



Crestone Peak Resources Operating LLC

## **WASTE MANAGEMENT PLAN**

**Submitted with Form 2A Application for**

**Bijou 3-65 19-24 North Pad**

**Crestone Peak Resources Operating LLC's  
Waste Management Plan was developed in accordance  
with ECMC Rule 304.c(11).**



## Crestone Peak Resources Operating LLC

### **INTRODUCTION**

The following Materials & Waste Management Practices were prepared by Crestone Peak Resources Operating LLC (Operator) to ensure compliance with applicable federal, state, and local materials management regulations by utilizing a comprehensive program of materials handling and waste minimization, segregation, transportation, and disposal. The program is administered and maintained by environmental professionals employed by Operator with formal education in materials and waste management and years of experience in the oil and gas (O&G) industry. These personnel oversee a team of environmental professionals and consultants responsible for implementing the program and ensuring processes are consistent with current regulations.

The following provides a brief overview of Operator's Materials and Waste Management Best Management Practices and summarizes waste streams and practices for ensuring compliance with exploration and production (E&P) waste regulations administered by the Colorado Energy and Carbon Management Commission (ECMC), and applicable solid, hazardous, and universal waste regulations administered by the Colorado Department of Public Health and Environment (CDPHE).

### **CONSTRUCTION WASTE MANAGEMENT**

Waste generated during the construction phase of development consists of non-hazardous, non-E&P waste characterized as general trash. Surface debris, trash, unusable scrap, or solid waste generated during construction will be securely stored in a roll-off dumpster bin. Once a roll-off dumpster bin is full, the bin will then be transported by truck to an approved, offsite commercial disposal facility.

### **DRILLING WASTE MANAGEMENT**

Wastes generated during the drilling phase of development consist of both non-hazardous, non-E&P and E&P wastes.

E&P wastes can be characterized as water-based drilling fluid, oil-based/synthetic drilling fluid, and drill cuttings. Water based drilling fluids are used to drill the surface hole portion of the wellbore. These fluids are reused for each well that is planned to be developed on location. After the surface hole of all wells on location have been drilled, the water-based fluid will be stored on location in tanks until they can be hauled off location via truck to an approved disposal facility listed in the Approved Waste Disposal Facilities section. Oil-based/synthetic drilling fluid is used to drill the production hole of the well; this includes the (near) vertical portion from beneath the surface casing shoe to the target formation and through the entirety of the horizontal portion of the wellbore. The fluid is continually stored and reused during drilling operations for all wells on location. After all wells have been drilled, fluid is then transported via sealed truck to the next planned pad to be developed. Drill cuttings are native materials that are produced from drilling both the surface and production holes. The drill cuttings are treated on-site via mechanical separation to remove any free liquids – e.g., drilling fluid. The resulting “dried” drill cuttings are then stored via high wall containment until such a time that they can be transported off location to an approved disposal facility.

Non-E&P wastes are characterized as general trash consisting of surface debris, trash, unusable scrap, and solid waste generated during the drilling phase. These wastes are securely stored in a roll off dumpster bin until it is hauled off location to an approved, offsite commercial disposal facility.

### **COMPLETIONS WASTE MANAGEMENT**

Wastes generated during the completion phase of development consist of both non-hazardous, non-E&P and E&P wastes.

E&P wastes can be characterized as millout sand and water that are generated during workover operations necessary to prepare the well for production operations. Millout sand is separated from water and stored in a 3-sided bin until it can be loaded onto a truck and hauled to an approved disposal facility. Millout water is stored in a closed loop frac tank, until it can be transported to an approved, offsite commercial disposal facility.

Non-E&P wastes are characterized as general trash consisting of surface debris, trash, unusable scrap, and solid waste generated during the drilling phase. These wastes are securely stored in a roll-off dumpster bin until it is hauled off location to an approved, offsite commercial disposal facility.



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### **FLOWBACK WASTE MANAGEMENT**

Wastes generated during the flowback phase of development consist of non-hazardous E&P wastes. These wastes consist of flowback water and sand that are generated after the recently completed wells begin to produce. Sand gets filtered out from the production fluids through a mechanical separation device known as a "sand can". As the sand can gets full, the sand is blown down to a temporary tank where it is loaded onto a truck and hauled to an approved, offsite commercial disposal facility. Production fluids go to the permanent production facility where it is broken down into three streams: flowback (produced) water, oil, and gas. The produced water is stored in the sealed produced water tanks located in the permanent production facility until it can be transported via truck or pipeline to an approved, offsite commercial disposal facility.

### **PRODUCTION WASTE MANAGEMENT**

Wastes generated during the production phase of development consist of non-hazardous E&P wastes. These wastes consist of produced water, tank bottoms, basic sediment and water, oily soils, engine oil, and chemical fluid totes. Produced water, much like flowback water, is a byproduct of oil and gas production. The produced water is stored in the sealed produced water tanks located in the permanent production facility until it can be transported via truck or pipeline to an approved, offsite commercial disposal facility. Tank bottoms, basic sediment, and water are byproducts of production operations and consists of dirt, oil emulsified with water, and free water. These waste streams are periodically drained from production tanks and hauled via truck to an approved, offsite commercial disposal facility. Engine oil and chemical totes are used on location for production operations and are stored in temporary tanks or plastic totes, both of which utilize secondary containment in case of leaks. When these fluids no longer meet specifications, they are hauled to an approved, offsite commercial disposal facility.

### **SPILL RESPONSE/REMEDATION WASTE MANAGEMENT**

In the event there is a release of hydrocarbons from primary containment, contaminated oily soils and other media are excavated and loaded onto trucks where it is transported to an approved, offsite commercial disposal facility. All soil and other media area removed until testing shows there is no longer contamination.

### **FACILITY DECOMMISSIONING/ PLUGGING AND ABANDONMENT WASTE MANAGEMENT**

When a location has reached the end of its life, facility decommissioning along with associated plugging and abandonment will commence. During this process, there are associated wastes and opportunities for reuse. All remaining liquids that are generated during production operations are hauled off location to an approved commercial disposal facility. Equipment that was utilized during production operations is thoroughly tested and, if it still meets acceptable specifications, it will be transported to another location and reused. Equipment that no longer meets specifications including facility equipment, flowlines, casing, and wellheads will be transported via truck to an approved, offsite commercial disposal facility or sold for scrap.

### **REUSE/RECYLCE**

Where applicable, current reuse/recycling procedures have been discussed in the various phases of waste management. Operator continues to investigate options to reuse/recycle waste streams generated through pre-production and/or production operations. As other technologies and recycling practices become technically and economically feasible, they will be implemented into our operations as appropriate.

### **OFFSITE WASTE TRANSPORT PROCEDURES AND TRACKING**

Waste containers will be labeled appropriately with a description of the chemical waste listed on the label. Operator will retain records of any test results, waste analysis, waste profiles, manifests, shipping papers and any waste determinations made for at least five (5) years from the date the waste was removed from location.

Records of waste that is transported off-site will be kept for a period of 5 years and shall include copies of each invoice, bill, or ticket and such other records as necessary to document waste disposal. Records will include:

- Date of transport
- Name of the generator
- Name of the transporter
- Location of the waste site
- Type and volume of waste
- Name, and location of the disposal facility



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**Bijou 3-65 19-24 North Pad WASTE STREAM TABLE (Volumes and frequencies are estimated)**

<u>Waste Stream</u>	<u>Est. Volume (daily)</u>	<u>Method of Storage</u>	<u>Method of Treatment (if applicable)</u>	<u>Frequency of Disposal</u>	<u>Method of Disposal (*Approved Waste Disposal Locations)</u>	<u>Duration of Waste Stream (days)</u>	<u>Phase</u>
Surface (Water based bentonitic)Cuttings	240 Tons	High Wall Containment		16 Loads/Day	Commercial Solids Disposal	15	Drilling
Drilling (Water based bentonitic) Fluid	140 BBL	Storage Tanks		1 Load/pad	Commercial Solids Disposal	15	Drilling
Production(Oil Based) Cuttings	320 Tons	High Wall Containment		15 Loads / Day	Commercial Solids Disposal	81	Drilling
Drilling (Oil Based) Fluids	140 BBL	Storage Tanks		Never/Recycled	N/A	81	Drilling
General Trash	40 Yards	Roll off dumpster		1 dumpster/week	Landfill	190	Drilling/ Completions
Millout Sand	20,000 lbs	3 sided bin	NA	Daily	Side Dump Trailer	40	Completions
Millout Water	1200 bbls	Closed loop frac tanks	Biocide	3 days	Tanker Truck/Trailer	40	Completions
Flowback Sand	4 bbls	Frac Tank		1 time	Commercial Solids Diposal	27	Flowback
Flowback Water	4400 bbls	Sealed Tank		Daily	Commercial Fluid Disposal	27	Flowback
Produced Water	40 bbls	Sealed Tank		Daily	Commercial Fluid Disposal	Life of Wells	Production
Tank Bottoms	4 bbls	Concrete pit		Bi-weekly	Commercial Fluid Disposal	Life of wells	Production
Basic sediment and water	As needed	Concrete pit		As needed	Commercial Fluid Disposal	Life of wells	Production
Oily Soils	Varies	Trucked to approved waste site	Media will be characterized/ screened, removed, and disposed of in compliance with remediation practices required by 900-series rules.	As needed	Commercial Solids Disposal	Life of wells	Production
Engine Oil	1 gallon monthly	Concrete pit		As needed	Commercial Fluid Disposal	Life of wells	Production
Chemical Fluid Totes	5 gallons	Plastic Tote		As needed	Commercial Fluid Disposal	Life of wells	Production
Biohazardous Waste	34 Gallons	Portable Toilet		2 times/week	Commercial Disposal	190	Drilling/ Completions

**\*APPROVED WASTE DISPOSAL FACILITIES**

Operational considerations, the type of waste in question, and approved disposal profiles, will determine where waste is disposed of on an individual project. Operator has active waste disposal profiles with the following facilities:

**Solids Disposal Locations**

- Waste Management-Buffalo Ridge Landfill: COD-00227827
- Waste Management-Denver Arapahoe Disposal Site (DADS): COD-149366106
- Waste Management-North Weld Landfill: COD-983790684
- Waste Management-Conservation Services, Inc. (CSI): COD-983767674
- Waste Connections: COD-910629
- Pawnee Waste, LLC: EPL03443



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Liquids Disposal Locations

- NGL Energy Partners, LP (*dba NGL Water Solutions DJ LLC*) – Various locations throughout the basin.

*Please note – Operator reserves the right to add additional approved waste disposal facilities at any time; the above list is subject to change without notice.*



## **Crestone Peak Resources Operating LLC**

### **Best Management Practices**

1. Consistent with good materials and waste management practices, Operator maintains records of material/waste source, transporter, and final disposition or disposal. These records are maintained under usual and customary practice and are made available upon request. See attached list of waste disposal facilities that Operator has active waste disposal profiles with. Depending on operational considerations, the type of waste in question, and approved disposal profiles, Operator may send waste to one or more approved facilities on a single, individual project.
2. Operator minimizes the generation of waste by ensuring that material products are fully used for their intended purpose. If unused materials remain following an activity, contractors are required to take unused product with them for reuse at the next applicable project. Contractors are contractually required to comply with applicable material and waste management practices.
3. In the event of an unintended release of material by a contractor, Operator requires the contractor to report the release, and to remediate impacts in accordance with applicable cleanup standards. Operator tracks all contractor releases to closure by requiring formal documentation, supported by laboratory analysis demonstrating cleanup of site impacts, any required waste characterization, waste disposal approval, and manifests or load tickets tracking waste from source, through transport, to final disposal.
4. If there are unanticipated hazardous waste streams not listed in the attached Waste Streams Spreadsheet, the hazardous waste will be stored and disposed of in compliance with all rules and regulations applicable to that specific waste.
5. Produced water with no commercial value or reuse potential is typically disposed of via underground injection. In all instances, produced water is disposed of at an offsite location(s) via properly permitted disposal facilities including but not limited to UIC wells intended specifically for produced water disposal.
6. Soils impacted with produced fluids will be transported offsite for disposal at a disposal facility permitted to receive E&P waste. All incidents are reported in accordance with CECMC 900-Series Rules.
7. All drill cuttings generated during drilling operations are transported offsite with proper manifesting for disposal at facilities properly permitted to receive E&P waste. Drilling fluids will be stored on-site and recycled for use in future drilling operations.
8. All surface trash, debris and material not intrinsic to the operation of the oil and gas facility shall be removed, stored in a roll off container or other trash bin, and disposed of at a commercial solid waste disposal location.