

**Waste Management Plan – 304.c.(11)**

**South Leverich 13-09 Oil and Gas Location**

**Loc ID #335045**

**July 2022**



## **INTRODUCTION**

TEP Rocky Mountain LLC (“TEP”) has developed the following Waste Management Plan to address Exploration and Production (“E&P”) and other wastes related to its proposed operations on the South Leverich 13-09 Pad (COGCC Loc ID: 335045). This plan provides an overview of methods TEP will use for managing waste materials as required by Colorado Oil and Gas Commission (“COGCC”) Rule 304.c.(11) and Rule 905.a.(4).

E&P wastes are not regulated (i.e., exempt) as hazardous wastes by the Environmental Protection Agency (EPA) (40 CFR 261) or by the COGCC. The COGCC regulates E&P wastes in the State of Colorado. Both agencies publish a list of E&P exempt wastes on their websites. To qualify as an E&P waste, the waste must be generated during the drilling, completions, or production operations. These wastes must be managed (treated, stored, transported, and disposed of) in accordance with COGCC, County and municipal regulations, and land use codes and ordinances.

Non-E&P Wastes are those that are not generated as part of Oil and Gas downhole operations and are generally classified as non-hazardous or hazardous. These wastes must be managed in accordance with Colorado Department of Public Health and Environment (“CDPHE”) regulations, and County and Local landfill or waste disposal facility requirements.

The following documents the general practices and procedures TEP will use to manage the identified waste streams to be generated during development of the twenty-one (21) proposed wells on the South Leverich 13-09 pad.

## **SITE DESCRIPTION**

The South Leverich 13-09 Oil and Gas Development Plan (“OGDP”) is located within Lot 3 and Lot 4 of Section 13 of Township 7 South, Range 94 West, 6th P.M., which includes the reconstruction of the existing South Leverich 13-09 pad and associated pipeline infrastructure. TEP is proposing to reconstruct the South Leverich 13-09 pad to support drilling, completion, and production operations for twenty-one (21) proposed natural gas wells. The South Leverich 13-09 pad is located within Lot 3 and Lot 4 of Section 13, Township 7 South, Range 94 West, 6th P.M. on private land owned by Gordman Leverich, LLP and overlies private minerals. The land on which the pad would be located is classified as non-crop land and is primarily used for grazing cattle.

The South Leverich 13-09 OGDP involves reconstruction and expansion of one (1) existing Oil and Gas Location, construction of new pipeline corridors for natural gas transport, and the utilization of other existing facilities to support well completion and production operations. The pad location would have a constructed pad elevation of 8,007.1 feet.

The proposed 6.43-acre South Leverich 13-09 pad would be reconstructed for drilling and completions operations of the twenty-one (21) proposed directional wells. The long-term disturbance attributed to the South Leverich 13-09 pad would be approximately 1.74-acres. The existing access road would be utilized for development of the South Leverich 13-09 pad. Minor maintenance activities may occur along the existing access road; however, no new disturbance would occur. The proposed pipeline corridors would account for an additional 1.83-acres of disturbance with approximately 0.69-acres (existing roads) remaining after reclamation. The total South Leverich 13-09 OGDP disturbance would be approximately 16.11-acres. Approximately 4.79-acres of disturbance would remain long-term (including the Youberg SR 43-12 support pad and Youberg RU 44-7 remote frac pad) following interim reclamation of the proposed facilities and pipeline corridors. All proposed disturbance would be located on private surface. Please see

the Plan of Development attached to the Form 2A for a detailed breakdown of disturbance acreage for all project components associated with the South Leverich 13-09 OGD.

**DEVELOPMENT PHASE AND POTENTIAL WASTE STREAMS**

Development of the proposed Oil and Gas Location and the proposed wells will generally occur in the following order of operations:

- 1) Construction operations;
- 2) Drilling operations;
- 3) Well completion operations;
- 4) Flowback operations;
- 5) Production operations;
- 6) Interim reclamation activities;
- 7) Spill response and remediation;
- 8) Plugging and abandonment; and
- 9) Final site reclamation

The potential waste streams identified for operations at the South Leverich 13-09 pad are listed in Table 1, Potential Waste Streams by Operations Phase. This table identifies the types of waste streams likely to be generated during development of the proposed wells and the operational phase when the waste may occur.

**Table 1, Potential Waste Streams by Operations Phase.**

Potential Waste Streams	Operational Phase	Description
Drilling Fluids	Drilling Operations	Water-based circulating fluid/mud used in drilling operations to clean and condition the hole and to counterbalance formation pressure.
Drill Cuttings	Drilling Operations	Drill cuttings, and small quantities of cured cement in the shoe track, generated by drilling into the subsurface geological formations.
Excess Cement	Drilling Operations	Excess cement circulated to surface to protect groundwater and comply with COGCC Rule 408.i.(2) when conductor /surface casing is set.
Frac Sand	Completions	Returned frac sand following completion operations.
Produced Water	Completion, Flowback, and Production	Produced water utilized during well completion operations and returned fluid during flowback and production.
Contaminated Soils	All Phases	Soils contaminated at any phase of development.
Sewage	All Phases	Sewage generated while location is occupied during construction, drilling, completion, flowback, and potentially production activities.
Solid Waste / Trash	All Phases	Solid waste materials produced during any phase of development at the Oil and Gas Location.

**TYPES OF WASTES AND DISPOSAL METHODS**

**Drilling Fluids Management**

Unless noted otherwise, water-based drilling fluids will be utilized during drilling operations on the proposed oil and gas location and are classified as E&P waste. During drilling operations water-based

drilling fluids are necessary to ensure proper well control and to return cuttings generated during construction of the well back to the surface. Drilling fluids are pumped down hole and returned up the annulus and processed through a closed loop drilling fluid system, which separates liquids and solids. Drilling fluids will be re-used throughout the drilling process on the Oil and Gas Location. Once drilling operations are complete, drilling fluids will be processed through solids control and dewatering equipment on the Oil and Gas Location to reduce volume and weight of the drilling fluid. The processed drilling fluid is then stored in tanks and recycled for future drilling operations. Approximately one thousand barrels (1,000bbls) of drilling fluids could be recycled for future drilling operations following completion of drilling operations.

### **Drill Cuttings Management**

Drill cuttings generated during drilling operations on the South Leverich 13-09 pad will be managed and permanently stored within a cuttings trench constructed along the south side of the Oil and Gas Location. The cuttings trench will be approximately 424 feet in length by 50 feet in width, with a depth between 13 feet and 19 feet. The estimated volume of drill cuttings generated per well at this location is approximately 590 cubic yards (cy). Hence, the total volume of drill cuttings estimated for the 21 proposed wells to be drilled at this location is approximately 12,390 cy. The cuttings trench has been designed with a maximum capacity of 6,360 cy, which is approximately 51 percent of the expected cuttings volume. Once the trench has reached capacity, cuttings will be stacked against the cut slope of the pad. Any remaining cuttings will be hauled to a commercial disposal facility. The cuttings trench will be constructed with a two and one-half foot (2.5') high earthen berm extending along the north side of the cuttings trench to ensure containment of drill cuttings. A wildlife ramp will be constructed near the east end of the trench to prevent entrapment. Please see the Layout Drawings attached to the Form 2A for additional details on the proposed cuttings trench. Also, please see the Access Road Map attached to the Form 2A for details on the haul route from I-70 to the Oil and Gas Location.

### **Protocol for Managing Cuttings**

As water-based bentonite drill cuttings (to be managed as Oily Waste per COGCC Rule 905.g.(1)C) are brought to the surface, they will be temporarily placed into a high-walled, heavy-duty, metal storage bin that is placed close to the rig's shaker assembly. If needed, sawdust (or another acceptable, inert fill material) may be mixed with the cuttings during this phase to moderate and reduce the moisture content of the cuttings. Once the storage bin becomes full, a loader is used to move the cuttings from the storage bin to multiple 3-sided storage bins for mixing with clean fill material and sampling. Once all drill cuttings are placed into the cuttings trench, contingency sampling will occur if the background sampling has determined TEP is not yet in compliance with COGCC Table 915-1 standards. Additional treatment or amendment of the cuttings may be needed to ensure that COGCC Table 915-1 standards are met prior to reclamation. If needed, additional clean fill material may be mixed with the cuttings to ensure that cleanup standards are met. Representative samples of the blended material will be collected and submitted to an approved analytical laboratory and analyzed for the full COGCC list of organic, inorganic, and metal compounds (in soils) to confirm that the drill cuttings comply with the appropriate COGCC Table 915-1 cleanup standards (see detailed sampling protocols below).

The moisture content of the drill cuttings is kept as low as practicable to prevent accumulation of liquids within the cuttings trench. In cases where weather conditions, safety concerns, or operational constraints require, drill cuttings may be transported via truck to an approved third-party commercial disposal facility, or an approved TEP E&P Centralized Waste Management Facility (CWMF) in accordance with COGCC rules for treatment and final disposal.

TEP estimates that approximately 12,390cy of drilling cuttings will be generated during drilling operations. Drilling cuttings will be mixed with clean fill materials and tested for compliance with Table 915-1 standards. TEP estimates that 1 cy of clean fill materials will be needed for every 1 cy of drill cuttings to bring the drill cuttings into compliance with Table 915-1 standards. The total volume of mixed drill cuttings is estimated at 24,780cy, less any drill cuttings that are hauled to a third party disposal facility.

Any excess drill cuttings that exceed the capacity of the cuttings trench will be hauled to an approved third-party disposal facility. Transportation of drill cuttings (E&P Waste) will be conducted in compliance with Rule 905.b, E&P Waste Transportation.

#### Drilling Cuttings Sampling Protocol

Water-based bentonite drill cuttings (to be managed as Oily Waste per COGCC Rule 905.g.(1)C) generated during construction of the proposed wells will be sampled and characterized for compliance with COGCC Table 915-1 Cleanup Concentrations.

All samples will be collected by qualified individuals experienced with sampling and sent to a laboratory certified by the National Environmental Laboratory Accreditation Program.

Representative Samples of water-based bentonite drilling cuttings (to be managed as Oily Waste per COGCC Rule 905.g.(1)C) will be collected and analyzed in accordance with COGCC Rule 900 series. Sampling activities and methods will adhere to COGCC applicable rules and will follow soil sampling procedures. Soil samples will consist of composite samples, a combination of two or more samples collected at different times, depths, or locations within a specified sample area. Upon collection of each composite sample, the individual aliquots will be combined and blended to represent one sample. Equipment used for sample collection will be decontaminated prior to each sample to prevent cross-contamination.

Soil samples will be collected in laboratory-approved sterilized containers and preservatives will be obtained from the contract laboratory. Soil samples will be analyzed for contaminants as listed in COGCC Table 915-1 Concentration Levels.

All drilling cuttings generated from the proposed well will be characterized based on the following sampling procedure to ensure consistency, comparability, and completeness of data.

*Baseline Sampling:* As drill cuttings are generated during well construction on the South Leverich 13-09 pad, cuttings will be stockpiled and blended with clean fill material in multiple 3-sided bins prior to storage in the cuttings trench. Based on geology and proposed drill depth, TEP estimates about 590 cubic yards of water-based bentonite drilling cuttings (to be managed as Oily Waste per COGCC Rule 905.g.(1)C) will be generated from each well. Baseline samples of the cuttings will be collected to assess constituent levels listed in COGCC Table 915-1, the cuttings pile will then be thoroughly mixed with clean fill material to create a composite of the stored materials prior to placement in the cuttings trench.

TEP anticipates that the drill cuttings to soil ratio will be 1:1. Any excess material excavated during initial grading activities will be utilized for blending material. Composite soil samples will be collected once blending is complete.

A 6-point composite sample will be collected for every 590 cubic yards of material placed in the trench. Each point will represent approximately 100 cubic yards as recommended by COGCC's Rule 915.e.(2)

Soil Sampling and Analysis Guidance document. All twenty-one (21) wells will be drilled in the same geologic formation.

All six composite samples will be collected at random depths at least one foot below the surface of the pile within the cuttings bin(s). A homogenous sample of the accumulated cuttings will be analyzed according to Table 915-1 criteria, since all cuttings accumulated will be from the same geologic formation using the same drilling mud program. This data set will also establish baseline criteria levels for future remediation and reclamation. Per Rule 913.b.(2).C. “[c]omposite sample results may be submitted for preliminary analysis and waste profiling. Discrete sample results will be required for confirmation sampling.”

*Contingency Sampling:* If the blended water-based bentonite drilling cuttings (to be managed as Oily Waste per COGCC Rule 905.g.(1)C.) do not meet Table 915-1 (or current COGCC analytical requirements), the 590 cubic yard treatment cell, from which the composite samples were taken, will undergo additional blending and aeration/turning process on location. Samples will be collected approximately 2 weeks after re-blending. After treatment, on average, water-based bentonite drilling cuttings samples will be collected monthly until stored material meets Table 915-1 or are within background limits in the footnotes listed in Table 915-1.

Soils that were in contact with (beneath or adjacent to) the cuttings treatment area will be sampled according to Table 915-1 criteria and remediated as appropriate.

*Final Disposition of Waste:* The material will be sampled and analyzed to determine if cuttings are in compliance with Table 915-1. Once the water-based bentonite drilling cuttings meet the requirements of Table 915-1 as determined upon sampling and analysis, the water-based bentonite drilling cuttings will be managed and disposed of pursuant to Rule 905.g.(2) *Drill Cuttings*.

*“Operators will demonstrate compliance with Table 915-1 through sampling and analysis. Management of drill cuttings that exceed Table 915-1 for constituents listed under soil suitability for Reclamation by the methods listed below is subject to prior approval by the Director, pursuant to Rule 915.b. Operators may manage drill cuttings that comply with Table 915-1, are not Oily Waste, and are generated using water-based bentonitic drilling fluids through one of the following methods:”*

Water-based bentonite drilling cuttings at the South Leverich 13-09 pad will be buried in accordance with Rule 905.g.(2).E. *Subject to Surface Owner approval, and prior to Director approval of a Form 27, burial in a cuttings trench.* The treated drill cuttings will serve as fill material to allow for natural contouring during reclamation of the site. Pending Director approval of the Form 27, TEP will use salvaged topsoil as coverage in accordance with Rule 1003.e.(2) *Revegetation of non-crop lands*.

*“All segregated soil horizons removed from non-crop lands shall be replaced to their original relative positions and contour as near as practicable to achieve erosion control and long-term stability, and shall be tilled adequately in order to establish a proper seedbed.”*

The cuttings trench will be re-contoured to blend as nearly as possible with the natural topography per the *South Leverich 13-09 Reclamation Plan*.

As required by Rule 905.g.(2).E, TEP will submit a Form 27 for Director approval for final cuttings burial during interim reclamation. TEP intends to permanently bury drilling cuttings onsite in the cuttings trench.

Per the *South Leverich 13-09 Reclamation Plan*, Interim Reclamation of the South Leverich 13-09 pad will begin within six (6) months following completion of drilling and well completion operations. A working area (production pad) must be maintained around each wellhead and production equipment to ensure site accessibility and safe working conditions during long-term production operations.

**Excess Cement**

Wellbore cement that is returned to surface during cementing operations of the surface casing and conductor sections will be diverted to, and accumulated in, an open- top bin on location. Cement E&P Waste will be managed to comply with COGCC Rule 905.b.(1). This cement waste stream, defined as *Excess Cement* on Table 1, will subsequently be transported for final disposal as E&P waste via truck to a facility approved to receive E&P Waste by CDPHE and Relevant Local Government.

**Cement Washout**

Non-hazardous excess cement waste, called “cement washout”, will be managed separately on location in an open top bin. This cement waste stream, defined as *Cement Washout* on Table 1, will subsequently be transported as solid waste via truck to an approved disposal facility in accordance with COGCC rules for final disposal. TEP will comply with all storage, treatment, and disposal requirements in the SHWC’s Solid Waste Regulations, as incorporated by reference in Rule 901.b.(3).C.

**Frac Sand & Filter Socks**

Returned stimulation fluids generated during flowback operations are processed through two (2), four (4) phase separators to remove gas, water, condensate, and sand. Water will be reused during future well completion operations on the South Leverich 13-09 pad or transported via pipelines as described in the Produced Water section below. Frac sand will be managed within a forty-foot (40’) by forty-foot (40’) earthen containment cell with two and one-half foot (2.5’) high earthen berms surrounding all sides of the containment cell. This frac sand containment cell will be located on pad within the pad perimeter berm. Once flowback operations are complete, returned frac sand will be hauled off-site to an approved Centralized E&P Waste Management Facility or third-party commercial disposal facility.

Spent filter socks generated during the completion / flowback process are collected and stored separately from garbage / trash. The filters will be sampled and profiled for disposal at an approved third-party commercial disposal facility that is permitted and authorized to accept waste filter socks for disposal. Please see the Waste Handling Table (Table 5) below for additional details.

**Produced Water**

Produced water (water produced from the wells after the wells are turned over to production) will be transported through the proposed four-inch (4”) produced water pipeline to the tie-in point with an existing four-inch (4”) water pipeline at the Youberg SR 43-12 pad (Location ID 413683). Water will then be transported via existing water pipelines to one of the following TEP-operated Centralized E&P Waste Management Facilities for treatment, recycling, or disposal.

**Table 2, Existing E&P Waste Management Facilities**

<b>Facility Name</b>	<b>Location</b>	<b>COGCC Location ID</b>	<b>COGCC Facility ID</b>
Spruce Creek 14-4-794	SWSW Section 4 T7S R94W	427810	441099
Smith Gulch 31-32-796	NWNW Section 32 T7S R96W	430110	446561

Facility Name	Location	COGCC Location ID	COGCC Facility ID
KP 32-17 Completions Pit	SWNE Section 17 T6S R91W	323844	418807
Parachute E&P Waste Management Facility	SWSW Section 36 T6S R96W	--	149015
Rulison E&P Waste Management Facility	NWSW Section 20 T6S R94W	--	149006
Mautz Ranch E&P Waste Fac.	SENE Section 19 T2S R98W	422672	444993

Produced water will be treated with biocide at the water management facility. Produced water will also be treated with biocide prior to disposal if necessary. Produced water is then disposed of through (1) natural evaporation at the evaporation ponds, (2) delivered and injected into one of the approved TEP-operated underground injection control (“UIC”) facilities, (3) re-used in hydraulic fracturing operations, or (4) hauled to an approved third party, commercial disposal facility as described below.

Natural Evaporation Ponds

Produced water that has been collected and treated at any of the various Centralized E&P waste management facilities is stored in large, lined, engineered evaporation storage ponds that have been permitted and constructed to comply with COGCC Rule 907, Centralized E&P Waste Management Facilities, Rule 909 Pits – Construction and Operation, and Rule 910 Pit Lining Requirements and Specifications. These water storage ponds are purposefully designed with a large surface area to maximize evaporation of the produced water. Exposure to the sun, warm temperatures, and wind effectively evaporate water from the ponds and return that water to the atmosphere and ultimately to the hydrologic cycle. The arid climate of western Colorado is an ideal location for use of natural evaporation ponds as the annual evaporation rate typically is 3 – 4 times the annual precipitation rate for the area.

Underground Injection Control (UIC) Facilities

Disposal of produced water at permitted underground injection control facilities is another viable option for disposal of excess produced water. Currently, TEP owns and operates 38 UIC injection wells (see Table 3) that are used for produced water disposal as needed. These UIC disposal wells / facilities are a critical component of TEP’s water management process as they help to maintain the balance between the total volume of production water generated, and the volume of water that is re-used / recycled or otherwise evaporated. All UIC facilities have been permitted per the Rule 800 series.

**Table 3, Approved UIC Facilities**

Well Name	Location	UIC Facility Number	Ownership	API
Circle B Land 33A-35-692	NWSE-S35-T6S-R92W	159277	Fee	05-045-18493
GGU Roderick	NENW-S31-T6S-R91W	159176	Fee	05-045-13803
Scott 41D-36-692	NENE-S36-T6S-R92W	159159	Fee	05-045-11169
Specialty 13A-28	NWSW-S28-T6S-R92W	159212	Fed	05-045-14054
KP SWD 9-12D	NESE-S8-T6S-R91W	159301	Fee	05-045-18532
PWD Federal 21-6	SWSE-S21-T6S-R91W	159479	Fed	05-045-21277
GM 14-36	Lot 4-S36-T6S-R96W	159262	Fee	05-045-07501
GM 239-36	NESW-S36-T6S-R96W	159369	Fee	05-045-14693
GM 523-36	NESW-S36-T6S-R96W	159266	Fee	05-045-13979

Well Name	Location	UIC Facility Number	Ownership	API
GM 923-1D	SWNE-S1-T7S-R96W	159295	Fee	05-045-18424
GM 931-1D	SWNE-S1-T7S-R96W	159297	Fee	05-045-18425
GM 943-1D	SWNE-S1-T7S-R96W	159296	Fee	05-045-18426
Fed 299-23-1	SESW-S23-T2S-R99W	159478	Fed	05-103-10488
Fed 299-23-2	NESE-S23-T2S-R99W	159452	Fed	05-103-10490
Fed 299-26-1	SWNW-S26-T2S-R99W	160001	Fed	05-103-10364
Fed 299-26-2	NWNW-S26-T2S-R99W	159413	Fed	05-103-10538
Fed 299-27-5	SWNE-S27-T2S-R99W	159317	Fed	05-103-10624
Fed 299-27-6	NENW-S27-T2S-R99W	159396	Fed	05-103-10644
RG 41-16-397	NWNE-S16-T3S-R97W	159410	Fed	05-103-11517
RMV 215-21	NESW-S21-T6S-R94W	159388	Fee	05-045-07465
RWF 434-21	SWSE-S21-T6S-R94W	159386	Fee	05-045-10469
RWF 623-21	NESW-S21-T6S-R94W	159387	Fee	05-045-10389
RWF 911-28D	SESW-S21-T6S-R94W	159447	Fee	05-045-22176
RWF 933-19D	SWNW-S20-T6S-R94W	159462	Fed	05-045-22333
SG 334-32	NWSE-S32-T7S-R96W	159971	Fee	05-045-18442
SG 914-32D	NESE-S32-T7S-R96W	159981	Fee	05-045-18533
SG 922-32D	SESW-S32-T7S-R96W	159960	Fee	05-045-22654
SG 924-29D	NWNE-S32-T7S-R96W	159974	Fed	05-045-23023
B19-N	NWNE-S32-T7S-R96W	159220	Fee	05-103-11000
BAT 23CWI-24-07-96	NESW-S24-T7S-R96W	159457	Fee	05-045-22313
CSF #1-10W (Speakman)	NESW-S10-T7S-R91W	159150	Fed	05-045-06273
Tompkins 41 AWI-08-07-95	SESE-S5-T7S-R95W	160006	Fee	05-045-22551
Valley Farms D3	NENW-S15-T6S-R92W	159299	Fee	05-045-12082
Valley Farms F4	NWSW-S14-T6S-R92W	159298	Fee	05-045-14287
Watson Ranch B 24AWI-17-07-95	SESW-S17-T7S-R95W	159983	Fee	05-045-22801
DOE 1-W-27	Lot 5-S27-T6S-R95W	159432	Fed	05-045-06584
DOE 2-W-27	Lot 8-S27-T6S-R95W	159432	Fed	05-045-06585
DOE 2-W-29	Lot 8-S29-T6S-R95W	159418	Fed	05-045-06588

Re-use/Recycle in Hydraulic Fracturing Operations

Re-use and recycling of produced water is an effective and efficient use of produced water as it precludes the use and consumption of freshwater resources. As produced water is generated from existing wells, the water is collected / transported to one of the Centralized E&P waste management facilities for further treatment and potential re-use / recycling during hydraulic fracturing operations. The “finished” water from the treatment facility has been treated to remove any residual hydrocarbon content that was not separated at the well-head. After treatment, the treated water may then be “re-used / recycled” during hydraulic fracturing operations where the water is pumped from a Centralized E&P waste management facility to a series of remote storage ponds where the water is staged and ultimately re-used / recycled for

hydraulic fracturing operations. Hydraulic fracturing operations is a highly water intensive activity and re-using / recycling produced water serves to protect and reserve freshwater resources.

Third Party Disposal Facilities

Third party disposal facilities are an option available to TEP for management and disposal of produced water. However, because this option requires trucking to a distant commercial disposal facility, this is typically considered to be a labor-intensive option, is not cost effective for TEP, and therefore, is not a preferred option. There are six Third-Party, commercial disposal facilities that are locally / regionally available to TEP operations (see Table 4). Typically, TEP would only use a third-party commercial disposal facility for produced water disposal if our existing water treatment facilities were full (at maximum capacity) and/or TEP’s permitted injection wells were incapacitated (not available) for some reason.

**Table 4, Approved Third Party Disposal Facilities**

<b>Facility Name</b>	<b>Location</b>	<b>Permit No.</b>
OWL SWD Operating LLC Services	SE Sec 8, T20S, R24E Grand County, UT	Grand County Council Resolution 2798
Harley Dome #1 SWD 43-019-31622	Sec. 10-9S-25E	UIC-358-1
Greenleaf Environmental Services	15655 45 ½ Road Debeque, CO 81630	Mesa County CUP Resolution MCM 2012-044 APCD Permit – 02ME0577 CDPHE-HMWMD – SW / MES BLA / 2.2
ECDC Environmental Landfill	1111 West Highway 123 East Carbon, UT 84520	Class V Landfill Permit #9422R1
White River Dome (Owned by RNI/DHI) Colorado disposal site	White River City Rio Blanco County, CO Intersection of CR 5 and Hwy 64	CDPHE Solid Waste Permit: SW-RBL.PIC 2.3 APCD Permit- 07RB0987
PBR Disposal	SWSW Section 2, T3S, R98W Rio Blanco County	Air Construction Permit. 09RB0921 Rio Blanco County SUP Resolution 2007-42 (07/13/09)

**Contaminated Soils**

Occasionally, spills of production fluids may occur during oil and gas operations that result in localized impacts to soils on or near the well pad. All spills are immediately investigated by TEP Environmental and Operations personnel. Impacted soils are assessed to determine if they exceed regulatory cleanup standards and require removal, treatment, or disposal. Characterizing potentially contaminated soils is accomplished either by field-screening the impacted soils to determine relative hydrocarbon concentrations, and/or by collecting samples of the impacted soils and sending the samples to an approved commercial lab for analysis.

All contaminated soils exceeding regulatory cleanup standards are excavated and managed / disposed of appropriately. If a spill incident is subject to agency reporting requirements, the appropriate agencies are notified within the regulatory timelines. Impacted soils that exceed applicable cleanup standards are typically excavated and taken to an off-site commercial disposal facility that is authorized to accept that type of waste.

## **Sewage**

Chemical toilets (i.e., porta potties) will be provided on site for personnel use during construction, drilling, and completions operations. Porta potties will be emptied weekly by an approved sanitary waste contractor and hauled to an approved sanitary waste disposal facility. Please see Table 5, Waste Handling Summary, for additional details.

## **Garbage**

All garbage and trash (i.e., solid, non-hazardous wastes) will be stored in enclosed bear-proof trash containers. Disposal of garbage and trash will occur approximately once per week during drilling and completions operations. All garbage and trash will be transported to a permitted solid waste landfill within one (1) week following termination of drilling or completion operations. Garbage or trash will not be disposed of on-location. The well site and access road will be kept free of trash and debris during long-term production operations. No hazardous substances or hazardous wastes are anticipated to be generated during construction, drilling, and completions operations. Such materials are strictly prohibited for disposal at a solid waste landfill. Please see Table 5, Waste Handling Summary, for additional details.

## **RECORD KEEPING**

TEP will comply with COGCC Rule 905.b.(3), Waste Generator Requirement, which states that operators that generates E&P Waste that is transported off-site will maintain records of invoices, bills, or tickets for a minimum of five (5) years including the following information:

1. The date of the transport;
2. The identity of the waste generator;
3. The identity of the waste transporter;
4. The location of the waste pickup site;
5. The type and volume of waste; and
6. The name and location of the treatment or disposal site.

Records will be maintained in compliance with COGCC Rule 206, Recordkeeping and Access to Records. Records will be maintained at TEP's main field office in Parachute, CO. TEP will maintain facility inspection forms, maintenance documentation, analytical sample data, storm water management and weed control documentation, operational data, and any other information relative to the operation of this facility.

## **BEST MANAGEMENT PRACTICES**

- 1) TEP will properly characterize and dispose of all waste streams at facilities approved for acceptance of each waste stream;
- 2) TEP will properly characterize and dispose of all waste at the appropriate specific landfill/waste disposal location that allows for acceptance of the particular waste stream.
- 3) No offsite disposal of cuttings to another Oil and Gas Location shall occur without prior approval of an amended Waste Management Plan specifying disposal location and waste characterization method; commercial disposal of drill cuttings and drilling fluids will only require the operator to maintain documentation (manifests, bills of lading) of drill cuttings and drilling fluids disposal; the operator will implement measures (covers, misting) in trucks to reduce dust and PM emissions during transport of WBM solids and cuttings materials from the well pad location;

## **SUMMARY**

As described above, development of the proposed wells on the South Leverich 13-09 pad will produce waste fluids and materials which will be managed in accordance with all Federal, State, and local guidelines. Table 5, Waste Handling Summary, shows a detailed summary of the waste streams involved in development of the proposed wells.

**Table 5, Waste Handling Summary**

<b>Waste Type</b>	<b>Waste Classification</b>	<b>Waste Content Description</b>	<b>Waste per Well</b>	<b>Total Waste</b>	<b>Disposal Frequency</b>	<b>Containment Description</b>	<b>Disposal Type</b>	<b>Disposal Location</b>
<b>Drill Cuttings</b>	E&P Waste	Water-based Bentonitic Drill Cuttings	590cy	12,390cy	One Time Only	Cuttings Trench	On-site Disposal	Private / O&G Location
<b>Water-based Drilling Fluids</b>	E&P Waste	Water-based Bentonitic Drilling Fluids	NA	1,000bbls	One Time Only	Tanks	Recycle	Private / TEP E&P CWMF
<b>Excess Cement</b>	E&P Waste	Excess cement generated from setting surface casing and conductors.	4cy	84cy	As needed	3-sided bin or Open Top Tank	Haul to an Approved Commercial Facility	Commercial
<b>Cement Washout</b>	Non-hazardous Solid Waste	Cement washout from cleaning equipment and lines	0.1cy	2.1cy	As needed	3-sided bin or Open Top Tank	Haul to Commercial Facility	Commercial
<b>Sewage</b>	Non-hazardous Solid Waste	Sewage	200bbl	NA	Weekly	Chemical toilets or enclosed sewer system	Haul to Commercial Facility	Commercial
<b>Garbage</b>	Non-hazardous Solid Waste	Garbage/Trash	4000lb	NA	Weekly	Enclosed trash containers	Haul to Commercial Facility	Commercial
<b>Flowback - Frac Sand</b>	E&P Waste	Frac Sand	2060lb	37,080lb	As needed	Earthen berm containment on pad	Haul to an Approved Commercial Facility	Commercial
<b>Produced Water</b>	E&P Waste	Produced water after well is turned over to production. The volume reported is not accurate nor known at this time.	100+bbls	NA	Weekly	Water is piped into existing infrastructure	Recycled/Off-Lease Injection/Commercial Facility	Private / TEP E&P CWMF or Injection Facility
<b>Contaminated Soils</b>	E&P Waste	Contaminated soils from spill or release of <u>produced water</u> or <u>condensate</u> .	NA	NA	As needed	Earthen berm containment on pad	On-site Disposal or Haul to approved commercial disposal facility.	Private / O&G Location or Commercial
<b>Contaminated Soils</b>	Hazardous Waste or Substance	Contaminated soils from spill or release of <u>diesel fuel</u> or <u>chemicals</u>	NA	NA	As needed	Excavation and direct placement into dump trucks or temporary storage bins	Haul to approved commercial disposal facility	Commercial