

Stormwater Management Plan – 304.c.(15)

Arco Deep 1-27 Oil and Gas Location

Loc ID #322539

December 2022



INTRODUCTION

TEP Rocky Mountain LLC (“TEP”) has developed the following Storm Water Management Plan as required by the Colorado Oil and Gas Conservation Commission (“COGCC”) Rule 304.c.(15) describing the general practices and procedures TEP’s stormwater management program employs during the development of an Oil and Gas Location. Additionally, this plan provides site specific stormwater management control measures that will be employed during development of the Arco Deep 1-27 pad to ensure compliance with COGCC, Colorado Department of Public Health and Environment (“CDPHE”), and Federal regulations.

TEP has developed a Field Wide Storm Water Management Plan (SWMP) in compliance with the CDPHE’s Colorado Discharge Permit System (CDPS) and to ensure conformance to the stormwater management standards under COGCC Rule 1002.f. The SWMP will identify possible pollutant sources that may contribute pollutants to stormwater and identify Best Management Practices (BMPs) that, when implemented, will reduce, or eliminate any possible water quality impacts. TEP has also developed a field wide Post-Construction Stormwater Management Plan (PC-SWMP) as required by COGCC Rule 1002.f.(3) to ensure that Best Management Practices (BMPs) are implemented on all subject oil and gas locations under its management where the Construction Storm Water permit issued by CDPHE has been terminated. The PC-SWMP identifies possible pollutant sources that may contribute pollutants to stormwater during the post-construction and reclamation phases of operations, and describes BMPs to control stormwater runoff in a manner that minimizes erosion, transport of sediment offsite, transport of pollutants offsite, or degradation of site conditions. Upon request by the COGCC or the director, TEP will provide the SWMP and / or PC-SWMP for review.

TEP is proposing to drill, complete, and operate sixteen (16) directional natural gas wells from the existing Arco Deep 1-27 pad located on private surface owned by Allen Kelton overlying Fee minerals. The Arco Deep 1-27 pad is an existing oil and gas location (COGCC Loc ID: 322539) with one (1) natural gas well producing from the underlying Fee lease. The existing oil and gas location is located on resource / rangeland within NW¼SE¼ of Section 27, Township 6 South, Range 97 West, 6th P.M., within Garfield County, Colorado.

The Arco Deep 1-27 pad will be reconstructed and expanded to accommodate the development of the sixteen (16) new proposed directional wells. The existing access road from Garfield County Road 215 will be used to access the existing oil and gas location. The existing access road will be rerouted near the existing pad entrance to maintain access to the oil and gas location following site construction. Development of the sixteen (16) proposed wells on the Arco Deep 1-27 pad will also require the construction of two (2) new pipelines, one to support gas gathering operations and the other to support transport of produced water. The MV 1-23 pad (COGCC Loc ID: 322524) will be utilized as a remote support facility during well completion operations associated with development of the proposed wells on the Arco Deep 1-27 pad.

Development Phases: Each phase of development requires the implementation and maintenance of both structural and non-structural stormwater management control measures used by TEP to effectively minimize site erosion and sediment transport. The following outlines the typical development phase which is described in greater detail below.

- 1) Pre-Construction Phase
- 2) Construction Phase (pad, road, and pipeline)
- 3) Interim Reclamation Phase
- 4) Final Reclamation Phase

Please see Appendix A, Construction Layout, and Appendix B, Interim Reclamation Layout, which depict preliminary site-specific stormwater control measures planned for installation at the Arco Deep 1-27 pad during both initial construction and interim reclamation of the oil and gas location.

SUPPLEMENTAL SITE INFORMATION

The Arco Deep 1-27 pad is an existing 4.79-acre oil and gas location that will be reconstructed and expanded to a 6.451-acre footprint to support drilling and completion operations of sixteen (16) proposed natural gas wells. The long-term disturbance of the Arco Deep 1-27 pad will be approximately 1.269-acres. Approximately 5.182-acres of the oil and gas location will be reclaimed following completion of well construction.

Soils: The National Resource Conservation Service (“NRCS”) identifies the dominate soil types within the boundary of the Arco Deep 1-27 pad as the Parachute-Rhone loam. The Parachute soil type is associated with colluvium over residuum weathered from sandstone and shale. The typical profile to a depth of 10 inches is defined as loam; 10-25 inches defined as very channery loam, and 25-59 inches defined as bedrock. The Rhone soil type is associated with colluvium over residuum weathered from sandstone and shale. The typical profile to a depth of 10 inches is defined as loam, 10-39 inches defined as channery loam, 39-55 inches defined as very channery loam, and 55-60 inches defined as bedrock.

The NRCS reports that these soils are classified, under the Uniform Soils Classification System, as inorganic silts (ML). These soils have a reported hydrologic group rating of C, having a slow infiltration rate when thoroughly wet. The infiltration rate is listed as low to moderately high ranging from 0.01 to 0.57 inches per hour. The NRCS lists the Flood Frequency Class for the facility location as “None”. “None” means that flooding is not probable, and the chance of flooding is nearly zero percent in any year.

NRCS reports that the Erosion factor K (whole soil) of 0.20 for the site, or low to moderately susceptible to erosion by water. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water. Stormwater BMPs will be implemented to control soil erosion.

Vegetation Description: The primary vegetation communities within the project area include mountain shrublands, sagebrush shrublands, and aspen woodlands. A comprehensive list of common plant species within the project area can be found in the Biological Survey Report attached to the Form 2A. Since the Arco Deep 1-27 pad is an existing oil and gas location, a pre-disturbance vegetation cover evaluation would not provide an accurate assessment of vegetation cover at the site. However, a vegetation assessment was completed for the reference area, which determined that present cover for pre-disturbance conditions are approximately 92%. Please see the vegetation assessment included in the Biological Survey for additional details.

Weed Infestations: WestWater Engineering (“WestWater”) conducted a biological survey which included a survey for weeds within the project area. WestWater identified several noxious weed infestations within the project area including State Listed B and C noxious weeds. Please see the Biological Survey Report attached to the Form 2A for additional detail on noxious weeds, including a list of the noxious weed observed within the project area.

Non-Stormwater Discharges: Non-stormwater discharges are limited to application of fresh water along the existing access road and well pad. Excavation activities associated with the proposed activities are not

expected to impact groundwater. However, ground water encountered during excavation will be addressed in accordance with Federal and State regulations.

Receiving Water: Conn Creek, a perennial stream which is located south and west of the Oil and Gas Location approximately 3.75 miles, is the nearest perennial stream downgradient of the Arco Deep 1-27 pad. Two (2) other unnamed intermittent drainages are located south and northwest of the Oil and Gas Location approximately 230 feet and 305 feet respectively. Stormwater control measure described below will minimize the potential for impacts to surface water features.

STORMWATER MANAGEMENT CONTROL MEASURES

Potential Pollution Sources and Locations: Stormwater management control measures will be implemented to minimize the potential for pollution. The following potential pollution source have been identified as part of planned activities on the Arco Deep 1-27 pad:

1) Transport of chemicals and materials, including loading and unloading operations

Spill prevention during loading and unloading is outlined in TEP's Piceance Basin Spill Prevention and Response Plan ("SPRP") and Integrated Spill Prevention, Control, and Countermeasures ("SPCC") Plan. TEP complies with applicable DOT requirements when transporting chemicals and materials to oil and gas locations.

2) Vehicle/equipment fueling

Equipment is only fueled in designated fueling areas. Proper storage and transport of fuels is described below.

3) Outdoor storage activities, including those for chemicals and additives

Material or chemicals brought to or produced on the oil and gas location will be handled properly using good housekeeping practices. TEP's SPCC and SPRP plans address storage and handling procedures including guidelines for materials handling, storage container labeling, elevation, sealing, covering, securing, and secondary containment, as described below.

4) Produced water and drilling fluids storage

Guidelines for storing produced water, drilling fluids, fuels, and chemicals include the following.

- All containers will be clearly labeled.
- Dry materials will be stored on pallets and covered when not in use to avoid contact with precipitation, stormwater, and wind.
- Potentially hazardous liquid materials in buckets, drums or tanks will be stored within secondary containment, such as soil berms, steel containers or bermed visqueen, to capture accidental spills or leaks. Drums will be kept off the ground within secondary containment and stored under cover, if needed. The berms shall be constructed such that they are sufficiently impervious to prevent the material from being released beyond the confines of the containment system.
- Fuel tanks will be stored within secondary containment.
- Container lids will be securely fastened.
- In the event of a spill, procedures outlined in TEP's SPRP will be followed. Persons trained in handling spills will be available.

- Spill clean-up and containment materials (absorbent, shovels, etc.) will be readily accessible. Spills will be immediately cleaned up and contaminated materials will be properly stored on site until they can be disposed of in accordance with applicable regulations.
- Storage areas and containers will be monitored for leaks and repaired or replaced as necessary. Storage areas will be inspected regularly, and any minor spills or leaks will be cleaned up immediately.
- As necessary, covers and stormwater diversion structures will be utilized to minimize contact of precipitation and stormwater runoff with materials and wastes with potential to result in discharges causing pollution of surface waters.
- TEP's SPRP will be readily available at the field office as a reference to assist in responding to spills at locations where materials are stored or handled.
- Material Safety Data Sheets (MSDS) and product labels will be available as per TEP's Hazard Communications (HazCom) program.
- Employees will have proper training in materials handling, spill prevention and response.

5) Outdoor processing activities and machinery

A variety of operating equipment will be utilized at the Oil and Gas Location for production, storage and transmission purposes. Equipment is inspected regularly to ensure it is operating properly and that no fluid leaks or spills are evident. Any leaks or problems with equipment will be identified and repaired immediately. Leaked or spilled fluids will be cleaned up promptly in accordance with TEP's Spill Response Plan (SPRP).

Routine equipment maintenance will be performed on-site. Any waste product from maintenance will be containerized and transported off site for proper disposal or recycling. There will be no major equipment overhauls conducted on site. Equipment will be transported off site for major overhauls.

6) Significant dust or particulate generating processes

Dust generation may occur from site construction, vehicle traffic, and high winds. Dust suppression will be performed on an as needed basis to minimize the potential for fugitive dust. Please see the Dust Mitigation Plan attached to the Form 2A for specific details on dust suppression methods.

7) Erosion and vehicle tracking from well pads, road surfaces, and pipelines;

To prevent vehicle tracking, stabilized construction entrances may be utilized as necessary to prevent tracked mud and dust from leaving a disturbed area. The use of stabilized construction entrances removes mud and sediment from the vehicle's wheels and offsite transport of soil is reduced.

Control measures will be established during site construction to prevent erosion and transport of sediment off the oil and gas location. Control measures will include structural items such as diversion ditches, wattles, strawbales, sediment traps, water bars, and matting, as well as non-structural items such as timing of ground disturbance activities and dust control measures. Guidelines regarding the selection, installation or implementation, and maintenance of control measures are detailed in TEP's Stormwater Manual.

8) Waste disposal practices

Proper waste handling practices will be implemented at the Oil and Gas Location. All materials no longer needed for operations will be removed from the site and re-used or disposed of properly. Wastes will be temporarily stored in sealed containers and regularly collected and disposed of at off-site, suitable facilities.

Regular disposal for garbage, rubbish, construction wastes, and sanitary waste will be maintained during operations. Please see the Waste Management Plan attached to the Form 2A for additional details on waste disposal practices.

9) *Leaks and spills*

Leaks and spills will be handled according to TEP's SPCC Plan and SPRP. Appropriate TEP personnel are trained on the requirements of these plans during new hire training and then annually thereafter during employment. If a spill occurs, contractors are instructed to notify their TEP point of contact immediately. If the spill or leak can be safely stopped, employees or contractors should do so. The spill should be contained and resources for spill cleanup employed as described in the SPRP.

In case of a liquid leak or spill, such as produced water or hydrocarbon product, containment strategies will be implemented to control the release. Containment strategies include, but are not limited to, utilization of spill kits, creation of diversion ditches and containment berms, installation of check dams or headgates, and removal of free liquid by vacuum truck. Contaminated soils and materials will be land farmed within bermed areas on site or will be properly stored in sealed containers until removed for proper disposal.

In case of a dry material spill or leak, the affected soil will be land farmed within bermed areas on site, if appropriate, or removed and temporarily stored in a sealed container until removed for proper disposal. If a spill occurs, prompt cleanup is required to minimize any commingling of materials with stormwater runoff.

10) *Ground-disturbing maintenance activities.*

If ground disturbing maintenance activities are necessary, activities will be evaluated by TEP personnel to determine the following: First, whether the scope of activities merits returning to coverage under the CDPHE Construction Stormwater Permit, or if the activities can occur under the Post-Construction Stormwater Plan; and second, whether additional control measures need to be implemented to prevent erosion before, during, or after the maintenance activities. Control measures will be selected and implemented based on the guidelines provides in TEP's Stormwater Manual.

Pollution Prevention: Structural and non-structural control measures will be implemented at the oil and gas location to control stormwater and sediment erosion. The following outlines the planned structural and non-structural control measures slated for use at the Oil and Gas Location:

- 1) Structural Control Measures:
 - a. Wattles
 - b. Culvert Inlet and Outlet Protection
- 2) Non-structural Control Measures:
 - a. Minimizing surface disturbance by utilization of off-site support facilities
 - b. Sediment Catchment Basins
 - c. Diversion Ditches
 - d. Surface Roughening
 - e. Seeding and Mulching
 - f. Proper scheduling of construction activities

Erosion Controls: The Oil and Gas Location and existing access road will be unpaved. To prevent erosion from unpaved surfaces, TEP will apply gravel in sufficient quantities to minimize erosion potential. Hydro-mulch will be applied to the cut and fill slopes of the Oil and Gas Location and the associated stockpiles

following site construction to minimize erosion potential. Once interim reclamation of the Oil and Gas Location is complete, seed and mulch will be applied to the reclaimed cut and fill slopes.

Vehicle Tracking Control: Construction sites may use vehicle tracking controls to mitigate the transport of mud/sediment adhering to vehicle tires prior to leaving the site and entering the adjacent asphalt and/or public roadways, or areas where vehicle tracking occurs shall have measures in place that contain or filter flows in order to prevent the bypass of flows without treatment. If needed, access roads may be stabilized with base course or gravel to reduce erosion, and street sweeping will be utilized to removed tracked sediment on paved roads, when necessary.

Management of Waste Materials: Locations will be maintained in a clean and orderly fashion to minimize the potential for spills, leaks, stormwater contamination, and safety hazards. Housekeeping will consist of neat and orderly storage of materials and containerized fluids. Wastes will be temporarily stored in sealed containers and regularly collected and disposed of at approved off-site disposal facilities.

Contractors and employees will maintain, as necessary, an equipment storage (lay down) or staging area for equipment and materials storage at each site. These areas will be maintained with good housekeeping and will be inspected regularly for spills, leaks, and potential contamination.

Construction trash and debris (i.e., non-hazardous solid waste) will be collected in containers and hauled off-site for disposal at an approved disposal facility. Sanitary waste will be containerized in portable toilets or other storage tanks with waste materials regularly pumped and transported off-site for disposal at approved facilities.

Drill cuttings will be managed on location within a bermed cuttings trench. Stormwater run-on that enters the cuttings trench will be pumped out and properly disposed. Drill cuttings will be sampled for compliance with Table 915-1 and will be buried on location within the cuttings trench / cut slope of the oil and gas location. Please see the Waste Management Plan attached to the Form 2A for additional details on drill cuttings management.

SITE-SPECIFIC CONSTRUCTION AND STORMWATER CONTROL MEASURES

The Arco Deep 1-27 pad will be reconstructed and slightly expanded to accommodate the development of the sixteen (16) new proposed natural gas wells. Site-specific stormwater control measures are depicted on Appendix A, Construction Layout Drawing, and include diversion ditches, sediment basins, wattles, surface roughening, application of mulch, and application of gravel. Additional stormwater control measures may be considered during site construction. The existing access road from Garfield County Road 215 will continue to be used to access the Oil and Gas Location. The existing access road / lease road is approximate 11.25 mile in length.

To support the increase in production volume from the Arco Deep 1-27 pad, TEP will install one (1) eight-inch (8") coated steel natural gas pipeline (approx. 8,513 feet) from the proposed separator on the Arco Deep 1-27 pad to the existing eight-inch (8") natural gas pipeline tie-in point, located in the SW $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 23, Township 6 South, Range 97 West, 6th P.M. The proposed natural gas pipeline will be installed following the proposed / existing access road to the Kelton / Laramie property boundary where it will deviate cross county following the property boundary across private property owned by Allen Kelton, and Puckett Land Company to the proposed tie-in with the existing eight-inch (8") natural gas pipeline. A valve set will be installed at the tie-in location to support pipeline maintenance activities.

TEP will install one (1) six-inch (6") Flexpipe or Coreline produced water pipeline (approx. 8,180 feet) from the proposed produced water pump on the Arco Deep 1-27 pad to the tie-in point with the existing

water-pipeline located in the SW¹/₄NW¹/₄ of Section 23, Township 6 South, Range 97 West, 6th P.M. TEP would install several on-location flowlines to support onsite production operations.

The proposed off-location pipelines will be installed within a fifty-foot (50') pipeline Right-of-Way located on private property.

Prior to initial pad construction, TEP will have the proposed pad location and pipeline corridors staked for construction and will hold a pre-construction onsite with the excavation and stormwater contractors to review proposed site construction. TEP's stormwater management contractor will review the preliminary erosion control plan and determine if any additional control measures are needed. Any new control measures implemented because of this review or requested by the surface owner will be documented as required by Federal and/or State regulations.

TEP's stormwater contractor will then oversee the installation of stormwater control measures (i.e. wattles, straw bales, etc.) along the outer perimeter of the proposed disturbance boundary. TEP's construction contractor will then begin removal of existing vegetation within the disturbance footprint by hydro-axing or brush hogging the trees or larger bushes within the project disturbance boundary. Stormwater control measures, such as sediment traps and diversion ditches, will then be installed along the perimeter of the site prior to pad excavation.

Topsoil horizon or the top six inches (6") of soil within the pad disturbance footprint will then be stripped and stockpiled along the south side of the oil and gas location. Topsoil will be segregated from all other subsurface materials at the site and wattles will be placed around the perimeter of the stockpile to prevent migration of organic materials from the stockpile.

Excavation of the pad will then commence and will be constructed based on the Appendix A, Construction Layout Drawing. A perimeter berm will be constructed around the fill side of the pad location and around the cuttings trench. A drive over berm will be constructed at the pad entrance.

The proposed production equipment, on-location flowlines, and well conductors will then be installed. The area beneath the proposed rig footprint, approximately forty feet (40') from the proposed cellar, will be compacted to ensure stability of the rig during drilling operations. The pad working surface will be bladed level and graveled.

The cut and fill slopes, excess stockpile, and topsoil stockpile will be hydro-mulched following completion of pad construction to minimize the potential for site degradation during the initial drilling and well completion phase of the project.

Interim reclamation of the oil and gas location will occur following completion of well construction. Stormwater control measures will be implemented during interim reclamation and will include diversion ditches, sediment traps, surfacing materials (as needed), and application of seed and mulch. Additional control measure may be implemented as needed to prevent off-site migration of sediment and pollutants. Stormwater control measure planned for interim reclamation are depicted on Appendix B, Interim Reclamation Layout Drawing.

STORMWATER MANAGEMENT PROGRAM

Oil and gas operation generally require major ground disturbing activities which may include construction of oil and / or natural gas well pad, access roads, natural gas pipelines, produced water pipelines or off-location flowlines, compressor stations, centralized exploration and production waste management facilities, compressor stations, and other support facilities. All construction activities will follow standard construction and engineering protocols and procedures, and the appropriate stormwater runoff, erosion, and

sediment control measures will be used to minimize the impact of earth ground disturbing activities. The following sections describe the relationship between the phases of construction and the implementation and maintenance of both structural and non-structural stormwater management control measures used by TEP to effectively minimize site erosion and sediment transport.

Pre-construction Phase

Preliminary site assessments are made for site planning and management (e.g., well pad dimensions, access roads, pipeline routes, etc.) and to determine needed site-specific control measures, pre-construction vegetative cover, existing drainages/outfalls, soil types, and other site-specific considerations prior to site excavation. These features are incorporated into site specific stormwater plans and are used to develop, implement, maintain, and update/revise the SWMP.

Prior to initial construction activities or ground disturbance, stormwater control measures shall be implemented at construction sites to control erosion (i.e., sequencing of construction activities, surface roughening, etc.) and sediment (i.e., stabilized construction entrances, temporary berms, diversion ditches, etc.), and to protect existing vegetation outside the perimeter of the construction site.

Construction Phase

Upon completion of pre-construction site assessments and related SWMP management (i.e., development, implementation, maintenance, updates/revisions), construction activities are scheduled or phased to control erosion and sediment and all potential pollutant sources at project sites, and to protect existing vegetation. Construction activities for the exploration and production of natural gas typically follow this general order of operation:

- 1) Installation of perimeter sediment control measures around the proposed site disturbance including material stockpiles to ensure adequate protection for surface waters and / or wetland areas adjacent to, or downgradient of the construction site (i.e. well pad, access road, pipeline corridor, utilities);
- 2) Preservation of existing vegetation adjacent to construction activities, or where feasible;
- 3) Clearing and grubbing of site vegetation;
- 4) Preserving topsoil by stripping and placing topsoil within designated areas along the perimeter of the construction site;
- 5) Site construction includes excavation of cut and fill slope of the proposed access road and well pad, excavation of pipeline right-of-way, installation of utility lines and site facilities, and other ground disturbance activities;
- 6) Implementation of interior erosion and sediment control measures as described in the SWMP (i.e. diversion ditches, sediment traps, surface roughening, mulching, wattles, riprap, culverts, etc.);
- 7) Development of oil and natural gas wells through planned drilling and completion operations;
- 8) Installation and operation of production facilities (if not completed before D&C operations);
- 9) Stormwater control measure management and reporting, including daily or bi-weekly inspection depending on phase of construction.

Interim Reclamation

Disturbed areas affected by construction, drilling, completion, and/or production operations not required for long-term production operations will be temporarily stabilized after construction is complete. Interim reclamation will be initiated for areas of well pad surfaces, access roads, pipelines, etc. not needed for long-term production operations. Surfaces required for the operation of production facilities will be maintained until wells are no longer productive (approximately 30 years). The following measures may be used for

interim reclamation to control stormwater runoff, minimize erosion and the transport of sediment off-site, and to control site degradation:

- 1) Managing debris and waste materials (i.e., well completion and drilling materials, drill pipe, excess materials and equipment, etc.) in accordance with TEP guidelines and regulatory requirements;
- 2) Closing drilling pits, cuttings trenches, and / or management areas per COGCC regulations and re-contouring disturbances to eliminate the potential for stormwater ponding;
- 3) Grading the construction site to reduce the working pad surface to approximately one-quarter ($\frac{1}{4}$) of an acre or the area required for long-term production operations;
- 4) Cross-ripping disturbed areas compacted by oil and gas operations which are no longer needed following completion of such operations to alleviate compaction;
- 5) Stabilizing unpaved access roads with base course or gravel to minimize erosion, and implementing permanent erosion control measures (e.g., permanent vegetation, erosion control blanket, retaining walls, etc.) for adjacent slopes or ditches;
- 6) Installing water bars and supplemental control measures on slopes greater than 20%, as needed;
- 7) Installing rock check dams, or equivalent structures, in drainage channels susceptible to erosion;
- 8) Seeding ripped or harrowed ground disturbances with an appropriate seed mix and using stockpiled topsoil for areas of the site that will utilize vegetative final stabilization measures; and
- 9) Monthly inspection schedule for $< 70\%$ pre-disturbance vegetation cover. Annual inspection schedule for $\geq 70\%$ pre-disturbance vegetation cover.

When construction of well pads, pipelines, access roads, and other production facilities are complete, interim reclamation activities will be initiated. Sites located on cropland will be reclaimed in accordance with COGCC regulations and private landowner requirements. All other sites will be reclaimed in the interim using measures described above, taking into consideration the natural landscape of the surrounding undisturbed area, disturbed surface slopes, and the proximity of the site to drainages and surface waters. Please see the Reclamation Plan attached to the Form 2A for further details on site reclamation.

Final Reclamation

TEP's final reclamation phase of construction aligns with industry and regulatory standards and regulations for reclaiming lands affected by oil and natural gas construction activities and operations. Structural and/or non-structural control measures will be implemented to effectively minimize erosion, sediment transport, and the release of other pollutants at the completion of final reclamation construction activities. Final reclamation of disturbed surfaces at sites may be accomplished with the following sequence of construction activities:

- 1) Plugging and abandoning of wells which are no longer producing;
- 2) Removal of any remaining production equipment, pipeline riser, and debris from the site, and backfilling remaining pits and boreholes used for production operations;
- 3) Recontouring the site to approximate pre-construction contours as practicable, per COGCC regulations, landowner agreements, or land management agency requirements;
- 4) Closing, grading, and re-contouring access roads, and removing culverts;
- 5) Alleviating compaction where necessary per COGCC requirements;
- 6) Replacing stockpiled topsoil over the site and preparing the surface for seeding by disking or ripping; and
- 7) Application of approved seed mix using appropriate application method (hydro-seed, drill seed, or broadcast seed), and covering with mulch to prevent sediment erosion and promoting growth of desirable vegetation.

Sediment and erosion control measures at the site will be maintained or modified as needed until final reclamation of disturbed areas has been completed. Site-specific maps shall be updated to reflect field conditions post-construction.

Restoration control measures, including vegetation, have been designed and will be installed as permanent features. When the surface of the land has been restored (as nearly as practicable) to its condition at the commencement of construction activities all temporary non-biodegradable control measures shall be removed from the site.

INSPECTION AND MAINTENANCE

All TEP internal site inspections are conducted in accordance with State Permit regulations and represent the minimum inspection schedule for construction sites in the Piceance Fields (at least once every 14 calendar days). More frequent inspections are often conducted on active construction sites in accordance with project needs and communication with TEP's SWMP Administrator, Construction Superintendent, and onsite contractors. Internal inspections are conducted by a TEP appointed third party Qualified Stormwater Manager (QSM).

At a minimum, the following shall be evaluated during each inspection for evidence of, or the potential for, pollutants leaving construction site boundaries; entering a stormwater drainage system; or discharging to State waters:

- 1) construction site perimeter;
- 2) all disturbed areas;
- 3) designated haul routes;
- 4) material and waste storage areas exposed to precipitation;
- 5) locations where stormwater has the potential to discharge off-site; and
- 6) locations where vehicles exit the site.

All erosion and sediment control measures identified at the site are evaluated to ensure that they are maintained and operating correctly.

Inspection Requirements:

- 1) Visually verify whether all implemented control measures (CMs) are in effective operational condition and are working as designed in their specifications to minimize pollutant discharges.
- 2) Determine if there are new potential sources of pollutants.
- 3) Assess the adequacy of CMs at the site to identify areas requiring new or modified control measures to minimize pollutant discharges.
- 4) Identify all areas of non-compliance with the Permit requirements and, if necessary, implement corrective action/work order.

BEST MANAGEMENT PRACTICES

The following Best Management Practices for stormwater management will be utilized during development of the Arco Deep 1-27 Oil and Gas Location:

- 1) Stormwater control measures will be in place during all phases of development to control stormwater runoff in a manner that minimizes erosion, transportation of sediment offsite, and site degradation.
- 2) Stormwater control measures will include perimeter controls and site degradation control measures; these will include a minimum 1.5-foot compacted earthen perimeter berm around the

entire working pad surface and around the cuttings trench near the north side of the well pad; topsoil will be stockpiled near the north end of the location within the disturbance area and segregated from all subsurface material; there will be a system of exterior diversion ditches around the entire oil and gas location; these diversion ditches will be fitted with rock check dams and will tie into three (3) sediment catchment basins along the west and south side of oil and gas location; site degradation control measures will include grading, slope stabilization (seeding, mulching, surface roughening of the topsoil stockpile), straw wattles along the toe of all fill slopes, and the use of gravel and road base materials for surfacing; wattles will be placed around the entire perimeter of the topsoil stockpile to minimize potential for loss of organic materials.

- 3) Outlet protection should be used when a conveyance discharges onto a disturbed area where there is potential for accelerated erosion due to concentrated flow;
- 4) TEP will conduct stormwater inspections immediately after storm events;
- 5) Bi-weekly inspection of the pad and stormwater control measures (berms, ditches, sediment basins), and the cuttings trench (berms and precipitation buildup). When necessary, precipitation within the cuttings trench will be pumped out and sent into the TEP proposed produced water management system for disposal.
- 6) Documentation / Stormwater Management Plan – if it is infeasible to install or repair a control measure immediately after discovering a deficiency, TEP will document and keep on record in the stormwater management plan: (a) a description of why it is infeasible to initiate the installation or repair immediately; and (b) a schedule for installing or repairing the control measure and returning it to an effective operating condition as soon as possible.
- 7) A post-construction stormwater program will be developed for the facility as required per Rule 1002.f.(3). Stormwater control is also addressed under a field-wide Stormwater Management Plan.

APPENDIX A
ARCO DEEP 1-27 DRILL PAD
CONSTRUCTION LAYOUT DRAWING
PLAN VIEW & CROSS SECTION

GENERAL NOTES

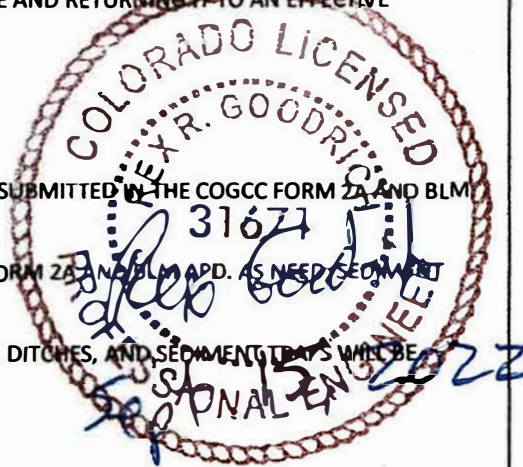
1. THE ARCO DEEP 1-27 WELL PAD PROJECT CONSISTS OF APPROXIMATELY 6.45 ACRES OF DISTURBANCE WHICH WILL BE COVERED UNDER TERRA ENERGY PARTNERS' (TEP) ACTIVE COLORADO DISCHARGE PERMIT SYSTEM (CDPS)GENERAL PERMIT COR400000 FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
2. TEP MAINTAINS A FIELD WIDE STORMWATER MANAGEMENT PLAN (SWMP) FOR THE PICEANCE BASIN ASSET TO MAINTAIN COMPLIANCE WITH ALL ACTIVE COR400000 STORMWATER PERMITS. THIS SWMP HAS BEEN PREPARED IN ACCORDANCE WITH GOOD ENGINEERING, HYDROLOGIC AND POLLUTION CONTROL PRACTICES TO MEET THE REQUIREMENTS OF THE COR400000 CONSTRUCTION STORMWATER PERMIT AND COGCC RULE 1002.f.(2). THIS FIELD WIDE SWMP WILL BE IMPLEMENTED AT THE ARCO DEEP 1-27.
3. AS DEFINED IN THE CDPHE COR400000 PERMIT, GOOD ENGINEERING, HYDROLOGIC AND POLLUTION CONTROL PRACTICES: ARE METHODS, PROCEDURES, AND PRACTICES THAT: A. ARE BASED ON BASIC SCIENTIFIC FACT(S). B. REFLECT BEST INDUSTRY PRACTICES AND STANDARDS. C. ARE APPROPRIATE FOR THE CONDITIONS AND POLLUTANT SOURCES. D. PROVIDE APPROPRIATE SOLUTIONS TO MEET THE ASSOCIATED PERMIT REQUIREMENTS, INCLUDING PRACTICE BASED EFFLUENT LIMITS.
4. ALL EARTHWORK, CUTTING/FILLING, AND COMPACTION SHALL BE PERFORMED IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND THE PROJECT GEOTECHNICAL ENGINEER'S RECOMMENDATIONS; AND ALL EARTHWORK, SITE PREPARATION, AND QUALITY CONTROL TESTING SHALL BE DONE IN ACCORDANCE WITH RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER. TEP SHALL BE RESPONSIBLE FOR COORDINATING AND SCHEDULING TESTING.
5. IN THE EVENT THAT GROUNDWATER IS ENCOUNTERED DURING CONSTRUCTION ACTIVITIES, TEP SHALL PERFORM, AS NEEDED, DEWATERING MEASURES IN ACCORDANCE WITH STATE PERMIT STANDARDS AND REQUIREMENTS.
6. IN THE EVENT THAT CONTAMINATED SOIL AND/OR GROUNDWATER ARE ENCOUNTERED DURING CONSTRUCTION ACTIVITIES, THE EARTHWORK CONTRACTOR MUST NOTIFIY TEP STAFF: ENVIRONMENTAL STAFF OF ANY CONTAMINATED SOILS ENCOUNTERED, AND TEP WILL COORDINATE WITH AN APPROPRIATE SPILL RESPONSE CONTRACTOR FOR ANY SAMPLING, WASTE MANAGEMENT, AND DISPOSAL OF CONTAMINATED MEDIA.

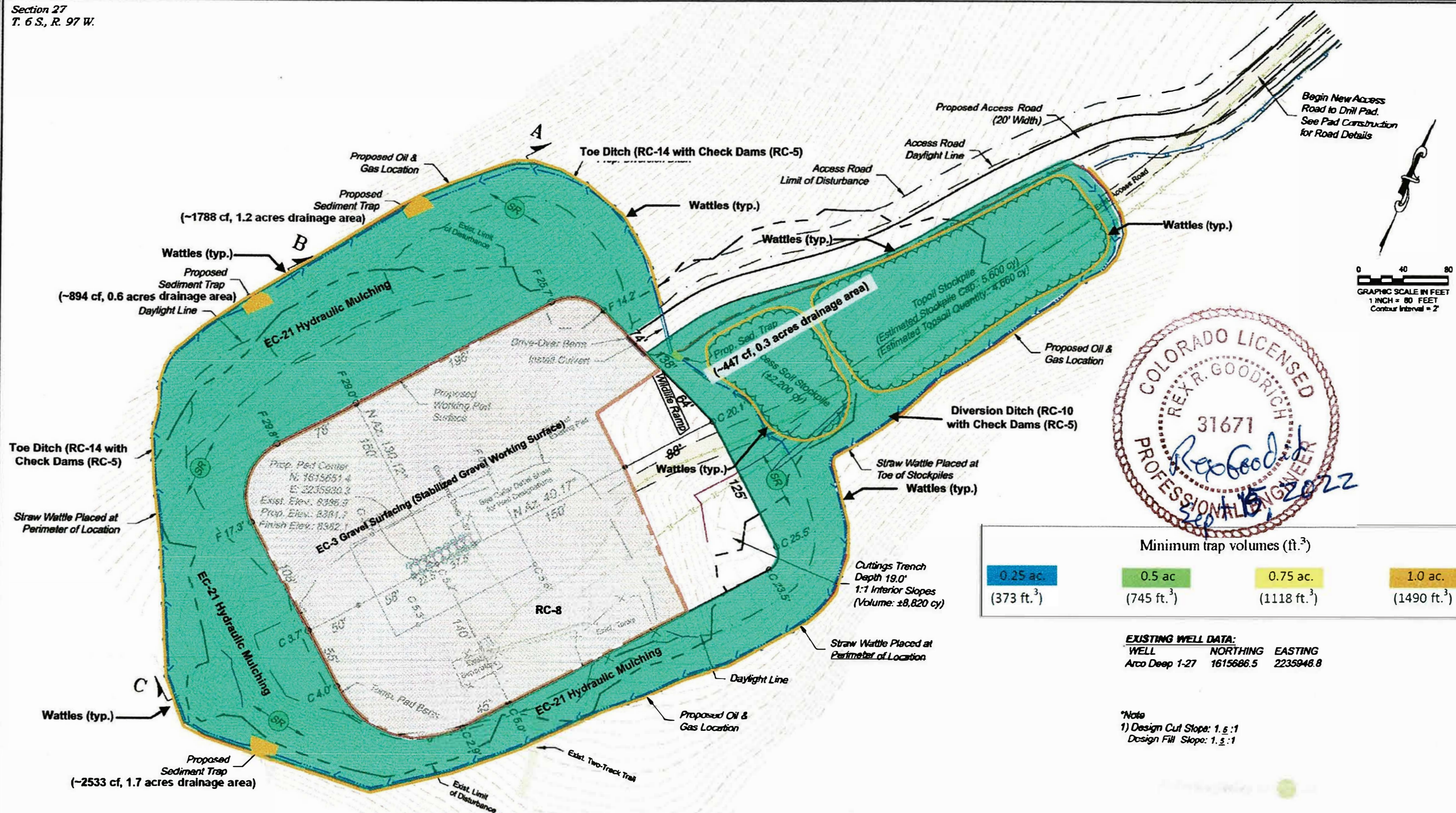
SEDIMENT AND EROSION CONTROL MEASURES

7. TERRA ENERGY PARTNERS (TEP) SHALL ASSUME RESPONSIBILITY FOR CONTROLLING EROSION AND SEDIMENTATION WITHIN THE PROJECT AREA DURING AND AFTER CONSTRUCTION ACTIVITIES. TEP WILL FOLLOW RULES AND REGULATIONS ESTABLISHED BY THE STATE OF COLORADO'S CONSTRUCTION STORMWATER PERMIT (COR400000), AND THE COLORADO OIL AND GAS CONSERVATION COMMISSION (COGCC). TEP'S MOST CURRENT PICEANCE BASIN STORMWATER MANAGEMENT PLAN SHALL BE IMPLEMENTED TO PROVIDE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES UNTIL THE REQUIRED NATIVE VEGETATION GROUND COVER HAS BEEN RE-ESTABLISHED PER STATE REQUIREMENTS. THE PROJECT EROSION CONTROL PLAN (SITE MAP) WILL SHOW THE LOCATION OF ALL EROSION AND SEDIMENT CONTROL MEASURES.
8. IN ADDITION TO COMPLYING WITH THE COLORADO DEPARTMENT OF PUBLIC HEALTH'S COR400000 CONSTRUCTION STORMWATER PERMIT, TEP'S CONSTRUCTION STORMWATER MANAGEMENT PROGRAM SHALL COMPLY WITH COGCC RULE 1002.f.(2) WHICH STATES "OIL AND GAS OPERATORS SHALL IMPLEMENT AND MAINTAINING BEST MANAGEMENT PRACTICES (BMPs) AT ALL OIL AND GAS LOCATIONS TO CONTROL STORMWATER RUNOFF IN A MANNER THAT MINIMIZES EROSION, TRANSPORT OF SEDIMENT OFFSITE, AND SITE DEGRADATION".
9. TEP SHALL INSPECT ALL SEDIMENT AND EROSION CONTROL MEASURES AND GENERAL SITE CONDITIONS AT LEAST ONCE EVERY 14 CALENDAR DAYS. POST-STORM EVENT INSPECTIONS WILL BE CONDUCTED WITHIN 24 HOURS AFTER THE END OF ANY PRECIPITATION OR SNOWMELT EVENT THAT CAUSES SURFACE EROSION. IF NO CONSTRUCTION ACTIVITIES WILL OCCUR FOLLOWING A STORM EVENT, POST-STORM EVENT INSPECTIONS SHALL BE CONDUCTED PRIOR TO RE-COMMENCING CONSTRUCTION ACTIVITIES, BUT NO LATER THAN 72 HOURS FOLLOWING THE STORM EVENT.
10. DURING WINTER MONTHS, THIS FACILITY WILL TYPICALLY QUALIFY FOR WINTER EXCLUSION AS DEFINED IN THE CDPHE COR400000 STORMWATER PERMIT. STORMWATER INSPECTIONS WILL RESUME WHEN THE FACILITY NO LONGER MEETS WINTER EXCLUSION REQUIREMENTS.
11. TEP SHALL STABILIZE THE WORKING SURFACE OF THE WELL PAD AS AN ALTERNATIVE TO CONSTRUCTING VEHICLE TRACKING CONTROLS SUCH AS MUD MATS, VEHICLE TRACKING PADS. THE STABILIZED WORKING SURFACE SHALL BE MAINTAINED IN ACCORDANCE WITH GOOD ENGINEERING PRACTICES AND THE DETAIL/SPECIFICATION PROVIDED IN THIS PLAN.
12. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SUCH AS DIVERSION DITCHES, WATTLES, EARTHEN BERMS, SEDIMENT TRAPS, AND OTHER MEANS SHALL BE INSTALLED TO CONTROL EROSION AND SEDIMENT PER THESE PLANS AND TERRA ENERGY PARTNERS' STORMWATER MANAGEMENT PLAN (SWMP). DIVERSION DITCHES ARE PLANNED FOR USE WHERE STORMWATER RUN-ON ENTERS THE PROJECT AREA, AND TO CONVEY STORMWATER RUNOFF FROM THE PROJECT AREA INTO SEDIMENT TRAPPING DEVICES; SEDIMENT CONTROL LOGS MAY BE USED AROUND MATERIAL STOCKPILES OR ON THE DOWNGRADIENT SIDE OF DISTURBANCES ACCORDING TO THE SPECIFICATION LIMITATIONS; SEDIMENT TRAPS ARE PLANNED FOR USE AT ALL DISCHARGE POINTS AND WILL BE SIZED ACCORING TO THE ENGINEERED SPECIFICATION PROVIDED IN THIS PLAN; AND EARTHEN BERMS WILL BE UTILIZED ON THE PAD'S WORKING SURFACE TO CONTAIN ANY POTENTIAL POLLUTANTS DURING DRILLING/COMPLETION/PRODUCTION OPERATIONS. AS THE OPERATIONS AND PHASING OF THE PROJECT CHANGES, OTHER STORMWATER CONTROLS WILL BE INSTALLED/CONSTRUCTED AS NEEDED.
13. TEP WILL CONTROL DUST AT ALL TIMES. THE USE OF A DUST PALLIATIVE, TACKIFIER, OR TEMPORARY SEEDING/MULCHING OF DISTURBED SURFACES MAY BE USED TO HELP WITH DUST CONTROL.
14. TEMPORARY STABILIZATION SHALL BE IMPLEMENTED ON ALL DISTURBED SLOPES THAT HAVE BEEN IDLE FOR 14 DAYS OR LONGER. TEP SHALL APPLY A HIGH PERFORMACE HYDRO-MULCH WITH MANUFACTURER SPECIFICATIONS THAT MEET THE APPLICATION NEEDS. ROLLED EROSION CONTROL PRODUCTS MAY ALSO BE USED.
15. TEP WILL PERFORM ROUTINE MAINTENANCE ON ANY CONTROL MEASURE THAT IS STILL OPERATING IN ACCORDANCE WITH IT'S DESIGN AND THE REQUIREMENTS OF THE COR400000 PERMIT, BUT REQUIRES MAINTENANCE TO PREVENT A BREACH OF THE CONTROL MEASURE.
16. TEP MUST TAKE ALL NECESSARY STEPS TO MINIMIZE OR PREVENT THE DISCHARGE OF POLLUTANTS FROM THE PERMITTED AREA AND MANAGE ANY STORMWATER RUN-ON ONTO THE SITE UNTIL A CONTROL MEASURE IS IMPLEMENTED AND MADE OPERATIONAL AND/OR AN INADEQUATE CONTROL MEASURE IS REPLACED OR CORRECTED AND RETURNED TO EFFECTIVE OPERATING CONDITION. IF IT IS INFEASIBLE TO INSTALL OR REPAIR THE CONTROL MEASURE IMMEDIATELY AFTER DISCOVERING THE DEFICIENCY, THE FOLLOWING MUST BE DOCUMENTED IN THE SWMP AND KEPT ON RECORD IN ACCORDANCE WITH THE RECORDKEEPING REQUIREMENTS OF THE PERMIT: A. DESCRIBE WHY IT IS INFEASIBLE TO INITIATE THE INSTALLATION OR REPAIR IMMEDIATELY; AND B. PROVIDE A SCHEDULE FOR INSTALLING OR REPAIRING THE CONTROL MEASURE AND RETURNING IT TO AN EFFECTIVE OPERATING CONDITION AS SOON AS POSSIBLE.
17. EROSION AND SEDIMENT CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL FINAL STABILIZATION IS ACHIEVED OR UNTIL SITE CONDITIONS WARRANT THE USE OF DIFFERENT STORMWATER BMPs.

SOIL HANDLING

18. TERRA ENERGY PARTNERS (TEP) WILL SALVAGE TOPSOIL FROM AREAS OF BOTH CUT AND FILL FOR REUSE IN REVEGETATING DISTURBED SURFACES. TOPSOIL SALVAGED FROM AN AREA SHALL BE PLACED ACCORDING TO THE TOPSOIL PROTECTION PLAN SUBMITTED IN THE COGCC FORM 2A AND BLM APD, AND CARE SHALL BE TAKEN BY EQUIPMENT OPERATORS WHEN SALVAGING, STOCKPILING, AND REPLACING TOPSOIL.
19. WHEN TOPSOIL STOCKPILE LOCATIONS ARE ESTABLISHED, THESE LOCATIONS WILL BE ADDED TO THE EROSION CONTROL PLAN/SITE MAP FOR THIS PROJECT. TOPSOIL WILL BE STOCKPILED ACCORDING TO THE TOPSOIL PROTECTION PLAN AND COGCC FORM 2A AND BLM APD. AS NEEDED, SEDIMENT AND EROSION CONTROL MEASURES WILL BE USED FOR ALL TOPSOIL STOCKPILES.
20. TEP SHALL REMOVE, STORE, AND REPLACE TOPSOIL IN A WAY THAT PREVENTS SOIL EROSION AND STORMWATER POLLUTION. TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL BMPs SUCH WAS WATTLES, EARTHEN BERMS, DIVERSION DITCHES, AND SEDIMENT TRAPS WILL BE INSTALLED AND PROPERLY MAINTAINED DURING SOIL EXCAVATION AND REPLACEMENT CONSTRUCTION PHASES.
21. TOPSOIL SHALL BE REPLACED AS SOON AS POSSIBLE TO PREVENT LEACHING OF NUTRIENTS AND LOSS OF MICRO-ORGANISMS.
22. TEP WILL CONTROL DUST FROM MATERIAL STOCKPILES AT ALL TIMES WITH THE USE OF WATER, A DUST PALLIATIVE, TACKIFIER, OR TEMPORARY SEEDING/MULCHING.





REVISED: 8/30/22






Construction Plan Prepared for:

TERRA TEP Rocky Mountain LLC

**STORMWATER MANAGEMENT EC PLAN
(CONSTRUCTION PHASE)**

SHEET REFERENCE
NUMBER:
Sheet 2

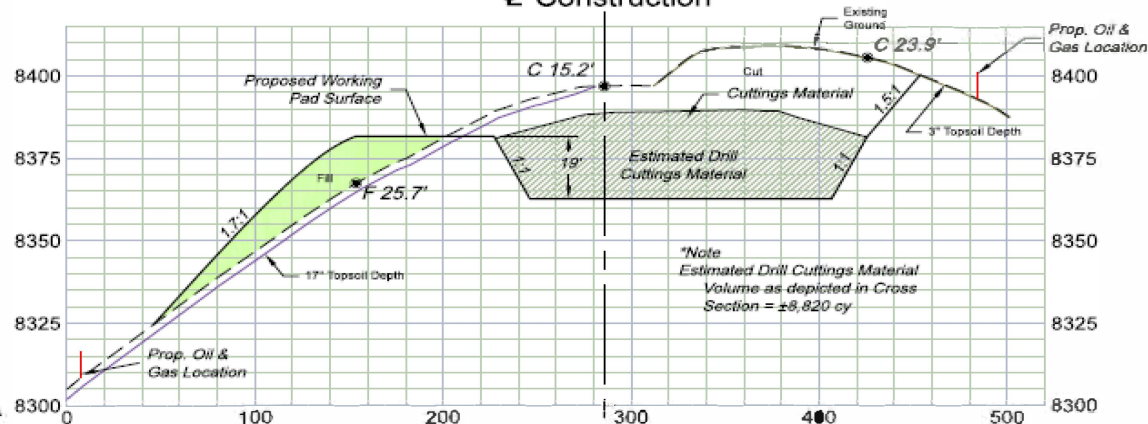
SCALE: 1" = 80'
DATE: 6/11/20
PROJECT: TEP Trail Ridge
DPT: CS

 Toe Ditch (RC-14): Installed ~~downgradient~~ of ground-disturbing construction activities and material stockpiles. Toe ditches will lead to a terminal sediment control measure.
 (as shown)  Sediment Trap (SC-06): Sized according to TEP's control measure Manual and installed at the terminal end of diversion and toe ditches.
 Diversion Ditch (RC-10): Permanent ditches to be preserved or installed along the facility's perimeter to prevent stormwater run-on which could cause erosion on slopes and the working surface.
 Wattle (EC-08): Placed at the toe of slopes for sediment control and at the toe of topsoil stockpiles to prevent topsoil contamination from potential contact with subsoils.
 Mulching (EC-07): Will be used as a temporary stabilization practice for erosion control on topsoil stockpiles and areas of disturbance planned to be idle for longer than 14 days. Specified mulch type: Flexterra HP-FGM or equivalent. Re-apply as needed per manufacturer specifications.

Construction



Section A



*Notes

- 1) Design Cut Slope: 1.5:1
Design Fill Slope: 1.5:1
- 2) Topsoil based on 6" Soil Depth.
- 3) 20% Swell Factor Applied to Earthwork Cut Volume.
- 4) Access Road Earthwork Volumes Included in Table.
- 5) Pad Surface Completion:
Compacted Volume of Approximately ±1430 cy
4" Aggregate Base Pad Surfacing Material is to be Applied to Entire Pad Footprint.

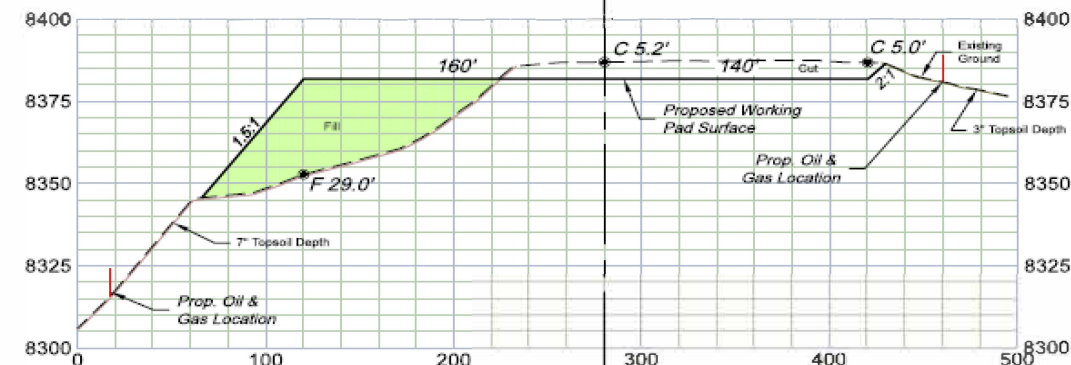
DISTURBANCE AREAS

Total GDP Disturbance:	±18.865 ac
Oil and Gas Location:	±6.451 ac
Working Pad Surface Area:	±2.64 ac
Access Road:	±4.338 ac
Pipeline/Utility Corridors:	±6.078 ac

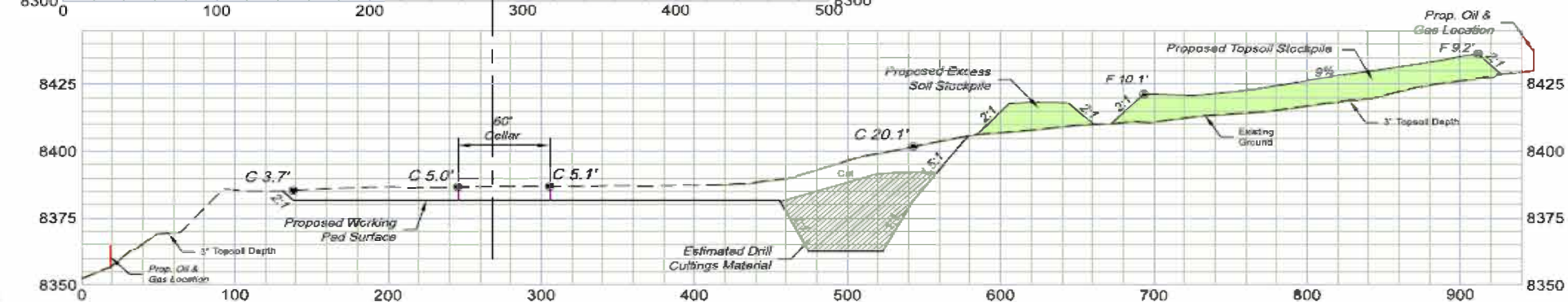
ESTIMATED EARTHWORK QUANTITIES (cy)

ITEM	CUT	FILL	TOPSOIL	EXCESS
PAD	33,990	38,000	4,350	-8,380
PIT	10,590			10,590
ROAD	560	280	310	-30
TOTALS	45,140	38,280	4,660	2,200

Section B

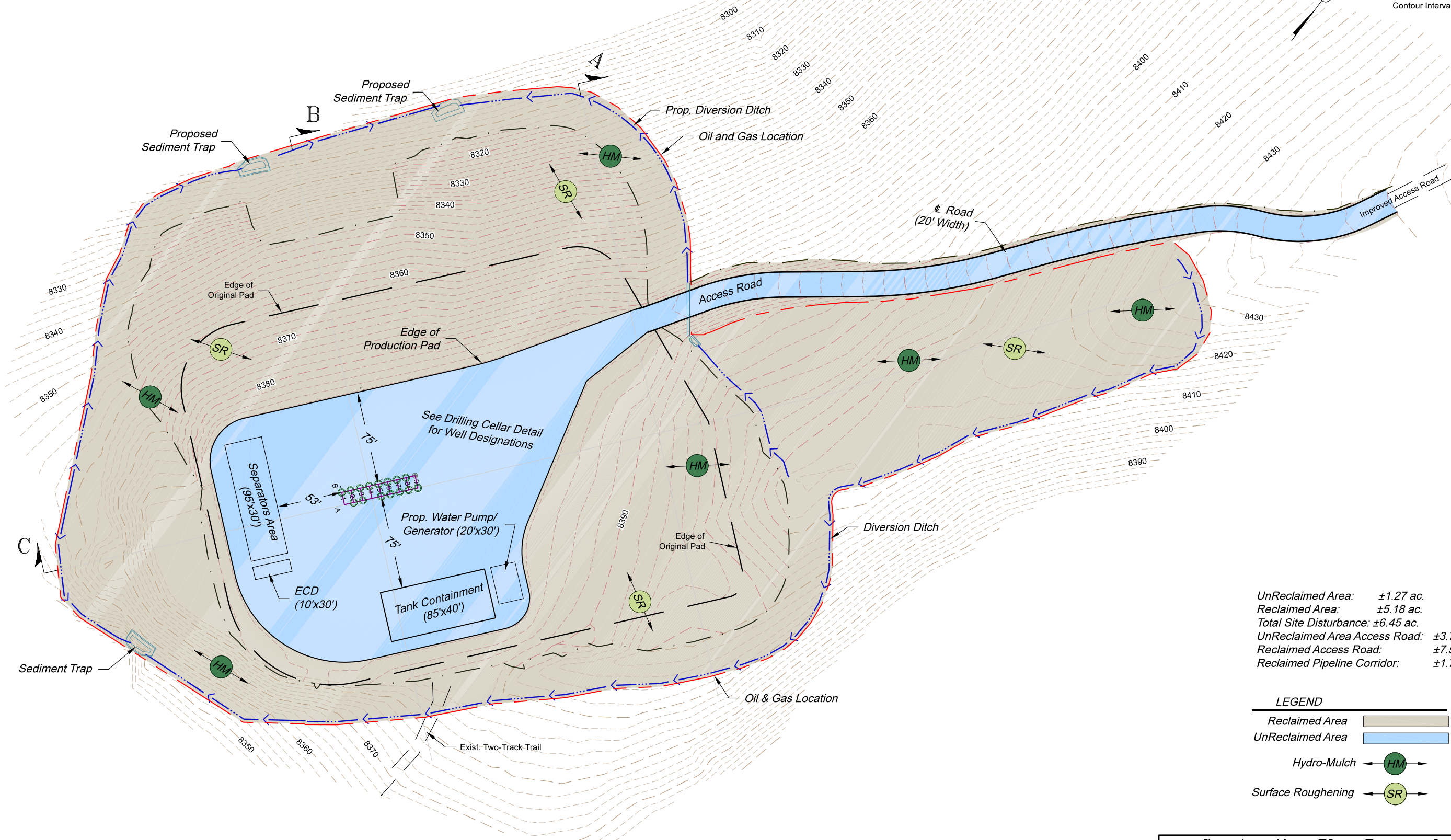
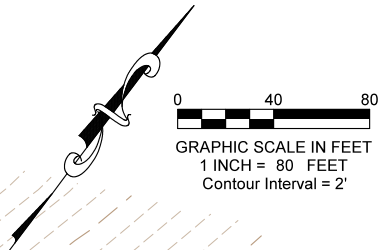


Section C



APPENDIX B
ARCO DEEP 1-27 DRILL PAD
INTERIM RECLAMATION LAYOUT
PLAN VIEW & CROSS SECTION

NOTE:
Reclaimed Slopes Vary as Shown.



UnReclaimed Area:	±1.27 ac.
Reclaimed Area:	±5.18 ac.
Total Site Disturbance:	±6.45 ac.
UnReclaimed Area Access Road:	±3.75 ac.
Reclaimed Access Road:	±7.59 ac.
Reclaimed Pipeline Corridor:	±1.74 ac.

LEGEND	
Reclaimed Area	
UnReclaimed Area	
Hydro-Mulch	
Surface Roughening	

136 East Third Street
Rifle, Colorado 81650
Ph. (970) 625-1330
Fax (970) 625-2773

BOOKCLIFF
Survey Services, Inc.

SCALE:	1" = 80'
DATE:	6/28/22
PROJECT:	TEP Trail Ridge
DFT:	CS

REVISED: 8/15/20

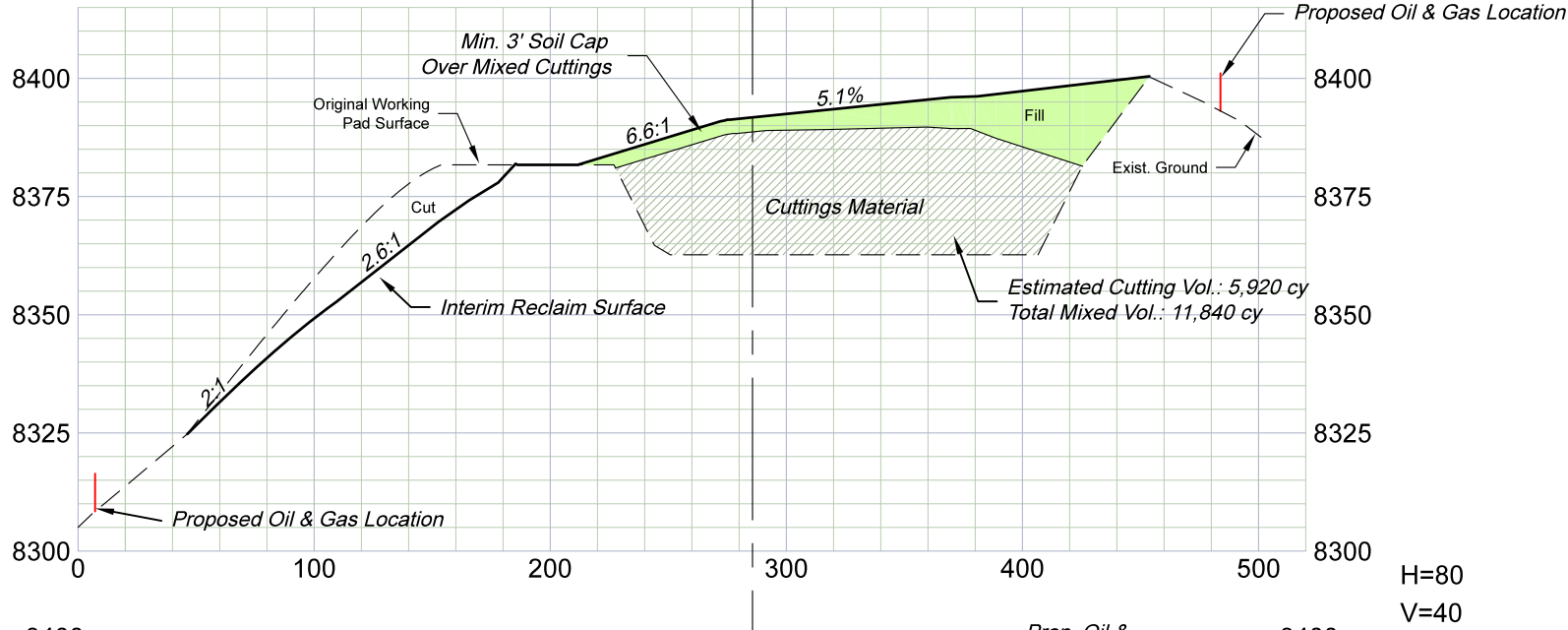
Construction Plan Prepared for:

 TEP Rocky Mountain LLC

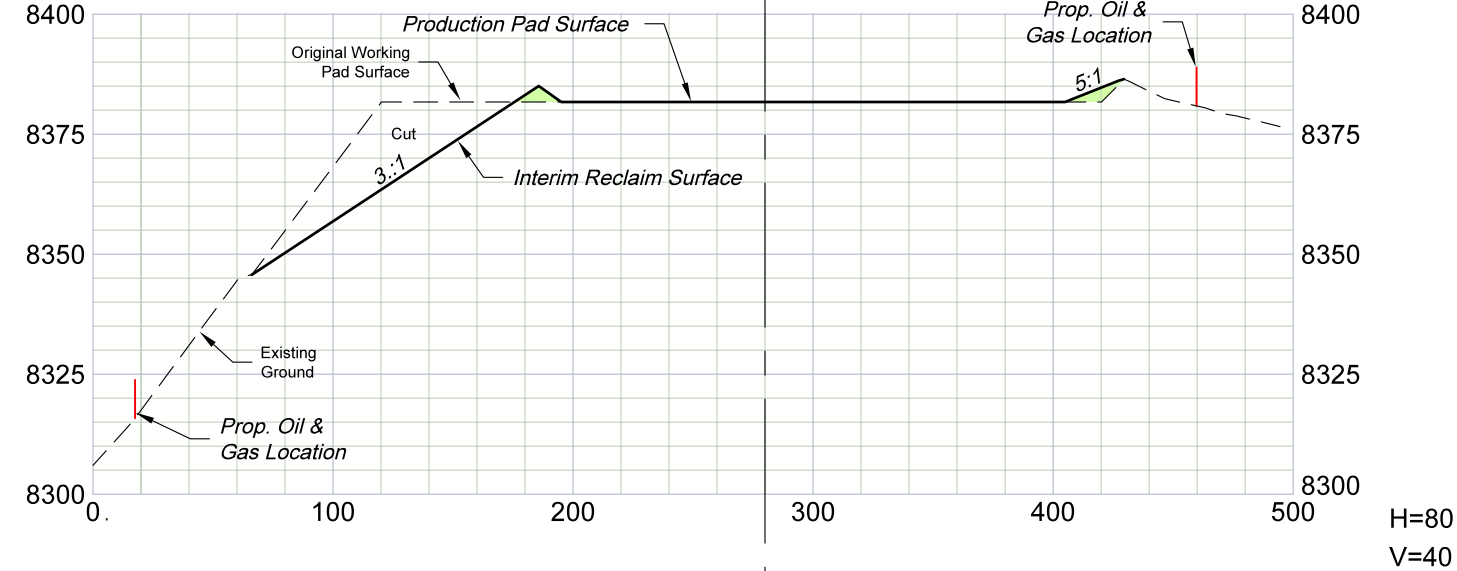
ARCO Deep 1-27 Drill Pad
INTERIM RECLAMATION LAYOUT

Construction

Section A



Section B



INTERIM RECLAMATION
ESTIMATED EARTHWORK QUANTITIES (cy)

ITEM	CUT	FILL	EXCESS
PAD	21,910	15,980	5,930
CUTTINGS		5,920	-5,920
TOTALS	21,910	21,900	10

*NOTE :
Reclam Slopes Vary as Shown.

Section C

