



## **DJ WASTE MANAGEMENT PLAN 2016**

### **1.0 APPLICABILITY**

This DJ Basin Waste Management Plan is applicable to all Crestone Peak Resources (CPR) DJ Basin Operating Area employees and non-Crestone Peak Resources employees who work under contract for Crestone Peak Resources at all facilities owned and/or operated by Crestone Peak Resources.

### **2.0 SCOPE**

The purpose of this plan is to assess and mitigate any significant risks and impacts to human health and the environment associated with solid waste generated by activities derived from oil and gas exploration and production (E&P) activities across the DJ Basin. This plan outlines requirements and procedures to ensure waste is stored, transported, and disposed of in accordance with state and federal regulations. Complying with this practice supports Crestone Peak Resources' commitment to minimize, recover, recycle and reuse materials where possible, along with all standards currently being practiced by Crestone Peak Resources.

### **3.0 ROLES AND RESPONSIBILITIES**

Responsibilities encompassing materials and waste management will be shared among Crestone Peak Resources EH&S employees in order to track and report waste properly. Responsibilities and coinciding roles are outlined as:

DJ Basin Leadership will direct employees and service providers to fully comply with this and other materials and waste practices and procedures. This will include identifying, supporting, and implementing prevention, reporting, management and response programs.

DJ Basin Staff is responsible for implementing this plan along with other materials and waste practices and procedures. This will include identifying, supporting, and implementing prevention, reporting, management, and response programs; along with materials and waste training for field personnel.

### **4.0 MATERIALS AND WASTE MANAGEMENT GUIDANCE**

Waste is regulated on Federal and State platforms. In order to comply with these requirements one must first characterize the waste for proper disposal methods. The following sections will provide guidance to these regulations and touch on resources available.

#### **4.1 Waste Classification**

Waste generated by DJ Basin operations can be broken down into five categories; exploration and production (E&P), universal, used oil, hazards and non-hazardous. These waste streams are defined by the Environmental Protection Agency (EPA). They are then filtered into State regulation brought to a fore via; The Colorado Oil and Gas Conservation Commission (COGCC) and its counterpart, Colorado Department of Public Health and Environment (CDPHE).

##### **4.1.1 Definitions**

*Exploration and Production Waste:* Wastes associated with operations to locate or remove oil or gas from the ground or to remove impurities from such substances and which are uniquely associated with and intrinsic to oil and gas exploration, development, and production.

*Hazardous Material:* A substance or material that the Secretary of Transportation has determined is capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and has designated as hazardous under section 5103 of Federal hazardous materials transportation act ([49 U.S.C. 5103](#)). The term includes hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (see [49 CFR 172.101](#)), and materials that meet the defining criteria for hazard classes and divisions in [40 CFR Part 173](#).

*Hazardous Waste:* Materials that have specific defined characteristics, are generated by specific processes, are listed commercial chemical products that are hazardous when disposed of, or have the following characteristics:

- Ignitable (D001):
  - Liquids with a flash point < 140°F, and
  - Solids that readily ignite and burn vigorously;
- Reactive (D002):
  - Normally unstable and readily undergoes violent changes without detonation,
  - Violent reaction to water,
  - Explosive mixture with water, and
  - Generates toxic gases, vapors, or fumes with water;
- Corrosive (D003) – Aqueous liquids with a pH ≤ 2 or ≥ 12:
- Toxic (D004-D043):
  - Harmful or fatal when ingested or adsorbed, and
  - When land disposed contamination may leach out of the waste and pollute ground water.

*Universal Waste:* Specific hazardous wastes that are generated by most business and industrial users. Examples of universal wastes include batteries, fluorescent light bulbs, printer cartridges, and used electronics.

*Used Oil:* Any oil that has been refined from crude oil, or any synthetic oil, that has been used and as a result is contaminated by physical or chemical impurities.

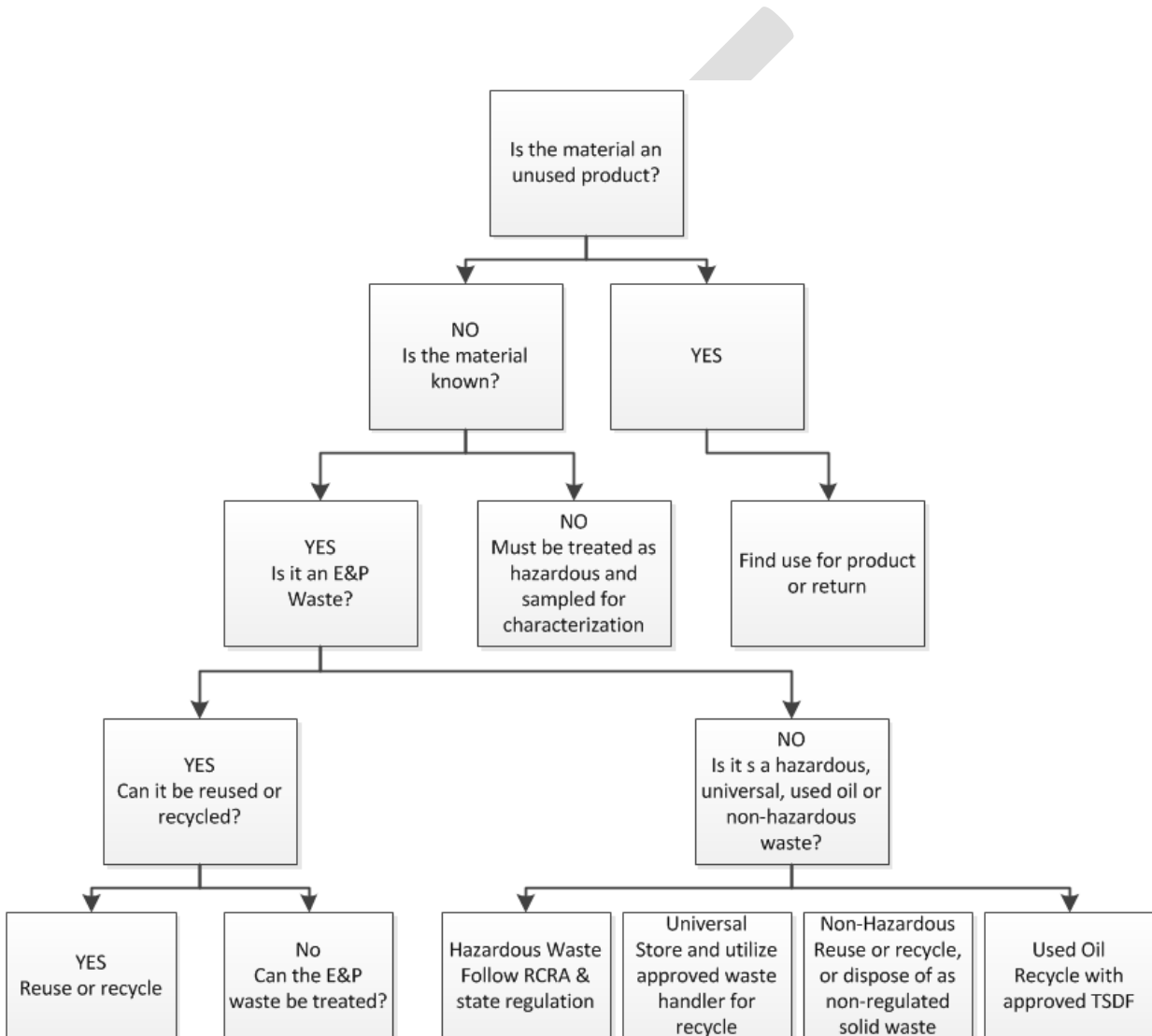
*Solid Waste:* Any solid, semi-solid, liquid, or contained gas discarded from industrial, commercial, mining, or agricultural operations, and from community activities which includes garbage, construction debris, commercial refuse, sludge from water supply or waste treatment plants, or air pollution control facilities, and other discarded materials.

*Facility:* The same or geographically contiguous property that may be divided by public or private right-of-way provided the entrance and exit between the properties is at a crossroads intersection, and access is by crossing as opposed to going along, the right-of-way. Non-contiguous properties owned by the same person but connected by a right-of-way which he controls and to which the public does not have access, is also considered on-site property.

*Treatment Storage and Disposal Facility (TDSF):* Site where a hazardous substance is treated, stored, or disposed. TSDFs are regulated by EPA and states under the Resource Conservation and Recovery Act (RCRA).

#### 4.1.2 Waste Identification Flow Chart

The flow chart in Figure 1.0 is used in assessing most waste generated by Crestone Peak Resources operations.



#### **4.1.3 Regulatory Guidance**

Below are Colorado state and federal guidance documents for reference:

[COGCC 900 Series](#)

[EPA General Guidance](#)

[Resource Conservation and Recovery Act Summary](#)

[CDPHE Hazardous Waste Management](#)

## **4.2 STORAGE, INSPECTION AND GENERATOR STATUS**

Hazardous and Universal waste streams require special storage and handling requirements. Specific requirements for both waste streams are provided below.

### **4.2.1 Hazardous Waste**

Hazardous waste can be stored at location in 55 gallon DOT approved drums that are:

- Properly labeled with DOT and CAS numbers and placards
- Well maintained to prevent leaks
- Sealed when not filling

If a drum is kept at location and not within a 90/180 day accumulation site, it can be kept until it is full. Once full, it must be labeled and either disposed of or moved to the 90/180 accumulation site within 72 hours. The 90/180 day accumulation sites are for hazardous waste collected for a region or from various facilities. These sites must:

- Be secured with limited access
- Have appropriate secondary containment to prevent spills and releases
- Allow adequate room for inspections and emergency clean up
- Have elevated or sloped bases to prevent accumulation of liquids from leaks and spills
- Separate incompatible wastes with dikes, berms, or walls
- Not allow smoking
- Be inspected at least weekly for leaks
- Ensure that all waste containers are appropriately labeled
- Ensure all OSHA standards are met (e.g., eyewash stations)

#### 4.2.2 Universal Waste

Universal waste must be stored in a manner to prevent contamination. Universal waste is stored in a common location within a field or sub-business unit in 55 gallon DOT approved drums that are:

- Properly labeled with DOT and CAS numbers and placards
- Labeled as “Universal Waste (*enter waste type*)” (e.g., “Universal Waste Pesticides”)
- Well maintained to prevent leaks
- Organized
- Sealed when not filling

Universal waste can only be held on site for up to one year. In order to prevent any waste from being held over one year, all Universal Waste must be disposed of within 9 months of collection. In order to track the amount of time that Universal Waste is held on site, Crestone Peak Resources staff will complete one of the following:

- Marking each item with the date it was initially accumulated;
- Marking the container holding the waste with the date the material was initially accumulated; or
- Using an inventory tracking system.

Generator status for Universal Waste is determined solely by the total amount (in kilograms) held on site at any given point in time. In order for Crestone Peak Resources facilities to maintain Small Quantity Generator (SQG) status, Universal Waste shall not exceed 4,000 kg (8,820 pounds) on site at any time.

#### 4.2.3 Used Oil

Used oil must be stored in a manner to prevent contamination. When storing used oil, the following must be complied with:

- Used oil must be stored in tanks or containers with appropriate secondary containment;
- Containers and above-ground tanks must be in good condition and not leaking; and
- Used oil storage units must be clearly marked or labeled with the words “Used Oil.”

Used oil should not be mixed with hazardous waste, however, some mixtures of used oil and hazardous waste can be treated as used oil. Table 1.0 provides guidance on how to determine how to treat used oil mixed with other hazardous materials (after it is sampled and analyzed).

**Table 1.0 Used Oil Mixture Chart**

	<b>Mixed With:</b>	<b>And Afterwards:</b>	<b>Manage As:</b>
Used Oil	Listed Hazardous Materials (F, K, P, U)	Shows or does not show Hazardous Characteristic	Listed Hazardous Waste
Used Oil	Characteristic Hazardous Waste (corrosive, ignitable, toxic, reactive)	Shows the Hazardous Waste characteristic	Characteristic Hazardous Waste
Used Oil	Characteristic Hazardous Waste (corrosive, ignitable, toxic, reactive)	Does not show the Hazardous Waste characteristic	Used Oil

#### 4.2.4 Exploration and Production Waste

Exploration and production waste (E&P waste) is exempt from RCRA regulations, but is still regulated under state authority. Each state has different rules regarding the accumulation, storage, inspection and disposal of E&P waste. Crestone Peak Resources staff should refer to the Regulatory Matrix for details on how E&P waste is accumulated, stored, inspected and disposal in their state.

*Drilling Mud/Cuttings:* Drilling mud/cuttings are generated during drilling operations. Drilling mud/cuttings typically involve fresh water, bentonite, and a blend of bio-degradable polymers. Soda Ash or caustic soda is added in small concentrations to control fluid pH to a range of 9.0 – 10.0. Store E&P waste in a manner to prevent contamination of the soil, groundwater, and wildlife.

- Disposal of drilling mud/cuttings may be reclaimed as a soil amendment to surface soils under COGCC Rule No. 907.d(3).B. The drilling mud/cuttings are transported to an approved site and are applied to the surface in accordance with the COGCC rule. Prior to application of drilling mud/cuttings, the surface owner must sign a “Letter of Agreement” with Crestone Peak Resources authorizing application of drilling mud/cuttings. A copy of this letter of agreement is retained by Crestone Peak Resources

*Non-E&P Waste:* Non-E&P waste is regulated under COGCC rule 907A. Wastes that are non-exempt under RCRA subtitle C must be managed as follows:

- a. Certain wastes generated by oil and gas-related activities are not E&P wastes and are properly identified and disposed of in accordance with state and federal regulations.
- b. The hazardous waste regulations require that a hazardous waste determination be made for any non-E&P solid waste. Hazardous wastes require storage, treatment, and disposal practices in accordance with 6 C.C.R. 1007-3. All non-hazardous/non-E&P wastes are considered solid waste, which require storage, treatment, and disposal in accordance with 6 C.C.R. 1007-2. The most common example of a “Non E&P Waste” is hydraulic oil. Hydraulic oil does not meet any of the RCRA threshold standards and is not listed as a hazardous product or waste by the EPA.

- Not mix E&P waste with hazardous or any other waste
- Track the disposal of E&P waste

While E&P waste should not be mixed with Hazardous Waste, Table 2.0 describes how a mixture of E&P waste is to be treated if contaminated with certain types of hazardous waste, once sampled and analyzed.

**Table 2.0 Exploration and Production Waste Mixture Chart**

	<b>Mixed With:</b>	<b>And Afterwards:</b>	<b>Manage As:</b>
E & P waste	Listed Hazardous Materials (F, K, P, U)	Shows or does not show Hazardous Characteristic	Listed Hazardous Waste
E & P waste	Characteristic Hazardous Waste (corrosive, ignitable, toxic, reactive)	Shows the Hazardous Waste characteristic	Characteristic Hazardous Waste
E & P waste	Characteristic Hazardous Waste (corrosive, ignitable, toxic, reactive)	Does not show the Hazardous Waste characteristic	E&P Waste

### 4.3 GENERATOR STATUS

Every site is required to determine generator status for all of the wastes handled on-site. A site can handle and be subject to regulations for both hazardous and universal waste. The Waste Tracking Tool will be used to track all waste disposals. A report option is available to determine the generator status for hazardous waste generators and handlers of Universal Wastes.

#### 4.3.1 Hazardous Waste

Hazardous waste generator status is determined by the quantity of hazardous waste produced per calendar month or the amount of hazardous waste accumulated at any one time at one facility. RCRA exempt wastes, such as E&P and universal, are not included in determining generator status. The EPA designated three levels of hazardous waste generator: Large Quantity, Small Quantity, and Conditionally Exempt Small Quantity.

##### 4.3.1.1 Large Quantity Generator

If the facility generates hazardous waste in amounts greater than 1,000 kg (2,205 lbs) per month (or greater than one kilogram (2.2 lbs) acutely hazardous waste per month) it is classified as a Large Quantity Generator (LQG). LQGs are subject to the following constraints:

- Accumulation of hazardous waste on-site for a maximum of 90 days;
- No quantity limitations on hazardous waste accumulation
- Ensuring anyone who handles hazardous waste within the facility receive RCRA training
- Ensuring there is always at least one employee available and responsible for coordinating all emergency response measures
- Submitting biennial reports to the EPA and maintaining annual reports (discussed in further detail in section 8.2.1 “Hazardous Waste Reporting”)

#### 4.3.1.2 Small Quantity Generator

If the facility generates hazardous waste in amounts greater than or equal to 100 kg (220.5 lbs.) and less than or equal to 1,000 kg (2,205 lbs) per month and less than 1 kg (2.2 lbs.) of acutely hazardous waste, the facility is classified as a Small Quantity Generator (SQG). SQGs are subject to the following constraints:

- Accumulation of hazardous waste for up to 180 days (270 days if the shipping distance is greater than 200 miles)
- Limitation of 6,000 kg (13,228 lbs) of hazardous waste stored at any time
- Ensuring there is always at least one employee available and responsible for coordinating all emergency response measures

#### 4.3.1.3 Conditionally Exempt Small Quantity Generator

If the facility generates hazardous waste in amounts less than 100 kg (about 220 lbs) and less than 1 kg (about 2.2 lbs) of acutely hazardous waste, the facility is categorized as a Conditionally Exempt Small Quantity Generator (CESQG). CESQGs are subject to the following constraints:

- Accumulation of hazardous waste for up to 180 days (270 days if shipping is further than 200 miles)
- Storage of no more than 1,000 kg (2,205 lbs) of hazardous waste at any time

#### 4.3.2 Universal Waste

Universal Waste generator status is determined by the total accumulation at a facility at any time. It is important to track all Universal Waste on-site and stay well under the 5,000 kg (11,023 lbs.) limit required to maintain small quantity handler status.

##### 4.3.2.1 Large Quantity Handler of Universal Waste

A facility that accumulates at any time more than 5,000 kg (11,023 lbs) of Universal Waste is categorized as a Large Quantity Handler of Universal Waste. Universal Waste may only be kept on site for up to one year.

##### 4.3.2.2 Small Quantity Handler of Universal Wastes

A facility that accumulates less than 5,000 kg (11,023 lbs) of Universal Waste is categorized as a Small Quantity Handler of Universal Waste. Universal Waste may only be kept on site for up to one year.

## 4.4 HANDLING AND TRANSPORTATION

Safety Data Sheets for waste and associated materials should be referenced when handling and transporting wastes. Transportation of waste is recorded and tracked utilizing Waste Manifests. Properly trained and designated personnel will prepare a manifest for waste and



material shipments, to ensure proper tracking and reporting. Hazardous Waste Manifests must have an original signature of an authorized Crestone Peak Resources representative. A copy of each manifest is given to the Crestone Peak Resources environmental employee responsible for waste for tracking purposes.

#### **4.5 DISPOSAL**

Crestone Peak Resources facilities will use only company-approved, properly licensed and permitted commercial waste transporters, treatment, storage and disposal facilities (TSDFs), and universal waste handling facilities to transport and manage their waste. For reference to these vendors one may contact procurement.

#### **4.6 REDUCE - REUSE - RECYCLE – RECOVER**

The Crestone Peak Resources EH&S Management System specifies the 4 R's must be at the forefront of any process that generates waste. Comprehensive industrial ecology analyses may be completed annually by Waste Specialists on materials used and wastes generated by Crestone Peak Resources. Industrial ecology includes the study of finding reuses for generated "waste" streams. Crestone Peak Resources strives to find new environmentally and economically sound methods to reuse, reduce, recycle and/or recover waste.

End.