

State of Colorado  
**Oil and Gas Conservation Commission**

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



#8083

FOR OGCC USE ONLY

**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.

OGCC Employee:

Spill                      Complaint  
Inspection              NOAV

Tracking No:

**CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED**

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

OGCC Operator Number: \_\_\_\_\_

Name of Operator: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Contact Name and Telephone: \_\_\_\_\_

No: \_\_\_\_\_

Fax: \_\_\_\_\_

API Number: \_\_\_\_\_

County: \_\_\_\_\_

Facility Name: \_\_\_\_\_

Facility Number: \_\_\_\_\_

Well Name: \_\_\_\_\_

Well Number: \_\_\_\_\_

Location: (QtrQtr, Sec, Twp, Rng, Meridian): \_\_\_\_\_ Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_

**TECHNICAL CONDITIONS**

Type of Waste Causing Impact (crude oil, condensate, produced water, etc.): \_\_\_\_\_

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.): \_\_\_\_\_

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: \_\_\_\_\_

Potential receptors (water wells within 1/4 mi, surface waters, etc.): \_\_\_\_\_

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

Impacted Media (check):

Extent of Impact:

How Determined:

Soils

Vegetation

Groundwater

Surface Water

**REMEDIALTION WORKPLAN**

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

Describe how source is to be removed:

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.:



Tracking Number: \_\_\_\_\_  
Name of Operator: \_\_\_\_\_  
OGCC Operator No: \_\_\_\_\_  
Received Date: \_\_\_\_\_  
Well Name & No: \_\_\_\_\_  
Facility Name & No: \_\_\_\_\_

Page 2  
**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 100 feet below the ground surface. Soil samples were collected for laboratory analysis of subliner material to confirm no groundwater impact potential exists (see Table 1).

**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.

Please see Attachment II

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 ☒ N If yes, describe:

Based on subliner sample results no additional assessment will be necessary beneath the Freshwater, Reserve, Cuttings Pit #1 or Cuttings Pit #2 (see Table 1).

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

Synthetic liners from each of the pits were removed and will be transported to an approved offsite disposal/recycling facility. Reserve Pit, Cuttings Pit #1 and Cuttings Pit #2 contents will be treated onsite by mix/blend processing and/or transported offsite to a permitted disposal/recycling facility.

**IMPLEMENTATION SCHEDULE**

Date Site Investigation Began: 11/7/11 Date Site Investigation Completed: In progress Date Remediation Plan Submitted: 10/16/2013  
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: \_\_\_\_\_

Title: Piceance EHS Supervisor

Date: 10/16/2013

OGCC Approved: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

## ATTACHMENT I

### FRU 197-31A Pit Closure Workplan, Form 27 Page 1

#### **Background Arsenic:**

XTO Energy herein requests consideration of site-specific background Arsenic levels as an alternative to the Table 910-1 value for the FRU 197-31A location. COGCC Table 910-1 Concentration Levels list the allowable concentration level for Arsenic in soil at 0.39 mg/kg. Footnote 1 of Table 910-1 states "Consideration shall be given to background levels in native soils and ground water". At other locations COGCC has allowed the determination of allowable levels based upon a 10% variability factor applied to background soil concentration values where the maximum allowable level is computed by multiplying the highest detected background concentration by 1.1.

1. Ten representative background samples were collected from undisturbed areas adjacent to the subject location. Arsenic concentrations in those samples ranged from 2.5 mg/kg to 6.2 mg/kg. Applying the 10% variability factor to the highest concentration detected results in an allowable Arsenic concentration level of 6.8 mg/kg.
2. Subliner Arsenic samples were collected from the Freshwater (3.6 mg/kg), Reserve (3.2 mg/kg) and Cuttings Pit #1 (5.0 mg/kg). The subliner Arsenic concentrations are within the allowable background Arsenic concentration of 6.8 mg/kg.
3. The Cuttings Pit #2 subliner Arsenic concentration of 7.0 mg/kg is above the allowable background Arsenic concentration of 6.8 mg/kg. XTO Energy believes the subliner Arsenic value reflects the heterogeneous nature of the substrate and does not indicate subliner impacts due to operations.
4. Initial Reserve Pit content Arsenic concentration of 4.3 mg/kg is presumed to be the result of material from the Mancos formation. The Reserve Pit content Arsenic concentration is within the allowable background Arsenic concentration of 6.8 mg/kg.
5. Initial Cuttings Pit #1 and Cuttings Pit #2 content Arsenic concentrations of 13.1 mg/kg and 10.7 mg/kg, respectively are presumed to be the result of material from the Mancos formation. Five additional discrete samples were collected from each of the Cuttings Pit #1 and Cuttings Pit #2 contents, including, in part,

material from the Mancos formation and analyzed for Arsenic. Cuttings Pit #1 analysis resulted in a range of 13.7 mg/kg to 17.3 mg/kg. Cuttings Pit #2 analysis resulted in a range of 10.9 mg/kg to 69.3 mg/kg. It is our interpretation that the discrete Arsenic samples demonstrate that there were no anthropogenic affects to the Cuttings Pit #1 or Cuttings Pit #2 content material and that the elevated Arsenic levels reflect contributions due to drilling through the Mancos formation (see Table 2).

Please find the Lab Data Summary Tables and the Site Map indicating Arsenic sampling locations attached.

## **ATTACHMENT II**

### **FRU 197-31A Pit Closure Workplan, Form 27 Pages 1 and 2**

#### **Describe initial action taken:**

The site consists of Freshwater, Reserve and Cuttings Pits #1 and #2 (see Figure 1).

#### **1. Freshwater Pit**

- Freshwater Pit contents (de minimis) and associated synthetic liners were removed and will be transported to an offsite permitted disposal/recycling facility.
- Freshwater Pit subliner composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for pH (9.51) and Arsenic (3.6 mg/kg).

#### **2. Reserve Pit**

- Reserve Pit contents were solidified and sampled for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for EC (23.500 mmhos/cm), SAR (226), pH (12.28), Arsenic (4.3 mg/kg) and Barium (17600 mg/kg).
- Reserve Pit subliner composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for pH (9.98) and Arsenic (3.2 mg/kg).

#### **3. Cuttings Pit #1**

- Cuttings Pit #1 contents were solidified and composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for TPH (892 mg/kg), EC (17.400 mmhos/cm), SAR (63.6), pH (9.92) and Arsenic (13.1 mg/kg).
- Cuttings Pit #1 subliner composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for SAR (31.3), pH (10.18) and Arsenic (5.0 mg/kg).

#### **4. Cuttings Pit #2**

- Cuttings Pit #2 contents were solidified and composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for TPH (820 mg/kg), EC (13.900 mmhos/cm), SAR (199), pH (11.23) and Arsenic (10.7 mg/kg).

- Cuttings Pit #1 subliner composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for SAR (12.8), pH (10.25) and Arsenic (7.0 mg/kg).
- Reserve Pit, Cuttings Pit #1 and Cuttings Pit #2 contents were removed and will either be mix/blend processed and/or transported to an approved offsite disposal/recycling facility.
- Mix/blend processed Reserve Pit, Cuttings Pit #1 and Cuttings Pit #2 contents material that meets Table 910-1 concentration levels will be used onsite for backfill.
- All associated Reserve, Cuttings Pit #1 and Cuttings Pit #2 synthetic liners were removed and will be transported to an offsite permitted disposal/recycling facility.
- Refer to Table 1 for a summary of the laboratory results and Figure 1 for layout of the pits and sample locations.
- Elevated Arsenic levels above Table 910-1 concentration were detected beneath the Freshwater, Reserve, Cuttings Pit #1 and Cuttings Pit #2. Please refer to Attachment I requesting consideration of background Arsenic levels.
- Any remaining elevated levels of Electrical Conductivity, SAR and pH detected beneath the pits or in material used for backfill will be covered with a minimum 3 feet of clean, native soils per COGCC guidance. No additional treatment of these soils will be required.
- Material used to fill the top 3 feet of each pit will be found onsite.
- Reclamation activities will be performed in accordance with applicable COGCC 900, 1000 Series rules and as specified in the Surface Use Plan and BLM Conditions of Approval.

**Table 1**  
**Location: FRU 197-31A**  
**Lab Summary**

Last update 10/10/2013

Analytical Parameter	Freshwater Pit		Reserve Pit		Cuttings #1		Cuttings #2		Background					Background					COGCC	Maximum based on Background
(with units)	FW Contents	FW Subliner 9/25/13	RP Contents 9/30/13	RP Subliner 9/25/13	Cut #1 Contents 9/30/13	Cut #1 Subliner 9/30/13	Cut #2 Contents 9/30/13	Cut #2 Subliner 9/30/13	#1	#2	#3	#4	#5	#1	#2	#3	#4	#5	Table 910-1 Concentration Levels	
Accutest Job #	Pit Contents De Minimis	D51044	D51124	D51041	D51123	D51203	D51122	D51202	D29260 (11/7/11)					D29743 (11/22/11)					-	-
Sample type (Composite/Discrete)		C	C	C	C	C	C	C	D	D	D	D	D	D	D	D	D	D	-	-
TPH (GRO) (mg/Kg)		ND	27.0	ND	29.3	ND	30.1	ND	-	-	-	-	-	-	-	-	-	-	-	-
TPH (DRO) (mg/Kg)		321	259	ND	863	26.7	790	23.7	-	-	-	-	-	-	-	-	-	-	-	-
TPH (GRO + DRO) (mg/Kg)		321	286	ND	892	26.7	820	23.7	-	-	-	-	-	-	-	-	-	-	500	-
Benzene (mg/Kg)		ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-	0.170	-
Toluene (mg/Kg)		ND	ND	ND	0.0993	ND	0.445	ND	-	-	-	-	-	-	-	-	-	-	85	-
Ethylbenzene (mg/Kg)		ND	ND	ND	0.117	ND	0.205	ND	-	-	-	-	-	-	-	-	-	-	100	-
Xylenes (total) (mg/Kg)		ND	ND	ND	ND	ND	0.591	ND	-	-	-	-	-	-	-	-	-	-	175	-
Acenaphthene (mg/Kg)		ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-	1000	-
Anthracene (mg/Kg)		ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-	1000	-
Benzo(A)anthracene (mg/Kg)		ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-	0.22	-
Benzo(A)pyrene (mg/Kg)		ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-	0.022	-
Benzo(B)fluoranthene (mg/Kg)		ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-	0.22	-
Benzo(K)fluoranthene (mg/Kg)		ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-	2.2	-
Chrysene (mg/Kg)		0.0068	0.0102	ND	0.0365	ND	0.0310	ND	-	-	-	-	-	-	-	-	-	-	22	-
Dibenzo(A,H)anthracene (mg/Kg)		ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-	0.022	-
Fluoranthene (mg/Kg)		ND	0.0114	ND	0.0148	ND	ND	ND	-	-	-	-	-	-	-	-	-	-	1000	-
Fluorene (mg/Kg)		ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-	1000	-
Indeno(1,2,3,C,D)pyrene (mg/Kg)		ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-	0.22	-
Naphthalene (mg/Kg)		ND	0.0739	ND	0.266	ND	0.383	ND	-	-	-	-	-	-	-	-	-	-	23	-
Pyrene (mg/Kg)		ND	0.0160	ND	0.0238	ND	0.0208	ND	-	-	-	-	-	-	-	-	-	-	1000	-
Electrical Conductivity (mmhos/cm)		0.197	23.500	0.433	17.400	1.610	13.900	0.821	-	-	-	-	-	-	-	-	-	-	4	-
Sodium Adsorption Ratio (SAR)		4.93	226	11.2	63.6	31.3	199	12.8	-	-	-	-	-	-	-	-	-	-	12	-
pH		9.51	12.28	9.98	9.92	10.18	11.23	10.25	-	-	-	-	-	-	-	-	-	-	6-9	-
Arsenic (mg/kg)		3.6	4.3	3.2	13.1	5.0	10.7	7.0	4.1	5.6	2.9	3.3	3.9	6.2	3.7	4.3	4.2	2.5	0.39	6.8
Barium (mg/kg)		556	17600	1970	4070	361	2780	227	-	-	-	-	-	-	-	-	-	-	15000	-
Cadmium (mg/kg)		<1.2	<1.7	<1.2	<1.3	<1.1	<1.2	<1.2	-	-	-	-	-	-	-	-	-	-	70	-
Chromium (III) (mg/Kg)		50.7	26.9	47.1	19.9	41.0	23.5	41.1	-	-	-	-	-	-	-	-	-	-	120000	-
Chromium (VI) (mg/Kg)		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	-	-	-	-	-	-	-	-	-	23	-
Copper (mg/kg)		7.7	16.7	8.9	33.9	8.5	30.0	7.0	-	-	-	-	-	-	-	-	-	-	3100	-
Lead (inorganic) (mg/kg)		8.0	11.5	9.5	24.2	9.2	17.7	8.1	-	-	-	-	-	-	-	-	-	-	400	-
Mercury (mg/kg)		<0.10	<0.14	<0.10	<0.11	<0.097	<0.11	<0.095	-	-	-	-	-	-	-	-	-	-	23	-
Nickel (mg/kg)		16.1	12.2	15.4	16.6	14.8	14.5	13.1	-	-	-	-	-	-	-	-	-	-	1600	-
Selenium (mg/kg)		<6.0	<8.3	<5.9	<6.4	<5.4	<6.1	<5.8	-	-	-	-	-	-	-	-	-	-	390	-
Silver (mg/kg)		<3.6	<5.0	<3.6	<3.9	<3.3	<3.6	<3.5	-	-	-	-	-	-	-	-	-	-	390	-
Zinc (mg/kg)		39.1	33.8	40.6	57.0	36.8	50.9	34.8	-	-	-	-	-	-	-	-	-	-	23000	-
% Solids		82.0	60.9	83.6	77.9	88.5	80.6	85.2	86.0	83.9	81.3	86.2	86.0	98.0	90.5	86.0	88.9	97.9	-	-

Notes:

- 1) ND = not detectible to the laboratory detection limit.
- 2) Results highlighted in yellow exceed Table 910-1 concentration levels. Results highlighted in Gray exceed Table 910-1, but are below background levels.
- 3) "-" indicates no analysis.
- 4) See site map for sample locations.

**Table 2**  
**Location: FRU 197-31A**  
**Lab Summary - Arsenic Summary**

Last update 10/16/2013

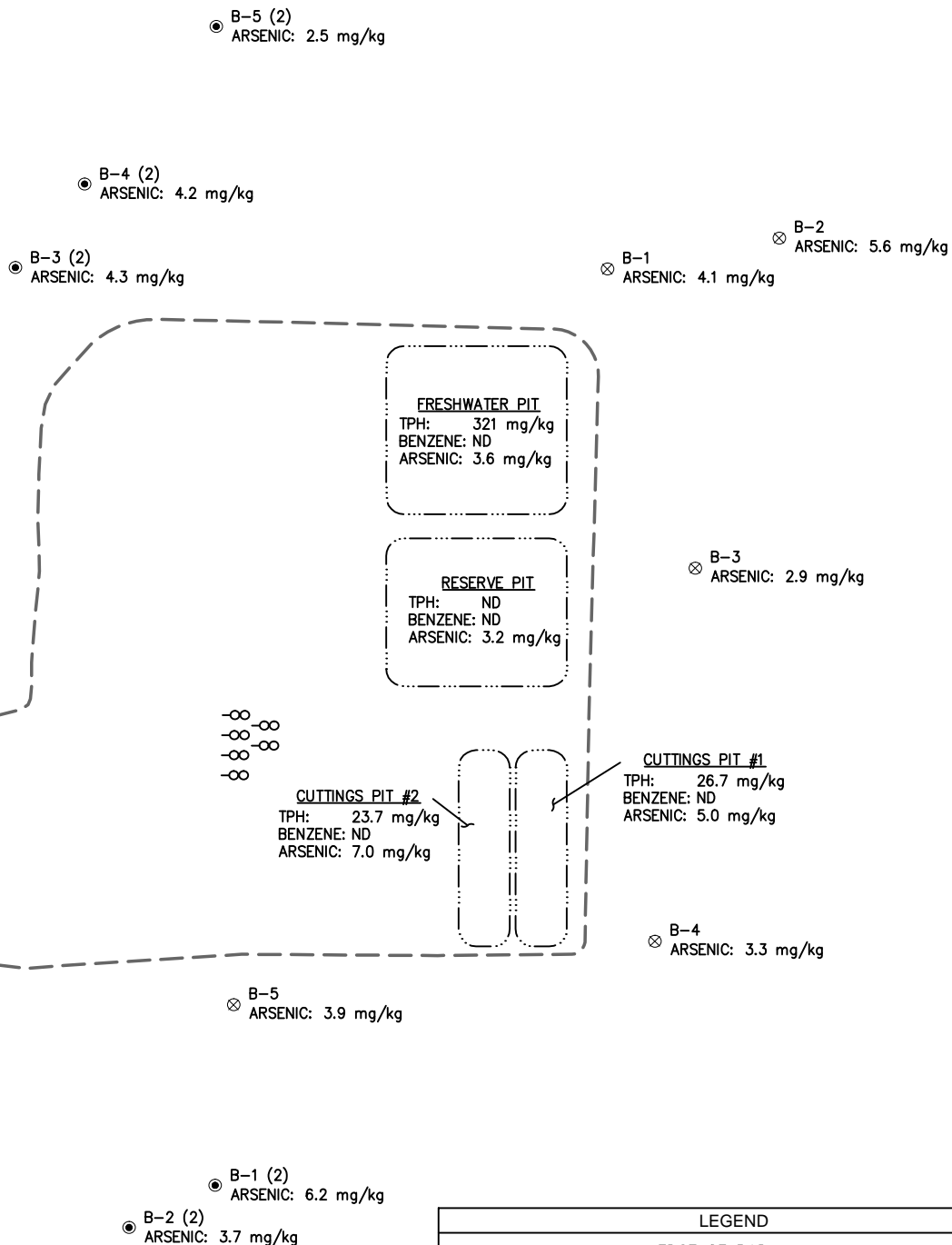
Analytical Parameter  (with units)	Cuttings #1						Cuttings #2						Background					Background					COGCC Table 910-1 Concentration Levels	Maximum based on Background
	Cut #1 Contents 9/30/13	Cut 1 AS-1	Cut 1 AS-2	Cut 1 AS-3	Cut 1 AS-4	Cut 1 AS-5	Cut #2 Contents 9/30/13	Cut 2 AS-1	Cut 2 AS-2	Cut 2 AS-3	Cut 2 AS-4	Cut 2 AS-5	#1	#2	#3	#4	#5	#1	#2	#3	#4	#5		
Accutest Job #	D51123	D51422 10/8/13					D51122	D51423 10/8/13					D29260 (11/7/11)					D29743 (11/22/11)					-	-
Sample type (Composite/Discrete)	C	D	D	D	D	D	C	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	-	-
TPH (GRO) (mg/Kg)	29.3	-	-	-	-	-	30.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH (DRO) (mg/Kg)	863	-	-	-	-	-	790	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH (GRO + DRO) (mg/Kg)	892	-	-	-	-	-	820	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	500	-
Benzene (mg/Kg)	ND	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.170	-
Toluene (mg/Kg)	0.0993	-	-	-	-	-	0.445	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85	-
Ethylbenzene (mg/Kg)	0.117	-	-	-	-	-	0.205	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	-
Xylenes (total) (mg/Kg)	ND	-	-	-	-	-	0.591	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	175	-
Acenaphthene (mg/Kg)	ND	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Anthracene (mg/Kg)	ND	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Benzo(A)anthracene (mg/Kg)	ND	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Benzo(A)pyrene (mg/Kg)	ND	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022	-
Benzo(B)fluoranthene (mg/Kg)	ND	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Benzo(K)fluoranthene (mg/Kg)	ND	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2	-
Chrysene (mg/Kg)	0.0365	-	-	-	-	-	0.0310	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-
Dibenzo(A,H)anthracene (mg/Kg)	ND	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022	-
Fluoranthene (mg/Kg)	0.0148	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Fluorene (mg/Kg)	ND	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Indeno(1,2,3,C,D)pyrene (mg/Kg)	ND	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Naphthalene (mg/Kg)	0.266	-	-	-	-	-	0.383	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Pyrene (mg/Kg)	0.0238	-	-	-	-	-	0.0208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Electrical Conductivity (mmhos/cm)	17.400	-	-	-	-	-	13.900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-
Sodium Adsorption Ratio (SAR)	63.6	-	-	-	-	-	199	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-
pH	9.92	-	-	-	-	-	11.23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6-9	-
Arsenic (mg/kg)	13.1	17.3	13.7	14.5	15.4	14.3	10.7	11.9	10.9	13.2	12.5	69.3	4.1	5.6	2.9	3.3	3.9	6.2	3.7	4.3	4.2	2.5	0.39	6.8
Barium (mg/kg)	4070	-	-	-	-	-	2780	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15000	-
Cadmium (mg/kg)	<1.3	-	-	-	-	-	<1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-
Chromium (III) (mg/Kg)	19.9	-	-	-	-	-	23.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120000	-
Chromium (VI) (mg/Kg)	<1.0	-	-	-	-	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Copper (mg/kg)	33.9	-	-	-	-	-	30.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3100	-
Lead (inorganic) (mg/kg)	24.2	-	-	-	-	-	17.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	400	-
Mercury (mg/kg)	<0.11	-	-	-	-	-	<0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Nickel (mg/kg)	16.6	-	-	-	-	-	14.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1600	-
Selenium (mg/kg)	<6.4	-	-	-	-	-	<6.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390	-
Silver (mg/kg)	<3.9	-	-	-	-	-	<3.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390	-
Zinc (mg/kg)	57.0	-	-	-	-	-	50.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23000	-
% Solids	77.9	82.3	81.6	75.6	77.5	75.4	80.6	79.2	79	74.8	71.2	74.5	86.0	83.9	81.3	86.2	86.0	98.0	90.5	86.0	88.9	97.9	-	-

- Notes:
- 1) ND = not detectable to the laboratory detection limit.
  - 2) Results highlighted in yellow exceed Table 910-1 concentration levels. Results highlighted in Gray exceed Table 910-1, but are below background levels.
  - 3) "-" indicates no analysis.
  - 4) See site map for sample locations.





0 75 150  
SCALE IN FEET  
1"=150'



**NOTES:**

1. ND INDICATES NOT DETECTED WITHIN LABORATORY DETECTION LIMITS.
2. RESULTS SHOWN ARE SUBLINER CONFIRMATION SAMPLES UNLESS OTHERWISE NOTED.

LEGEND	
---	EDGE OF PAD
----	TOP OF PIT
—○—	WELL HEAD
⊗ B-0	BACKGROUND SAMPLE LOCATION COLLECTED 11-07-11 WITH ARSENIC RESULTS
⊙ B-0 (2)	BACKGROUND SAMPLE LOCATION COLLECTED 11/22/11 WITH ARSENIC RESULTS

GPS: KRW	CHECKED: DK	FIGURE 1	DATE	REVISIONS
DATE: 10/16/13	DRAWN: DRF			
FILE NAME: samples ars	SHEET NO. 1 of 1			
PROJECT NO. 1111-02A	SCALE: 1" = 150'			

**KRW CONSULTING, INC.**  
8000 W. 14TH AVENUE, SUITE 200  
LAKEWOOD, COLORADO  
(303) 239-9011

**FIGURE 1**  
PICEANCE CREEK  
FRU 197-31A  
SAMPLE LOCATIONS MAP  
WITH SELECT RESULTS  
PREPARED FOR XTO ENERGY