



PDC
ENERGY

INTERIM RECLAMATION PLAN

Rule 304.c.(16) and 1003.

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Site Description:

Provide a brief description of the oil and gas location, including whether on fee or federal surface; total acres of disturbance, working pad surface, and post-drilling and completion area (production pad); site elevation; proposed timeframes and duration of all oil and gas operations; and timeframe for interim reclamation (first favorable season).

PDC Energy (PDC) is proposing to construct the Denali State 5N67W13 1-23 Pad (Denali Pad) Project. The Project consists of the development of infrastructure to support the drilling and production of 23 oil and gas wells from a new well pad located in SESW Section 13, Township 5 North, Range 67 West, 6th Principal Meridian. The proposed Bypass Pad is part of the PDC's Guanella Comprehensive Area Plan (CAP) that was approved by the COGCC in December 2022.

The Denali Pad is in an area with other existing oil and gas operations as well as agricultural and rangeland activities. The proposed new well pad would support a total of 23 wells and their supporting production equipment. The well pad would be constructed from the native earthen materials present and leveled by standard cut-and-fill techniques. The well pad would be constructed by clearing vegetation, stripping, and stockpiling topsoil, and leveling the pad areas. Construction of a typical well pad involves the use of heavy equipment, such as a dozer, flat blade, dump truck, and crane; however, equipment needs may vary depending on the site-specific conditions of the individual well pads.

Separate stockpiles for both topsoil and subsoil would be established within the permitted location boundaries and will be maintained for future backfilling and rehabilitation of the disturbed areas of each well pad for interim reclamation and final abandonment after the life of the wells.

Construction of the proposed location, with associated cut and fill slopes, would initially disturb approximately 16.2 acres. Following interim reclamation of 9.3 acres, the total Project residual surface disturbance would be reduced to approximately 6.9 acres. Total well pad surface disturbances are summarized by location in Table 1.

A total of approximately 0.5 miles of new access road would be required to provide access to the proposed locations. The new access roads would be constructed such that they provide an approximate 24-foot running surface within a 30-foot-wide corridor. The construction and maintenance of these access roads would disturb approximately 1.9 acres of land, which would be a residual disturbance for the life of the operation of the wells. Total access road disturbance is summarized by location in Table 2.

The construction of the Denali Pad would require temporary surface-laid, lay-flat water lines, which would be located within existing ditch infrastructure, therefore no additional disturbance is assumed for the lay-flat water lines (pipelines). Additionally, flowlines installed for production operations of this location would be installed within the footprint of well pad. Therefore, flowline disturbance is not calculated separately from the overall disturbance of the pad.

In accordance with COGCC Rule 1003, interim reclamation at the Denali Pad would commence as soon as practicable and, at minimum, within 3 months following drilling, completions, and subsequent production operations. Debris, waste material, and equipment associated with

drilling, completion and production operations will be removed from the facility. Reclamation of all disturbed, non-working areas affected by drilling or subsequent operations, except those areas needed for production operations or for subsequent drilling operations that will be commenced within 12 months will be reclaimed as nearly as practical to their original condition or post disturbance land use. The disturbed areas will be ripped and returned to landowner for agricultural use (in areas that can be re-farmed after reclamation) or, in areas that cannot be farmed and accessed by farming equipment and irrigation, reseeded with species consistent with the plant community identified during the baseline vegetation survey in the first favorable season after the location has been turned over to production. Areas needed for production or drilling operations will be stabilized within 12 months and maintained to minimize dust and erosion to the extent possible.

Total Surface Disturbance

Construction associated with the Denali Pad (including access road) would result in a total estimated initial disturbance of approximately 18.1 acres and long-term disturbance of 8.8 acres. Initial and long-term disturbance by project feature is summarized in Table 1. Residual disturbance includes acreage that would remain disturbed for the life of the project (LOP), which is approximately 29 years plus the time required to successfully reestablish vegetation (those acres not subject to interim reclamation). As previously stated, site reclamation would be initiated for portions of the well pad not required for the continued operation of the well within 6 months of completion and production, weather permitting.

**Table 1
Estimated Surface Disturbance**

Project Feature	#/Miles	Initial (acres)	Long-Term (acres)¹
New Denali State Well Pad	1 well pad	16.2	6.9
New Access Roads Corridor	0.5 miles	1.9	1.9
Temporary Lay-Flat Water Pipeline Corridors	0.0 miles	0.0	0.00
Location Total²	--	18.1	8.8

¹ Residual disturbance calculations are based on the assumption that interim reclamation would be successful.

³ Total acreage estimates are based on Geographic Information System (GIS) software calculations and match what is presented in the Form 2A Plat package. These totals may not equal the total summation when using mathematic equation due to rounding, removal of overlapping development and minute boundary discrepancies. GIS-based calculations are considered more accurate than estimates calculated using simple addition and therefore will be used throughout this document.

Project Schedule

Pending OGDPA approval from the COGCC, the Denali Pad would likely be constructed in Q1 2024. Drilling would commence in Q3 2024, and completions in Q3 2025. The anticipated production life of each well is 25-29 years for Denali.

Soils Description:

Briefly describe the identified soil types and boundaries of the mapped units on the location and pertinent soil properties (drainage class, available water capacity, depth to restrictive feature [bedrock or confining layer]).

To determine anticipated site characteristics for the project site, Geographic Information System (GIS) data from the Natural Resource Conservation Service (NRCS) along with aerial photography was overlain on the site proposed disturbance boundary to derive potential ecological site descriptions (ESDs) and NRCS soil map units. A desktop review of the proposed project area indicates the presence of three soils map units – 61.4% consisting of Olney fine sandy loam (1 to 3 percent slopes), 38% Otero sandy loam (5 to 9 percent slopes) and 0.6% Haverson loam (1 to 3 percent slopes).

The Olney fine sandy loam (1 to 3 percent slopes) soils map unit shows an anticipated top soil depth of 0 to 10 inches. The depth to a restrictive feature is more than 80 inches. The drainage class is well drained, and the available water capacity is moderate (about 7.0 inches).

The Otero sandy loam (5 to 9 percent slopes) soils map unit shows an anticipated top soil depth of 0 to 12 inches. The depth to a restrictive feature is more than 80 inches. The drainage class is well drained, and the available water capacity is moderate (about 7.7 inches).

The Haverson loam (1 to 3 percent slopes) soils map unit shows an anticipated top soil depth of 0 to 4 inches. The depth to a restrictive feature is more than 80 inches. The drainage class is well drained, and the available water capacity is moderate (about 7.6 inches).

Slopes in the project area range from 1-9%. The risk of susceptibility to erosion/runoff is low to moderate based on K factor values; the overall erosion hazard is slight.

Soils and erosion maps and soils reports can be found in Appendix A and B, respectively.

Oil and Gas Location Pre-Disturbance Vegetation Composition:

Describe the predominant plant species based on both soil types and onsite survey, as well as the percent of vegetative cover.

The pre-disturbance land use at the subject location is agriculture.

No vegetation density or coverage assessments were conducted at the project location due to the project being located within agricultural land-use. There are no known noxious weed infestations onsite.

Land use maps and pre-existing conditions/vegetation photo series and maps can be found in Appendix A.

Identification of Reference Area and Vegetation Composition (Non-Crop Land):

Describe how and where the Reference Area was determined and describe the predominant plant species based on both soil types and onsite survey, as well as the percent of vegetative cover.

No reference area is needed as the pre-disturbance land use is agriculture.

Known Weed Infestations:

Identify any Colorado list A or B weed infestations at this location.

There are no known weed infestations as the entire project exists within an agricultural field.

Gathering Lines:

Identify the pipeline and utility corridors that will be reclaimed (if applicable).

Flowlines or utility corridors within the reclamation area on the facility map (Appendix A) will be reclaimed during the interim reclamation phase. All wells will be located on the same working surface as the tank battery so there will be no flowline corridors off location. Other pipeline and utility corridors associated with the production facility in the permanent working space will not be reclaimed.

Any midstream tie-in work will be unassociated to the subject project and off-pad reclamation will be managed by the 3rd party responsible for the construction. On-pad reclamation will likely include reapplying road base to armor the on-pad disturbed pipeline corridor, and rebuilding perimeter BMPs (ditch/berm) after tie-in.

Access Road:

Identify if portions of the access road system can be reclaimed (if applicable).

The access road will remain for the long-term life of the oil and gas location. No portions of the access road will be reclaimed during interim reclamation.

Removal of Drilling, Re-entry, Completion Equipment and all Associated Debris and Waste Materials (1003.a.):

Debris and non-exploration and production (E&P) waste materials (concrete, sack bentonite and other drilling mud additives, sand, plastic, pipe and cable) should be removed and cellars, rat holes, and other boreholes unnecessary for further lease operations should be backfilled.

PDC will ensure the appropriate management, storage, transportation, and disposal requirements for non-E&P wastes are performed in accordance with State and Federal regulations. Non-E&P wastes anticipated to be generated onsite include used oil and TENORM scale and sludge. The site-specific management and storage procedures for these wastes are listed below, and in accordance with the Project Waste Management Plan. In addition, debris and other non-E&P wastes such as concrete, sack bentonite or other drilling mud additives, sand, plastic, pipe and cable will be removed as generated while cellars, rat holes, and other boreholes unnecessary for further lease operations will be backfilled.

Oil (Used)

If used oil is being disposed of or exhibits hazardous characteristics, it will be managed as a hazardous waste. Used Oil will be stored in a closed container, that is in good condition, and does not leak, or stored in a tank designated as a used oil container. Lids, funnels, and bungs will be kept closed when not adding used oil. Used oil containers will be stored inside containment pending disposal if disposal is not completed on the same day it is collected.

TENORM (Scale or Sludge)

Accumulate TENORM scale and sludge in sealed DOT-rated containers. Keep containers closed when not adding waste. Store TENORM scale and sludge containers in a secure area. TENORM pipe should be marked and kept in a separate area to prevent cross contamination and wrapped or stored in a closed container to prevent loose scale from contacting soil or contact with rain or snow. Ensure TENORM wastes are only disposed of at permitted disposal facilities, that can accept wastes with low level radiation and possible hydrocarbon content.

Management of Waste Material:

Assess and determine what steps are needed to ensure compliance with COGCC regulations; including Drilling Pit (both fluid and cuttings) Closure (1003.d.) and adherence to the 900-Series Rules in determining which materials can be left onsite or require offsite treatment or disposal.

Waste Determination Forms have been developed for waste streams anticipated to be generated at the Facility and are included in the Project Waste Management Plan to provide a description of the process that generates the waste, determination of waste type, details the characterization, treatment, management and storage, transport and disposal (or recycling) of each waste listed below. Records of waste that is transported off-site shall be maintained for 5-years including copies of each invoice, bill, or ticket and such other records as necessary to document waste disposal.

Produced Water (Completions and Production)

Water (brine) brought up from the hydrocarbon bearing strata during the extraction of oil and gas may include formation water (water that has been injected into the formation and any chemicals added down hole or during the oil/water separation process).

Onsite Treatment: The produced water will be separated from the total fluids extracted from the well by applying heat and possibly with the use of chemical emulsion breakers injected downhole.

Onsite Management and Storage: Accumulate produced water in storage tanks (aboveground, or partially buried vaults). Remove produced water directly into a vacuum truck. Water levels in the tanks are monitored by pumpers and/or electronic gauging. Haulers are called when water levels reach a target level. Secondary containment for the produced water wastes tanks meets SPCC requirements.

Transport: Produced will then be transported for disposal by licensed haulers with proper manifests, shipping papers, labels and placards, and waste determination or profiles approved by

the disposal facility. PDC requires all transporters participate in an annual safety training provided by PDC. In addition, transporters are required to participate in and have a good rating in the ISNetworld contractor management program along with a drug testing program.

Records of waste that is transported off-site shall be maintained for 5-years including copies of each invoice, bill, or ticket and such other records as necessary to document waste disposal. Produced water will be transported for disposal under 905.c(2)A.

Drilling Fluids (Flowback and Workover)

Used flowback and workover fluids, muds, completion, treatment, stimulation, and packing fluid, blowdown, swabbing and bailing wastes, and pipe dope from well development and workover.

Onsite Treatment: Flowback fluids are not treated on-site, only temporary storage pending disposal.

Onsite Management and Storage: Flowback and Workover Fluid wastes will be stored in a container that is compatible with the waste. The waste storage location will have proper containment in the case of a spill, and be protected from run-off or storm drains, to comply with SPCC regulations. Flowback and Workover Fluid wastes will be stored no more than 24 hours on-site. During active drilling hauling operates 12 hours per day to ensure adequate storage in tanks.

Transport: The waste container should be labeled "Non-Hazardous" with a description of the chemical waste listed on the label. Keep records of any test results, waste analysis, waste profiles, manifests, shipping papers and any waste determinations made for at least 3 years from the date the waste was sent off-site. Drilling fluids from flowback/completions and workovers will be transported for disposal under 905.d(2)B and 905.f(1).

Drilling Fluids (Oil and Water-Based)

Oil and water-based drilling fluids are used to lubricate and remove drill cuttings during the drilling process. Drilling fluids are processed to remove solids and recirculated. When drilling is complete, or the drilling fluid is spent the drilling fluids are sent for disposal.

Onsite Treatment: Drilling fluids/muds are recirculated and process through shakers to remove solids during the drilling process.

Onsite Management and Storage: Spent drilling fluids/muds are collected upon completion of the drilling phase into vac trucks for disposal. Drilling muds are stored in the recirculating equipment during the transport phase for less than 24 hours.

Transport: Drilling Fluids will be transported for disposal by licensed haulers with proper manifests, shipping papers, labels and placards, and waste determination or profiles approved by the disposal facility. PDC requires all transporters participate in an annual safety training provided by PDC. In addition, transporters are required to participate in and have a good rating in the ISNetworld contractor management program along with a drug testing program. Drilling fluids will be transported for disposal under 905.d(2)B.

Drill Cuttings (Oil and Water-based)

Small pieces of rock and soil (including spall and carvings) that break away from the well walls during drilling and are screened out of the liquid mud system.

Onsite Treatment: Drill cuttings will be separated from drilling muds to facilitate reuse of the mud through a mechanical shaker. Drill cuttings will be solidified on site by adding manure to the cuttings inside the cutting boxes to remove free liquids prior to offsite disposal.

Onsite Management and Storage: Drill cuttings will be stored in cutting bins at the rig until loaded for disposal in side-dump trailers. Drill cuttings are stored on location next to the rig shaker boxes. Cuttings are stored on-site less than 24 hours prior to disposal.

Transport: Drill cuttings will be transported for disposal by licensed haulers with proper manifests, shipping papers, labels and placards, and waste determination or profiles approved by the disposal facility. PDC requires all transporters participate in an annual safety training provided by PDC. In addition, transporters are required to participate in and have a good rating in the ISNetworld contractor management program along with a drug testing program. Drill cuttings will be transported for disposal in accordance with 905.g(1)A and 905.g(2)A.

Identification of Interim Reclamation Areas no Longer in Use (1003.b.):

Identify the areas (and acreage) immediately around wellhead equipment, production tanks, separation equipment, air pollution control and treatment equipment, meter stations, and LACT units on location that will not be interim reclaimed.

Areas that are to be reclaimed during interim reclamation are shown in the interim reclamation construction layout drawing in Appendix A. Initial total construction disturbance is 16.21 acres (18.08 including the access road). After interim reclamation is complete, the final interim pad disturbance area is 7.58 acres (9.45 acres including the access road).

Areas that will not be reclaimed and that will remain as a permanent working surface are immediately around wellhead equipment, production tanks, separation equipment, air pollution control and treatment equipment, meter/monitoring stations, vapor recovery units, power generation units, LACT units and any other equipment needed to operate the Denali State production facility. All areas needed for ongoing operations will be armored and stabilized for the long-term life of the facility. The permanent working surface can be seen on the interim reclamation construction layout drawing in Appendix A.

Compaction Alleviation (1003.c.):

Describe the proposed mechanical methods to be used and depths to un-compact the areas planned for interim reclamation in order to promote vegetation growth.

Compacted soils and areas of the location impacted by construction to be ripped to a minimum depth of 18 inches prior to topsoil replacement. Decompaction will be performed by a parabolic

Ag style ripper capable of fracturing the soil ensuring soil layers are not mixed. Proper decompaction will allow for greater water infiltration and promote vegetation growth.

Recontouring:

Describe site-specific recontouring or land forming design; including how the reclaimed areas will blend with surrounding contours, historic hydrology patterns, erosion control measures, and topsoil spreading.

Working in conjunction with the site-specific storm water plan, PDC will complete interim reclamation by reestablishing all topography and contours on the reclaimed area to their pre-disturbance conditions.

PDC will document the existing topography, natural drainages, and contours at the site prior to disturbance, and will return the reclaimed areas to preexisting conditions during interim reclamation. The height of the well heads and tank battery will be set at native elevation, if not in conflict with the site-specific stormwater plan. The outer limits of the location will be blended back to native topography by matching the surrounding area of the location, as this area will remain undisturbed from the construction phase. Recontouring will take place in such a way that the depth of the topsoil is accounted for with the initial regrading of the site, this will ensure that an even and adequate amount of topsoil is spread over the entire site in a way that will not inhibit any natural drainages.

PDC will cross-rip slopes and prepare the reclaimed areas for agricultural-use (areas that can be farmed) or seed/mulch the areas that cannot be farmed.

Re-establish and Stabilize Drainage Features:

Briefly describe the proposed stormwater management on this location to stabilize soils, prevent excessive erosion, soil instability, subsidence, and/or slumping. Details of stormwater and erosion control measures will be provided in the Stormwater Management Plan.

The proposed Denali State Stormwater Management Plan will follow sound engineering practices outlined in the Urban Drainage manual and approved under PDC's Colorado Department of Public Health and Environment (CDPHE) basin-wide stormwater construction permit. Best Management Practices (BMPs) will be installed around the disturbance perimeter to prevent soil erosion, subsidence/slumping, and instability. Control measures and BMPs will be installed at the beginning of the construction phase and remain intact until interim reclamation stabilization requirements have been met.

BMPs used are approved by the CDPHE and will be installed following engineered guidelines. The Denali State location and all stormwater control measures will be inspected on a bi-weekly basis for deficiencies. Any deficiencies found will be corrected in a timely manner to prevent offsite sediment transport. All plan details can be found under the Denali State Stormwater Management Plan.

Establish Desired Self-Perpetuating Plant Community (1003.e.):

Describe the seed mix selected (BLM, CPW, surface owner, local soil conservation district), seed weight in pounds per acre, and the proposed seed application rate.

Interim reclamation at the subject location involves returning all areas that can feasibly be farmed to landowner for agricultural use and reincorporation into the surrounding field. For all areas that cannot be feasibly farmed due to shape of the disturbance and/or inability to get heavy farming equipment into these areas to cultivate crops, these areas will be seeded/mulched during interim reclamation/final stabilization.

For areas that may need to be seeded/mulched – seed mix may be required by surface owner and/or local agency in some cases. If no requirement is stated, the seed mix should be determined based on land use and soil type. Seed composition should be a mix of both warm and cool season grasses to ensure plant diversity and reclamation success. Application rate and seed mix design should be developed based on local conditions including soil type, time of year, and historical precipitation data. The seed mix selected for the Denali state interim reclamation, on areas that cannot be returned to cropland, is 20% Dahurian wildrye, 20% wildrye Amazon, 15% smooth brome, 15% pubescent wheatgrass, 15% intermediate wheatgrass and 15% orchard grass. PDC estimates application rate should be 40 pounds per acre.

Seedbed Preparation and Seeding (1003.e.):

Describe the mechanical processes of seedbed prep, proposed amendments, moisture retention and soil stabilization methods, and timing and process of seeding.

After decompaction, recontouring, and topsoil application, on areas that cannot be returned to cropland, the top 3-4 inches of soil will be prepared for seed application using a high-speed disk and/or a mulcher as needed. Straw mulch will be applied and crimped to topsoil adding further stabilization and increasing moisture retention. Seedbed will be void of earthen clods and firm enough to keep seed from being applied too deeply. Soil samples can be collected and analyzed prior to seed application to identify any amendments needed. Compost and fertilizer will be applied based on current site conditions and on an as needed basis.

Seed application will be performed using a disc seed drill equipped with depth bands, capable of direct seed placement no deeper than $\frac{1}{4}$ to $\frac{3}{4}$ inches, and functioning packer wheels with row spacing not exceeding 8 inches to adequately cover and stabilize the seed. Seeding will occur during interim reclamation – after compaction alleviation, topsoil application, recontouring, and seedbed preparation, and will be conducted during a spring or fall planting window to achieve maximum germination rates.

Fencing:

Identify the type (wildlife friendly, livestock, barbed-wire) and area to be fenced, if needed, to ensure that the interim reclaim does not get overgrazed.

Fencing will not be used at the subject location due to its location within a cultivated agricultural field with no risk of livestock grazing.

Management of Invasive Plants (1003.f.):

Describe how noxious and invasive weeds will be identified, inventoried and treated to control and reduce the spread of weed species.

Invasive plants will be managed by performing a site assessment during the spring and upon completion of the first growing season after interim reclamation. This assessment will identify and inventory any/all invasive plants on the location. The assessment will include GPS coordinates and maps detailing the location of the invasive plants. Management will be performed by either mowing or spraying and in some rare occasions both methods may be necessary. Routine inspections throughout the life of the pad will also aid in identifying when weed mitigation is needed.

Proposed Interim Reclamation Drawing:

This type of drawing is being required per guidance (forthcoming) for all locations regardless of site grade. All structural and non-structural BMPs should be shown on the plan drawing and labelled or put in a legend. Use arrows to show planned flow direction. Controls for stormwater flow entering pad should be identified. Cross sections should be included to show reclaimed location and grading. The operator can use the drawing provided in the Stormwater Management Plan.

The interim reclamation drawing is included in Construction Layout Drawings (Appendix A).

Reclamation Monitoring, Inspection, Maintenance, and Reporting:

Describe the frequency of routine site visits and active management over reclamation activities, along with annual reclamation reporting requirements. Operator will focus to further stabilize soils, preventing erosion and site degradation, and to monitor for and treat invasive species. Locations will remain in the interim reclamation phase until the well is plugged and abandoned, at which time final reclamation will take place.

Frequency

Active Construction Inspections: site inspections shall start within 7 calendar days of the commencement of construction activities at a new site. Inspections will then be conducted either, at least every 7 calendar days, or, at least every 14 calendar days and after precipitation and melting-events that cause surface erosion.

Inactive/30-Day Inspections: if areas of the reclamation cannot be feasibly farmed due to irrigation or equipment access limitations, these areas will be seeded/mulched. Once all ground disturbing activities have been completed and the location has been pulled-back and these areas have been seeded/mulched (or are awaiting seeding/mulch), and all final stabilization measures have been implemented, the inspection frequency will be reduced to the 30-day/inactive frequency. Inspections will proceed until the seeded/mulched areas have met

CDPHE final stabilization vegetation criteria, at which point the location will move into the COGCC post-construction stormwater program.

Post-Construction Locations: when a location moves into the COGCC post-construction stormwater program, the location will be assessed against the COGCC Tier 1 criteria to determine COGCC Tier 1 exemption applicability. If the location is not Tier 1-exempted, risk-based criteria will be used to determine post-construction stormwater inspection frequencies (annual, bi-annual, quarterly), which will be conducted until final reclamation, or until conditions change to allow a transition to being Tier 1-exempted.

Inspection Scope

At a minimum, the following will be inspected for adequate protection of stormwater and compliance:

- Construction site perimeter
- All disturbed areas
- Designated haul routes
- Material and waste storage areas
- Discharge or potential discharge locations
- Vehicle access locations
- All BMPs

Inspection requirements:

- Visually verify whether all implemented control measures are in effective operational condition and are working as designed in their specifications to minimize pollutant discharges.
- Determine if there are new potential sources of pollutants.
- Assess the adequacy of control measures at the site to identify areas requiring new or modified control measures to minimize pollutant discharges.
- Identify all areas of non-compliance with the permit requirements and, if necessary, implement corrective action(s) in accordance with the general permit (Part I.B.1.c.).

At a minimum, the following information is recorded with each inspection:

- Inspection date
- Names and titles of personnel conducting the inspection
 - Inspector needs to be a Qualified Stormwater Manager (see Section 6.5)
- Weather
- Phase of construction
- Estimate acreage of disturbance
- Location(s) and identification of control measures requiring routine maintenance
- Location(s) and identification of discharges of sediment or other pollutants from the site
- Location(s) and identification of inadequate control measures
- Location(s) and identification of additional control measures needed that were not in place at the time of inspection
- Description of corrective action(s) for previous three items above, dates corrective action(s) were completed, including requisite changes to the SWMP, as necessary

- Description of minimum inspection frequency
- Deviations from inspection schedule
- After adequate corrective action(s) and maintenance have been taken, or where a report does not identify any incidents requiring corrective action or maintenance, the report shall contain the following statement, to be signed by the Qualified Stormwater Manager (QSM):

I verify that, to the best of my knowledge and belief, that if any corrective action items were identified during the inspection, those corrective action are complete, and the site is currently in compliance with the permit.

Maintenance Procedures for BMPs

The operator is responsible for implementing control measures (inclusive of seeding/mulching and weed mitigation) and performing routine maintenance, as needed, to ensure BMPs are in effective operating condition. BMPs requiring maintenance are identified in inspection reports and are addressed in the field as soon as practicable.

Interim Reclamation Completion Notice, Form 4 (1003.e.[3]):

Operators will submit a Form 4 Sundry Notice to describe reclamation procedures, associated mitigation measures, changes to final land use, and the total cover of live perennial vegetation to evaluate the success of interim reclamation.

Interim reclamation of all disturbed areas no longer in use shall be considered complete when all ground surface disturbing activities at the site have been completed, and all disturbed areas have been either built on, compacted, covered, paved, or otherwise stabilized in such a way as to minimize erosion to the extent practicable, or a uniform vegetative cover has been established that reflects pre-disturbance or reference area forbs, shrubs, and grasses with total percent plant cover of at least eighty percent (80%) of pre-disturbance levels or reference areas, excluding noxious weeds.

Once interim reclamation is achieved, a vegetation coverage assessment is conducted to confirm and document successful reclamation. In areas that were returned to cropland, this involves an assessment to show that crops are growing as well on the reclamation as in representative areas of the surrounding field. In the areas of the reclamation that cannot feasibly be farmed and will be seeded/mulched, this involves a vegetation coverage quantitative assessment. When a crop assessment and/or vegetation coverage assessment confirms that the requirements have been met, photos are collected to document interim reclamation completion. Four photos are taken from the pad reclamation during the growing season facing each cardinal direction, and one photo is taken to document the vegetation in an undisturbed/reference area adjacent to the pad. Each photograph is identified by date taken, well name or location number (for Weld County – location name), GPS coordinates, and direction of view. A COGCC Form 4 Sundry Notice is then submitted to document interim reclamation completion, accompanied by the requisite photos documenting the reclamation and vegetation analysis. The Form 4 submission will also outline a description of the reclamation procedures, associated mitigation measures, changes to final land use, and the total cover of live perennial vegetation to evaluate the success of interim reclamation.

Weld County Code Sec. 21-5-555 requires the operator to also notify Weld County via the 1041 WOGLA Sundry Form to document interim reclamation completion, with the same requirements and procedures as the COGCC.

Site-Specific Interim Reclamation BMPs:

Operators will submit, as part of this plan, a detailed list or narrative description of site-specific Best Management Practices (BMPs) for conducting interim reclamation on all areas of an Oil, and Gas Location that is not being used for production or processing of E&P materials, but has been disturbed, should be conducted through recontouring, topsoil replacement, and revegetation. BMPs shall include, but not limited to placement of soil (subsoil first, followed by top soil), packing of soil layers (pack each soil layer separately), erosion control, weed control, seed mix description, seeding methods, fencing (if needed), timing of reclamation, and landscape description (drainage pattern [streams, creeks, aquifers, contours, etc.], grade or slope).

The following is a list of site-specific BMPs related to PDC's interim reclamation approach at the Denali State location, for areas that will be reclaimed (the reclamation), and not used for continuing oil and gas operations (the working interim pad).

- Compaction alleviation – compacted soils and areas of the location impacted by construction will be ripped to a minimum depth of 18 inches prior to topsoil replacement. Decompaction will be performed by a parabolic Ag style ripper capable of fracturing the soil ensuring soil layers are not mixed. Proper decompaction will allow for greater water infiltration and promote vegetation growth.
- Erosion control – seed/mulch application functions as erosion control during initial reclamation efforts until adequate vegetation establishment, at which point the reclamation will be deemed final stabilized. The interim working pad will be stabilized against potential erosion for the long-term with surface armoring.
- Grading – Grading involves reshaping the ground surface to planned grades. Grading provides more suitable topography for well pads and pipelines and helps to control runoff, soil erosion, and sediment during and after construction in these areas.
- Mulching – mulching is a temporary erosion control used to stabilize exposed soils while waiting for vegetation to establish. Mulch protects soils from rain impacts and wind erosion, increases infiltration, and helps regulate soil temperatures. Typically, agricultural straw or hay is mechanically applied and crimped in or wood splinters/fibers are surface applied by hand or machinery. Tackifiers may be sprayed over the applied mulch to enhance stabilization.
- Placement of soil – any subsoil used during interim reclamation is applied first, followed by top soil, in order to ensure that topsoil is not contaminated or adulterated and to ensure optimum germination efforts.
- Packing of soil layers – if multiple soil layers are applied during interim reclamation, each soil layer is packed separately and sequentially.

- Recontouring – documenting the existing topography and natural drainages and the site prior to disturbance, and reestablishing the topography and contours on the reclamation to pre-disturbance conditions.
- Routine inspections – PDC, and/or third-party contractors, conduct a number of routine and regularly scheduled inspections during which the reclamation and general site conditions are inspected and monitored.
- Seedbed preparation – after decompaction, recontouring, and topsoil application, on areas that cannot be returned to cropland, the top 3-4 inches of soil will be prepared for seed application using a high-speed disk and/or a mulcher as needed. Seedbed will be void of earthen clods and firm enough to keep seed from being applied too deeply. Soil samples will be collected and analyzed prior to seed application to identify any amendments needed. Compost and fertilizer will be applied based on current site conditions and on an as needed basis.
- Seeding – seeding, to establish perennial vegetative cover following construction, is the best long term stabilization control for areas not stabilized with other permanent controls (pavement, concrete, road base, etc.). Establishing perennial vegetation stabilizes the soil, reduces wind and water erosion, minimizes sheet flow, increases infiltration, and reduces overall runoff volumes. Seeding can be used to establish temporary stabilization when dirt moving activities have ceased and will not resume for an extended period of time, or as a final stabilization technique as part of the reclamation plan for a site. On areas that cannot be returned to cropland, seed application at the Denali State location will be performed using a disc seed drill equipped with depth bands, capable of direct seed placement no deeper than ¼ to ¾ inches, and functioning packer wheels with row spacing not exceeding 8 inches to adequately cover and stabilize the seed.
- Seed mix – the seed mix selected for the Denali State interim reclamation (if needed, on areas that cannot be returned to cropland) is 20% Dahurian wildrye, 20% wildrye Amazon, 15% smooth brome, 15% pubescent wheatgrass, 15% intermediate wheatgrass and 15% orchard grass. PDC estimates application rate should be 40 pounds per acre.
- Stockpile management – stockpile management is the protection of stockpiled erodible materials through structural and nonstructural practices.
- Surface armor – surface armor is a combination of various materials (e.g., clay, concrete, dirt, rock, etc.) used to stabilize a surface on location where erosion could occur. The armor reduces erosion caused by runoff and/or raindrop impact, and provides a stable working surface for various construction related activities. Surface armor is often utilized throughout the life of a location and can be incorporated on access roads, tank battery locations, and well head locations.

- Timing of reclamation – seeding will occur during interim reclamation – after compaction alleviation, topsoil application, recontouring, and seedbed preparation, and will be conducted during a spring or fall planting window to achieve maximum germination rates.
- Topsoil salvage – the salvage and proper handling of topsoil is one of the keys to reclamation success. Topsoil is vital for the revegetation of disturbed areas following final grading. Commonly accepted BMPs for topsoil stockpile construction call for a maximum height of ten feet and topsoil stockpile slope no greater than 3:1. PDC plans to follow these specifications with regards to the topsoil stockpile at the subject location.
- Training – employee training on spill prevention, stormwater, and associated practices and procedures is essential to ensuring that everyone has the knowledge needed to follow appropriate steps and be able to minimize potential impacts resulting from stormwater related incidents.
- Weed control – invasive plants will be managed by performing a site assessment during the spring and upon completion of the first growing season after interim reclamation. This assessment will identify and inventory any/all invasive plants on the location. The assessment will include GPS coordinates and maps detailing the location of the invasive plants. Management will be performed by either mowing or spraying and in some rare occasions both methods may be necessary. Routine inspections throughout the life of the pad will also aid in identifying when weed mitigation is needed.

Appendix A – Stormwater Management Plan Maps

- Initial Construction SWMP Overview Map
- Soils/Erosion Maps
- Pre-Disturbance Land Use Map
- Pre-Disturbance Vegetation Identification/Analysis and Photo Series



Stormwater Management Plan Overview Map

Denali State 5N67W13 1-23 PAD



0 1,550 3,100

Feet
Scale: 1:14,140

Prepared by:

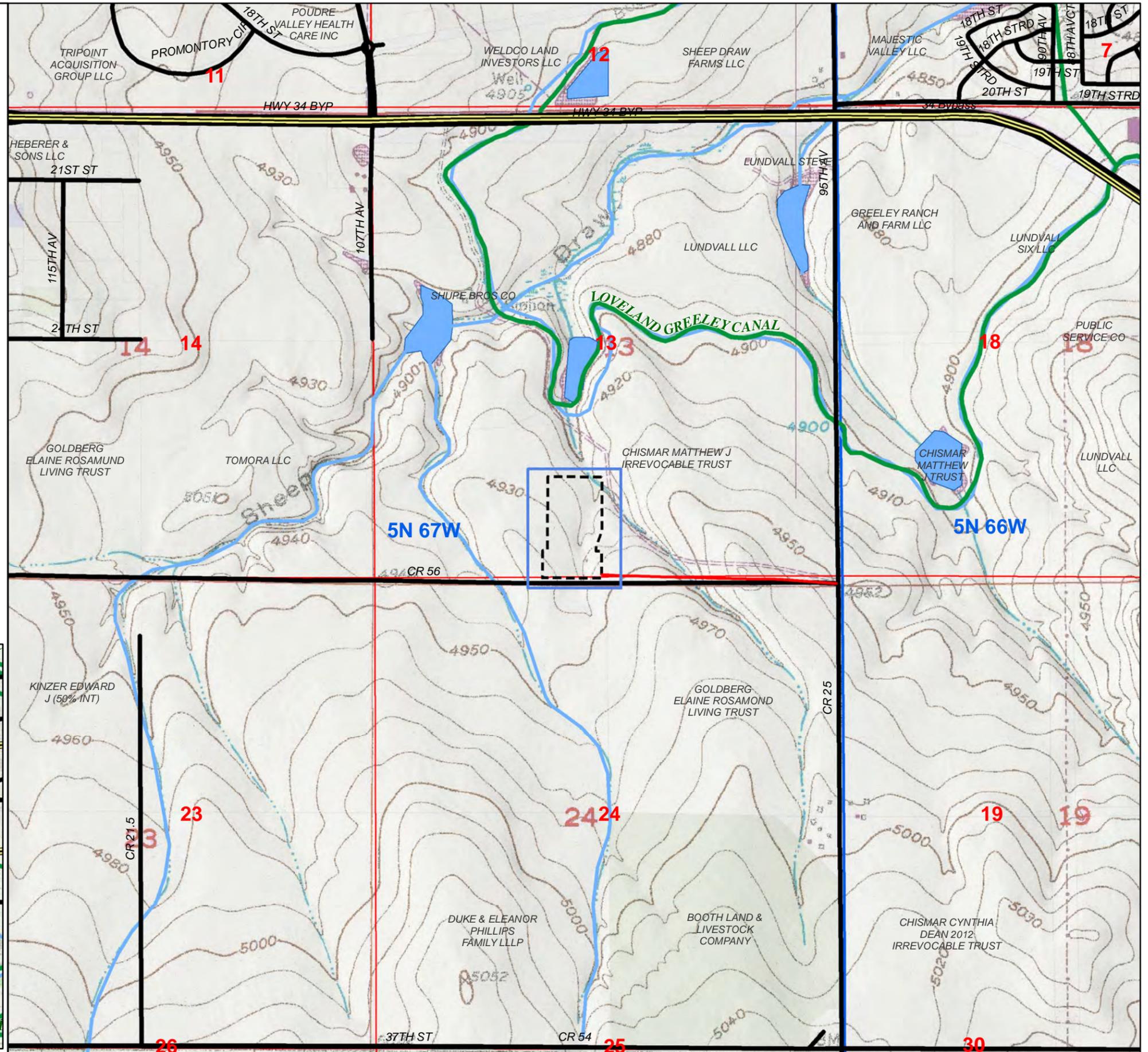
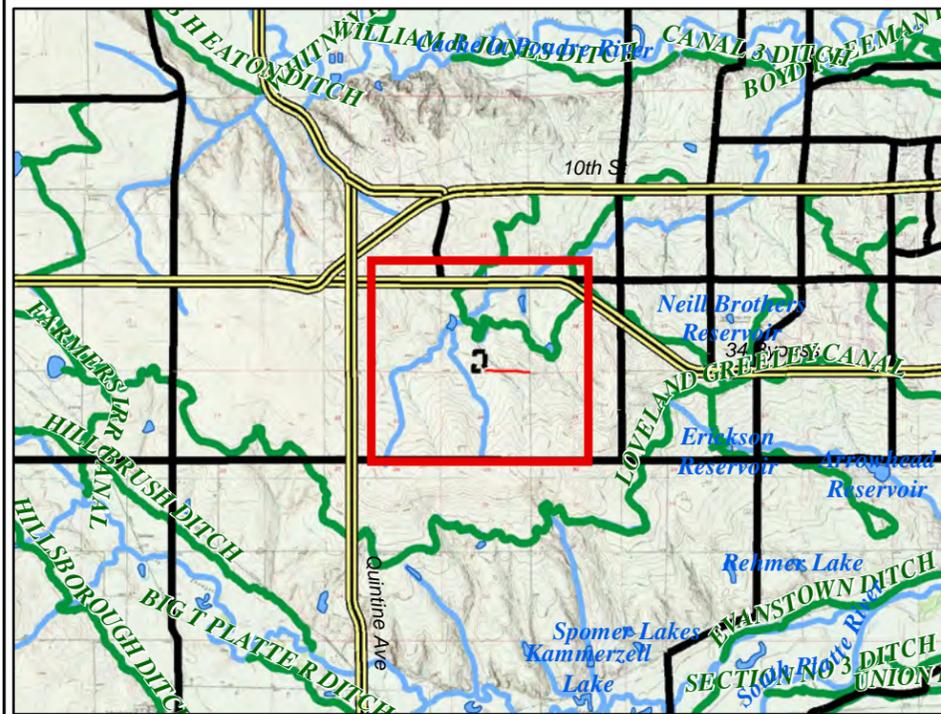


Editor: nwilson

Date: 1/27/2023

File: PDC_PreConstr_Overview_V2

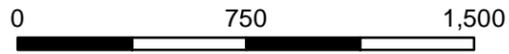
- Map Figures
- Road - Access Road
- Construction Boundary
- Highway
- Major Roads
- County/Local Road
- Canal/Irrigation Ditch
- Waterway
- Waterbody
- Townships
- Sections





Stormwater Management Plan Land Use Map

Denali State 5N67W13 1-23 PAD



Scale: 1:7,210

Prepared by:



Editor: nwilson

File: PDC_Land_Use_V1

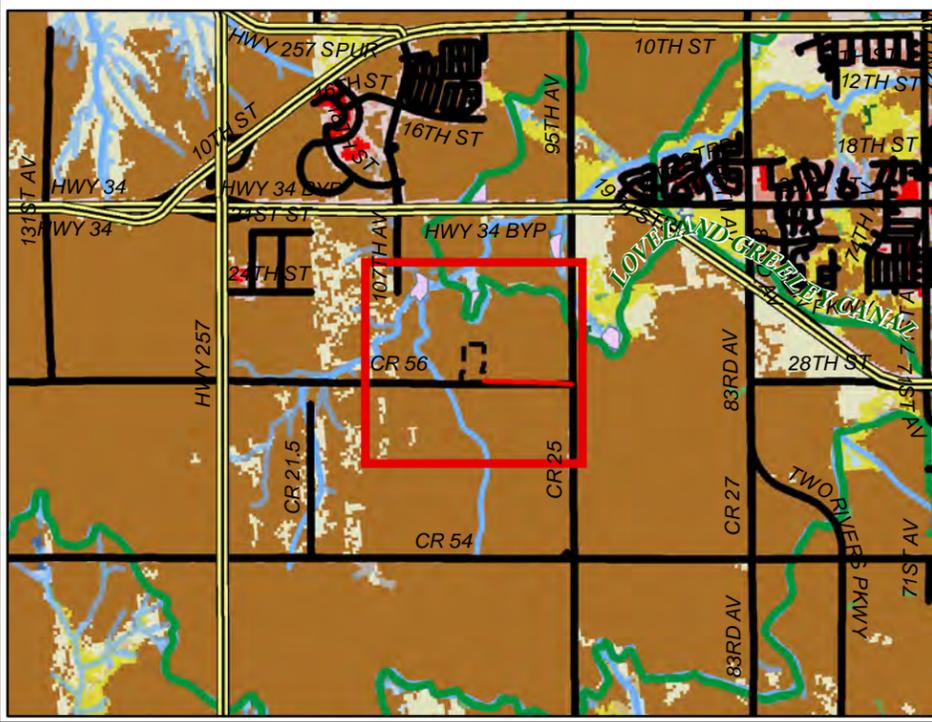
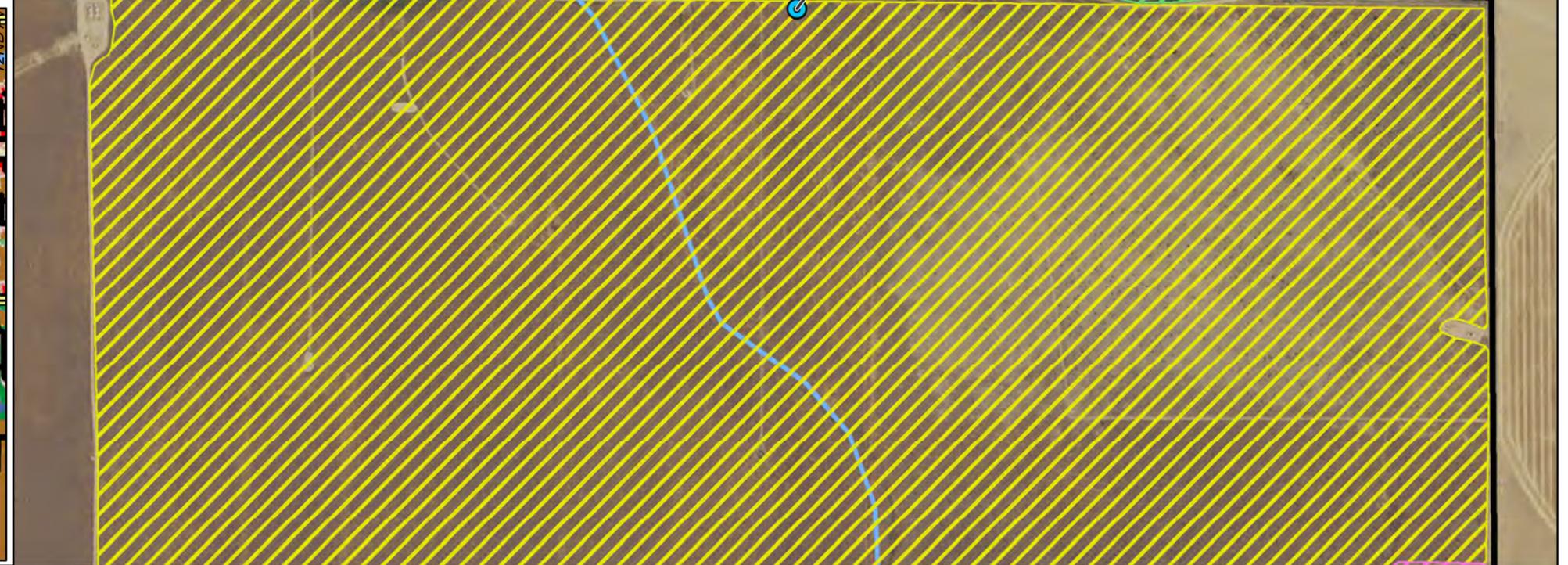
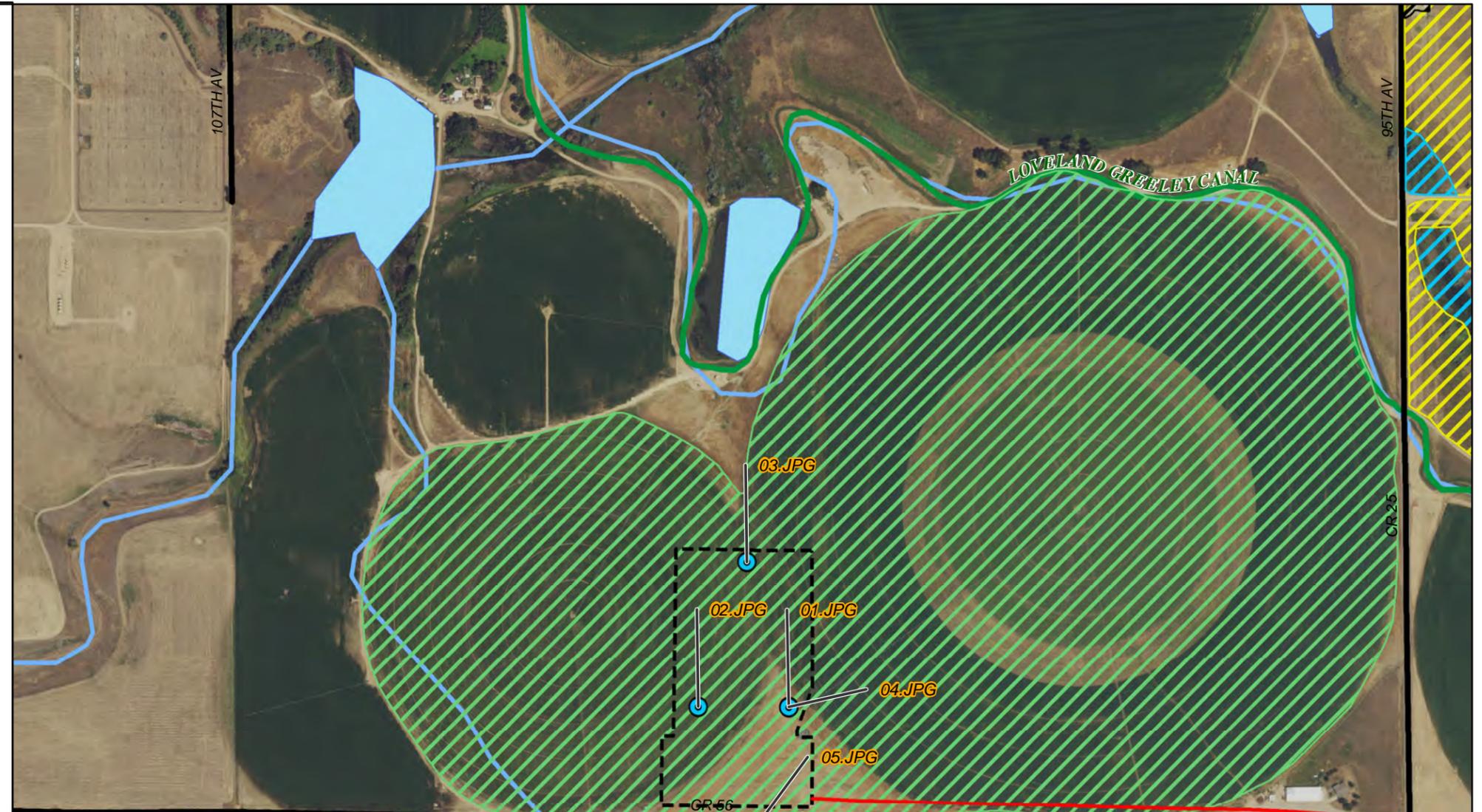
Date: 1/27/2023

Main Map (H2E Gathered Data)

- Photo Point
- Weld Local
- Road - Access Road
- Canal/Irrigation Ditch
- Construction Boundary
- NHDWaterbody
- Cropland
- Waterway
- Disturbed Grassland
- Industrial
- Residential
- Wetland
- CO HIGHWAYS

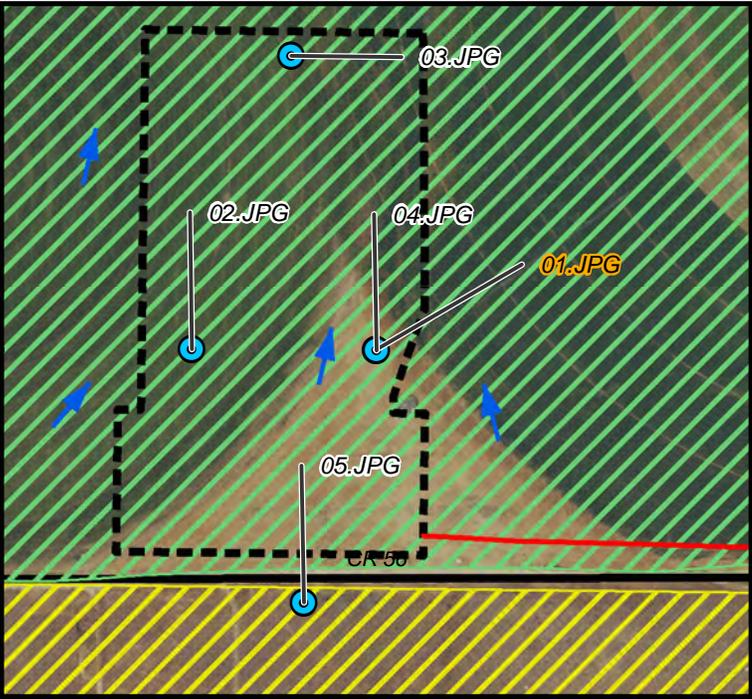
Inset Map (National Land Cover Data)

- Barren Land
- Cultivated Crops
- Deciduous Forest
- Developed, High Intensity
- Developed, Low Intensity
- Developed, Medium Intensity
- Developed, Open Space
- Emergent Herbaceous Wetlands
- Evergreen Forest
- Hay/Pasture
- Herbaceous
- Mixed Forest
- Open Water
- Perennial Snow/Ice
- Shrub/Scrub
- Woody Wetlands





04.28.2022



Stormwater Management Plan Map

Denali State 5N67W13 1-23 Pad
01.JPG

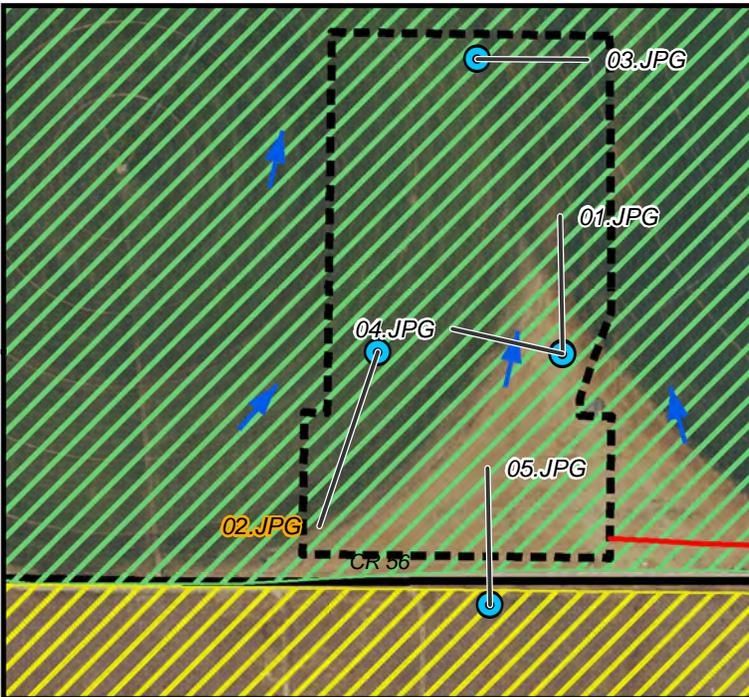
D_WGS_1984: 40.393490 -104.842100

- Photo Point
- Flow
- Access Road
- Construction Boundary
- Cropland
- Disturbed Grassland

Photo taken facing north across the future construction and tilled ag field at the eastern edge of the expected construction boundary.



04.28.2022



Stormwater Management Plan Map

Denali State 5N67W13 1-23 Pad
02.JPG

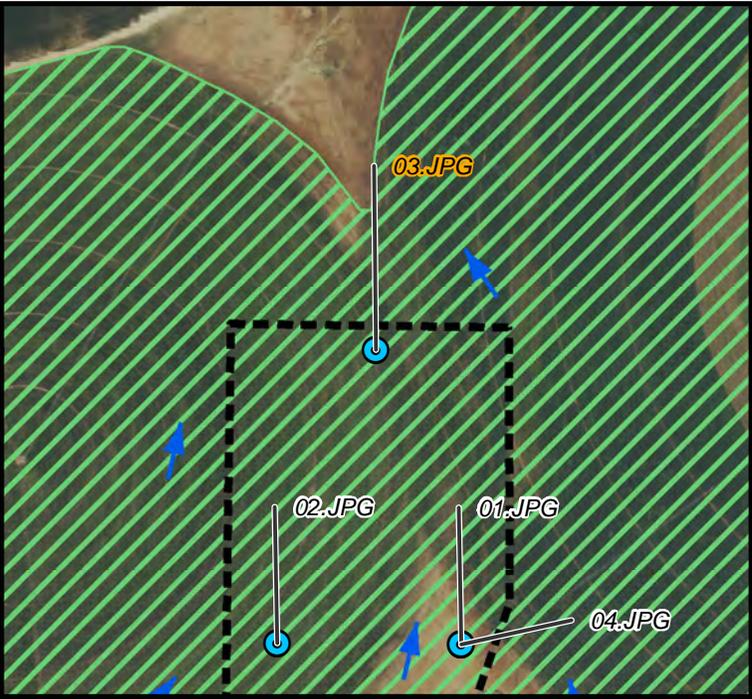
D_WGS_1984: 40.393500 -104.843500

-  Photo Point
-  Flow
-  Access Road
-  Construction Boundary
-  Cropland
-  Disturbed Grassland

Photo taken facing east across the future construction and ag field at the western edge of the expected construction boundary.



04.28.2022



Stormwater Management Plan Map

Denali State 5N67W13 1-23 Pad
03.JPG

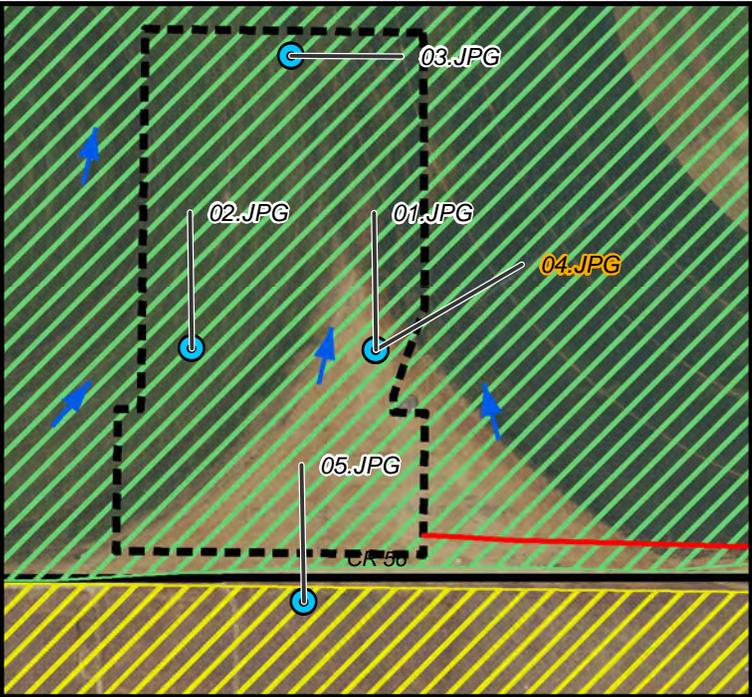
D_WGS_1984: 40.395260 -104.842800

- Photo Point
- Flow
- Construction Boundary
- Cropland

Photo taken facing south across the future construction and ag field at the northern edge of the expected construction boundary.



04.28.2022



Stormwater Management Plan Map

Denali State 5N67W13 1-23 Pad
04.JPG

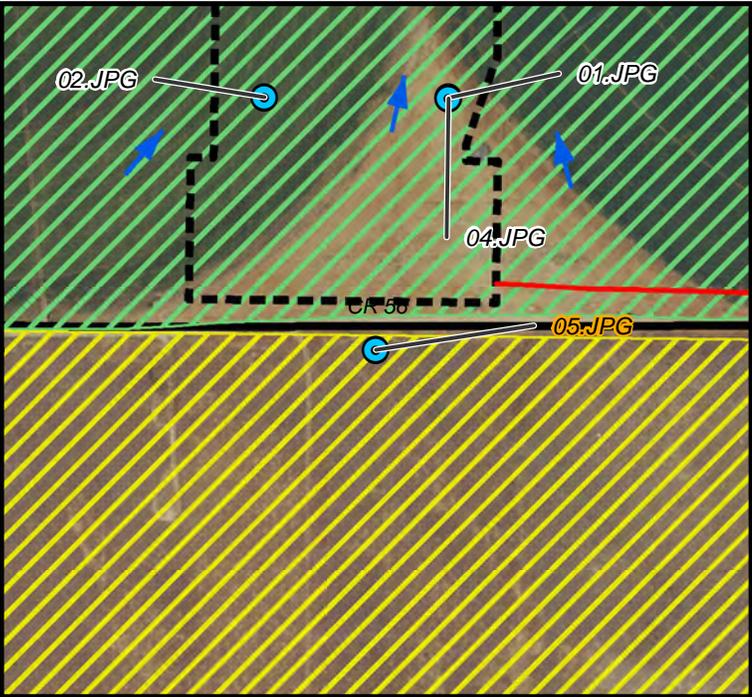
D_WGS_1984: 40.393490 -104.842100

-  Photo Point
-  Flow
-  Access Road
-  Construction Boundary
-  Cropland
-  Disturbed Grassland

Photo taken facing west across the future construction and tilled ag field at the eastern edge of the expected construction boundary.



04.28.2022



Stormwater Management Plan Map

Denali State 5N67W13 1-23 Pad
05.JPG

D_WGS_1984: 40.391980 -104.842700

-  Photo Point
-  Flow
-  Access Road
-  Construction Boundary
-  Cropland
-  Disturbed Grassland

Photo taken facing north across the future construction and tilled ag field at the southern edge of the expected construction boundary.

Appendix B – Soils Reports

Weld County, Colorado, Southern Part

47—Olney fine sandy loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 362v

Elevation: 4,600 to 5,200 feet

Mean annual precipitation: 11 to 15 inches

Mean annual air temperature: 46 to 54 degrees F

Frost-free period: 125 to 175 days

Farmland classification: Prime farmland if irrigated and the product of
I (soil erodibility) x C (climate factor) does not exceed 60

Map Unit Composition

Olney and similar soils: 85 percent

Minor components: 15 percent

*Estimates are based on observations, descriptions, and transects of
the mapunit.*

Description of Olney

Setting

Landform: Plains

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed deposit outwash

Typical profile

H1 - 0 to 10 inches: fine sandy loam

H2 - 10 to 20 inches: sandy clay loam

H3 - 20 to 25 inches: sandy clay loam

H4 - 25 to 60 inches: fine sandy loam

Properties and qualities

Slope: 1 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water

(Ksat): Moderately high to high (0.57 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 15 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0
mmhos/cm)

Available water supply, 0 to 60 inches: Moderate (about 7.0
inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 4c

Hydrologic Soil Group: B
Ecological site: R067BY024CO - Sandy Plains
Hydric soil rating: No

Minor Components

Zigweid

Percent of map unit: 10 percent
Hydric soil rating: No

Vona

Percent of map unit: 5 percent
Hydric soil rating: No

Data Source Information

Soil Survey Area: Weld County, Colorado, Southern Part
Survey Area Data: Version 20, Aug 31, 2021

Weld County, Colorado, Southern Part

53—Otero sandy loam, 5 to 9 percent slopes

Map Unit Setting

National map unit symbol: 3632
Elevation: 4,700 to 5,250 feet
Mean annual precipitation: 12 to 15 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 130 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Otero and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Otero

Setting

Landform: Plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits and/or mixed outwash

Typical profile

H1 - 0 to 12 inches: sandy loam
H2 - 12 to 60 inches: fine sandy loam

Properties and qualities

Slope: 5 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 7.7 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: R067BY024CO - Sandy Plains
Hydric soil rating: No

Minor Components

Kim

Percent of map unit: 10 percent

Hydric soil rating: No

Cushman

Percent of map unit: 5 percent

Hydric soil rating: No

Data Source Information

Soil Survey Area: Weld County, Colorado, Southern Part

Survey Area Data: Version 20, Aug 31, 2021

Weld County, Colorado, Southern Part

26—Haverson loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2tlq0

Elevation: 4,140 to 5,080 feet

Mean annual precipitation: 13 to 17 inches

Mean annual air temperature: 50 to 54 degrees F

Frost-free period: 135 to 160 days

Farmland classification: Prime farmland if irrigated

Map Unit Composition

Haverson, rarely flooded, and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Haverson, Rarely Flooded

Setting

Landform: Terraces, flood plains

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Stratified alluvium derived from mixed sources

Typical profile

Ap - 0 to 4 inches: loam

A - 4 to 11 inches: loam

C1 - 11 to 19 inches: loam

C2 - 19 to 80 inches: stratified sandy loam to loam

Properties and qualities

Slope: 1 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water

(Ksat): Moderately high to high (0.20 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: Rare

Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent

Maximum salinity: Nonsaline to very slightly saline (0.1 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 1.0

Available water supply, 0 to 60 inches: Moderate (about 7.6 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: B
Ecological site: R067BY036CO - Overflow
Hydric soil rating: No

Minor Components

Bijou

Percent of map unit: 10 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R067BY024CO - Sandy Plains
Hydric soil rating: No

Data Source Information

Soil Survey Area: Weld County, Colorado, Southern Part
Survey Area Data: Version 20, Aug 31, 2021