



Caerus Piceance, LLC - Operator # 10456

**Final Reclamation Plan**

**PCU FED A27 197 CDP & FRAC PAD**

COGCC Location ID Pending

NWNW Section 27, T1S R97W

Rio Blanco County

**Site Description:**

The proposed PCU Fed A27 197 CDP (Central Delivery Point) and Frac pad would be located within the valley of Lee Gulch in the Piceance Basin. The site is located on federal lands managed by the Bureau of Land Management (BLM) in Section 27, Township 1 South, Range 97 West. Site aspect is west-southwesterly with slopes ranging from 6 to 13%. The surrounding terrain consists of a valley bottom with moderately steep slopes and intermittent drainages. Elevation of the proposed pad is approximately 6,196 feet and average annual precipitation of the area is between 16 and 20 inches per year. The current primary uses of the land are wildlife habitat, rangeland, and natural gas development. The historical and current land use description at the site is Rangeland. When all associated wells that the PCU Fed A27 197 Central Delivery Point services are plugged, the location will be final reclaimed to comply BLM final abandonment regulations and COGCC Rule 1004 reclamation regulations.

Based on the planned disturbance area during site construction and interim reclamation/production phases, the facility pad final reclamation area will be less than 5.7 acres and is anticipated to be approximately 3.5 acres to replace soils as near as practicable to their original relative position and contour. If the location services additional well pads due to future development in the area, the CDP working surface may be increased and interim reclamation area decreased to accommodate additional facility equipment. This would result in an overall increase to the final reclamation area. The planned access road will be reclaimed during final reclamation operations. The access road reclamation area will be approximately 2.7 acres.

**Soils Description:**

The United States Department of Agriculture (USDA) National Resource Conservation Service (NRCS) Web Soil Survey was used to identify Soil Map Units within the proposed well pad and access road boundaries. Two Map Units were identified within the project area:

Map Unit Symbol	Soil Name	Description
6	Barcus channery loamy sand, 2 to 8 percent slopes	Soils are formed from calcareous alluvium derived from sandstone and shale. Occurs in alluvial fans and valleys and is somewhat excessively drained with a low runoff class.
91	Torriorthents-Rock outcrop complex, 15 to 90 percent slopes	Soils are formed from colluvium derived from siltstone and/or residuum weathered from limestone, sandstone, and shale. Occurs in mountains, hills, ridges, canyons, and is well drained with a very high runoff class.

These soils typically have non-saline to very slightly saline properties, have water table depths greater than 80 inches, and the depth to lithic bedrock typically ranges 16 inches to more than 80 inches.



### **Reference Area And Pre-Disturbance Vegetation Composition:**

The planned location is within Ecological Sites R048AY285CO — Foothill Swale and R048AY287CO — Stony Foothills. The vegetation community present in the project area is primarily composed of Basin big sagebrush shrublands intermixed with greasewood with an understory of native grasses (Indian ricegrass, Muttongrass, Western wheatgrass, Bottlebrush squirreltail), native forbs (Scarlet gilia, Plains prickly pear, Flatspine stickseed), introduced forbs (Desert madwort, Curvseed butterwort), and noxious weeds (Cheatgrass). The reference area is north of the planned location at 39.942200, -108.275024 and has similar slope, aspect, elevation, and vegetation community.

### **Known Weed Infestations:**

Cheatgrass (*Bromus tectorum*) was identified with moderate frequency in the project area during pre-disturbance assessments.

### **Management of Waste Material:**

During facility removal, Caerus will conduct soil investigations to comply with Colorado Oil and Gas Conservation Commission (COGCC) 900 Series Rules regarding the decommissioning of oil and gas facilities. Throughout all phases of final reclamation, Caerus and associated contractors monitor the work area for any sheens, odors, or soils that may exceed COGCC Table 915-1 Cleanup Concentrations. If impacted material is encountered during soil investigations or final reclamation operations, Caerus will assess and determine what steps need to be taken to ensure compliance with COGCC regulations.

### **Gathering Lines:**

Final abandonment of pipelines will involve flushing and properly disposing of any fluids in the lines. All on-site flowlines will be removed. Surface lines and any lines that are buried close to the surface that may become exposed in the foreseeable future due to water or wind erosion, soil movement, or anticipated subsequent use, will be removed. Deeply buried lines may be capped and remain in place unless otherwise directed by the BLM Authorized Officer.

### **Access Road:**

The 150-foot northern segment of the access road that will be constructed over an existing BLM two-track road will be reduced to the approximate pre-disturbance width and footprint. All portions of the two-track that are not compacted and stabilized will be reclaimed. The remaining 3,811-foot access road will be reclaimed during final reclamation operations. The access road reclamation area will be approximately 2.7 acres. Size reduction and final reclamation will be completed with the same best management practices described below.

### **Gravel Removal, Soil Preparation, and Recontouring:**

During the first favorable season within 12 months after the last well the CDP services is plugged and abandoned, final reclamation operations will commence. Gravel will be removed from the pad working surface and removed from the field or distributed on nearby active access roads or well pads. All regions with compacted soils will be cross-ripped to a minimum depth of 18 inches or to bedrock, whichever is shallower, to alleviate compaction.

Recontouring will occur to replace soils to their original relative positions, as detailed in the associated final reclamation plat, and level ripped soils. The fill slope along the western reclamation area will be pulled back to ensure the reclamation surface matches pre-disturbance grade. Prior to grading, all vegetated topsoil within the interim reclamation area will be stripped and stored for redistribution during topsoil application. Topsoil stockpiled during initial construction for long-term storage and use during final reclamation will be located in the interim reclamation area directly south of the working surface.

Recontouring will include all edges of the disturbance to blend them with the adjacent landscape. Preexisting natural drainages will be re-established, and topsoil will be spread evenly across the recontoured pad. The final



surface will be left rough to promote surface heterogeneity and micro catch depressions for additional stormwater retention.

#### **Re-establishment and Stabilization of Drainage Features:**

During pre-disturbance environmental assessments, no Waters of the U.S., springs, or seeps were identified within the proposed disturbance boundaries. During site construction, existing intermittent drainages within the west and northeast disturbance boundaries will be modified to flow around the location boundaries. No additional intermittent drainage modification will be necessary during final reclamation, though natural drainage patterns will be reestablished within the final reclamation area. Site specific erosion control measures will be installed at the direction of the Caerus construction department to prevent erosion channel formation, topsoil loss, and sediment discharge from Location. Long-term stormwater best management practices include land-forming and revegetation with native perennial plant species to prevent excessive erosion, soil instability, subsidence, or slumping.

#### **Seedbed Preparation, Seeding, and Mulching:**

Special effort will be made to salvage topsoil and available vegetation within the earthwork area during the reclamation process. These materials will be distributed throughout the disturbance surface during topsoil dressing. The seedbed will be prepared via disk, harrow, or chisel plow to have the topsoil loose enough to allow for root growth and firm enough on the surface for proper seed to soil contact. The soil surface should also be relatively free of debris and dirt clods greater than 3 inches in diameter, as too much debris and clods will inhibit proper seed placement. If possible, the soil surface should also be free of rocks greater than 3 inches in diameter, though this may not be feasible based on soil types on the proposed location.

Soil amendments for final reclamation projects in the Piceance Basin area typically include a blend of Richlawn 3-6-3 with mycorrhizae and humates™ pellet organic fertilizer, Lot 125 soil biotic treatment, humates, and sulfur flakes applied prior to seeding and mulch application. Topsoil conditions are evaluated at the time of final reclamation and soil amendment type and application rate are modified based on soil analysis.

Seed will be applied using a range type drill seeder throughout the reclamation area. All seed will be calculated in pounds per acre and certified weed free with pure live seed rated per applicable jurisdiction standards. Seed tags are reviewed by Caerus before application and documented through a seeding report form completed by contractors to ensure seed meets these standards. The below-detailed seed mix, provided by the BLM White River Field Office, will be used for final reclamation.

Following seeding, certified weed-free straw mulch will be applied at a rate of 3,500 lbs./acre to cover 100% of the seedbed. Straw will be crimped along contour to properly anchor the mulch and ensure maximum soil moisture retention and stormwater stabilization. A natural fiber mulch (hydraulically applied) may also be utilized on slopes steeper than 3:1, areas of concentrated stormwater flow, or as a tackifier over the straw to prevent wind-loss.

#### **Final Reclamation Seed Mix**

Standard BLM seed mix #3 – White River Field Office

Cultivar	Species	Scientific Name	Application Rate (lbs. PLS/Acre)
Rosana	Western Wheatgrass	<i>Pascopyrum smithii</i>	4
Rimrock	Indian Ricegrass	<i>Achnatherum hymenoides</i>	3
Whitmar	Bluebunch Wheatgrass	<i>Pseudoroegneria spicata</i> ssp. <i>inermis</i>	3.5
VNS	Needle and Thread Grass	<i>Hesperostipa comata</i> ssp. <i>comata</i>	2.5
Critana	Thickspike Wheatgrass	<i>Elymus lanceolatus</i> ssp. <i>lanceolatus</i>	3



VNS	Sulphur Flower Buckwheat	<i>Eriogonum umbellatum</i>	1.5
VNS	Lewis Flax	<i>Linum lewisii</i>	1
VNS	Scarlet Globemallow	<i>Sphaeralcea coccinea</i>	0.5
Total lbs. PLS/Acre (Drill Rate)			19

**Fencing:**

The previously installed four-wire, wildlife friendly, cattle exclusion fence will be modified as necessary to surround the final reclamation area. A wire drop gate will be installed at the pad entrance to allow access for maintenance. The fence will be removed once the final reclamation area has achieved BLM Final Abandonment and COGCC Rule 1004 success criteria.

**Management of Invasive Plants:**

Through routine site visits, any noxious and invasive weeds within the disturbance boundaries will be identified, inventoried, and treated by licensed contracted herbicide applicators or mechanically removed through mowing, line-trimming, or hand tools. Caerus will monitor, control, and reduce the spread of noxious and invasive weed species within Caerus' disturbances per Federal regulation, COGCC regulation 1004.e. and rules pertaining to the administration and enforcement of the Colorado Noxious Weed Act.

**Reclamation Monitoring and Reporting:**

Federal and State regulations and Caerus Best Management Practices require routine site visits and active management over construction activities, along with annual reclamation reporting requirements. For compliance with Colorado Department of Public Health and Environment (CDPHE) Stormwater rules, the location will be visited for stormwater inspections every 14 days during active earthwork and monthly following completion of final reclamation until the vegetation has reached 70% cover of pre-disturbance levels, with the focus on stabilizing soils, preventing erosion and site degradation, and monitoring for and treating invasive species. Annual inspections (at a minimum) will then take place. Quantitative vegetation assessments are completed biannually with results reported to the White River BLM Field Office. These assessments are completed until the reclaimed disturbance is deemed successful based on the following criteria provided by the BLM:

- Erosional features (gully, headcutting, slumping, and deep or excessive rilling – greater than 3 inches) are equal to or less than those in the surrounding area. Water naturally infiltrates into the soil rather than running off the surface.
- Site is free of all State, County, or locally listed A and B weed species.
- Permanent vegetation cover, i.e., the basal and foliar cover of desirable perennial species, is at least 80% of the basal and foliar cover of the undisturbed site or of a reference area.
- The resulting plant community (in a healthy early seral state) contains at least 80% desirable plant species, preferably one of which is a forb or shrub. Plants are resilient, as demonstrated by vigorous, well-developed root systems and flowers. Shrubs are well established and at least in a "young" age class, rather than comprised mainly of seedlings that might not survive.
- No one species exceeds 70% of the basal and foliar cover in the resulting plant community to achieve species diversity on the site.

When the reclaim achieves these standards, Caerus will submit a Sundry Notice, Form 4, with associated attachments as detailed in COGCC Rule 1004.c.(4).



**Establishment of a Desirable Self-Perpetuating Plant Community:**

Caerus knows that reclamation maintenance, including greater than one seeding event, may be necessary to ensure the final reclamation achieves uniform cover of a desirable, self-perpetuating, plant community. Monitoring, subsequent planning, and implementation of site-specific maintenance plans will ensure revegetation efforts are successful, topsoil is stabilized, and wildlife habitat and forage is reestablished.