

# RECLAMATION STANDARD



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**SUMMARY:** Devon’s Enterprise-Wide Reclamation Standard (the “**Standard**”) establishes minimum success criteria to benefit the re-establishment of native habitat. The Standard requires ongoing tracking of reclamation success, minimal ongoing maintenance and allows flexibility for subsequent land uses.

**PURPOSE:** The Standard is designed to mitigate habitat loss and fragmentation associated with Devon’s operations with the goal of improving biodiversity value. Devon will be able to compare the relative size, scale, and nature of impacts over time and across business units through data acquisition, analysis, and reporting.

**SCOPE:** The Standard applies to all Devon initiated surface disturbance associated with new well pads and access roads in each Devon business unit. All individuals involved in Devon’s reclamation process within each business unit shall adhere to and carry out the Standard. This is a voluntary internal minimum Standard. Devon must also comply with any federal, state or local requirement that is more stringent than the Standard.

**ROLES AND RESPONSIBILITIES:** The Construction Foreman or individual in charge of construction for each project will be responsible for ensuring that the Standard is completed on construction projects that take place within each basin. The Construction Foreman will assign the appropriate Devon employees to the required tasks. A Biodiversity Core team member, or designee, will verify that each project area has achieved the goal of the Standard.

**PROCEDURE:** Below is the process to follow for Devon’s Reclamation Standard:

## 1. Ground Preparation Prior to Seed Dispersal

**Benefit:** This process enhances plant germination and survival by creating loose soils and rough surfaces that facilitate rainwater infiltration rates and root penetration surface area.

### Requirement:

- A. Soil Preparation
  - i. Use light equipment with rubber tires to minimize compaction while performing this task.
  - ii. On Slopes: Rip soil along the contours to minimize erosion.
  - iii. In Dry Soils: Use a shallow ripper shank or similar tilling device to loosen compacted surface soils when the soil is dry in order to penetrate the rooting medium down to a depth of approximately 5 inches.
  - iv. In Rocky Soils: Use a single shank tiller to minimize the displacement of rocks.

v. In High Clay Content Soils: Using a single blade tiller, rip soil in two perpendicular directions to properly break up the soil.

B. Unwanted Vegetation (when applicable)

i. Remove unwanted noxious weeds through tilling and/or herbicides the fall before planting. A list of noxious weeds by state can be found here: [State Noxious Weeds \(usda.gov\)](https://www.usda.gov/state-noxious-weeds). Weeds will compete with the seedlings for soil nutrients. Weed removal will enhance reclamation results.

## 2. Use Native Seed Mixtures

**Benefit:** Native plants are adapted to local environmental conditions, which translates to far less water usage than non-native varieties. In addition, wildlife will use native habitat for food and cover.

**Requirement:**

A. Baseline Conditions:

- i. Conduct vegetation assessments on two adjacent, undisturbed areas to determine which vegetation complex is present within the project area and help determine the appropriate seed mix.
- ii. Document the existing vegetation types and percent coverage across those areas to establish baseline conditions on the Site Assessment Form provided in Survey 1-2-3.
- iii. Document soil type. Planting seed that can thrive in the soil type present at the project area is essential to success. A desktop review using programs such as USDA Web Soil Survey (Web Soil Survey ([usda.gov](https://www.usda.gov))) or conducting shallow shovel probes prior to reclamation activities should be used to inform of the soil conditions at the site. To determine the soil texture/type when sampling, refer to the following webpage from the Natural Resource Conservation Service (NRCS): Guide to Texture by Feel | NRCS Soils ([usda.gov](https://www.usda.gov)).

B. Seed Mix:

- i. Obtain a weed-free mix of seeds native to your area at least 6 months prior to planting.
- ii. Plant a native seed mix according to guidance established by your business unit's local United States Department of Agriculture (USDA) (NRCS)<sup>1</sup> service center and/or based on landowner requirements and/or any applicable agency mix requirements<sup>2</sup>.

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<sup>1</sup> The local NRCS office can provide guidance regarding the proper mix, amount, depth of seed placement, and proper care for the seeds you are planting. The soil type, hydrology (drainage, flood inundation), climate, weeds, shade, aspect, topography, adjacent crops, associated land uses should be considered for seed selection.

<sup>2</sup> The requirements of this Standard are waived when a private landowner chooses not to allow Devon to apply the Standard to their property.

C. Planting:

- i. Broadcast the seed in the winter or fall prior to snowfall (geographic area dependent) either with a calibrated seed spreader with agitator or by hand at a seeding rate appropriate for your area of operation (see appendix A for suggestion by business unit) to a depth of ½ inch.

D. Herbicide Application:

- i. Herbicide application on federal surface requires approval of a Pesticide Use Plan (PUP).
- ii. Apply appropriate non-residual, selective herbicide at the direction of the local NRCS office available for those specific weeds present.

### 3. Protect Seeds from Erosion

**Benefit:** Regrading project sites to original contours will lead to slopes in some areas where the potential for soil erosion and seed displacement is greater than on flat surfaces.

**Requirement:**

- A. Where slopes cannot be re-graded, these areas should remain rough, uneven, and/or concave.
- B. Use physical barriers such as weed-free, native grass hay bales in areas where erosion is high to prevent soil from moving out of the project area.
- C. Lay a thin layer of native, weed-free straw for mulch to help the seeds stay in place and minimize erosion.
- D. Use naturally biodegradable erosion control mats consisting of coconut fiber, straw or wood shavings in areas where mulching is not optimal, due to wind.

### 4. Document Reclamation Efforts

**Benefit:** To determine if reclamation has achieved the desired objectives.

**Requirement:**

- A. Document progression of reclamation process by observing plant development.
  - i. Use recent satellite imagery to document the environment before construction has begun, while the facility is functioning, during interim reclamation, and after final reclamation is complete; OR use a drone to take these images at an approximate 45-degree angle and cover the entire project area for each of these stages.
  - ii. A minimum of four images must be taken for each project area regardless of which imaging option you choose. Images will be taken over the life of the reclamation process.

- iii. For each project area, record pre-construction land observations and progress of vegetation re-establishment through the reclamation process on the Reclamation Assessment Form provided in Survey 1-2-3, or similar system.<sup>3</sup>
- iv. A digital dossier shall be developed for each well pad that would enable one to record and view the history, reclamation status for that well pad and associated access road.

## 5. Final Stabilization Criteria

**Benefit:** To restore the natural vegetation community, hydrology, and wildlife habitat to its original function.

**Requirement:**

- A. Complete vegetation assessments the first growing season after final reclamation work has been completed.
- B. Record percent aerial coverage and vegetation species present on the Reclamation Assessment Form provided in GeoCortex Go.
- C. Final Reclamation occurs when all earth disturbing activities have been completed and a uniform vegetative cover has been re-established to 70% of the density of the background vegetation.
- D. 60% of the of the restored vegetation must be native species.
- E. A Biodiversity Core team member, or designee, will verify that a project has met the final reclamation criteria.
- F. A dossier shall be developed for each well pad that would enable one to record and view the history, and reclamation status for that pad.

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<sup>3</sup> Successful revegetation will be determined by monitoring reclaimed areas against existing conditions. Species and relative density will be assessed as mentioned in the final stabilization criteria and compared to baseline data collected prior to the start of ground-disturbing activities. Reclamation will be determined successful if vegetation has become established in the seeded areas and are demonstrating that they will, over time, achieve a distribution and diversity similar to pre-construction conditions. If after a second growing season problem areas have been identified (e.g., seed germination is lower than expected; prevalence of noxious-weed species), the area will be treated and re-seeded. Treatment may include additional seedbed preparation, control of noxious weeds, use of soil amendments, and/or use of another appropriate seed mix.