



CRESTONE PEAK
RESOURCES

INTERIM RECLAMATION PLAN

Submitted with Form 2A Application for:

Alamosa 5-64 6-1

Plan Finalized: March 23, 2022

Plan Revised: April 25, 2022

Crestone Peak Resources Interim Reclamation Plan was developed in accordance with
COGCC Rule 1003.

Interim Reclamation Plan

COGCC Operator Name (ID)	Crestone Peak Resources Operating, LLC (10633)
Operator Location Name	Alamosa 5-64 6-1
Legal Description	SESW Sec. 6 T5S R64W
County	Arapahoe County (005), Colorado
Geographic Coordinates (WGS84)	39.648991, -104.586126
Field	WILDCAT – 99999

Introduction

This site-specific interim reclamation plan (Plan) was prepared by Confluence Compliance Companies, LLC (Confluence) at the request of Schuyler Hamilton (Environmental Specialist) to support Crestone Peak Resources Operating, LLC (Crestone) Form 2A oil and gas permitting efforts on the above referenced project site (Location). The Plan includes a Location description, interim reclamation procedure, and plans for reclamation monitoring and invasive/noxious weed management. Best management practices (BMPs) to be employed in site construction and operation have been included throughout the Plan and in the Site-Specific Interim Reclamation BMPs section of this document.

Location

Site Description

The Location is within Ecological Site R049XB208CO – Clayey Foothill in Arapahoe County on private land owned by East Quincy Holding, LLC [1]. The Location receives an average of approximately 12.5 inches of precipitation annually [2] and has 0-3% slopes with a north-northeasterly aspect and surface flow direction. The nearest Receiving Water is an unnamed, ephemeral drainage approximately 0.4 miles east-southeast of the Location. This drainage confluent with Box Elder Creek 2.4 miles east of the Location. The nearest Receiving Water to the west is an unnamed, ephemeral drainage approximately 0.42 miles west of the Location. This drainage confluent with Coal Creek 2.6 miles west of the Location. Both these water sheds ultimately drain to the South Platte River.

In preparation for drilling and well completions operations, Crestone proposes to disturb approximately 19.5 acres of surface to construct the well pad and associated rights-of-way (ROW). Of this total, 9.5 acres will be stabilized for the production phase of operation while 10 acres will be interim reclaimed for long-term Location operation.

Soil Description

According to the United States Department of Agriculture (USDA) Web Soil Survey [2], the Location and reference area span two Soil Map Units (SMU); Renohill-Little-Thedalund complex, 9 to 30 percent slopes and Bresser-Stapleton sandy loams, 9 to 20 percent slopes.

Renohill-Little-Thedalund complex SMU

- The A horizon is typically a loam soil texture.
- The B horizon ranges from clay and clay loam textures.

- These soils are well drained with a high runoff class and moderate available water capacity.
- Seed mortality class is rated moderate.
- Depth to a restrictive feature or water table is more than 80 inches.
- Soils are nonsaline to very slightly saline.

Bresser-Stapleton sandy loams SMU

- The A horizon is typically a sandy loam soil texture.
- The B horizon ranges from sandy clay loam to gravelly clay loam texture.
- These soils are well drained with a medium runoff class and moderately high to high available water capacity.
- Seed mortality class is rated moderate.
- Depth to a restrictive feature or water table is more than 80 inches.
- Soils have a maximum calcium carbonate content of 10%.

Renohill-Litle-Thedalund complex and Bresser-Stapleton sandy loam SMUs are typical of Colorado shortgrass prairie, which is characterized by alluvial fans, hills, rolling plains, and shallow ephemeral drainages [3].

Pre-Disturbance/ Reference Area Vegetation

The Location is within private property historically utilized in cattle ranching operations and surfaces of the Location and equivalent reference area exhibit moderate to high livestock disturbance. Current vegetation cover within the planned disturbance boundary is predominately composed of perennial grasses with moderate occurrences of List C noxious weeds intermixed with desirable cover. Dominant species include buffalograss (*B. dactyloides*), blue grama (*B. gracilis*), sideoats grama (*B. curtipendula*), downy brome (*B. tectorum*), Great Plains yucca (*Y. Glauca*) and prairie sunflower (*H. petiolaris*). The reference area south of the Location, has similar vegetation cover, soils, slope, and aspect. With natural grazing, these regions can produce grasslands composed of cool and warm season bunch grasses such as western wheatgrass (*P. smithii*), green needlegrass (*N. viridula*), fendler threeawn (*A. purpurea*), blue grama, and sideoats grama. When subject to moderate to heavy cattle grazing, larger biomass bunchgrass abundance decreases and the cover of stoloniferous and rhizomatous grasses and grass-like species, such as blue grama, buffalograss, and threadleaf sedge (*C. filifolia*), increase [4].

Reclamation Procedure

The following procedures detail site-specific interim reclamation BMPs that will be implemented following drilling and construction operations. Standard operating procedures based on site-specific conditions, existing agreements, and local government requirements and recommendations will be utilized. Any deviation from these procedures will be coordinated with Crestone's reclamation team and if necessary, with local governments, regulatory agencies, and the surface owner.

Access Road and Gathering Lines

The Location access road will be constructed from the southwest perimeter of the pad surface, extending approximately 4,718 feet south to East Quincy Avenue. All flowline disturbances will

be incorporated into the graveled working surface of the Location for long-term operation. All gathering line disturbances, as well as the access road following width reduction, will be reclaimed per the reclamation procedure described below.

Removal of Debris and Management of Waste Materials

All non-exploration and production (E&P) waste, drill cuttings and fluids, waste material, and debris will be removed, as detailed in the associated Rule 304.c.(11) Waste Management Plan. Following drilling and well completion operations, all cellars, rat holes, and other boreholes will be backfilled.

Pad Size Reduction

During the first favorable season within six months after the wells are completed for production, gravel/road base will be removed from the drilling and construction footprint and the pad area reduced to the size necessary for long-term Location operation.

Recontouring and Subsoil Preparation

After gravel and road base removal, fill slopes will be constructed along the east and west working surface perimeters and subsoils throughout the interim reclamation area will be cross-rippled to a depth of 18 inches to alleviate compaction and promote root growth. Topsoil will be stored in a labeled stockpile along the northern pad edge with maximum side slope of 4:1. Recontouring will occur to replace subsoils beyond the stockpile to their original relative positions and level.

Recontouring will include all edges of the disturbance to ensure the reclamation surface matches pre-disturbance grade. Any preexisting topographic features will be reestablished, and subsoils will be packed to ensure proper density for root establishment prior to topsoil application. Topsoil will not be comingled with subsoil materials during recontouring and subsoil preparation operations.

Seedbed Preparation

1,886 cubic yards (CY) of salvaged topsoil will be redistributed throughout the interim reclamation area to the depth of pre-disturbance conditions and final contouring will occur to match pre-disturbance topography. The remaining 8,556 CY of salvaged topsoil will be maintained within the northern interim reclamation area for long-term storage. Seedbed preparation will proceed via disking to ensure that proper grade, soil texture and bulk density is achieved to prepare the seedbed for seeding operations and mulch application.

Seed Mix / Soil Amendments

The selected seed mix for the Location is the Clayey Plains Grazing Seed Mix, detailed in the Seed Mix Table below. The seed mix will be applied at the rate specified below or at the rate specified by the seed supplier. All seed will be certified weed-free and pure live seed (PLS) rated per federal, state, county, and municipal standards.

Clayey Plains Grazing Seed Mix			
Common Name	Scientific Name	Variety	lb. PLS/ Acre
Buffalograss	<i>Bouteloua dactyloides</i>	Cody or Bison	3
Western Wheatgrass	<i>Pascopyrum smithii</i>	Recovery	3.21
Blue Grama	<i>Bouteloua gracilis</i>	Bad River or Birdseye	0.29
Green Needlegrass	<i>Nasella viridula</i>	LoDorm	1.3
Russian Wildrye	<i>Psathyrostachys juncea</i>	Bozoisky Select	1.68
Slender Wheatgrass	<i>Elymus trachycaulus</i>	San Luis or Revenue	0.99
Needleandthread	<i>Hesperostipa comata</i>	Colorado origin if possible	1.3
Alkali Sacaton	<i>Sporobolus airoides</i>	Colorado origin if possible	0.08
Sideoats Grama	<i>Bouteloua curtipendula</i>	Vaughn	0.51
Blue Grama	<i>Bouteloua gracilis</i>	Alma	0.07
Total Drill Rate			12.43

Note: The seed mix may be adjusted based on seed availability, seeding dates, or other variables.

The following amendments will be applied throughout the interim reclamation area:

- 1000 lbs. per acre of Mesa Verde brand humates.
- 500 lbs. per acre of Richlawn 3-6-3 organic fertilizer with mycorrhizae and humates.

Drill Seeding and Mulching

Seed application will be completed within 24 hours of seedbed preparation, weather permitting. The above seed mix will be drill seeded throughout the topsoil stockpile and interim reclamation area at 60° southwest to northeast to a minimum depth of 0.25 inches and maximum depth of 0.5 inches. Multiple passes will be completed along any narrow linear disturbances (access road, etc.) to reduce drill spacing and promote density. Seed and soil amendments will not be tilled into the soil profile.

Certified weed-free grass or wheat origin straw mulch will be uniformly applied at rate of 2,000 lbs./ per acre to cover 100% of the seed bed. Mulch will be properly anchored to the soil surface using a commercial straw crimper with a final orientation north to south on slopes less than 8% and on contour on greater slopes. Hydraulically applied tackifier/Ecomatrix BFM will be applied at a rate of 1,000 lbs./ per acre to sufficiently secure straw mulch through the first growing season on all slopes greater than 8%.

Site Stabilization and Stormwater Controls

Mulch and tackifier will be applied to stabilize soils, prevent erosion, and increase moisture retention to promote seed germination and establishment. Routine stormwater monitoring will evaluate stabilized and reclaimed surfaces; if erosive features are identified, additional erosion control measures will be deployed.

Fencing

Wildlife fencing with a height of 4 feet will be installed along the outer perimeter of the disturbance area during drilling and construction phases of operation. During interim

reclamation operations, wildlife fencing along the southern and eastern perimeters will be moved from the perimeters of the original disturbance to bound the permanent working surface.

Reclamation Monitoring Plan

The interim reclamation area will be routinely monitored for establishment of seeded grasses and undesirable and noxious weeds by Crestone personnel and contractors during operations and scheduled stormwater inspections. When the reclamation area vegetation cover achieves 70% of reference area cover required by the CDPHE General Construction Stormwater Permit final stabilization requirement [5], formal stormwater inspections will cease, though informal stormwater inspections will continue throughout the life of the Location.

Following stormwater permit closure, the Location will be incorporated into Crestone's long-term reclamation monitoring program. During this phase, Crestone personnel will continue routine monitoring and reclamation assessments. Any identified maintenance tasks relating to revegetation success, soil degradation/erosion, or weed establishment will be coordinated and completed by Crestone. Monitoring will continue until seeded areas establish uniform cover of native vegetation of at least 80% of pre-disturbance or reference area levels. At that time, an interim reclamation completion notice will be submitted via a Sundry Notice (Form 4) with associated photos and descriptions of reclamation procedures. The interim reclaim will continue to be monitored by Crestone throughout the life of the Location.

Invasive and Noxious Weed Management

Weeds will be mitigated on an as-needed basis via mowing operations when the height of noxious, undesirable, or invasive species exceeds 6 inches or before seed development. Herbicide applications will be utilized as needed to treat prostrate, low growing, or perennial noxious species for which mowing methods are ineffective. Herbicide applications will be spot-specific.

Site-Specific Interim Reclamation Best Management Practices (BMPs)

Landscape Evaluation and Description

- The surface water flow direction is to the northeast.
- Pre-existing drainages are present in the northeast section of the Location.
- The nearest receiving water is Box Elder Creek, located approximately 2.4 miles to the east. Box Elder Creek is a tributary to the South Platte River.

Erosion Control Measure Deployment

- Seeding and mulch application will be completed within 24 hours of seedbed preparation, weather permitting.
- The seed mix will be broadcasted and drill seeded throughout the interim reclamation area.
- All seed will be certified weed free and pure live seed (PLS) rated per federal, state, county, and municipal standards.

- Certified weed free grass or wheat origin straw mulch will be uniformly applied at rate of 2,000 lbs./ per acre to cover 100% of the seed bed.
- Mulch will be properly anchored to the soil surface using a commercial straw crimper with a final orientation south to north on slopes less than 8% and on contour on greater slopes.
- Hydraulically applied tackifier/Ecomatrix BFM will be applied at a rate of 1,000 lbs./ per acre to sufficiently secure straw mulch through the first growing season on slopes greater than 8%, stabilize soils and increase moisture retention, promote seed germination and establishment, and assist in erosion prevention.

Soil Management and Placement

- Topsoil horizon depth will be identified based on changes in physical characteristics.
- Topsoil will be separated from the disturbance area to the depth of the topsoil horizon.
- Salvaged topsoil will be stockpiled, seeded with cover crop grasses, and the location marked or documented.
- Topsoil will not be comingled with subsoil materials during recontouring and subsoil preparation operations.

Grading

- The grade of the interim reclamation area is between 0-3 percent.
- The surface elevation will be returned as close to the original relative position and contour as practicable during pad size reduction and grading operations.

Seeding Method

- Seeding will be completed with drill methods.

Weed Management

- Certified weed free grass or wheat origin straw will be utilized for mulching operations.
- Mowing operations will be commenced when the height of weeds exceeds 6 inches or before seed development.
- Herbicide applications will be utilized as needed to treat prostrate, low growing, or perennial noxious weed species for which mowing methods are ineffective.
- Herbicide applications will be spot-specific.

Pre-Disturbance Landscape Assessment

- A landscape assessment will be conducted prior to ground disturbance to ensure that the recontoured reclamation surface matches pre-disturbance grade and topography.
- Any preexisting drainage features will be reestablished during recontouring.

Site-Specific Seed Mix

- Reseeding will be completed with species consistent with the adjacent plant community.
- The selected seed mix and rate for this location is the Clayey Plains Grazing Seed Mix (see Seed Mix Table above).

- Crestone will consult with the surface owner regarding the planned seed mix.
- Seeding will occur throughout the interim reclamation area, topsoil stockpile, and at least 5 feet into the adjacent landscape.

Fence Installation

- A 4-foot-tall wildlife fence will be installed to mitigate wildlife access to the interim reclamation area.

This Plan summarizes interim reclamation standard operating procedures as well as information relevant to the reclamation project acquired from publicly available databases and records analyzed by Confluence. For additional information please contact Carolyn Craveiro de Sá, Reclamation Project Manager, at (720) 289-1631 or carolyn.craveiro@confluence-cc.com.

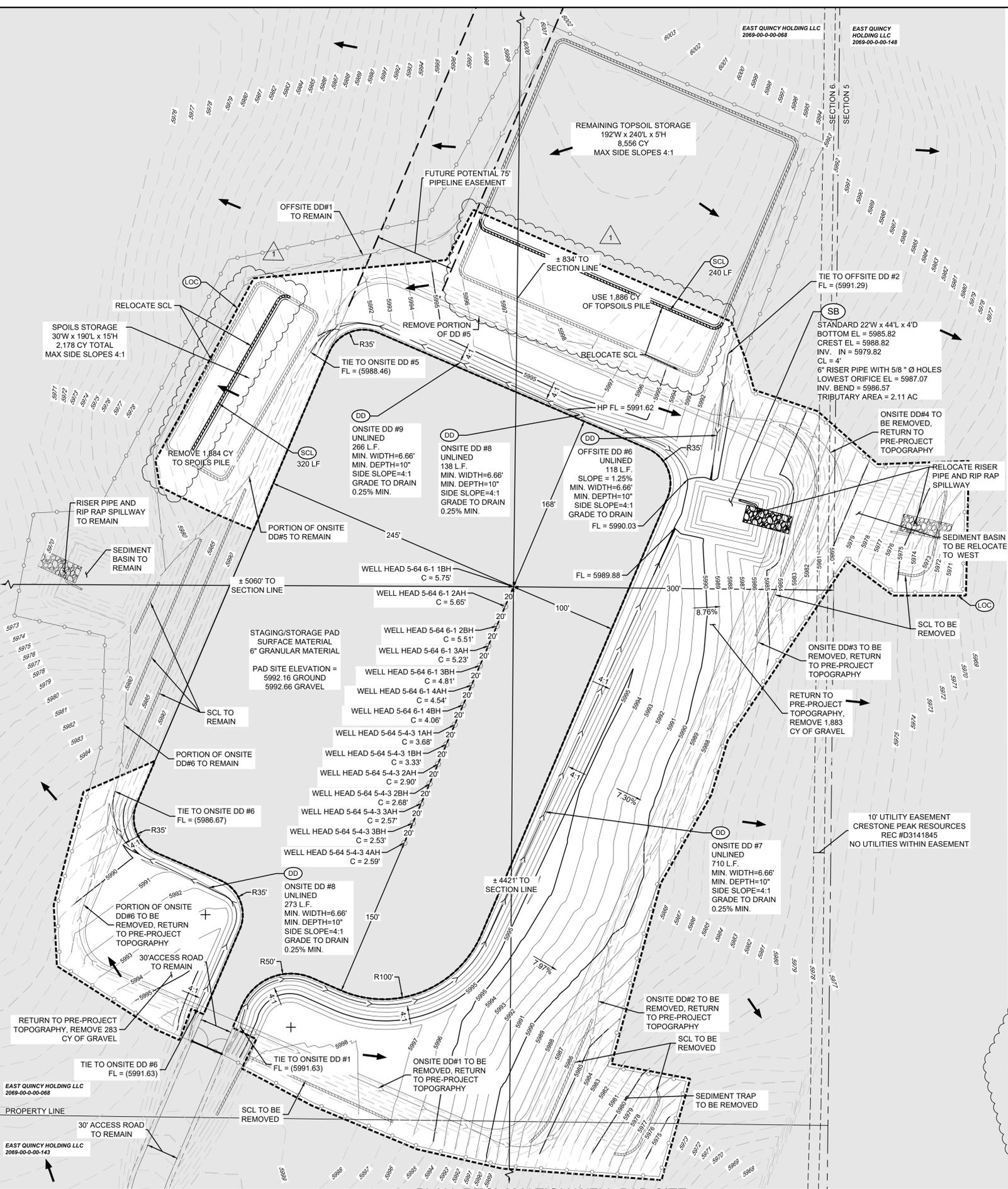
Sincerely,



Carolyn Craveiro de Sá
Reclamation Project Manager
720-289-1631
carolyn.craveiro@confluence-cc.com

Citations

1. United States Department of Agriculture. "Web Soil Survey." Soil Data Explorer, 2021, <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>. Accessed 03/03/2022.
2. National Weather Service. "Annual Climate Report." National Oceanic and Atmospheric Administration, 1 Jan. 2021, www.weather.gov/wrh/climate?wfo=gjt. Accessed 03/03/2022.
3. Colorado Parks and Wildlife, and Department Of Natural Resources. "State Wildlife Action Plan." State Wildlife Action Plan, 12 June 2015, cpw.state.co.us/aboutus/Pages/StateWildlifeActionPlan.aspx. Accessed 12/10/2021
4. Project and Program Support Staff, USDA-ARS Jornada Experimental Range, USDA Natural Resources Conservation Service, and New Mexico State University. "Ecological Site Descriptions". <https://edit.jornada.nmsu.edu/catalogs/esd>. Accessed 03/03/2022.
5. Colorado Department of Public Health & Environment. (2018, November 1). COR400000 Stormwater Discharge. CDPHE Home. <https://cdphe.colorado.gov/cor400000-stormwater-discharge>. Accessed 03/03/2022.



NOTES:

- SEE THE STANDARD NOTES AND DETAILS IN FIELD WIDE REPORT, REVISED APRIL 2019 (3 SHEETS) FOR ALL STANDARD DETAILS & ARAPAHOE COUNTY RULES AND REGULATIONS REGARDING STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES, NOTES AND LEGENDS OF BMP NAMES AND SYMBOLS.
- QUANTITIES:**
 - PAD SITE ELEVATION = 5991.96' (GROUND), 5992.46' (GRAVEL)
 - CUT SLOPES = 4:1
 - FILL SLOPES = 4:1
 - PHASE 1 RECLAMATION TOPSOIL = 1886 CY REPLACED, 7966 CY STOCKPILED
 - PHASE 1 RECLAMATION TOTAL CUT = 6221 CY
 - PHASE 1 RECLAMATION TOTAL FILL = 8389 CY (INCLUDES 10% ADJUSTMENT FOR COMPACTION)
 - PHASE 1 RECLAMATION GRAVEL REMOVED OFF-SITE = 2166 CY
 - PHASE 1 RECLAMATION SPOILS STOCKPILED = 1884 CY USED, 2178 CY STOCKPILED
 - PHASE 1 RECLAMATION TOTAL DISTURBED AREA = 5.23 ACRES
 - PHASE 1 RECLAMATION FENCED AREA = 9.54 ACRES
 - PHASE 1 RECLAMATION WORKING PAD SURFACE = 4.42 ACRES
 - PHASE 1 RECLAMATION GRAVEL PAD AREA = 4.42 ACRES
 - SIZE OF LOCATION AFTER INTERIM RECLAMATION = 9.54 ACRES
- ALL DIVERSION DITCHES ARE ANTICIPATED TO BE UNLINED.
- THE DIMENSION OF THE CRUSHED ROCK AROUND THE SEDIMENT BASIN RISER PIPE IS LARGER THAN THE HOLE DIAMETER.
- ALL BMP'S ARE INITIAL/INTERIM.

SOILS

EROSION POTENTIAL: USING THE US DEPARTMENT OF AGRICULTURE'S WEB SOIL SURVEY, TWO SOIL TYPES EXIST WITHIN THE PROJECT BOUNDARY. FONDIS - COLBY SILT LOAMS, 3 TO 5 PERCENT SLOPES (F0C), RENOHILL-LITTLE-THE DALYND COMPLEX, 9 TO 30 PERCENT SLOPES (R1E). THE SOILS LISTED ABOVE FALL INTO THE HYDROLOGIC CLASSIFICATION GROUP C AND D, WHICH HAVE A SLOW INFILTRATION RATE. THE K FACTOR INDICATES THE SUSCEPTIBILITY OF A SOIL TO SHEET AND RILL EROSION BY WATER AND VARIES FROM 0.02 (LOW SUSCEPTIBILITY) TO 0.69 (HIGH SUSCEPTIBILITY). THIS PROJECTS AREA'S SOIL HAS AN AVERAGE K OF 0.34.

TYPE OF GROUND COVER: RANGELAND.

APPROXIMATE PERCENTAGE OF VEGETATIVE GROUND COVER: 50%-70%.

DEWATERING

IF DEWATERING IS REQUIRED, A STATE CONSTRUCTION DEWATERING DISCHARGE PERMIT IS REQUIRED FOR DISCHARGES TO A STORM SEWER, CHANNEL, IRRIGATION DITCH, ANY STREET THAT IS TRIBUTARY TO THE MENTIONED FACILITIES, OR ANY WATER OF THE UNITED STATES.

DRAINAGE

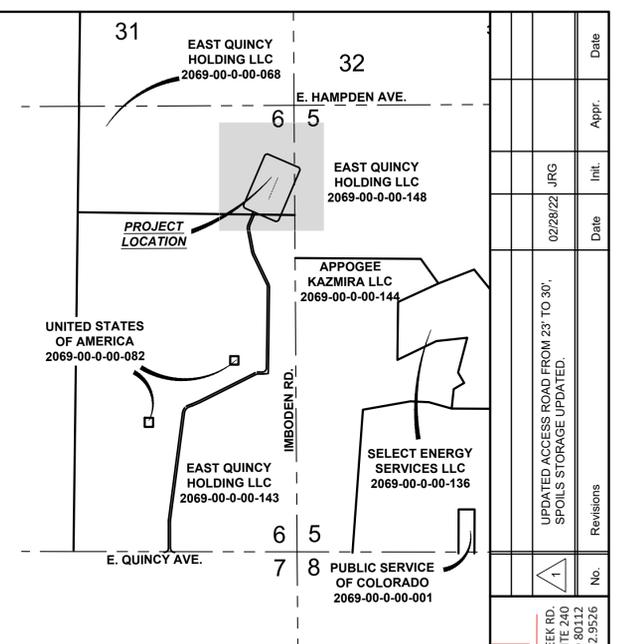
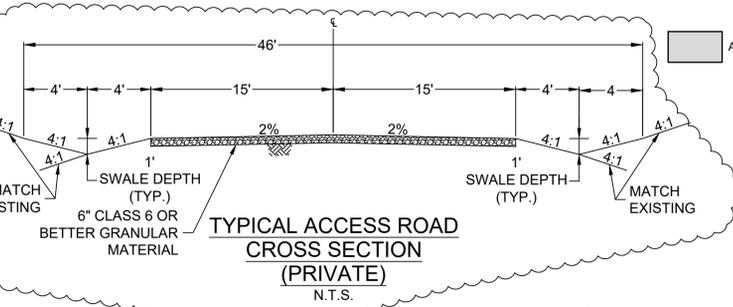
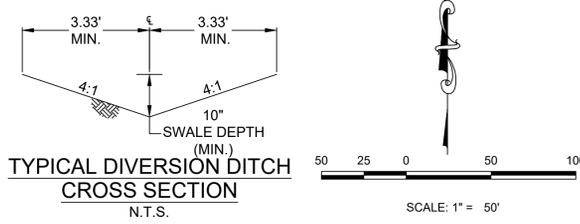
APPROXIMATE DRAINAGE PATTERNS: THE SITE LIES ON TOP OF A RIDGE AND DRAINS 2%-14% SLOPE EAST AND WEST.

RECEIVING WATERS/DRAINAGEWAY: THE PROJECT IS LOCATED WITHIN THE KERSTEN GULLY AND DEACON DRAW WATERSHED, WHICH ULTIMATELY DRAINS TO THE SOUTH PLATTE RIVER.

WETLANDS: THERE ARE NO WETLANDS WITHIN THE PROJECT LIMITS OF CONSTRUCTION.

SEDIMENT BASIN/TRAP: CALCULATIONS IN DRAINAGE LETTER.

DIVERSION DITCH CAPACITY: 2.39 CFS @ 0.25%



NO.	NO.	LEGEND
1	①	CBC CUT BACK CURB
2	①	CD CHECK DAM
3	①	CWA CONCRETE WASHOUT AREA
4	①	CF CONSTRUCTION FENCE
5	①	CM CONSTRUCTION MARKERS
6	①	CS CURB SOCK
7	①	DW DEWATERING
8	②	DD DIVERSION DITCH
9	②	ECB EROSION CONTROL BLANKET
10	②	GMS GROUT MIXING STATION
11	②	IP INLET PROTECTION
12	②	RCD REINFORCED CHECK DAM
13	②	RRB REINFORCED ROCK BERM
14	②	RRC RRB FOR CULVERT PROTECTION
15	②	SB SEDIMENT BASIN
16	③	SCL SEDIMENT CONTROL LOG
17	③	ST SEDIMENT TRAP
18	③	SM SEEDING AND MULCHING
19	③	SF SILT FENCE
20	③	SID SLOPE INTERCEPT DITCH
21	③	SSA STABILIZED STAGING AREA
22	④	SR SURFACE ROUGHENING
23	④	TSD TEMPORARY SLOPE DRAIN
24	④	TSC TEMPORARY STREAM CROSSING
25	④	VTC VEHICLE TRACKING CONTROL
26	④	WW VTC WITH WHEEL WASH
		LOC ROCK AND RIPRAP GRADATIONS LIMITS OF CONSTRUCTION
		*EG MAY MEET MAJOR MODIFICATION REQUIREMENTS

Westwood
10333 E DRY CREEK RD., SUITE 240
ENGLEWOOD, CO 80112
Westwoodops.com
Westwood Professional Services, Inc.
TEL: 720.482.9526

CRESTONE PEAK RESOURCES OPERATING LLC
ATTN: KATHY DENZER
34501 E. QUINCY AVE., BUILDING 1
WATKINS, CO 80137
PHONE: (720) 410-8519

ALAMOSA 5-64 6-1 1BH, 2AH, 2BH, 3AH, 3BH, 4AH, 4BH, 5-4-3 1AH, 1BH, 2AH, 2BH, 3AH, 3BH, 4AH
GESC PLANS
RECLAMATION INITIAL-INTERIM

SCALE: AS SHOWN
DRAWN BY: KRW
CHECKED BY: MEL
DATE: 04-28-21
FILE NO: 8.13.03.02822

CALL 811
TWO WORKING DAYS
BEFORE YOU DIG
1-800-922-1987