

#6821

FORM
27
Rev 6/99

State of Colorado Oil and Gas Conservation Commission



FOR OGCC USE ONLY
RECEIVED
1/20/2012
OGCC Employee:
 Spill Complaint
 Inspection NOAV
Tracking No:

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax:(303)894-2109

SITE INVESTIGATION AND REMEDIATION WORKPLAN

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

Spill or Release Plug & Abandon Central Facility Closure Site/Facility Closure Other (describe): Pit Closure

OGCC Operator Number: 100264	Contact Name and Telephone: Jessica Dooling
Name of Operator: XTO Energy	No: 970-675-4122
Address: 9127 S Jamacia Drive	Fax: 970-675-4150
City: Englewood State: CO Zip: 80112	

API Number: 05-103-11128	County: Rio Blanco
Facility Name: Freedom Unit	Facility Number: 293830
Well Name: Freedom Unit	Well Number: FRU 297-20B
Location: (QtrQtr, Sec, Twp, Rng, Meridian): NW/NW Sec 20, T2S, 97W, 6th PM Latitude: 39.866464 Longitude: -108.314587	

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Drill Cuttings and Fluids

Site Conditions: Is location within a sensitive area (according to Rule 901e)? Y N If yes, attach evaluation.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): non-cropland rangeland

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Renstac channery loam, 5 to 50% slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): no water wells within 1/4 mi., Black Suphur Creek greater than 1/2 mile away

Description of Impact (if previously provided, refer to that form or document):

Impacted Media (check):	Extent of Impact:	How Determined:
<input type="checkbox"/> Soils	_____	_____
<input type="checkbox"/> Vegetation	_____	_____
<input type="checkbox"/> Groundwater	_____	_____
<input type="checkbox"/> Surface Water	_____	_____

REMEDATION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document):

All impacted pit contents were transported to an off-site permitted disposal/recycling facility. All pit liners were removed and transported to an off-site permitted disposal/recycling facility.

Describe how source is to be removed:

NA

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, insitu bioremediation, burning of oily vegetation, etc.:

NA

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Tracking Number: Name of Operator: OGCC Operator No: Received Date: Well Name & No: LOCATION ID # 335899 Facility Name & No: Pit Facility ID# 293030

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REMEDIATION WORKPLAN (Cont.)

OGCC Employee

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):

Available information indicates that the uppermost groundwater bearing zone is greater than 150 feet below ground surface. Soil samples were collected for laboratory analysis of subliner material. Analytical results confirm no groundwater impact potential exists.

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required.

The pits will be closed and backfilled with native on-site material or material transported to the site. Material used to fill the top three feet of each pit will be obtained from on-site native material. The closed pits will be regraded per the approved pad reclamation design to provide positive drainage to the perimeter of the closed pit. Following grading activities, stockpiled topsoil will be spread across re-graded pits and seeded with a BLM approved seed mixture and application rate. Additional soil stabilization practices, such as mulching, crimping, or erosion control blankets may be employed as necessary. Reclamation as specified in the Surface Use Plan, the BLM Conditions of Approval, and the COGCC regulations 900 and 1000 series will be completed as applicable.

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.

Is further site investigation required? [] Y [x] N If yes, describe:

Upon removal and proper disposal of fresh water and reserve pit contents and synthetic liners subliner samples were collected for analysis. Additionally proposed pit backfill soils were sampled and analyzed to assess if native soils had been impacted by site operations prior to initiating backfill operations. The results are attached in Table 1 Lab Summary. Based on subliner sample results no additional assessment will be necessary beneath the freshwater and reserve pits. Subliner results indicate elevated ph, SAR and arsenic levels in the Fresh Water and Reserve pits. Three foot of native material will be utilized as cover to address ph and SAR. The arenic levels in the Fresh Water (7.5 mg/kg) and Reserve pit (3.3 mg/kg) are within the background arsenic range although above the Table 910-1 value of 0.39 mg/kg. Please refer to the associated Form 4 requesting consideration of background arsenic levels. The proposed pit backfill soils results indicate no impact by site operations.

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

All pit liners and pit contents were removed to an off-site permitted disposal/recycling facility.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: 10/27/11 Date Site Investigation Completed: in progress Date Remediation Plan Submitted: 1/20/2012 Remediation Start Date: pending approval Anticipated Completion Date: pending approval Actual Completion Date: TBD

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct and complete.

Print Name: Jessica Dooling Signed: [Signature] Title: Environmental Coordinator Date: 1/20/2012

OGCC Approved: [Signature] Title: FOR Chris Canfield Date: 02/07/2012 EPS NW Region

Table 1
Location: FRU 297-20B
Lab Summary

Updated:
1/20/12

Analytical Parameter (with units)	Fresh Water Pit		Reserve Pit			Background					COGCC
	FW Subliner 12/8/11	FW Pit Backfill 10/31/11	Res Pit Contents 10/27/11	Res Pit Subliner 11/10/11	Res Pit Backfill 10/31/11	#1	#2	#3	#4	#5	Table 910-1 Concentration Levels
Accutest Job #	D30145	D29054	D28973	D29395	D29054	D29052					
Sample type (composite/discrete)	C	C	C	C	C	D	D	D	D	D	
TPH (GRO) (mg/Kg)	ND	ND	ND	ND	ND	-	-	-	-	-	-
TPH (DRO) (mg/Kg)	60	ND	6,050	262	ND	-	-	-	-	-	-
TPH (GRO + DRO) (mg/Kg)	60	ND	6,050	262	ND	-	-	-	-	-	500
Benzene (mg/Kg)	ND	ND	ND	ND	ND	-	-	-	-	-	0.170
Toluene (mg/Kg)	ND	ND	0.387	ND	ND	-	-	-	-	-	85
Ethylbenzene (mg/Kg)	ND	ND	ND	ND	ND	-	-	-	-	-	100
Xylenes (total) (mg/Kg)	ND	ND	0.961	ND	ND	-	-	-	-	-	175
Acenaphthene (mg/Kg)	ND	-	ND	ND	-	-	-	-	-	-	1000
Anthracene (mg/Kg)	ND	-	ND	ND	-	-	-	-	-	-	1000
Benzo(A)anthracene (mg/Kg)	ND	-	ND	ND	-	-	-	-	-	-	0.22
Benzo(B)fluoranthene (mg/Kg)	ND	-	ND	ND	-	-	-	-	-	-	0.22
Benzo(K)fluoranthene (mg/Kg)	ND	-	ND	ND	-	-	-	-	-	-	2.2
Benzo(A)pyrene (mg/Kg)	ND	-	ND	ND	-	-	-	-	-	-	0.022
Chrysene (mg/Kg)	0.0013	-	ND	ND	-	-	-	-	-	-	22
Dibenzo(A,H)anthracene (mg/Kg)	ND	-	ND	ND	-	-	-	-	-	-	0.022
Fluoranthene (mg/Kg)	ND	-	ND	ND	-	-	-	-	-	-	1000
Fluorene (mg/Kg)	ND	-	ND	ND	-	-	-	-	-	-	1000
Indeno(1,2,3,C,D)pyrene (mg/Kg)	ND	-	ND	ND	-	-	-	-	-	-	0.22
Napthalene (mg/Kg)	ND	-	ND	ND	-	-	-	-	-	-	23
Pyrene (mg/Kg)	ND	-	ND	ND	-	-	-	-	-	-	1000
Electrical Conductivity (mmhos/cm)	1.400	-	10.50	0.9	-	-	-	-	-	-	<4 or 2X BG
Sodium Adsorption Ratio (SAR)	19.7	-	15.2	10.1	-	-	-	-	-	-	<12
pH	9.98	-	12.46	9.67	-	-	-	-	-	-	6-9
Arsenic (mg/kg)	7.5	-	4.4	3.3	-	7.2	7.4	8.3	8.1	7.4	0.39
Barium (mg/kg)	326.0	-	19,200	1380	-	-	-	-	-	-	15000
Cadmium (mg/kg)	<1.2	-	<2.1	<1.2	-	-	-	-	-	-	70
Chromium (III) (mg/Kg)	29.5	-	15.4	21.6	-	-	-	-	-	-	120000
Chromium (VI) (mg/Kg)	1.0	-	<0.88	<0.47	-	-	-	-	-	-	23
Copper (mg/kg)	6.4	-	21.7	5.9	-	-	-	-	-	-	3100
Lead (inorganic) (mg/kg)	13.6	-	<11	13.1	-	-	-	-	-	-	400
Mercury (mg/kg)	<0.12	-	<0.2	<0.11	-	-	-	-	-	-	23
Nickel (mg/kg)	12.9	-	11.2	9.1	-	-	-	-	-	-	1600
Selenium (mg/kg)	<6.1	-	<110	<5.8	-	-	-	-	-	-	390
Silver (mg/kg)	<3.6	-	<6.3	<3.5	-	-	-	-	-	-	390
Zinc (mg/kg)	41.2	-	26.9	35.7	-	-	-	-	-	-	23000

Notes:

- 1) Freshwater pit contained de minimus contents; i.e. there was insufficient volume of material to collect a sample. Freshwater pit was used to stage solidified reserve pit contents prior to liner removal.
- 2) ND = not detectable to the laboratory detection limit.
- 3) Results highlighted in yellow exceed Table 910-1 parameters. Results highlighted in gray exceed Table 910-1, but are within area background levels.
- 4) "-" indicates no analysis.
- 5) One representative backfill sample was collected from native stockpiled soils to be used in backfilling one or more of the pits.
- 6) See site map (Figure 1) for pit configuration and sample locations