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# Stormwater Management Plan

## Red Rocks 1-16

This Stormwater Management Plan has been prepared by Desert Eagle Operating, LLC (DEO) for its Red Rocks 1-16 helium gas well location in Las Animas County, Colorado. The Plan addresses the Colorado Oil & Gas Conservation Commission (COGCC) requirement at Rule 304.c.(15) to prepare a Stormwater Management Plan consistent with Rule 1002.f.

### 1.0 Oil and Gas Location and Construction Site Details

#### 1.1 Proposed Oil and Gas Operations

DEO proposes to develop helium gas using a single conventional vertical helium gas well. The well will be approximately 1,800 feet deep. It will be drilled with air using a water well-sized drill rig. There will be no drilling mud, hydraulic fracturing, stimulation, or flowback. The well is not expected to produce hydrocarbons or water, based on results from wells already drilled in this area. The well will be in the following location:

NE ¼ NE ¼ Section 1, Township 30 South, Range 55 West

The location is on fee surface and will produce fee minerals.

The site elevation is 5,493 feet.

The Oil and Gas Location will be approximately 1.10 acres during well development with a Working Pad Surface of 1.00 acres. After Interim Reclamation, the production pad will be downsized to an estimated 0.20 acres. An estimated 0.90 acres will be reclaimed.

The estimated durations are 1 day for pad preparation; 7 days for drilling; 3 days for completion; 1 day for interim reclamation; and approximately 10 years for production.

#### 1.2 Site Description

The Oil and Gas Location is on ranchland leased from a private landowner. The environmental setting is arid disturbed grassland, which is sparsely vegetated. The area is previously disturbed from ranching, dirt roads, and oil and gas well development.

There is no nearby surface water.

The area is not immediately upgradient of a wetland or riparian corridor.

An environmental on-site review was conducted in July 2022. The review did not identify any immediately downgradient waters of the state. Area hydrology is shown on the Hydrology Map submitted with the Form 2A application.

#### 1.3 Nature of Construction Activity

The Oil and Gas Location is on disturbed ranchland. It is relatively flat, as shown on the attached Construction Layout Drawing. There will be no anticipated cut or fill needed to support well drilling. Minimal topsoil will be disturbed. The estimated 150 cubic yards of stockpiled topsoil is shown on the attached Construction Layout Drawing. The well will be drilled with air. A mist system will be used for dust control. There will be no hydraulic fracturing, stimulation, flowback, or any anticipated produced water. Storage tanks during well drilling will consist of one 100-bbl freshwater tank for dust mitigation and one 300-gallon fuel tank for the drill rig.

## **1.4 Sequence of Construction Activities**

The location is expected to require 1 day to prepare for well drilling. Well drilling is expected to require 7 days. Completion is expected to require 3 days. Interim reclamation is expected to require 1 day. Revegetation will occur during the first growing season and within 6 months after well development is complete.

## **1.5 Access Road and Flowline Corridor Construction**

An existing dirt access road will be used to access the location from County Road (CR) 177.9. The road is approximately 12 feet wide. Based on the driller's experience drilling previous wells in the area, neither the water well-sized drill rig nor potential for emergency response vehicles require clearing or blading of the access. The access road is shown on the Form 2A, Access Road Map. The access road will remain in place during production.

An off-location flowline for helium gas will be buried underground from the wellhead to an off-location helium processing unit. The helium processing unit will be located on private property. The flowline will be 8-inch polyethylene. The flowline trench will be approximately 2,170 feet long to its interconnection with the flowline for Red Rocks 1-14. It will be 2 feet wide, and 4 feet deep, with approximately 3 feet of soil cover. Soil removed during flowline trenching will be segregated based on changes in physical characteristics. It will be windrowed alongside to the trench. After flowline installation and integrity testing, the trench will be backfilled. The soil layers will be replaced in the order in which they were removed. The operator will identify appropriate soil amendments to promote vegetative growth. Seeding and revegetation will provide cover and prevent soil erosion. The area will be monitored for vegetation growth. The flowline is shown on the Form 2A, Related Location and Flowline Map.

## **2.0 Supplemental Site Information**

### **2.1 Site Area and Disturbance Area**

The Oil and Gas Location is largely flat. There is little variation in grade across the location. There is no cut and fill planned to support the location, and minimal topsoil will be disturbed. The Working Pad Surface is shown on the attached Construction Layout Drawing.

No new disturbance is needed for access road construction. DEO will use the existing dirt access road. An approximately 0.10-acre area will be disturbed for off-location flowline installation.

### **2.2 Soil Description, Data, and Erosion Potential**

Soil at the Oil and Gas Location is Soil Unit VT – Villedry-Travessilla complex, according to the Natural Resources Conservation Service Map Unit Descriptions. The typical profile for this soil type is silt loam and sandy loam with 1 to 8 percent slopes. The A-horizon is 0 to 5 inches of silt and sandy loam overlaying 4 to 15 inches of silt loam silty clay loam, and sandy loam. The soil type is well drained. The depth to the restrictive feature is alternately 20 to 40 inches and 6 to 20 inches.

Soil types at the access road and flowline locations are VT – Villedry-Travessilla complex; DaE – Dalerose-Rock Outcrop complex; and WC – Plughat-Villegreen complex.

The soil units are further described in the Form 2A, Dust Mitigation Plan.

### **2.3 Vegetation Description**

The Oil and Gas Location is located on disturbed arid ranchland. Vegetation includes Blue Grama, Sideoats Grama, Western Wheatgrass, Great Plains Yucca, One-seed Juniper, Plains Prickly Pear, and Tree Cholla.

### **2.4 Pre-disturbance Coverage Estimate**

The pre-disturbance coverage is an estimated 75 percent, based on the environmental on-site review conducted in July 2022.

## **2.5 Known Weed Infestations**

No weed infestations were identified on the Oil and Gas Location during the environmental on-site review conducted in July 2022.

## **2.6 Non-stormwater Discharges**

The location will have no non-stormwater discharges.

## **2.7 Receiving Waters**

The location has no nearby surface water or receiving water.

# **3.0 Stormwater Management Control Measures**

## **3.1 Potential Pollution Sources**

Potential pollution sources during construction are soils and sediment from disturbed areas and potential fluid drips, leaks, or spills during well development and production. The sources are described below.

## **3.2 Locations Listed in Rule 1002.f.(3).A**

Locations listed in Rule 1002.f.(3).A are described below.

### **Chemicals and Materials**

The well will be drilled with air. There will be no mud, hydraulic fracturing, stimulation, or flowback. During well development, material will consist predominantly of lubricants. Lubricants will be properly stored and capped in their original containers. During production, product used to support the well or wellhead will not be left on site.

### **Fueling**

The drill rig will have a separate 300-gallon fuel tank. The fuel tank will be double walled for secondary containment. Vehicles will not be fueled on site.

### **Produced Water and Drilling Fluids**

There will be no anticipated produced water, based on previous wells drilled in this area. There will be no drilling fluids. The well will be drilled with air.

### **Outdoor Processing Activities**

There will be no on-site processing. The well will produce helium gas with take away at the wellhead using an 8-inch buried polyethylene flowline.

### **Significant Dust or Particulate Generating Processes**

Exposed soils and drilling have potential to generate dust. Dust during well drilling will be controlled using a mist system and freshwater. A water truck will be used as need on disturbed soils to form a crust for dust control.

### **Erosion and Vehicle Tracking**

There is not a sufficient elevation change between the Working Pad Surface and surrounding topography to result in significant erosion. The access will tie into the existing dirt access road, which will tie into the unpaved CR 177.9.

### **Waste Disposal Practices**

Waste is limited to drill cuttings that will be contained on location inside of a bermed area until sampling and analysis are complete. Drill cuttings then will be buried in an on-location cuttings trench. Trash will

consist of domestic trash and packaging. It will be containerized to prevent it from blowing. Unused material will be removed for reuse at another location.

### **Leaks and Spills**

The location for the drill rig and support equipment is shown on the Preliminary Drill Rig Layout. A synthetic liner will be placed under the drill rig. Spill control material will be available during well development.

### **Ground Disturbing Maintenance Activities**

After construction and interim reclamation, there will be no anticipated ground disturbing maintenance activities.

## **3.3 Pollution Prevention**

### **Erosion Control**

There is an approximately 7-foot elevation change across the Working Pad Surface. The flow direction is shown on the Construction Layout Drawing. The Construction Layout Drawing shows that the approximately 150 cubic yards of topsoil salvage that will be mounded on a topsoil stockpile with an approximately 2:1 slope to avoid loose soils. Topsoil will be used on the 0.90-acre portion of the Working Pad Surface identified for interim reclamation during the first growing season after well development is complete.

### **Secondary Containment**

Tanks during well drilling will consist of (1) a 100-bbl water truck with freshwater, and (2) a 300-gallon fuel tank with a double wall for secondary containment. The drill rig will have a synthetic liner underneath to capture drips or leaks. There will be no tanks on the location during production. There will be no fuel storage on the location during production. The Larkin-type natural gas wellhead will flow to a buried 8-inch polyethylene flowline.

### **Spill Prevention**

There will be no fluids, loading or unloading, or tank storage during production. Best Management Practices (BMPs) during well drilling are described below.

### **Reclamation**

The location will be reduced to approximately 0.20 acres after well development is complete. The remaining area will be revegetated and stabilized during interim reclamation.

## **3.4 Structural and Non-structural Practices**

### **Structural Practices**

The location will have staked wattles to control run on and run off. Wattles will be placed on the north and south portions of the location, per the direction of surface flow, as shown on the attached layout drawings. The erosion controls will minimize run on to the location and run off of soils and sediment in the event of a significant storm event and prior to interim reclamation. After interim reclamation, if vegetation does not provide sufficient armoring, erosion controls will be maintained and inspected to prevent soils and sediment from leaving the location. If there is evidence of ponding or erosion from the location, stormwater diversions will be created to avoid stormwater channelization. During production, there will be only a wellhead and buried off-location flowline on the location.

### **Non-structural Practices**

Disturbances will be limited to the portions of the Oil and Gas Location needed to support well development and production so that vegetation and/or stable soils remain in place. Disturbed portions of the Working Pad Surface not needed for production will be stabilized and revegetated as part of interim reclamation.

Trash will be contained. Vehicles and equipment will be monitored for leaks during well development. Booms and absorbents will be made available to address inadvertent spills. Ingress, egress, and parking will occur in designated areas. Inspections will be performed daily during well drilling. Inspections will be performed routinely during well production, as described below. The location and stormwater controls will be maintained to prevent deterioration resulting in erosion or transport of soils and sediments off site.

### **3.5 Erosion Controls**

Erosion controls using wattles are shown on the attached Layout Drawings. They will prevent movement of sediment and soils from stormwater runoff. Designated vehicle ingress and egress will help to avoid vegetation and soil disturbance resulting in erosion. Interim reclamation and revegetation will occur when well drilling is complete. Seeding will occur during the next favorable growing season. Revegetation will be monitored for growth and a vegetative cover that reflects 80 percent of the reference area condition.

### **3.6 Vehicle Tracking Control**

The location's access ties into the existing dirt access road, which ties into the unpaved CR 177.9. There will be no access onto paved roads and no potential for vehicle tracking.

### **3.7 Materials Handling and Spill Prevention**

Routine inspection of valves, transfer lines, tanks, and secondary containment during well development will identify potential damage, deterioration, or signs of staining and leaks. Shut off valves will be function tested to ensure adequate containment of fluids. Trash will be containerized to prevent it from blowing and will be transported off site for disposal. Vehicles and equipment used on site during drilling and production will be properly maintained and will be monitored for leakage. Site personnel will be trained in spill prevention, response, and response equipment. Training will include how spills or releases will be investigated, controlled, and contained in accordance with Rule 912.a.

### **3.8 Management of Waste Material**

An estimated 48 cubic yards of drill cuttings will be generated. After testing, drill cuttings will be buried on site in a drill cuttings trench. Trash will be containerized to secure it from blowing. It will be hauled off site using a light duty pickup truck. There will be no produced water or fluid storage tanks during production.

## **4.0 Site-specific Construction and Stormwater/Erosion Control Measure Drawings**

In accordance with COGCC guidance, this section refers to the attached Construction Layout Drawing and Facility Layout Drawing.

## **5.0 Inspection and Maintenance Procedures**

### **5.1 Trained and Qualified Site Inspectors**

Stormwater inspections will be conducted by personnel trained on the content of this Stormwater Management Plan. Personnel will be qualified regarding stormwater preventative measures, practices, controls, and maintenance in the field.

### **5.2 Scope of the Inspection**

During stormwater inspections, personnel will review the Oil and Gas Location perimeter; erosion control measures; disturbed areas and reclaimed areas; equipment; and vehicle access. Inspections will look for damaged or missing wattles, missing staking, evidence of erosion or uncontrolled stormwater, pooled or ponding stormwater, improper drainage, and evidence of soils or sediment leaving the location. Inspections will review the location for signs of erosion. Stormwater control maintenance needs will be identified and addressed with appropriate follow up.

### 5.3 State and Local Inspection Requirements

The operator will comply with construction stormwater management requirements administered by the Colorado Department of Public Health and Environment (CDPHE). Las Animas County does not separately regulate stormwater.

### 5.4 Inspection Procedures and Frequency

The Oil and Gas Location and stormwater controls will be monitored daily during site preparation and well development. Evidence of soil or sediment runoff, maintenance needs, and any spills or leaks will be addressed. Following well development, stormwater inspection will occur at a minimum of once every 7 days, consistent with stormwater requirements administered by CDPHE. Inspection frequency may be reduced to once every 30 days after ground disturbance is complete and the site is stabilized with interim reclamation. During inspection, the site operator will look for evidence of erosion, runoff, and stabilization and vegetative success from interim reclamation. Inspections will ensure that erosion and sediment controls identified in this plan are maintained, functioning properly, and that there is no evidence of movement of soils, ponding, or erosion.

### 5.5 Reporting and Recordkeeping Requirements

Recordkeeping will include conformance with recordkeeping requirements administered by CDPHE. During well drilling, stormwater records will be included with drilling operations records. During production, the site operator will record stormwater inspections and maintenance needs as part of the maintenance records for the location. Documentation will be kept in the operator's Dallas, Texas office.

## 6.0 Site-specific Construction and Stormwater/Erosion Control BMPs

**Table 1. Best Management Practices**

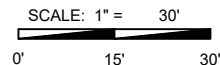
<b>Structural</b>	
<ul style="list-style-type: none"> <li>• Wattles will be placed on the north and south portions of the location. They will be staked in place.</li> <li>• Stormwater diversions will be created when there is evidence of ponding or erosion runnels.</li> <li>• The fuel tank used during well development will be double walled for secondary containment. There will be no separate fueling on the location.</li> <li>• The drill rig will have a liner under the motor to capture drips or leaks.</li> </ul>	
<b>Non-Structural</b>	
<ul style="list-style-type: none"> <li>• Personnel will receive training for how spills or releases will be investigated, controlled, and contained.</li> <li>• During pre-production, inspection of equipment will occur daily during well development to detect staining, drips, or leaks that could result in spills.</li> <li>• Vehicles will be monitored for leaks during well development.</li> <li>• During well drilling and completion, absorbent pads and absorbents will be available to support cleanup of leaks or spills. A larger incident would be bermed, and the operator would use third-party support, as needed.</li> <li>• Waste materials will be bagged or containerized to avoid contact with precipitation.</li> <li>• Ingress, egress, and parking will occur in designated areas.</li> <li>• The well pad will be inspected for excessive erosion. Diversions will be installed if there is evidence of runnels or ponding.</li> <li>• Stabilization and revegetation will be performed as part of interim reclamation during the first growing season and within 6 months after well development is complete.</li> <li>• During production, an operator will be on site approximately twice weekly to oversee areas that require corrective action.</li> <li>• The Oil and Gas Location and stormwater controls will be monitored daily during site preparation and well development. After well development, stormwater inspections will occur at a minimum of once every 7 days,</li> </ul>	

consistent with stormwater requirements administered by CDPHE. The inspection frequency may be reduced to once every 30 days after ground disturbance is complete and the site is stabilized with interim reclamation.
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| <ul style="list-style-type: none"><li>• The location and access road will not be accessible to the public to prevent unauthorized access and excessive wear on access roads.</li></ul> |
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## **Attachments**

Layout Drawings



SCALE: 1" = 30'



A horizontal scale bar with a black and white gradient. It is marked with '0'' at the left end, '15'' in the middle, and '30'' at the right end.

EXISTING 1' CONTOUR

EXISTING 5' CONTOUR

### PROPOSED FLOWLINE

WORKING PAD SURFACE

## OIL AND GAS LOCATION

## STRAW WATTLES

WELLHEAD

## DRAINAGE

WELLHEAD ELEVATIONS

GRADED ELEVATION: 5,493.37'  
UNGRADED ELEVATION: 5,493.37'

EARTHWORK QUANTITIES:

CUT: 185 CY

FILL: 35 C

TOPSOIL (6"):

150 CY

EXPORT: 0 CY

FILL FACTOR: 1.15

DISTURBANCE ACREAGES:

WORKING PAD SURFACE (AC): 1.00

OIL & GAS LOCATION (AC):	1.10
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EXISTING ACCESS ROAD (AC): 1.35

FLOWLINE CORRIDOR (AC): 0.10

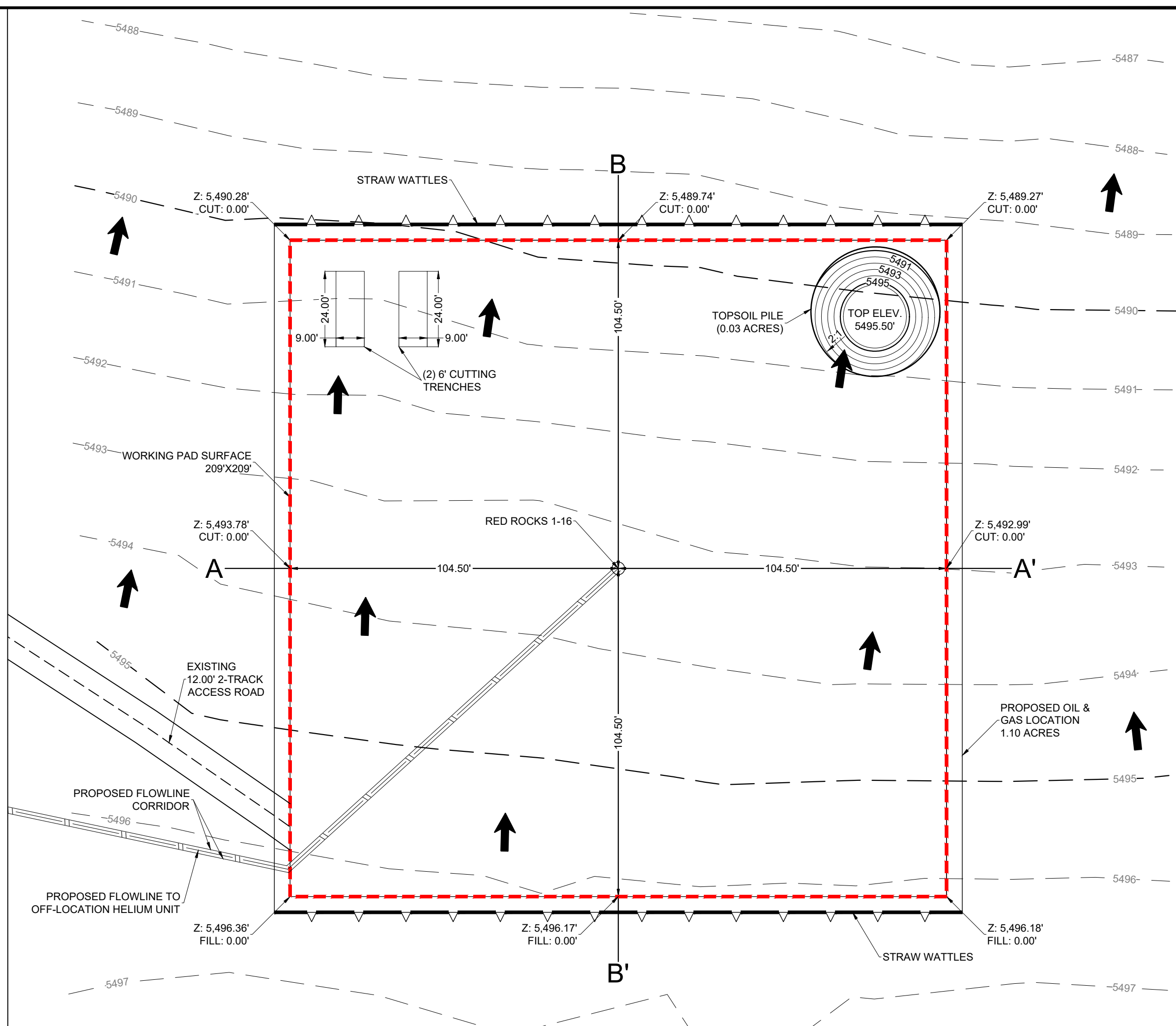
NOTES:

- 1.) THIS SITE HAS NO NECESSARY EXCAVATION, AS THE DRILL RIG IS SELF-LEVELING. ALL EARTHWORK FOR THE SITE IS TOPSOIL PRESERVATION ONLY.
- 2.) FLOWLINE CORRIDOR ACREAGE ONLY INCLUDES ACREAGE OUTSIDE OF OIL AND GAS AREA.



# DESERT EAGLE

## — OPERATING —



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## CONSTRUCTION LAYOUT - PLAN VIEW

RED ROCKS 1-16 LAS ANIMAS COUNTY

NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  SEC. 1 T30S R55W 6<sup>TH</sup> P.M.

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DATE: 10/10/2022  
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REVIEWED BY: CCC

SCALE: 1" = 30'

SHEET: 1 OF 4

REVIEWS

REVISION:

XX/XX/XX	XXX
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XX/XX/XX	XX
XX/XX/XX	XX





SCALE: 1" = 30'

- EXISTING 1' CONTOUR
- EXISTING 5' CONTOUR
- PROPOSED FLOWLINE
- WORKING PAD SURFACE
- STRAW WATTLES
- WELLHEAD
- PROPOSED DRAINAGE

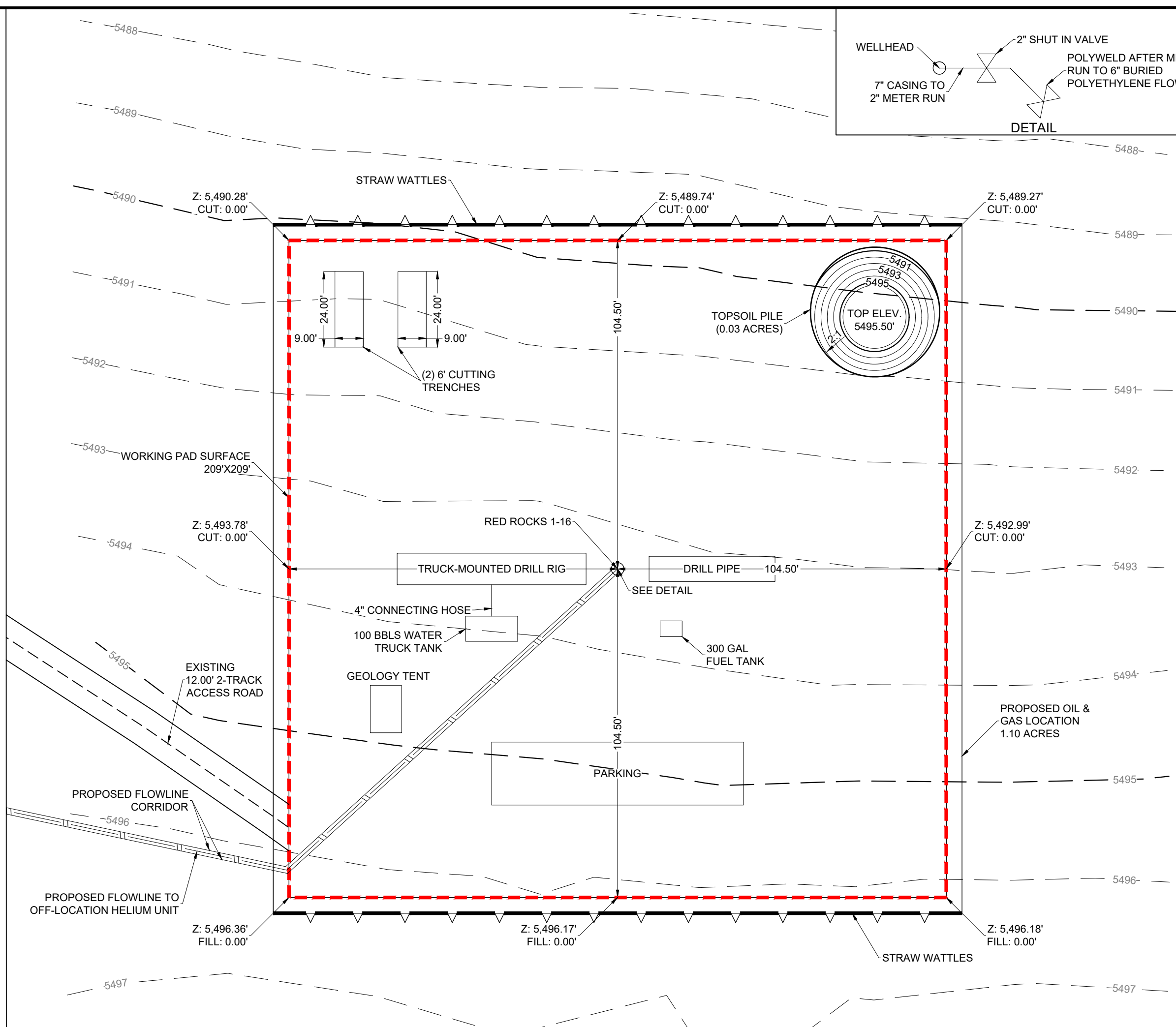
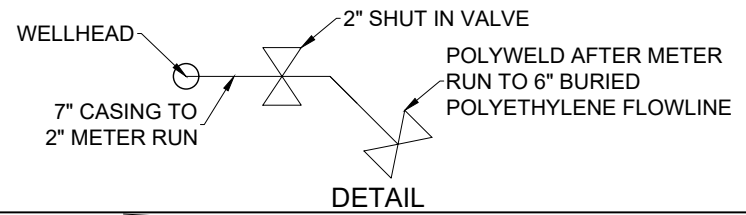
WELLHEAD ELEVATIONS  
GRADED ELEVATION: 5,493.37'  
UNGRADED ELEVATION: 5,493.37'

NOTES:

- 1.) THERE IS NO DISTINCTION BETWEEN PRELIMINARY DRILL RIG LAYOUT AND WELL COMPLETION LAYOUT FOR THIS DEVELOPMENT.
- 2.) THERE IS NO STIMULATION LAYOUT FOR THIS DEVELOPMENT.
- 3.) THERE IS NO FLOWBACK FOR THIS DEVELOPMENT.
- 4.) THE WELL WILL BE DRILLED WITH AIR. THERE WILL BE NO HYDRAULIC FRACKING, STIMULATION, OR FLOWBACK. THE WELL IS NOT ANTICIPATED TO PRODUCE WATER. FRESHWATER WILL BE USED FOR SURFACE DUST CONTROL.



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PRELIMINARY DRILL RIG LAYOUT  
RED ROCKS 1-16 LAS ANIMAS COUNTY  
NE 1/4 NE 1/4 SEC. 1 T30S R55W 6TH P.M.  
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											XXX/XX/XX	XXX/XX/XX	XXX/XX/XX



SCALE: 1" = 30'

0' 15' 30'

EXISTING 1' CONTOUR

EXISTING 5' CONTOUR

PROPOSED FLOWLINE

WORKING PAD SURFACE

STRAW WATTLES

WELLHEAD

INTERIM RECLAMATION AREA

DRAINAGE

WELLHEAD ELEVATIONS

GRADED ELEVATION: 5,493.37'  
UNGRADED ELEVATION: 5,493.37'

DISTURBANCE ACREAGES:

OIL & GAS LOCATION (AC): 1.10

PRODUCTION PAD SURFACE (AC): 0.20

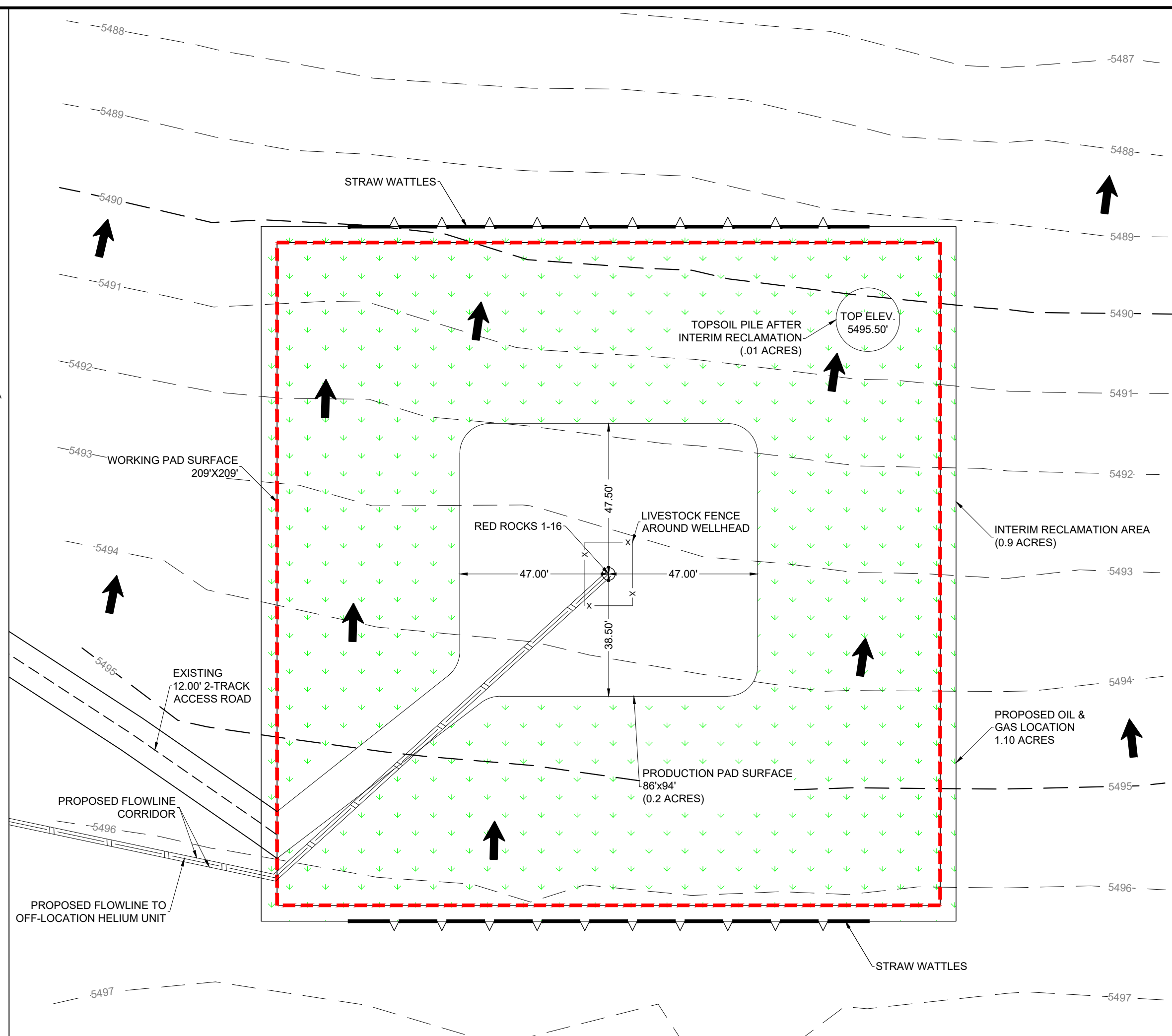
INTERIM RECLAMATION (AC): 0.90

EXISTING ACCESS ROAD (AC): 1.35

FLOWLINE CORRIDOR (AC): 0.10



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FACILITY LAYOUT

RED ROCKS 1-16 LAS ANIMAS COUNTY

NE 1/4 NE 1/4 SEC. 1 T30S R55W 6TH P.M.

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