

FORM 27 ATTACHMENT:

Describe initial Action taken:

- At the location(s) of the pit which are the furthest downgradient, lowest in elevation and/or have the potential for pooling of liquid, field-screening will be performed and will utilize appropriate field equipment which may include, but is not limited to the following.
 - a PetroFlag unit,
 - a photoionization gas detector (PID),
 - or similar, for detection of volatile hydrocarbons, in the immediate area of the pit footprint.
- Confirmation sample(s), Rule 905.b.(4), will be collected and submitted for lab analysis and verification to confirm compliance with Rule 910 and Table 910-1 (reference to specific analytes is provided below) relative to the aforementioned field screen activity.
- Other areas of the pit walls and floor will be inspected for evidence of impact via field screening and visual observation. Grab samples will be collected, as appropriate, to demonstrate diligence and thoroughness of investigation activities performed as directed in Rule 905.b.(1). In addition, all field screening activities and results will be documented and compiled into a summary report, table and/or map to be provided with the Site Closure Plan.
- Grab sample(s) will be submitted for laboratory analysis to confirm field screening activities. Sub-liner sample analytes will include considerations identified by Rule 910 and all contaminants of concern for soils from Table 910-1 excluding boron (see attached analyte list in Table 1 of Annex A; and Williams Highlands Pit Closure Plan, COGCC document #01175818).
- A visual assessment will be performed throughout the entire investigation process and will be adequately documented (e.g. field notes, observations, photographs, etc.) by qualified personnel.
- For additional information and detail of the proposed initial actions to be taken refer to the Williams Highlands Pit Closure Plan (COGCC document #01175818).

Describe how source is to be removed:

The presence of impact has not been determined at this point. No impacts have been observed to date or any other indication that would suggest there has been an event that would result in impact to the surrounding environment. However, should contamination be encountered the following actions will be taken:

- Any spill or release will be reported via a Form 19 and in accordance with Rule 906 and remediation shall be performed in accordance with requirements specified in Rules 909 and 910.
- Notification and consultation with the affected surface owner(s) shall be made with good faith effort and in accordance with Rule 906.c.
- Should a release be identified and attributed to the contents of the pit, the impacted area will be:

- excavated in which field screen instruments will guide the excavation and laboratory confirmation samples collected to demonstrate compliance with Table 910-1 of the COGCC 900-series rule; and
- placed within a lined and bermed containment cell pending remediation and disposal option described below.
- All pit contents will be evacuated and managed in accordance with all applicable local, state [i.e. Rule 905.b.(2)] and federal regulations. If disposal is required, the relevant media will be disposed of at an approved facility.
- The potential source - production pit - will be closed and reclaimed in accordance with the COGCC 900 and 1000 series rules, respectively.
- The synthetic liner will be removed either recycled/reused or disposed of at an approved facility as a solid waste and in accordance with Rule 905.b.(3). Williams personnel have no reason to suspect nor have they been informed of signs or conditions that would indicate past or present failure of the liner/containment system.
- For additional information and detail of how the potential sources is to be removed refer to the Williams Highlands Pit Closure Plan (COGCC document #01175818).

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility , land treatment on site, removal of impacted groundwater, in-situ bioremediation, burning of oily vegetation, etc.:

The presence of impact has not been determined at this point. No impacts have been observed to date or any other indication that would suggest there has been an event that would result in impact to the surrounding environment. However, should contamination be encountered the following actions will be taken:

- Any area(s) determined to be impacted/contaminated will be excavated and managed in accordance with all applicable rules and regulations regarding solid waste including applicable portion of COGCC Rule 907.
- Field screen equipment will be used to guide the excavation to ensure compliance with Table 910-1 of the COGCC 900 series rule.
- The excavated material will be placed within a lined and bermed containment cell pending the following options. Remediation and disposal options may include:
 - on-site landfarming/bioremediation,
 - in-situ remediation,
 - and/or disposal at an approved waste, management facility; as consistent with Rule 907.
- Disposal of impacted media will occur at an approved waste facility (i.e. Garfield County Landfill, Wray Gulch Landfill) further defined in the "Final disposition of E&P waste" below.
- Final disposition will be dependent upon identified contaminants, contaminant concentration, land availability, landowner approval and waste volume.
- For additional information and detail regarding the proposed approach to accomplish remediation of any impacts, if identified, refer to the Williams Highlands Pit Closure Plan (COGCC document #01175818).

If groundwater has been impacted, describe proposed monitoring plan:

- The presence of impact has not been determined at this point. No impacts have been observed to date or any other indication that would suggest there has been an event that would result in impact to the surrounding environment. However, should it be observed or determined that groundwater impacts exist an appropriate site specific monitoring and remediation plan will be developed and submitted for approval.
 - The monitoring and remediation plan will be developed to include, but is not limited to,
 - number of sample wells and/or points;
 - proposed location of sample wells and/or points;
 - sampling schedule;
 - analytical methods including analyte list(s);
 - monitoring scheme including end point; and
 - potential mitigation or remediation approaches if necessary [Rule 910 (4) E].

Describe reclamation plan:

- The pit will be reclaimed to the present grade of the location or to the approximate original contour of the landscape and consistent with the 1000-series Rule.
- Seeding of the disturbed area will be performed in accordance with its' intended use. The seed mix will be prescribed by the landowner.
- There are no known noxious weeds in the immediate area of the disturbance. A noxious weed survey is performed annually of the Trail Ridge field which includes this location.
- As a preventative measure, Williams seeds all disturbed areas as soon as practicable with temporary or sterile annual seed mixes to:
 - provide soil stability, and
 - serve as a nurse or cover crop for desired species; derived from the natural seed bank and/or the applied seed mix.
- Bare ground treatment is a common practice by Williams and any identified noxious weed species will be spot treated for immediate eradication and prevention of encroachment and dispersal.
- A plat of the location is attached for topographic and geographic reference.

Attach samples and analytical results taken to verify remediation of impacts. Show location of samples on an onsite schematic or drawing. Is further site investigation required?:

- The presence of impact has not been determined at this point; therefore, the need for further site investigation has not been determined at this time.
- A determination of whether further site investigation is required and is pending field assessments and screening, which are to be confirmed by analytical results from an accredited - NELAP - laboratory (i.e. Evergreen Analytical Laboratory).
- Final documentation of investigation and closure activities shall be submitted to the Division within thirty (30) days after conclusion of any and all remediation and

reclamation activity and in accordance with all applicable sections and subsections of Rule 909.

Final disposition of E&P waste:

- If the stockpiled volume is small enough to manage on-site, there is available area on location, concentrations are within a reasonable range to be remediated in a timely manner and the identified contaminants are conducive to bioremediation, landfarming or in-situ remediation may occur as approved and in accordance with Rule 907.
- Should the aforementioned attributes do not exist or concentrations are not conducive to bioremediation then off-site disposal will be the final disposition of all impacted materials.
- If the latter option is taken, disposal will occur at an approved treatment, storage or disposal facility (TSD) which may include, but is not limited to, the following facilities:
 - the West Garfield County Landfill (045-LFL-005; Parachute, CO);
 - or the Wray Gulch Landfill (103-LFL-020; Meeker, CO).
- Any soils requiring treatment that, once treated, fall below the allowable concentrations and levels provided in Table 910-1 may be recycled and reused at Williams facilities as fill material.

Facility Name: Arco Deep 1-27
Facility # 111608

Name of Operator: Williams Production RMT Company
Latitude: 39.482579 Longitude: -108.207057

COGCC Operator # 96850
County: Garfield

Location (QtrQtr, Sec, Twp, Rng, Meridian): NESW, Sec 27, T6S, R97W, 6th PM

ANNEX A:

Confirmatory Analyte List for Potential Contaminants of Concern in Soil:

Table 1 – Sample collection, handling and analysis summary

Analyte Class	Analysis	Method	COGCC Table 910-1 Standard	Holding Time	Container
Organics	TVPH (GRO)	SW8015 mod	500 mg/kg	14 days	4 oz. wide mouth jar
	TEPH (DRO)				
	Benzene	SW8021	0.17 mg/kg	14 days	4 oz. wide mouth jar
	Toluene		85 mg/kg		
	Ethylbenzene		100 mg/kg		
	Xylenes (total)		175 mg/kg		
	Acenaphthene	SW8270	1,000 mg/kg	14 days	4 oz. wide mouth jar
	Anthracene		0.22 mg/kg		
	Benzo (A) anthracene				
	Benzo (B) flouranthene				
	Benzo (K) fluoranthene				
	Benzo (A) pyrene		0.022 mg/kg		
	Chrysene		22 mg/kg		
	Dibenzo (A,H) anthracene		0.022 mg/kg		
	Fluoranthene		1,000 mg/kg		
	Fluorne		0.22 mg/kg		
	Indeno (1,2,3,C,D) pyrene				
	Naphthalene				
	Pyrene		1,000 mg/kg		
	Inorganics	Electrical Conductivity	USDA Hdbk	<4 mmhos/cm or 2x background	28 days
Sodium Adsorption Rate		USDA Hdbk 60 Method 20B or 3A	<12	180 days	1 gal. ziplock bag
pH		SW9045	6-9	< 24 hrs.	2 oz. wide mouth jar

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Table 1 Cont'd - Sample collection, handling and analysis summary

Analyte Class	Analysis	Method	COGCC Table 910-1 Standard	Holding Time	Container
Total Metals*	Arsenic	SW 6010, 6020, 7470	0.39 mg/kg	28 days for Hg & 180 days for remaining	4 oz. wide mouth jar
	Barium		15,000 mg/kg		
	Cadmium		70 mg/kg		
	Chromium (III)		120,000 mg/kg		
	Chromium (IV)		23 mg/kg		
	Copper		3,100 mg/kg		
	Lead (inorganic)		400 mg/kg		
	Mercury		23 mg/kg		
	Nickel (soluble salts)		1,600 mg/kg		
	Selenium		390 mg/kg		
	Silver		390 mg/kg		
	Chloride		15,000 mg/kg		

General note: Preservation standards for organics and inorganics in soil are < 4°C as per EAL protocol. Of the above sample methods and procedures, none require a preservative to preserve sample integrity.

Note(): Boron (hot water soluble) has been excluded from this analyte list as no crops (citrus or nuts) or other vegetation which may be sensitive to boron are known or are expected to be encountered. Should the Director or COGCC EPS decide to, at his discretion, require a Boron analysis the above analyte list will be modified to reflect that change and requirement, at that point in time.*

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