FORM
27
Rev 6/99

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State of Colorado
Oil and Gas Conservation Commission

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

FOR OGCC USE ONLY

OGCC Employee:
☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV
Tracking No:

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 REM #8510 Update

OGCC Operator Number: 100264
Name of Operator: XTO Energy Inc.
Address: PO Box 6501
City: Englewood State: CO Zip: 80155

Contact Name and Telephone:
Jessica Dooling
No: 970-675-4122
Fax: 970-675-4150

API Number: 05-103-11546-00
County: Rio Blanco
Facility Name: Piceance Creek Unit
Facility Number:
Well Name: Piceance Creek Unit
Well Number: 296-6B
Location: (QtrQtr, Sec, Twp, Rng, Meridian): NWSE, Sec. 6, T2S, R96W, 6th P.M. Latitude: 39.905268 Longitude: -108.204977

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-Crop Land, Rangeland

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Piceance Fine Sandy Loam, 5 to 15 percent slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): +/- 2,500' to nearest water well; +/- 1,500' to nearest spring and drainage

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

Impacted Media (check):	Extent of Impact:	How Determined:
☑ Soils	TPH, Benzene, Arsenic and Barium	laboratory analysis
☐ Vegetation		
☐ Groundwater		
☐ Surface Water		

REMEDIATION WORKPLAN

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

Initial impacts were identified and reported via Form 27 REM #8510, DOC #2141570. Please see Attachment I, Tables 1 through 5 (5 total), and Figure 1 (1 total). Refer to COGCC approved Form 4 Background Arsenic Sundry (DOC #2141571) for details regarding background Arsenic.

Describe how source is to be removed:

Synthetic liners from all pits have been removed and were transported offsite to Wray Gulch Landfill near Meeker, CO. Reserve Pit Contents, Cuttings Spoil Pile, and Cuttings Pits #1, #2 and #3 contents that were mix/blend processed and/or Thermal Desorption Unit (TDU) processed to below Table 910-1 concentration levels were used onsite for backfill.

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.:

Soil assessment and remediation have been completed. All impacted soils have been either mix/blend and/or TDU processed to below Table 910-1 concentration levels.

Submit Page 2 with Page 1

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Page 2

State of Colorado
Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801, Denver, Colorado 80203
(303)894-2100 Fax:(303)894-2109

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

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 I.

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, #2 or #3 (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 transported offsite to Wray Gulch Landfill near Meeker, CO. Reserve Pit Contents, Cuttings Spoil Pile, and Cuttings Pits #1, #2 and #3 contents that were mix/blend processed and/or Thermal Desorption Unit (TDU) processed to below Table 910-1 concentration levels were used onsite for backfill.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: 9/20/12	Date Site Investigation Completed: 6/6/13	Date Remediation Plan Submitted: 12/12/12
Remediation Start Date: 10/1/12	Anticipated Completion Date: 6/6/13	Actual Completion Date: 6/6/13

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 EH&S Supervisor Date: 1/18/2016

OGCC Approved: _____ Title: _____ Date: _____

ATTACHMENT I

PCU 296-6B Pit Closure Workplan, Form 27 Page 2

Describe initial action taken:

The site consists of Freshwater, Reserve, and Cuttings Pits #1, #2 and #3 (see Figure 1).

1. **Fresh Water Pit**
   - Freshwater Pit contents (de minimis) and associated synthetic liners were removed and were transported to Wray Gulch Landfill near Meeker, CO.
   - Freshwater Pit subliner samples were collected and analyzed for Table 910-1 parameters. Results were below Table 910-1 concentration levels with the exception of pH (9.68) and Arsenic (4.9 mg/kg) (see Table 1).

2. **Reserve Pit**
   - Reserve Pit contents were solidified and sampled for Table 910-1 parameters. Results were below Table 910-1 concentration levels with the exception of EC (7.650 mmhos/cm), pH (12.42) and Arsenic (9.0 mg/kg).
   - Reserve Pit subliner samples were collected and analyzed for Table 910-1 parameters. Results were below Table 910-1 concentration levels with the exception of pH (9.85) and Arsenic (6.3 mg/kg) (see Table 1).

3. **Cuttings Pit #1**
   - Cuttings Pit contents were solidified and sampled for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for TPH (590 mg/kg), Benzene (0.422 mg/kg), EC (8.260 mmhos/cm), SAR (17.2), pH (12.49) and Arsenic (7.5 mg/kg).
   - Cuttings Pit #1 subliner samples were collected and analyzed for Table 910-1 parameters. Results were below Table 910-1 concentration levels with the exception of pH (9.95) and Arsenic (10.9 mg/kg) (see Table 1).

4. **Cuttings Pit #2**
   - Cuttings Pit #2 contents were solidified and sampled for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for TPH (565 mg/kg), Benzene (0.286 mg/kg), EC (7.910 mmhos/cm), SAR (186), pH (12.41) and Arsenic (12.1 mg/kg).

- Cuttings Pit #2 subliner samples were collected and analyzed for Table 910-1 parameters. Results were below Table 910-1 concentration levels with the exception of pH (9.94) and Arsenic (4.9 mg/kg) (see Table 1).

5. **Cuttings Pit #3**
   - Cuttings Pit #3 contents were solidified and sampled for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for Benzene (0.649 mg/kg), EC (5.410 mmhos/cm), SAR (23.2), pH (12.02) and Arsenic (6.9 mg/kg).
   - Cuttings Pit #3 subliner samples were collected and analyzed for Table 910-1 parameters. Results were below Table 910-1 concentration levels with the exception of pH (9.87) and Arsenic (5.7 mg/kg) (see Table 1).

6. **Cuttings Spoil Pile**
   - Cuttings spoil pile material (located above Cuttings Pit #1) was sampled and analyzed for Table 910-1 parameters. Results were below Table 910-1 concentration levels with the exception of Arsenic (9.8 mg/kg) (see Table 1).

- Synthetic liners from all pits were removed and transported offsite to Wray Gulch Landfill in Meeker, CO. Disposal manifests available on request.

- Reserve Pit contents and Cuttings Spoils below Table 910-1 concentration levels were used onsite for backfill.

- Cuttings Pits #1 and #2 contents were mix/blend processed, sampled to ensure Table 910-1 compliance and used onsite for backfill (See Tables 3 and 4).

- Cuttings Pit #3 contents were treated onsite with a temporary Thermal Desorption Unit (TDU), sampled to ensure Table 910-1 compliance and used onsite for backfill (See Table 5).

- Elevated Arsenic levels above the Table 910-1 concentration level were detected in all Pit contents and beneath the Freshwater, Reserve and Cuttings Pits #1, #2 and #3. Please refer to COGCC approved Form 4 Background Arsenic Sundry, DOC #2141571 establishing acceptable background Arsenic levels.

- Soil samples were collected by KRW following proper sampling and shipping protocol and submitted to Accutest Laboratories in Wheat Ridge, Colorado. QAQC of the laboratory results indicated no outstanding anomalies. The laboratory test results are summarized in the attached tables. Complete laboratory reports are available on request.

- Refer to Tables 1-5 (5 total) for a summary of the laboratory results and Figure 1 for layout of the pits and sample locations.

- 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.

- 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: PCU 296-6B
Lab Summary

Last update 1/4/2016

Analytical Parameter	Fresh Water Pit		Reserve Pit		Cutting #1		Cuttings #2		Cuttings #3		Cuttings Spoils	Background								COGCC	Maximum based on Background
(with units)	FW Pit Contents	FW Pit Subliner	RP Post Solid.	RP Subliner	Cut #1 Post Solid.	Cut #1 Subliner	Cut #2 Post Solid.	Cut #2 Subliner	Cut #3 Post Solid.	Cut #3 Subliner	Cuttings Spoil Pile	#1	#2	#3	#4	#5	#6	#7	#8	Table 910-1 Concentration Levels	
Accutest Job #	De Minimis Contents	D40797 (11/8/12)	D40653 (11/5/12)	D40799 (11/8/12)	D39689 (10/8/12)	D40113 (10/18/12)	D39440 (10/1/12)	D39780 (10/10/12)	D41306 (11/27/12)	D39780 (10/10/12)	D39589 (10/4/12)	D39590 (10/5/12)								-	-
Sample type (**C**omposite/**D**iscrete)		C	C	C	C	C	C	C	C	C	C	-	-	-	-	-	-	-	-	-	-
TPH (GRO) (mg/Kg)		ND	ND	ND	14.5	ND	38.6	ND	9.92	ND	ND	-	-	-	-	-	-	-	-	-	-
TPH (DRO) (mg/Kg)		ND	404	23.1	575	31.2	526	24.7	299	28.1	15.1	-	-	-	-	-	-	-	-	-	-
TPH (GRO + DRO) (mg/Kg)		ND	404	23.1	590	31.2	565	24.7	309	28.1	15.1	-	-	-	-	-	-	-	-	500	-
Benzene (mg/Kg)		ND	ND	ND	0.422	0.0530	0.286	ND	0.649	ND	ND	-	-	-	-	-	-	-	-	0.170	-
Toluene (mg/Kg)		ND	ND	ND	1.35	0.108	2.24	ND	1.53	ND	ND	-	-	-	-	-	-	-	-	85	-
Ethylbenzene (mg/Kg)		ND	ND	ND	0.278	ND	0.502	ND	0.197	ND	ND	-	-	-	-	-	-	-	-	100	-
Xylenes (total) (mg/Kg)		ND	ND	ND	1.32	ND	2.50	ND	1.59	ND	ND	-	-	-	-	-	-	-	-	175	-
Acenaphthene (mg/Kg)		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	1000	-
Anthracene (mg/Kg)		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	1000	-
Benzo(A)anthracene (mg/Kg)		ND	ND	ND	ND	ND	ND	ND	0.0131	ND	ND	-	-	-	-	-	-	-	-	0.22	-
Benzo(B)fluoranthene (mg/Kg)		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	0.22	-
Benzo(K)fluoranthene (mg/Kg)		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	2.2	-
Benzo(A)pyrene (mg/Kg)		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	0.022	-
Chrysene (mg/Kg)		ND	ND	ND	0.0567	0.0056	0.0476	ND	0.0623	0.0048	ND	-	-	-	-	-	-	-	-	22	-
Dibenzo(A,H)anthracene (mg/Kg)		ND	ND	ND	ND	ND	ND	ND	0.0058	ND	ND	-	-	-	-	-	-	-	-	0.022	-
Fluoranthene (mg/Kg)		ND	ND	ND	ND	ND	ND	ND	0.0189	ND	ND	-	-	-	-	-	-	-	-	1000	-
Fluorene (mg/Kg)		ND	ND	ND	0.119	0.0085	ND	ND	0.103	0.0079	ND	-	-	-	-	-	-	-	-	1000	-
Indeno(1,2,3,C,D)pyrene (mg/Kg)		ND	ND	ND	0.0092	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	0.22	-
Naphthalene (mg/Kg)		ND	0.0182	ND	0.754	0.0463	0.391	ND	0.445	0.0406	ND	-	-	-	-	-	-	-	-	23	-
Pyrene (mg/Kg)		ND	ND	ND	0.0432	ND	0.0390	ND	0.0336	ND	ND	-	-	-	-	-	-	-	-	1000	-
Electrical Conductivity (mmhos/cm)		0.348	7.650	1.840	8.260	0.522	7.910	0.514	5.410	0.647	0.917	-	-	-	-	-	-	-	-	4	-
Sodium Adsorption Ratio (SAR)		3.08	7.52	6.92	17.2	7.50	186	3.66	23.2	5.55	5.13	-	-	-	-	-	-	-	-	12	-
pH		9.68	12.42	9.85	12.49	9.95	12.41	9.94	12.02	9.87	8.76	-	-	-	-	-	-	-	-	6-9	-
Arsenic (mg/kg)		4.9	9.0	6.3	7.5	10.9	12.1	4.9	6.9	5.7	9.8	7.9	8.6	5.5	5.2	7.8	5.8	6.0	5.9	0.39	9.5
Barium (mg/kg)		293	6720	3540	4910	1440	3680	1380	8110	3710	816	-	-	-	-	-	-	-	-	15000	-
Cadmium (mg/kg)		<1.1	<1.6	<1.0	<1.2	<1.1	<1.3	<1.2	<1.3	<1.1	<1.1	-	-	-	-	-	-	-	-	70	-
Chromium (III) (mg/Kg)		31.4	17.1	28.3	11.6	31.6	14.8	36.2	13.0	29.9	37.3	-	-	-	-	-	-	-	-	120000	-
Chromium (VI) (mg/Kg)		<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	-	-	-	-	-	-	-	23	-
Copper (mg/kg)		14.1	16.1	10.1	21.0	11.7	27.5	16.8	34.6	16.6	9.7	-	-	-	-	-	-	-	-	3100	-
Lead (inorganic) (mg/kg)		11.1	10.9	8.1	13.4	8.4	29.1	13.3	19.8	11.6	7.3	-	-	-	-	-	-	-	-	400	-
Mercury (mg/kg)		<0.10	<0.14	<0.086	<0.11	<0.10	<0.14	<0.11	<0.10	<0.11	<0.11	-	-	-	-	-	-	-	-	23	-
Nickel (mg/kg)		17.1	114	14.1	10.9	16.0	13.8	23.7	12.1	16.3	15.0	-	-	-	-	-	-	-	-	1600	-
Selenium (mg/kg)		<5.5	<8.1	<5.2	<5.9	<5.6	<6.4	<5.8	<6.3	<5.3	<5.6	-	-	-	-	-	-	-	-	390	-
Silver (mg/kg)		<3.3	<4.8	<3.1	<3.5	<3.4	<3.8	<3.5	<3.8	<3.2	<3.4	-	-	-	-	-	-	-	-	390	-
Zinc (mg/kg)		43.6	45.3	37.8	34.0	38.2	40.5	48.4	37.2	41.4	33.3	-	-	-	-	-	-	-	-	23000	-
% Solids		87.0	60.1	92.3	87.1	86.5	77.8	86.0	80.9	91.8	88.6	89.0	94.6	92.8	95.1	91.7	92.0	93.2	94.3	-	-

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: PCU 296-6B
Lab Summary - Arsenic Summary

Last update 1/4/2016

Analytical Parameter	Cut #2 Discrete Arsenic						Spoils Discrete Arsenic						Background								COGCC	Maximum based on Background
(with units)	Cut #2 Post Solid. 10/1/12	D - 1	D - 2	D - 3	D - 4	D - 5	Cuttings Spoil Pile 10/4/12	D - 1	D - 2	D - 3	D - 4	D - 5	#1	#2	#3	#4	#5	#6	#7	#8	Table 910-1 Concentration Levels	
Accutest Job #	D39440 (10/1/12)	D40774 (11/7/12)					D39589 (10/4/12)	D40775 (11/7/12)					D39590 (10/5/12)								-	-
Sample type (**C**omposite/**D**iscrete)	C	D	D	D	D	D	C	D	D	D	D	D	-	-	-	-	-	-	-	-	-	-
TPH (GRO) (mg/Kg)	38.6	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH (DRO) (mg/Kg)	526	-	-	-	-	-	15.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH (GRO + DRO) (mg/Kg)	565	-	-	-	-	-	15.1	-	-	-	-	-	-	-	-	-	-	-	-	-	500	-
Benzene (mg/Kg)	0.286	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	0.170	-
Toluene (mg/Kg)	2.24	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	85	-
Ethylbenzene (mg/Kg)	0.502	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	100	-
Xylenes (total) (mg/Kg)	2.50	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	175	-
Acenaphthene (mg/Kg)	ND	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Anthracene (mg/Kg)	ND	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Benzo(A)anthracene (mg/Kg)	ND	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Benzo(B)fluoranthene (mg/Kg)	ND	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Benzo(K)fluoranthene (mg/Kg)	ND	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2	-
Benzo(A)pyrene (mg/Kg)	ND	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022	-
Chrysene (mg/Kg)	0.0476	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-
Dibenzo(A,H)anthracene (mg/Kg)	ND	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022	-
Fluoranthene (mg/Kg)	ND	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Fluorene (mg/Kg)	ND	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Indeno(1,2,3,C,D)pyrene (mg/Kg)	ND	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Naphthalene (mg/Kg)	0.391	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Pyrene (mg/Kg)	0.0390	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Electrical Conductivity (mmhos/cm)	7.910	-	-	-	-	-	0.917	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-
Sodium Adsorption Ratio (SAR)	186	-	-	-	-	-	5.13	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-
pH	12.41	-	-	-	-	-	8.76	-	-	-	-	-	-	-	-	-	-	-	-	-	6-9	-
Arsenic (mg/kg)	12.1	10.0	9.5	10.0	9.3	8.6	9.8	5.3	7.5	6.8	6.3	6.6	7.9	8.6	5.5	5.2	7.8	5.8	6.0	5.9	0.39	9.5
Barium (mg/kg)	3680	-	-	-	-	-	816	-	-	-	-	-	-	-	-	-	-	-	-	-	15000	-
Cadmium (mg/kg)	<1.3	-	-	-	-	-	<1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-
Chromium (III) (mg/Kg)	14.8	-	-	-	-	-	37.3	-	-	-	-	-	-	-	-	-	-	-	-	-	120000	-
Chromium (VI) (mg/Kg)	<1.0	-	-	-	-	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Copper (mg/kg)	27.5	-	-	-	-	-	9.7	-	-	-	-	-	-	-	-	-	-	-	-	-	3100	-
Lead (inorganic) (mg/kg)	29.1	-	-	-	-	-	7.3	-	-	-	-	-	-	-	-	-	-	-	-	-	400	-
Mercury (mg/kg)	<0.14	-	-	-	-	-	<0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Nickel (mg/kg)	13.8	-	-	-	-	-	15.0	-	-	-	-	-	-	-	-	-	-	-	-	-	1600	-
Selenium (mg/kg)	<6.4	-	-	-	-	-	<5.6	-	-	-	-	-	-	-	-	-	-	-	-	-	390	-
Silver (mg/kg)	<3.8	-	-	-	-	-	<3.4	-	-	-	-	-	-	-	-	-	-	-	-	-	390	-
Zinc (mg/kg)	40.5	-	-	-	-	-	33.3	-	-	-	-	-	-	-	-	-	-	-	-	-	23000	-
% Solids	77.8	83.2	83.0	83.9	84.9	81.5	88.6	87.6	84.8	87.0	88.9	87.4	89.0	94.6	92.8	95.1	91.7	92.0	93.2	94.3	-	-

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.

Table 3
Location: PCU 296-6B
Lab Summary - Cuttings #1 Mix/blend Summary

Last update 1/4/2016

Analytical Parameter	Cuttings #1													COGCC	Maximum based on Background
(with units)	Cut #1 Post Solid.	Cut #1 Mix/blend Trial (2:1)	Cut #1 Pugmill Day 1	Cut #1 Pugmill Day 2	Cut #1 Pugmill Day 3	Cut #1 Pugmill Day 4	Cut #1 Pugmill Day 5	Cut #1 Pugmill Day 6	Cut #1 Pugmill Day 7	Cut #1 Pugmill Day 8	Cut #1 Pugmill Day 9	Cut #1 Pugmill Day 10	Cut #1 Pugmill Day 11	Table 910-1 Concentration Levels	
Accutest Job #	D39689 (10/8/12)	D40482 (10/30/12)	D43724 (2/20/13)		D43738 (2/21/13)	D43801 (2/22/13)	D43837 (2/25/13)	D43894 (2/26/13)	D43935 (2/27/13)	D43949 (2/28/13)	D44011 (3/4/13)	D44075 (3/5/13)	D44140 (3/6/13)	-	-
Sample type (**C**omposite/**D**iscrete)	C	C	C	C	C	C	C	C	C	C	C	C	C		-
TPH (GRO) (mg/Kg)	14.5	ND	ND	ND	7.59	ND	ND	ND	ND	ND	ND	ND	ND	-	-
TPH (DRO) (mg/Kg)	575	95.7	68.3	38.3	90.1	349	91.4	149	80.7	76.2	83.7	44.2	27.7	-	-
TPH (GRO + DRO) (mg/Kg)	590	95.7	68.3	38.3	97.7	349	91.4	149	80.7	76.2	83.7	44.2	27.7	500	-
Benzene (mg/Kg)	0.422	0.128	ND	ND	0.0436	ND	ND	ND	ND	ND	ND	ND	ND	0.170	-
Toluene (mg/Kg)	1.35	-	-	-	-	-	-	-	-	-	-	-	-	85	-
Ethylbenzene (mg/Kg)	0.278	-	-	-	-	-	-	-	-	-	-	-	-	100	-
Xylenes (total) (mg/Kg)	1.32	-	-	-	-	-	-	-	-	-	-	-	-	175	-
Acenaphthene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Benzo(A)anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Benzo(B)fluoranthene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Benzo(K)fluoranthene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	2.2	-
Benzo(A)pyrene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	0.022	-
Chrysene (mg/Kg)	0.0567	-	-	-	-	-	-	-	-	-	-	-	-	22	-
Dibenzo(A,H)anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	0.022	-
Fluoranthene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Fluorene (mg/Kg)	0.119	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Indeno(1,2,3,C,D)pyrene (mg/Kg)	0.0092	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Naphthalene (mg/Kg)	0.754	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Pyrene (mg/Kg)	0.0432	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Electrical Conductivity (mmhos/cm)	8.260	-	-	-	-	-	-	-	-	-	-	-	-	4	-
Sodium Adsorption Ratio (SAR)	17.2	-	-	-	-	-	-	-	-	-	-	-	-	12	-
pH	12.49	-	-	-	-	-	-	-	-	-	-	-	-	6-9	-
Arsenic (mg/kg)	7.5	-	-	-	-	-	-	-	-	-	-	-	-	0.39	9.5
Barium (mg/kg)	4910	-	-	-	-	-	-	-	-	-	-	-	-	15000	-
Cadmium (mg/kg)	<1.2	-	-	-	-	-	-	-	-	-	-	-	-	70	-
Chromium (III) (mg/Kg)	11.6	-	-	-	-	-	-	-	-	-	-	-	-	120000	-
Chromium (VI) (mg/Kg)	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Copper (mg/kg)	21.0	-	-	-	-	-	-	-	-	-	-	-	-	3100	-
Lead (inorganic) (mg/kg)	13.4	-	-	-	-	-	-	-	-	-	-	-	-	400	-
Mercury (mg/kg)	<0.11	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Nickel (mg/kg)	10.9	-	-	-	-	-	-	-	-	-	-	-	-	1600	-
Selenium (mg/kg)	<5.9	-	-	-	-	-	-	-	-	-	-	-	-	390	-
Silver (mg/kg)	<3.5	-	-	-	-	-	-	-	-	-	-	-	-	390	-
Zinc (mg/kg)	34.0	-	-	-	-	-	-	-	-	-	-	-	-	23000	-
% Solids	87.1	88.2	86.3	87.2	86.0	85.0	84.6	86.1	85.6	86.5	86.6	86.4	86.4	-	-

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.

Table 4
Location: PCU 296-6B
Lab Summary - Cuttings #2 Mix/blend Summary

Last update 1/4/2016

Analytical Parameter												COGCC	Maximum based on Background
(with units)	Cut #2 Post Solid.	Cut #2 Mix/blend Trial (1:1)	Cut #2 Mix/blend Trial (2:1)	Cut #2 Mix/blend Trial (3:1)	Cut #2 Trial (3:1) Resample	Cut #2 Pugmill Day 1	Cut #2 Pugmill Day 2	Cut #2 Pugmill Day 3	Cut #2 Pugmill Day 4	Cut #2 Pugmill Day 5	Cut #2 Pugmill Day 6	Table 910-1 Concentration Levels	
Accutest Job #	D39440 (10/1/12)	D40482 (10/30/12)	D41648 (12/5/12)	D42114 (12/18/12)	D42318 (1/3/12)	D44197 (3/7/12)	D44265 (3/11/13)	D44316 (3/12/13	D44363 (3/13/13)	D44419 (3/14/13)	D44518 (3/18/13)	-	-
Sample type (**C**omposite/**D**iscrete)	C	C	C	C	C	C	C	C	C	C	C	-	-
TPH (GRO) (mg/Kg)	38.6	7.66	ND	ND	-	8.20	ND	ND	ND	ND	ND	-	-
TPH (DRO) (mg/Kg)	526	361	140	70	-	167	108	138	33.3	159	93.7	-	-
TPH (GRO + DRO) (mg/Kg)	565	369	140	70	-	175	108	138	33.3	159	93.7	500	-
Benzene (mg/Kg)	0.286	0.312	0.226	ND	0.195	0.0335	ND	ND	0.0534	ND	ND	0.170	-
Toluene (mg/Kg)	2.24	-	-	-	-	-	-	-	-	-	-	85	-
Ethylbenzene (mg/Kg)	0.502	-	-	-	-	-	-	-	-	-	-	100	-
Xylenes (total) (mg/Kg)	2.50	-	-	-	-	-	-	-	-	-	-	175	-
Acenaphthene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	1000	-
Anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	1000	-
Benzo(A)anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	0.22	-
Benzo(B)fluoranthene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	0.22	-
Benzo(K)fluoranthene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	2.2	-
Benzo(A)pyrene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	0.022	-
Chrysene (mg/Kg)	0.0476	-	-	-	-	-	-	-	-	-	-	22	-
Dibenzo(A,H)anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	0.022	-
Fluoranthene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	1000	-
Fluorene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	1000	-
Indeno(1,2,3,C,D)pyrene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	0.22	-
Naphthalene (mg/Kg)	0.391	-	-	-	-	-	-	-	-	-	-	23	-
Pyrene (mg/Kg)	0.0390	-	-	-	-	-	-	-	-	-	-	1000	-
Electrical Conductivity (mmhos/cm)	7.910	-	-	-	-	-	-	-	-	-	-	4	-
Sodium Adsorption Ratio (SAR)	186	-	-	-	-	-	-	-	-	-	-	12	-
pH	12.41	-	-	-	-	-	-	-	-	-	-	6-9	-
Arsenic (mg/kg)	12.1	-	-	-	-	-	-	-	-	-	-	0.39	9.5
Barium (mg/kg)	3680	-	-	-	-	-	-	-	-	-	-	15000	-
Cadmium (mg/kg)	<1.3	-	-	-	-	-	-	-	-	-	-	70	-
Chromium (III) (mg/Kg)	14.8	-	-	-	-	-	-	-	-	-	-	120000	-
Chromium (VI) (mg/Kg)	<1.0	-	-	-	-	-	-	-	-	-	-	23	-
Copper (mg/kg)	27.5	-	-	-	-	-	-	-	-	-	-	3100	-
Lead (inorganic) (mg/kg)	29.1	-	-	-	-	-	-	-	-	-	-	400	-
Mercury (mg/kg)	<0.14	-	-	-	-	-	-	-	-	-	-	23	-
Nickel (mg/kg)	13.8	-	-	-	-	-	-	-	-	-	-	1600	-
Selenium (mg/kg)	<6.4	-	-	-	-	-	-	-	-	-	-	390	-
Silver (mg/kg)	<3.8	-	-	-	-	-	-	-	-	-	-	390	-
Zinc (mg/kg)	40.5	-	-	-	-	-	-	-	-	-	-	23000	-
% Solids	77.8	85.5	87.6	88.7	86.0	87.9	86.0	85.3	85.2	85.0	88.1	-	-

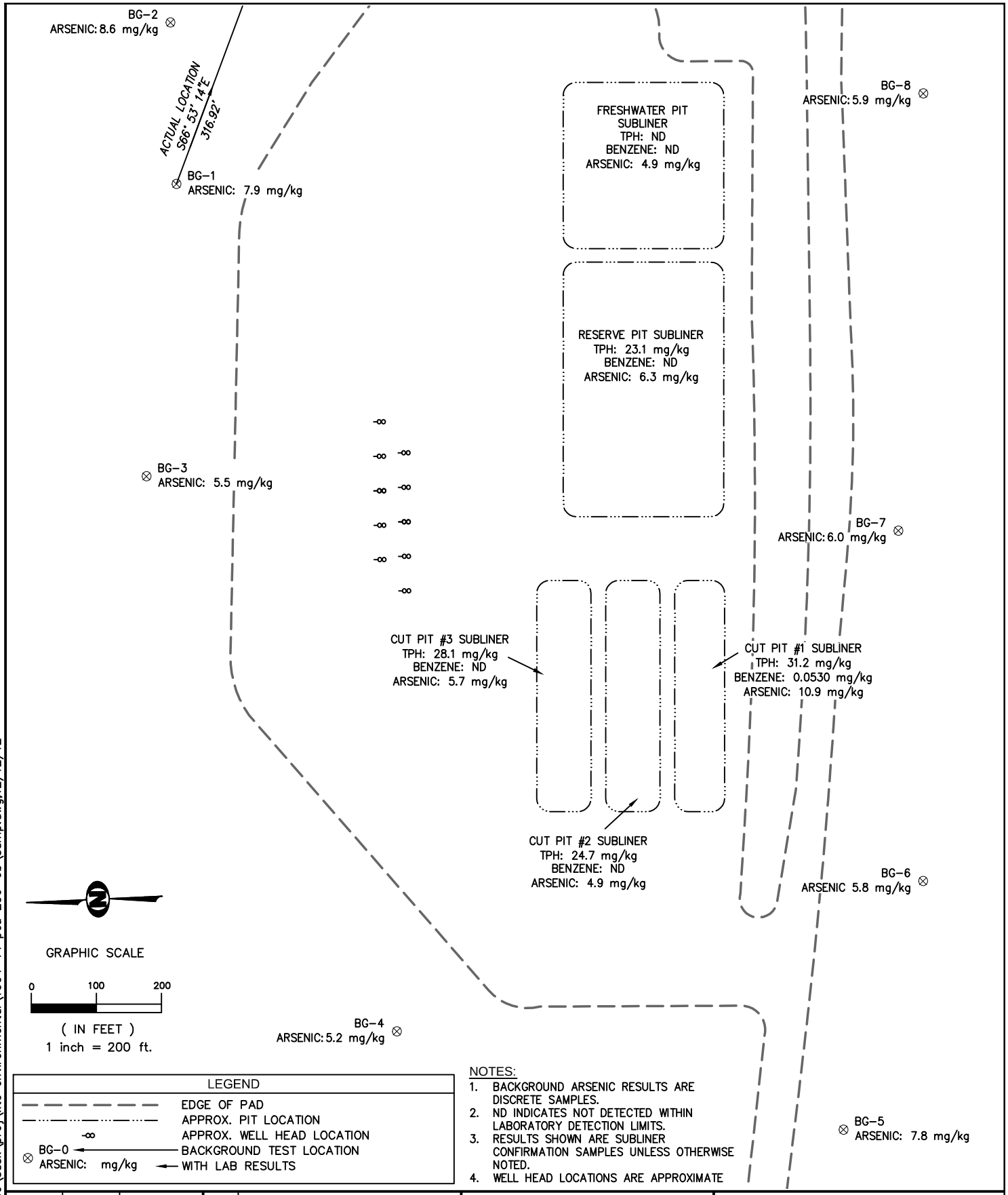
Notes:
1) ND = not detectible to the laboratory detection limit.
2) Results highlighted in yellow exceed Table 910-1 concentration levels. Results highlighted in Gray exceed Table 910-1, but are below background levels.
3) "-" indicates no analysis.

Table 5
Location: PCU 296-6B
Lab Summary - Cuttings #3 Mix/blend Summary

Last update 1/4/2016

Analytical Parameter	Cuttings #3							COGCC	Maximum based on Background
(with units)	Cut #3 Post Solid.	Cut #3 Mix/blend Trial (3:1)	Cut #3 TDU Output 0-400 Tons	Cut #3 TDU Output 400-800 Tons	Cut #3 TDU Output 800-1200 Tons	Cut #3 TDU Output 1200-1600 Tons	Cut #3 TDU Output 1600-1629 Tons	Table 910-1 ConcentrationLevels	
Accutest Job #	D41306 (11/27/12)	D40482 (10/30/12)	D46408 (5/20/13)	D46486 (5/22/13)	D46623 (5/28/13)	D46659 (5/29/13)	D46660 (5/29/13)	-	-
Sample type (**C**omposite/**D**iscrete)	C	C	C	C	C	C	C	-	-
TPH (GRO) (mg/Kg)	9.92	ND	-	-	-	-	-	-	-
TPH (DRO) (mg/Kg)	299	148	-	-	-	-	-	-	-
TPH (GRO + DRO) (mg/Kg)	309	148	-	-	-	-	-	500	-
Benzene (mg/Kg)	0.649	0.512	ND	ND	0.0386	0.0482	0.0973	0.170	-
Toluene (mg/Kg)	1.53	-	-	-	-	-	-	85	-
Ethylbenzene (mg/Kg)	0.197	-	-	-	-	-	-	100	-
Xylenes (total) (mg/Kg)	1.59	-	-	-	-	-	-	175	-
Acenaphthene (mg/Kg)	ND	-	-	-	-	-	-	1000	-
Anthracene (mg/Kg)	ND	-	-	-	-	-	-	1000	-
Benzo(A)anthracene (mg/Kg)	0.0131	-	-	-	-	-	-	0.22	-
Benzo(B)fluoranthene (mg/Kg)	ND	-	-	-	-	-	-	0.22	-
Benzo(K)fluoranthene (mg/Kg)	ND	-	-	-	-	-	-	2.2	-
Benzo(A)pyrene (mg/Kg)	ND	-	-	-	-	-	-	0.022	-
Chrysene (mg/Kg)	0.0623	-	-	-	-	-	-	22	-
Dibenzo(A,H)anthracene (mg/Kg)	0.0058	-	-	-	-	-	-	0.022	-
Fluoranthene (mg/Kg)	0.0189	-	-	-	-	-	-	1000	-
Fluorene (mg/Kg)	0.103	-	-	-	-	-	-	1000	-
Indeno(1,2,3,C,D)pyrene (mg/Kg)	ND	-	-	-	-	-	-	0.22	-
Naphthalene (mg/Kg)	0.445	-	-	-	-	-	-	23	-
Pyrene (mg/Kg)	0.0336	-	-	-	-	-	-	1000	-
Electrical Conductivity (mmhos/cm)	5.410	-	-	-	-	-	-	4	-
Sodium Adsorption Ratio (SAR)	23.2	-	-	-	-	-	-	12	-
pH	12.02	-	-	-	-	-	-	6-9	-
Arsenic (mg/kg)	6.9	-	-	-	-	-	-	0.39	9.5
Barium (mg/kg)	8110	-	-	-	-	-	-	15000	-
Cadmium (mg/kg)	<1.3	-	-	-	-	-	-	70	-
Chromium (III) (mg/Kg)	13.0	-	-	-	-	-	-	120000	-
Chromium (VI) (mg/Kg)	<1.0	-	-	-	-	-	-	23	-
Copper (mg/kg)	34.6	-	-	-	-	-	-	3100	-
Lead (inorganic) (mg/kg)	19.8	-	-	-	-	-	-	400	-
Mercury (mg/kg)	<0.10	-	-	-	-	-	-	23	-
Nickel (mg/kg)	12.1	-	-	-	-	-	-	1600	-
Selenium (mg/kg)	<6.3	-	-	-	-	-	-	390	-
Silver (mg/kg)	<3.8	-	-	-	-	-	-	390	-
Zinc (mg/kg)	37.2	-	-	-	-	-	-	23000	-
% Solids	80.9	87.9	91.7	90.0	92.7	91.8	93.3	-	-

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.



NOTES:

1. BACKGROUND ARSENIC RESULTS ARE DISCRETE SAMPLES.
2. ND INDICATES NOT DETECTED WITHIN LABORATORY DETECTION LIMITS.
3. RESULTS SHOWN ARE SUBLINER CONFIRMATION SAMPLES UNLESS OTHERWISE NOTED.
4. WELL HEAD LOCATIONS ARE APPROXIMATE

GPS: TRIMBLE	CHECKED: DK
DATE: 12/12/12	DRAWN: DRF
FILE NAME: samp	SHEET NO.: 1 of 1
PROJECT NO.: 1004-14	SCALE: 1" = 100'

FIGURE 1

DATE	REVISIONS

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

FIGURE 1
PICEANCE CREEK
PCU 296-6B
SAMPLE LOCATIONS WITH SELECT RESULTS
PREPARED FOR XTO ENERGY

\\hyper-v03\lkwd-co\sdsk\proj\xto environmental\1004-14 pcu 296-6b\samp.dwg,12/12/12

COMPLETED PIT CLOSURE

Photograph #1 – west side of pad looking east

Photograph #2 – east side of pad looking west

XTO ENERGY

Piceance Creek Unit 296-6B
NWSE, Sec 6 ,T2S, R96W, NAD 83, 6th PM
Lat. 39.905268
Long: -108.204977

SITE PHOTOGRAPHS
Photos Taken: 6/27/2013