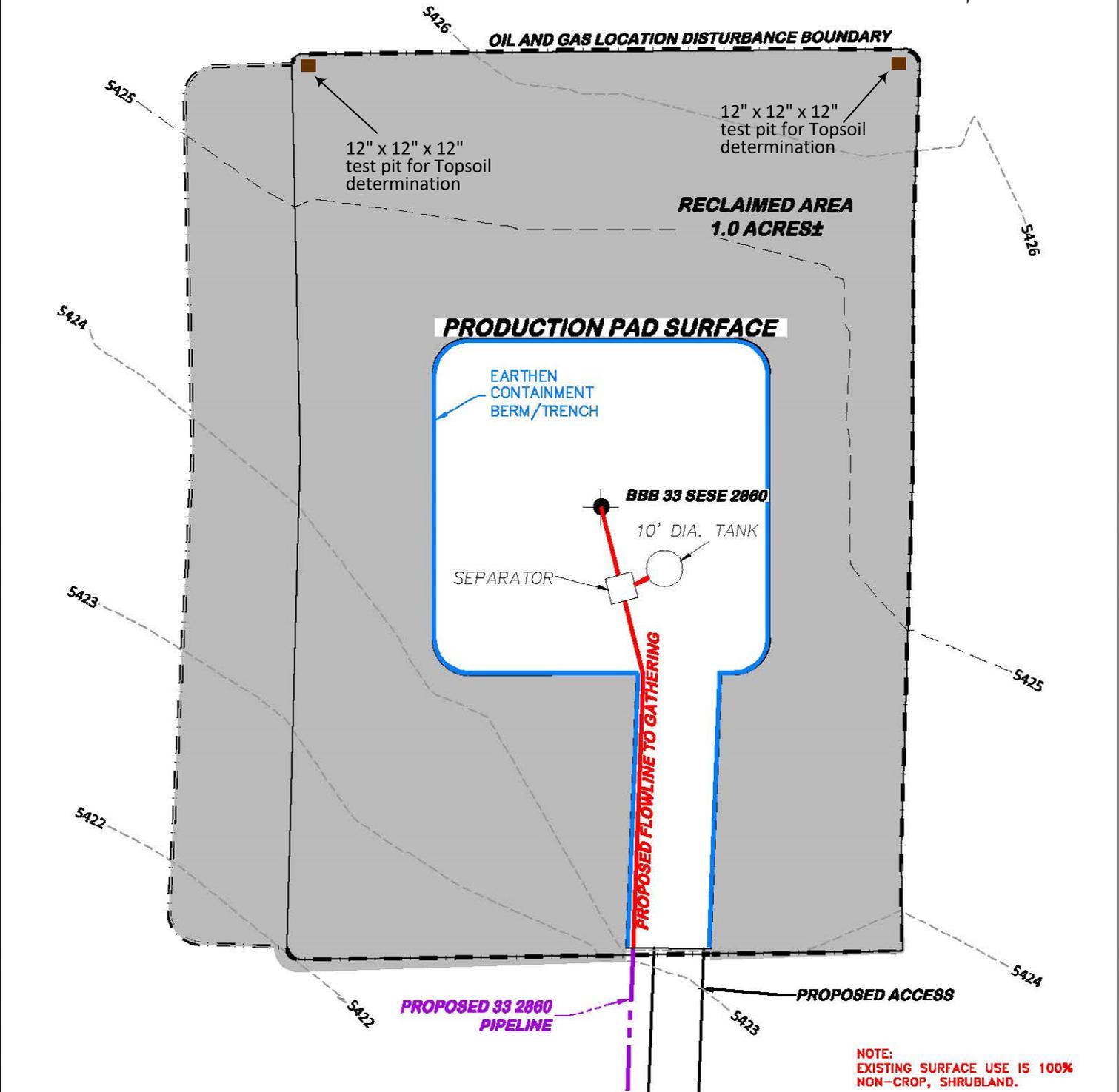
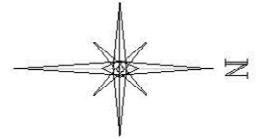
REVISED: 8/24/22 - JMB

DRG JOB No. 22197

REVISED CUTTINGS / RIG LAYOUT

304C(15) BMP

**APPROXIMATE DISTURBANCE AREA 1.2± ACRES**  
**PROPOSED RECLAMATED ON AREA: 1.0± ACRES**  
**INTERIM RECLAMATION DISTURBANCE: 0.2± ACRES**  
**AREA OF WORKING PAD SURFACE: 1.0± ACRES**  
**ROAD DISTURBANCE: 2.1± ACRES**



**BEFORE DIGGING  
 CALL FOR  
 UTILITY LINE LOCATION**

**BBB 33 SESE 2860**



|   |                             |
|---|-----------------------------|
|  <b>DRG RIFFIN &amp; ASSOCIATES, INC.</b><br>(307) 962-6028 1414 ELK ST., ROCK SPRINGS, WY 82901 |                             |
| <b>DRAWN: 2/7/22 - JMB</b>  | <b>SCALE: 1" = 60'</b>      |
| <b>REVISED: 8/24/22 - JMB</b>   | <b>DRG JOB No. 22197</b>    |
| <b>REVISED CUTTINGS / RIG LAYOUT</b>  | <b>304C(18) RECLAMATION</b> |

**PROPOSED INTERIM RECLAMATION  
 BNL (ENTERPRISE) INC.  
 BBB 33 SESE 2860  
 SESE, SECTION 33, T. 28 S., R. 60 W., 6th P.M.,  
 LAS ANIMAS COUNTY, COLORADO**