WASTE MANAGEMENT PLAN
Rule 304.c.11, 905.a.4

Carbon Storage Solutions, LLC
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Carbon Storage Solutions – Front Range #1
NW¼ SE¼, Section 26, T6N, R67W, 6th P.M.
Lat: 40.454964, Long: -104.859761
Windsor, Colorado
Weld County

Overview

This Waste Management Plan is intended to facilitate compliance with COGCC Rules 905 and 304 Series Regulations, as well as any applicable State and Federal guidelines. This document was prepared to be included as part of the COGCC Form 2A submission process.

This plan will serve as site specific guidance and recommended best management practices to properly manage, treat, and dispose of waste products created as a result of Oil and Gas activities. The operator will utilize these general guidelines on this site at the onset of construction activities as well as perform the necessary management and maintenance throughout the project life.

General

The Operator, Carbon Storage Solutions (CSS) will employ Best Management Practices (BMPs) & mitigation measures for handling and disposing of E&P waste, including drilling mud and cuttings. Wastes stored onsite during drill operations will be stored in compatible containers that are regularly inspected to ensure they are in good condition and free of excessive wear, structural issues or other defects that may impact their effectiveness. A closed-loop system will be used during drilling operations. No pits will be used on drilling locations. CSS intends to drill and case a stratigraphic test well, as such, no waste will be stored on location after the completion of drilling operations. All unanticipated spills/releases related to CSS operations will be promptly reported and remediated in accordance with Rule 905. All trash and other non-hazardous waste will be hauled off site by a licenses third-party transporter to be disposed of at a properly permitted commercial waste facility, per Rule 905. All waste hauled off location will follow a haul route off the Location as depicted below, and transported to Waste Management's North Weld Landfill located at 40000 W C R 25, Ault, CO 80610.

Water-Based and Oil-Based Drilling Fluids

CSS will use both water-based and oil-based fluids for the drilling of a stratigraphic test well. CSS uses two drilling scenarios with water and oil-based muds. The first consists of drilling the entire borehole with water-based drilling mud. The second consists of using water-based drilling mud only while drilling the surface casing set in the vertical portion of the borehole. Once the surface casing is set, CSS switches to oil-based drilling fluid to complete the remaining borehole. CSS determines the appropriate drilling scenario based on borehole layout, costs, and available equipment. The well is then permitted accordingly depending on the drilling mud type chosen. All wells are drilled using pit-less "closed loop" mud handling systems. Drilling fluid is contained in a series of metal tanks associated with the drilling rig and does not contact the ground surface. The following is a summary of the drilling process when CSS uses both water-based and oil-based drilling mud, while drilling a single borehole. Approximately 400-500 barrels (bbls) of water-based drilling fluid waste is produced during drilling of the surface casing borehole. After the surface casing installation is completed, the used water-based drilling fluid is transported to a permitted disposal facility via vacuum truck and transport tanker trucks on an as-needed basis. Upon completion of the surface casing borehole, CSS will switch to oil-based drilling fluid. CSS will use oil-based drilling fluid to drill the remaining borehole. Oil-based drilling fluid can be recycled much longer than water-based drilling fluid. The oil-based drilling fluid is transported to the next drilling location and reused. Only small quantities of the oil-based drilling fluid will be transported to a permitted disposal facility, if necessary. All drilling fluid is transported to permitted disposal facilities under waste manifest to ensure chain of custody control.

Drill Cuttings

Approximately 3,300 barrels (bbls) of drill cuttings are anticipated to be produced during the drilling of the CSS stratigraphic test well. The well will be drilled using a pit-less "closed loop" mud handling systems. Drill cuttings will be mechanically separated and stored in a 50 cubic yard metal roll-off container. The cuttings will be transferred from the roll-off container to a transport truck and hauled to a permitted disposal facility. Drill cuttings will be transported to permitted disposal facilities under waste manifest to ensure chain of custody control.

Impacted Soil Storage/Disposal

General housekeeping, including cleanup of limited drips and spills may generate small quantities of (E&P) exempt impacted soil and/or gravel. This includes soil or gravel from secondary containment. CSS may install small, centralized storage/disposal locations throughout the operations area for organized disposal of this waste. The covered waste containers are emptied on an as needed basis. The impacted soil/gravel is transported to a permitted disposal facility under waste manifest to ensure chain of custody control. Storage/disposal is only related to housekeeping activities and is not meant for large release cleanup or remediation.

Oily Trash

During operations, various types of exploration and production (E&P) exempt trash are generated. This includes oily gloves, rags, absorbent pads, rod packing, and spent bags filters. These items are used in the maintenance of E&P exempt oil and produced water process equipment. CSS will install centralized disposal locations throughout the operations area for disposal of this waste. The covered waste containers are emptied on an as needed basis. The oily trash is transported to a permitted disposal facility under waste manifest to ensure chain of custody control.

Recycling and Reuse Plan

CSS understands the importance of utilizing available resources to the fullest extent. This includes reuse and recycling efforts of E&P waste products. The operator will identify if a recycling and Reuse Plan is valid on any specific project and submit a written management plan with the applicable Form 4, Form 15 or Form 28, as required. This plan, when applicable, will also be consistent with the operator's site-specific Water Management Plan.

Flowback Fluid

CSS intends to drill a stratigraphic test well then case it. There will be no well stimulation phase nor will there be a flowback phase of development.

Produced Water

CSS intends to drill a stratigraphic test well then case it. There will be no well stimulation phase nor will there be a flowback phase of development.

Tank Bottoms

CSS intends to drill a stratigraphic test well then case it. There will be no produced oil or water tanks. Liquid and solid wastes are addressed within the Drill Fluids and Drill Cuttings sections of this document.

Haul Route

CSS intends to have all waste hauled off location utilizing the access road highlighted blue below. There is one way in and one way out of this facility. From the facility, there are numerous routes to the North Weld Landfill.

Waste Streams for CSS Front Range #1

Waste Stream	Operational Phase	Regulatory Classification	General Description	Estimated Volume (daily)	Frequency of Disposal	Duration of Waste Stream	Lab Analysis Required for any Physical or Chemical Hazards	Method of Storage	Method of treatment (If applicable)	Method of Disposal
General Trash	Construction/ Drilling/ Completions	Non-E&P Waste	Trash consists of any unused equipment, junk, or man-made non-E&P, non-hazardous waste.	40 yards	Weekly	7 days	No	Roll off dumpster	N/A	Commercial Disposal
Surface Cuttings	Drilling	E&P Exempt Waste	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.	270 bbls	3 loads/day	24 days	No	High wall containment	N/A	Commercial Disposal
Production Cuttings	Drilling	E&P Exempt Waste	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.	1,100 bbls	10 loads/day	24 days	No	High wall containment	N/A	Commercial Disposal
Drilling Fluids	Drilling	E&P Exempt Waste	Used to lubricate and remove drill cuttings during the drilling process. Drilling fluids are processed to remove solids and recirculated.	200 bbls	Recycled then disposed	24 days	No	Storage tanks	N/A	Commercial Disposal
Flowback Sand	N/A	E&P Exempt Waste	Sand and other small solids separated from flowback fluids.	N/A	N/A	N/A	N/A	N/A	N/A	Commercial Disposal
Flowback Water	N/A	E&P Waste Non-Exempt	Used flowback and workover fluids, muds, completion, treatment, stimulation, and packing fluid, swabbing and bailing wastes, and pipe dope from well development and workover.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Produced Water	N/A	E&P Exempt Waste	Water (brine) brought up from the hydrocarbon bearing strata during the extraction of oil and gas. It 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.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Basic Sediment and Water	N/A	E&P Exempt Waste	BS&W usually consists of water, paraffin, sand, scale, rust, and other sediments.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tank Bottoms	N/A	E&P Exempt Waste	Tank and vessel bottoms include basic sediment and water (BS&W), heavy hydrocarbons, solid sands and emulsions, which settle in the bottom of storage tanks and/or treating vessels.	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Waste Stream	Operational Phase	Regulatory Classification	General Description	Estimated Volume (daily)	Frequency of Disposal	Duration of Waste Stream	Lab Analysis Required for any Physical or Chemical Hazards	Method of Storage	Method of treatment (If applicable)	Method of Disposal
Oily Waste	N/A	E&P Waste Non-Exempt	Soil that has been impacted with crude oil, condensate, produced water, or any other E&P waste.	Varies	N/A	N/A	N/A	N/A	N/A	N/A
Drilling Mud	Plugging and Abandonment	E&P Exempt Waste	Drilling mud circulated out of annulus during plugging.	80 bbls **(Per well)**	As each well is plugged	Duration of abandonment of each well	No	Tank	N/A	Commercial Disposal
Cement Water	Plugging and Abandonment	E&P Exempt Waste	Cement returns brought back to surface during plugging.	120 bbls **(Per well)**	As each well is plugged	Duration of abandonment of each well	No	Tank	N/A	Commercial Disposal