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 #7920 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: 05-103-10863
County: Rio Blanco
Facility Name: Piceance Creek Unit
Facility Number: 285676
Well Name: Piceance Creek Unit
Well Number: 297-11A
Location: (QtrQtr, Sec, Twp, Rng, Meridian): NESE, Sec. 11, T2S, R97W, 6th P.M. Latitude: 39.891456 Longitude: -108.239626

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.): Closest water well is >1 mile; closest drainage is >1000' (McKee Gulch).

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 #7920, DOC #2145712. Please see Attachments I and II, Tables 1 through 6 (6 total), and Figures 1 through 2A (3 total) for details regarding background Arsenic and initial action taken.

Describe how source is to be removed:

Freshwater Pit contents and all associated synthetic liners have been removed and transported offsite to Wray Gulch Landfill in Meeker, CO. Freshwater Pit subliner material, Reserve Pit contents and subliner excavated material, and Cuttings Pit #1 contents were mix/blend processed, sampled to ensure Table 910-1 compliance and used onsite for backfill (see Tables 3, 4, and 5). Cuttings Pit #2 and #3 contents were combined and treated onsite with a temporary Thermal Desorption Unit, sampled to ensure Table 910-1 compliance and used onsite for backfill (see Table 6).

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 processed or treated on site with a TDU to below Table 910-1 concentration levels, or removed to a permitted disposal/recycling facility.

Submit Page 2 with Page 1

FORM 27 Rev 6/99

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 150 feet below the ground surface. Soil samples have been collected for laboratory analysis of subliner material to confirm no groundwater impact potential exists (see Tables 1 & 3).

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, #2 or #3 (see Tables 1 & 3).

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

Freshwater Pit contents and all associated synthetic liners have been removed and transported offsite to Wray Gulch Landfill in Meeker, CO. Freshwater Pit subliner material, Reserve Pit contents and subliner excavated material, and Cuttings Pit #1 contents were mix/blend processed, sampled to ensure Table 910-1 compliance and used onsite for backfill (see Tables 3, 4, and 5). Cuttings Pit #2 and #3 contents were combined and treated onsite with a temporary Thermal Desorption Unit, sampled to ensure Table 910-1 compliance and used onsite for backfill (see Table 6).

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: 4/4/12 Date Site Investigation Completed: 11/18/13 Date Remediation Plan Submitted: 7/8/13

Remediation Start Date: 8/27/12 Anticipated Completion Date: 12/20/13 Actual Completion Date: 12/20/13

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: 2/23/2016

OGCC Approved: _____ Title: _____ Date: _____

ATTACHMENT I

PCU 297-11A Pit Closure Workplan, Form 27 Page 1

Background Arsenic:

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

See Form 27 (Rem #7920, Doc #2145714) COGCC approved on 7/23/2013 which established a background Arsenic level of 7.2 mg/kg (See Table 1 and Figure 1).

ATTACHMENT II

PCU 297-11A Pit Closure Workplan, Form 27 Page 1

Describe initial action taken:

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

1. **Freshwater Pit**
    - Freshwater Pit contents were solidified and sampled for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for TPH (23455 mg/kg), EC (13.700 mmhos/cm), SAR (18.1), pH (12.52) and Arsenic (4.7 mg/kg) (see Table 1).
    - Freshwater Pit subliner samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for TPH (558 mg/kg), EC (5.36 mmhos/cm), SAR (26.2), pH (9.87) and Arsenic (5.2 mg/kg) (see Table 1).
    - Freshwater Pit subliner impacted soils from 0' to 3' were removed and confirmation samples were collected for TPH. Results ranged from 14.2 mg/kg in FW #2 to 295 mg/kg in FW #3 (See Table 3).
    - Freshwater Pit subliner excavated material was mix/blend processed, sampled to ensure Table 910-1 compliance and used onsite for backfill (see Table 3).

2. **Reserve Pit**
    - Reserve Pit contents were solidified and sampled for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for TPH (1324 mg/kg), EC (6.390 mmhos/cm), SAR (12.5), pH (12.53), Arsenic (5.3 mg/kg) and Barium (18200 mg/kg) (see Table 1).
    - 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 SAR (17), pH (10.07) and Arsenic (5.4 mg/kg) (see Table 1).
    - Reserve Pit post solidification contents and subliner excavated material was mix/blend processed, sampled for constituents of concern to ensure Table 910-1 compliance, and used onsite for backfill (see Table 4).

3. **Cuttings Spoil Pile**

- Cuttings Spoil Pile material (north and south piles combined) composite samples were collected and analyzed for Table 910-1 parameters. Results were below Table 910-1 concentration levels with the exception of EC (12.800 mmhos/cm), SAR (12.9), pH (12.79) and Arsenic (15.2 mg/kg) (see Table 1).

4. Cuttings Pit #1

- Cuttings Pit #1 contents were solidified and samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for Benzene (0.483 mg/kg), EC (6.600 mmhos/cm), SAR (26.9), pH (11.92) and Arsenic (7.6 mg/kg) (see Table 1).
- 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 EC (16.000 mmhos/cm), SAR (23.5), pH (11.35) and Arsenic (6.7 mg/kg) (see Table 1).
- Cuttings Pit #1 contents were mix/blend processed, sampled for constituents of concern to ensure Table 910-1 compliance, and used onsite for backfill (see Table 5).

5. Cuttings Pit #2

- Cuttings Pit #2 contents were solidified and samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for Benzene (1.56 mg/kg), EC (11.900 mmhos/cm), SAR (17.6), pH (12.16) and Arsenic (5.3 mg/kg) (see Table 1).
- 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 EC (7.840 mmhos/cm), SAR (25.8), pH (11.23) and Arsenic (6.5 mg/kg) (see Table 1).
- Cuttings Pit #2 and #3 contents were combined, treated onsite with a temporary Thermal Desorption Unit (TDU), sampled for constituents of concern to ensure Table 910-1 compliance and used onsite for backfill (see Table 6).

6. Cuttings Pit #3

- Cuttings Pit #3 contents were solidified and samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for Benzene (1.50 mg/kg), SAR (26.1), pH (11.25) and Arsenic (5.9 mg/kg) (see Table 1).
- 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 SAR (17.1), pH (10.41) and Arsenic (6.4 mg/kg) (see Table 1).
    - Cuttings Pit #3 contents were combined with Cuttings Pit #2 contents and were treated as described above in Cuttings Pit #2 section (see Table 6).

- Freshwater Pit contents and all associated synthetic liners have been removed and transported offsite to Wray Gulch Landfill in Meeker, CO. Disposal manifests available on request.

- Freshwater subliner impacted material, Reserve Pit contents and Cuttings Pit #1 contents were mix/blend processed, sampled to ensure Table 910-1 compliance and used onsite for backfill (see Tables 3, 4, and 5).

- Cuttings Pit #2 and #3 contents were combined, treated onsite with a temporary TDU, sampled to ensure Table 910-1 compliance and used onsite for backfill (see Table 6).

- Cuttings Spoil Pile material was sampled to ensure Table 910-1 compliance and used onsite for backfill (see Table 1).

- Soil samples were collected by KRW (now SMA) 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 - 6 (6 total) for a summary of the laboratory results and Figures 1 - 2A (3 total) for layout of the pits and sample locations.

- Elevated Arsenic levels above Table 910-1 concentration were detected beneath the Freshwater, Reserve, Cuttings Spoil Piles and Cuttings Pit #1, #2 and #3. Please refer to Form 27 Attachment I (REM #7920, DOC #2145712) COGCC approved on 7/23/13 establishing an acceptable Background Arsenic concentration of 7.2 mg/kg and for additional discussion.

- 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: PCU 297-11A
Lab Summary

Last update 2/22/2016

Analytical Parameter	Fresh Water Pit		Reserve Pit		Cuttings Spoil piles	Cuttings Pit #1		Cuttings Pit #2		Cuttings Pit #3		Background								COGCC	Maximum based on Background
(with units)	FW Pit Post Solid.	FW Pit Subliner[5]	RP Post Solid.	RP Subliner	North and South Combined	Cut #1 Pit Contents	Cut #1 Pit Subliner	Cut #2 Pit Contents	Cut #2 Pit Subliner	Cut #3 Pit Contents	Cut #3 Pit Subliner	#1	#2	#3	#4	#5	#6	#7	#8	Table 910-1 Concentration Levels	
Accutest Job #	D38130 (8/27/12)	D38129 (8/27/12)	D38130 (8/27/12)	D38131 (8/27/12)	D37608 (8/14/12)	D45453 (4/18/13)	D46304 (5/14/13)	D45453 (4/18/13)	D46356 (5/15/13)	D45453 (4/18/13)	D46459 (5/20/13)	D37609 (8/14/12)								-	-
Sample type (**C**omposite/**D**iscrete)	C	C	C	C	C	C	C	C	C	C	C	D	D	D	D	D	D	D	D	-	-
TPH (GRO) (mg/Kg)	155	ND	124	ND	16.6	51.0	ND	12.1	7.96	ND	ND	-	-	-	-	-	-	-	-	-	-
TPH (DRO) (mg/Kg)	23300	558	1200	183	297	234	186	335	142	181	95.3	-	-	-	-	-	-	-	-	-	-
TPH (GRO + DRO) (mg/Kg)	23455	558	1324	183	314	285	186	347	150	181	95.3	-	-	-	-	-	-	-	-	500	-
Benzene (mg/Kg)	ND	ND	ND	ND	0.124	0.483	0.0577	1.56	0.0721	1.50	ND	-	-	-	-	-	-	-	-	0.170	-
Toluene (mg/Kg)	0.152	ND	0.24	ND	0.275	1.39	0.224	3.76	0.181	2.71	ND	-	-	-	-	-	-	-	-	85	-
Ethylbenzene (mg/Kg)	0.163	ND	0.116	ND	0.0705	0.286	0.0614	0.242	0.0456	0.238	ND	-	-	-	-	-	-	-	-	100	-
Xylenes (total) (mg/Kg)	3.85	ND	2.41	ND	0.436	1.04	0.261	3.22	0.191	2.26	ND	-	-	-	-	-	-	-	-	175	-
Acenaphthene (mg/Kg)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	1000	-
Anthracene (mg/Kg)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	1000	-
Benzo(A)anthracene (mg/Kg)	ND	ND	ND	ND	0.0081	ND	ND	ND	ND	0.0078	ND	-	-	-	-	-	-	-	-	0.22	-
Benzo(A)pyrene (mg/Kg)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	0.22	-
Benzo(B)fluoranthene (mg/Kg)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	2.2	-
Benzo(K)fluoranthene (mg/Kg)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	0.022	-
Chrysene (mg/Kg)	0.363	0.0106	0.022	0.0049	0.0283	0.0114	0.0089	0.0281	0.0082	0.0431	0.0055	-	-	-	-	-	-	-	-	22	-
Dibenzo(A,H)anthracene (mg/Kg)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	0.022	-
Fluoranthene (mg/Kg)	0.48	0.0118	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	1000	-
Fluorene (mg/Kg)	8.29	0.0872	0.195	0.0187	0.0452	0.0373	0.0236	0.0426	0.0142	0.0481	0.0077	-	-	-	-	-	-	-	-	1000	-
Indeno(1,2,3,C,D)pyrene (mg/Kg)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	0.22	-
Naphthalene (mg/Kg)	0.774	ND	0.309	ND	0.320	0.246	0.133	0.192	0.0762	0.391	0.0279	-	-	-	-	-	-	-	-	23	-
Pyrene (mg/Kg)	0.431	0.0135	0.0273	0.0066	0.0184	0.0078	0.0120	ND	0.0073	0.0188	ND	-	-	-	-	-	-	-	-	1000	-
Electrical Conductivity (mmhos/cm)	13.700	5.36	6.390	1.4	12.800	6.600	16.000	11.900	7.840	3.680	3.520	-	-	-	-	-	-	-	-	4	-
Sodium Adsorption Ratio (SAR)	18.1	26.2	12.5	17	12.9	26.9	23.5	17.6	25.8	26.1	17.1	-	-	-	-	-	-	-	-	12	-
pH	12.52	9.87	12.53	10.07	12.79	11.92	11.35	12.16	11.23	11.25	10.41	-	-	-	-	-	-	-	-	6-9	-
Arsenic (mg/Kg)	4.7	5.2	5.3	5.4	15.2	7.6	6.7	5.3	6.5	5.9	6.4	5.3	3.5	5.0	4.8	4.1	6.5	6.2	4.9	0.39	7.2
Barium (mg/kg)	6460	403	18200	2310	4340	5970	2470	9470	6440	9640	5170	-	-	-	-	-	-	-	-	15000	-
Cadmium (mg/kg)	<1.4	<1.1	<1.9	<1.1	<1.3	<1.4	<1.1	<1.4	<1.2	<1.4	<1.2	-	-	-	-	-	-	-	-	70	-
Chromium (III) (mg/Kg)	24.8	39.7	16.6	38.7	17.7	17.5	32.7	19.6	34.2	16.5	48.1	-	-	-	-	-	-	-	-	120000	-
Chromium (VI) (mg/Kg)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	-	-	-	-	-	-	-	23	-
Copper (mg/kg)	19.2	10.2	28.9	12.7	24.9	31.3	16.9	19.6	15.9	29.2	10.4	-	-	-	-	-	-	-	-	3100	-
Lead (inorganic) (mg/kg)	8	12	12.8	12.7	23.5	21.1	17.9	16.4	16.4	15.1	10.8	-	-	-	-	-	-	-	-	400	-
Mercury (mg/kg)	0.26	<0.11	<0.18	<0.11	<0.14	<0.12	<0.099	<0.12	<0.11	<0.11	<0.11	-	-	-	-	-	-	-	-	23	-
Nickel (mg/kg)	35.7	17.8	22.4	20.8	15.0	16.6	17.2	12.0	18.4	14.0	18.7	-	-	-	-	-	-	-	-	1600	-
Selenium (mg/kg)	<6.9	<5.5	<9.4	<5.7	<6.7	<6.9	<5.6	<7.2	<6.2	<6.9	<5.8	-	-	-	-	-	-	-	-	390	-
Silver (mg/kg)	<4.1	<3.3	<5.6	<3.4	<4.0	<4.1	<3.4	<4.3	<3.7	<4.1	<3.5	-	-	-	-	-	-	-	-	390	-
Zinc (mg/kg)	41.2	49.1	41.7	51.6	65.2	63.8	49.1	51.2	48.3	50.1	41.9	-	-	-	-	-	-	-	-	23000	-
% Solids	71.8	89.7	54.0	89.6	72.6	73.6	88.7	72.0	81.9	75.4	84.8	92.1	91.9	93.0	92.9	81.1	93.4	87.5	90.4	-	-

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.
4) See Figure(s) for sample locations.
5) See Table 3 for FW Subliner assessment

Table 2
Location: PCU 297-11A
Lab Summary - Arsenic Summary

Last update 2/22/2016

Analytical Parameter	Cuttings Pit #1					Cuttings Spoil Pile					Background								COGCC	Maximum based on Background
(with units)	#1	#2	#3	#4	#5	#1	#2	#3	#4	#5	#1	#2	#3	#4	#5	#6	#7	#8	Table 910-1 Concentration Levels	
Accutest Job #	D46306 (5/14/13)					D46307 (5/14/13)					D37609 (8/14/12)								-	-
Sample type (**C**omposite/**D**iscrete)	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	-	-
TPH (GRO) (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH (DRO) (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH (GRO + DRO) (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	500	-
Benzene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.170	-
Toluene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85	-
Ethylbenzene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	-
Xylenes (total) (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	175	-
Acenaphthene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Anthracene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Benzo(A)anthracene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Benzo(A)pyrene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022	-
Benzo(B)fluoranthene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Benzo(K)fluoranthene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2	-
Chrysene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-
Dibenzo(A,H)anthracene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022	-
Fluoranthene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Fluorene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Indeno(1,2,3,C,D)pyrene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Naphthalene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Pyrene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Electrical Conductivity (mmhos/cm)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-
Sodium Adsorption Ratio (SAR)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-
pH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6-9	-
Arsenic (mg/kg)	5.0	6.1	11.1	9.2	6.0	6.1	12.1	8.6	16.6	13.1	5.3	3.5	5.0	4.8	4.1	6.5	6.2	4.9	0.39	7.2
Barium (mg/kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15000	-
Cadmium (mg/kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-
Chromium (III) (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120000	-
Chromium (VI) (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Copper (mg/kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3100	-
Lead (inorganic) (mg/kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	400	-
Mercury (mg/kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Nickel (mg/kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1600	-
Selenium (mg/kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390	-
Silver (mg/kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390	-
Zinc (mg/kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23000	-
% Solids	75.8	57.4	62.3	64.2	53.6	71.1	76.4	68.8	74.9	71.1	92.1	91.9	93.0	92.9	81.1	93.4	87.5	90.4	-	-

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 3
Location: PCU 297-11A
Lab Summary - FW Subliner Assessment

Last update 2/22/2016

Analytical Parameter	Fresh Water	FW Subliner Discrete					Post 1' to 2' Excavation				Post 3' Excavation		FW Excavated Material Mix/blend (MB)						COGCC
								FW Center											
(with units)	FW Pit Subliner	FW #1	FW #2	FW #3	FW #4 (NE Corner)	FW #5 (Center)	FW #4 (NE Corner -2')	FW #5 (Center) -1'	FW Center -1' (D-1)	FW Center -1' (D-2)	FW Center -3' #1	FW Center -3' #2	FW Ex. Mtrl	MB Day 1	MB Day 2	MB Day 3	MB Day 4	MB Day 5	Table 910-1 Concentration Levels
Accutest Job #	D38129 (8/27/12)	D38128 (8/27/12)					D39563 (10/3/12)		D39564 (10/3/12)		D41358 (11/28/12)		D41785 (12/11/12)	D42990 (1/29/13)	D43039 (1/30/13)	D43046 (1/31/13)	D43092 (2/1/13)	D43188 (2/4/13)	-
Sample type (**C**omposite/**D**iscrete)	C	D	D	D	D	D	C	C	D	D	D	D	C	C	C	C	C	C	-
TPH (GRO) (mg/Kg)	ND	ND	ND	ND	ND	8.39	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
TPH (DRO) (mg/Kg)	558	126	14.2	295	2120	718	76.1	652	53.9	1180	214	13.1	880	476	330	259	35.0	92.4	-
TPH (GRO + DRO) (mg/Kg)	558	126	14.2	295	2120	726	76.1	652	53.9	1180	214	13.1	880	476	330	259	35.0	92.4	500
Benzene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.170
Toluene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85
Ethylbenzene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100
Xylenes (total) (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	175
Acenaphthene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000
Anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000
Benzo(A)anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22
Benzo(A)pyrene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22
Benzo(B)fluoranthene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2
Benzo(K)fluoranthene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022
Chrysene (mg/Kg)	0.0106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22
Dibenzo(A,H)anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022
Fluoranthene (mg/Kg)	0.0118	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000
Fluorene (mg/Kg)	0.0872	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000
Indeno(1,2,3,C,D)pyrene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22
Naphthalene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23
Pyrene (mg/Kg)	0.0135	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000
Electrical Conductivity (mmhos/cm)	5.36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Sodium Adsorption Ratio (SAR)	26.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
pH	9.87	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6-9
Arsenic (mg/kg)	5.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.39
Barium (mg/kg)	403	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15000
Cadmium (mg/kg)	<1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70
Chromium (III) (mg/Kg)	39.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120000
Chromium (VI) (mg/Kg)	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23
Copper (mg/kg)	10.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3100
Lead (inorganic) (mg/kg)	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	400
Mercury (mg/kg)	<0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23
Nickel (mg/kg)	17.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1600
Selenium (mg/kg)	<5.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390
Silver (mg/kg)	<3.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390
Zinc (mg/kg)	49.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23000
% Solids	89.7	90.5	89.0	88.6	94.2	87.5	94.9	91.8	92.7	90.8	87.7	89.2	93.3	80.6	88.7	84.9	83.7	84.8	-

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 4
Location: PCU 297-11A
Lab Summary - Reserve Pit Mix/blend (MB) Summary

Last update 2/22/2016

Analytical Parameter	Reserve Pit		Mix/Blend Trials			Mix/Blends			Remix Trials			Pugmill															COGCC
(with units)	RP Post Solid.	RP Ex. Material	MB Trial (3:1)	MB Trial (2:1)	MB Trial (3:1)	RP MB Day 4	RP MB Day 7	RP Pug Mill 3:1	RP Remix 1:1	RP Remix 2:1	RP Remix 3:1	RP Remix Day 1	RP Remix Day 2	RP Remix Day 3	RP Remix Day 4	RP Remix Day 5	RP Remix Day 6	RP Contents Day 1	RP Contents Day 2	RP Contents Day 3	RP Contents Day 4	RP Contents Day 5	RP Contents Day 6	RP Contents Day 7	RP Contents Day 8 Remix	RP Contents Day 9	Table 910-1 Concentration Levels
Accutest Job #	D38130 (8/27/12)	D47476 (6/19/13)	D40116 (10/18/12)	D49924 (8/27/13)		D40777 (11/7/12)	D40958 (11/13/12)	D47475 (6/19/13)	D49875 (8/26/13)			D51315 (10/3/13)	D51366 (10/7/13)	D51421 (10/8/13)	D51526 (10/10/13)	D51580 (10/14/13)	D51626 (10/15/13)	D51625 (10/15/13)	D51668 (10/16/13)	D51733 (10/18/13)	D51772 (10/21/13)	D51812 (10/22/13)	D51865 (10/23/13)	D51909 (10/24/13)	D52308 (11/6/13)	D52003 (10/29/13)	-
Sample type (**C**omposite/**D**iscrete)	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-
TPH (GRO) (mg/Kg)	124	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10.2	9.66	8.24	9.09	11.4	8.67	8.87	ND	ND	-
TPH (DRO) (mg/Kg)	1200	782	261	375	399	498	463	463	139	93.7	67.6	152	205	274	182	151	137	354	410	403	474	481	315	426	200	134	-
TPH (GRO + DRO) (mg/Kg)	1324	782	261	375	399	498	463	463	139	93.7	67.6	152	205	274	182	151	137	364	420	411	483	492	324	435	200	134	500
Benzene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.170
Toluene (mg/Kg)	0.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85
Ethylbenzene (mg/Kg)	0.116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100
Xylenes (total) (mg/Kg)	2.41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	175
Acenaphthene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000
Anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000
Benzo(A)anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22
Benzo(A)pyrene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22
Benzo(B)fluoranthene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2
Benzo(K)fluoranthene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022
Chrysene (mg/Kg)	0.022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22
Dibenzo(A,H)anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022
Fluoranthene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000
Fluorene (mg/Kg)	0.195	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000
Indeno(1,2,3,C,D)pyrene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22
Naphthalene (mg/Kg)	0.309	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23
Pyrene (mg/Kg)	0.0273	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000
Electrical Conductivity (mmhos/cm)	6.390	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Sodium Adsorption Ratio (SAR)	12.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
pH	12.53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6-9
Arsenic (mg/kg)	5.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.39
Barium (mg/kg)	18200	7180	-	6040	4390	3510	5250	3990	-	-	-	2810	-	-	-	-	-	5640	5310	5450	5610	6540	4990	5100	-	4420	15000
Cadmium (mg/kg)	<1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70
Chromium (III) (mg/Kg)	16.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120000
Chromium (VI) (mg/Kg)	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23
Copper (mg/kg)	28.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3100
Lead (inorganic) (mg/kg)	12.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	400
Mercury (mg/kg)	<0.18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23
Nickel (mg/kg)	22.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1600
Selenium (mg/kg)	<9.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390
Silver (mg/kg)	<5.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390
Zinc (mg/kg)	41.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23000
% Solids	54.0	80.1	89.2	81.5	83.6	80.7	80.0	81.8	84.3	86.5	86.7	86.5	81.8	82.4	83.5	83.3	82.9	75.5	76.3	78.1	77.5	76.8	77.5	79.5	79.8	79.8	-

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 297-11A
Lab Summary - Cuttings Pit #1 MB Summary

Last update 2/22/2016

Analytical Parameter	Cuttings Pit #1						Pugmill														COGCC	Maximum based on Background
(with units)	CUT #1 Pit Contents	Cut #1 MB Trial 2:1	Cut #1 MB Trial 3:1	Cut #1 MB Trial 1:1	Cut #1 MB Trial 2:1	Cut #1 MB Trial 3:1	Cut #1 Day 1	Cut #1 Day 2	Cut #1 Day 3	Cut #1 Day 4	Cut #1 Day 5	Cut #1 Day 6	Cut #1 Day 7	Cut #1 Day 8	Cut #1 Day 9	Cut #1 Day 10	Cut #1 Day 11	Cut #1 Day 12	Cut #1 Day 13	Cut #1 Day 14	Table 910-1 Concentration Levels	
Accutest Job #	D45453 (4/18/13)	D46662 (5/29/13)		D49876 (8/26/13)		D49926 (8/27/13)	D52002 (10/29/13)	D52047 (10/30/13)	D52107 (10/31/13)	D52158 (11/4/13)	D52237 (11/5/13)	D52307 (11/6/13)	D52381 (11/7/13)	D52401 (11/8/13)	D52436 (11/11/13)	D52480 (11/12/13)	D52539 (11/13/13)	D52606 (11/14/13)	D52631 (11/15/13)	D52702 (11/18/13)	-	-
Sample type (**C**omposite/**D**iscrete)	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-
TPH (GRO) (mg/Kg)	51.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH (DRO) (mg/Kg)	234	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH (GRO + DRO) (mg/Kg)	285	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	500	-
Benzene (mg/Kg)	0.483	0.0688	0.0925	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.170	-
Toluene (mg/Kg)	1.39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85	-
Ethylbenzene (mg/Kg)	0.286	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	-
Xylenes (total) (mg/Kg)	1.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	175	-
Acenaphthene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Benzo(A)anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Benzo(A)pyrene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Benzo(B)fluoranthene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2	-
Benzo(K)fluoranthene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022	-
Chrysene (mg/Kg)	0.0114	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-
Dibenzo(A,H)anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022	-
Fluoranthene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Fluorene (mg/Kg)	0.0373	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Indeno(1,2,3,C,D)pyrene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Naphthalene (mg/Kg)	0.246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Pyrene (mg/Kg)	0.0078	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Electrical Conductivity (mmhos/cm)	6.600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-
Sodium Adsorption Ratio (SAR)	26.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-
pH	11.92	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6-9	-
Arsenic (mg/kg)	7.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.39	7.2
Barium (mg/kg)	5970	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15000	-
Cadmium (mg/kg)	<1.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-
Chromium (III) (mg/Kg)	17.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120000	-
Chromium (VI) (mg/Kg)	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Copper (mg/kg)	31.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3100	-
Lead (inorganic) (mg/kg)	21.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	400	-
Mercury (mg/kg)	<0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Nickel (mg/kg)	16.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1600	-
Selenium (mg/kg)	<6.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390	-
Silver (mg/kg)	<4.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390	-
Zinc (mg/kg)	63.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23000	-
% Solids	73.6	74.5	77.0	82.5	85.7	85.7	78.4	81.5	78.5	82.4	79.1	79.3	80.2	78.4	80.7	79.2	79.9	80.7	81.0	80.4	-	-

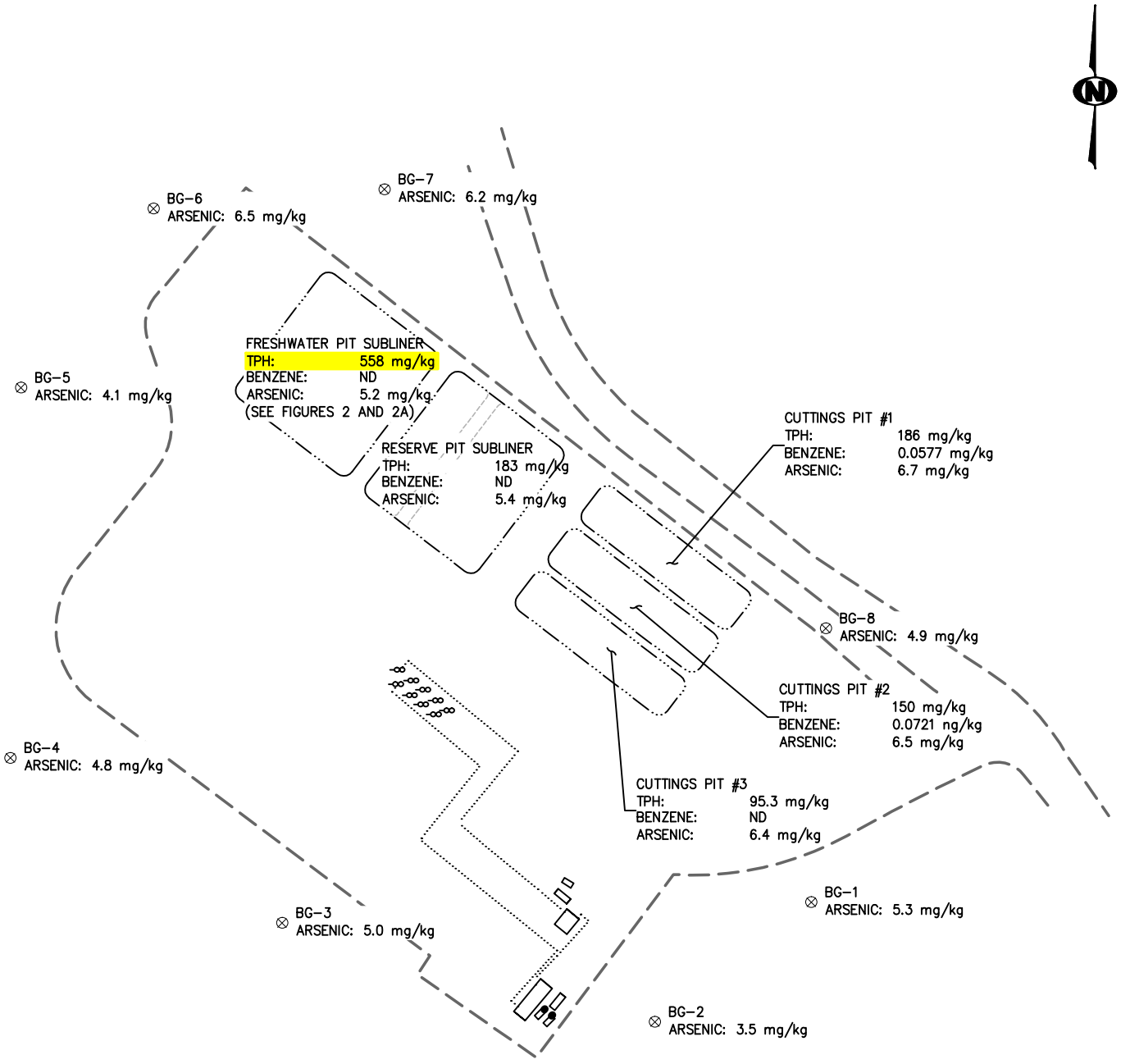
Notes:
1) ND = not detectible to the laboratory detection limit.
2) Results highlighted in yellow exceed Table 910-1 concentration levels. Results highlighted in Gray exceed Table 910-1, but are below background levels.
3) "-" indicates no analysis.

Table 6
Location: PCU 297-11A
Lab Summary - Cuttings 2 & 3 TDU Summary

Last update 2/22/2016

Analytical Parameter	Cuttings Pit #2	Cuttings Pit #3												COGCC	Maximum based on Background
(with units)	Cut #2 Pit Contents	Cut #3 Pit Contents	TDU Output 400-800 tons	TDU Output 800-1200 tons	TDU Output 1200-1600 tons	TDU Output 1600-2000 tons	TDU Output 2000-2400 tons	TDU Output 2400-2800 tons	TDU Output 2800-3200 tons	TDU Output 3200-3600 tons	TDU Output 4000-4400 tons	TDU Output 4400-4800 tons	TDU Output 4800-5200 tons	Table 910-1 Concentration Levels	
Accutest Job #	D45453 (4/18/13)	D45453 (4/18/13)	D48103 (7/10/13)	D48218 (7/15/13)	D48299 (7/16/13)	D48386 (7/18/13)	D48464 (7/22/13)	D48595 (7/24/13)	D48674 (7/26/13)	D48747 (7/30/13)	D49177 (8/8/13)	D49271 (8/12/13)	D49416 (8/14/13)	-	-
Sample type (**C**omposite/**D**iscrete)	C	C	C	C	C	C	C	C	C	C	C	C	C	-	-
TPH (GRO) (mg/Kg)	12.1	ND	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH (DRO) (mg/Kg)	335	181	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH (GRO + DRO) (mg/Kg)	347	181	-	-	-	-	-	-	-	-	-	-	-	500	-
Benzene (mg/Kg)	1.56	1.50	0.149	ND	ND	0.0323	ND	ND	ND	0.0391	ND	0.0409	ND	0.170	-
Toluene (mg/Kg)	3.76	2.71	-	-	-	-	-	-	-	-	-	-	-	85	-
Ethylbenzene (mg/Kg)	0.242	0.238	-	-	-	-	-	-	-	-	-	-	-	100	-
Xylenes (total) (mg/Kg)	3.22	2.26	-	-	-	-	-	-	-	-	-	-	-	175	-
Acenaphthene (mg/Kg)	ND	ND	-	-	-	-	-	-	-	-	-	-	-	1000	-
Anthracene (mg/Kg)	ND	ND	-	-	-	-	-	-	-	-	-	-	-	1000	-
Benzo(A)anthracene (mg/Kg)	ND	0.0078	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Benzo(A)pyrene (mg/Kg)	ND	ND	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Benzo(B)fluoranthene (mg/Kg)	ND	ND	-	-	-	-	-	-	-	-	-	-	-	2.2	-
Benzo(K)fluoranthene (mg/Kg)	ND	ND	-	-	-	-	-	-	-	-	-	-	-	0.022	-
Chrysene (mg/Kg)	0.0281	0.0431	-	-	-	-	-	-	-	-	-	-	-	22	-
Dibenzo(A,H)anthracene (mg/Kg)	ND	ND	-	-	-	-	-	-	-	-	-	-	-	0.022	-
Fluoranthene (mg/Kg)	ND	ND	-	-	-	-	-	-	-	-	-	-	-	1000	-
Fluorene (mg/Kg)	0.0426	0.0481	-	-	-	-	-	-	-	-	-	-	-	1000	-
Indeno(1,2,3,C,D)pyrene (mg/Kg)	ND	ND	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Naphthalene (mg/Kg)	0.192	0.391	-	-	-	-	-	-	-	-	-	-	-	23	-
Pyrene (mg/Kg)	ND	0.0188	-	-	-	-	-	-	-	-	-	-	-	1000	-
Electrical Conductivity (mmhos/cm)	11.900	3.680	-	-	-	-	-	-	-	-	-	-	-	4	-
Sodium Adsorption Ratio (SAR)	17.6	26.1	-	-	-	-	-	-	-	-	-	-	-	12	-
pH	12.16	11.25	-	-	-	-	-	-	-	-	-	-	-	6-9	-
Arsenic (mg/kg)	5.3	5.9	-	-	-	-	-	-	-	-	-	-	-	0.39	7.2
Barium (mg/kg)	9470	9640	-	-	-	-	-	-	-	-	-	-	-	15000	-
Cadmium (mg/kg)	<1.4	<1.4	-	-	-	-	-	-	-	-	-	-	-	70	-
Chromium (III) (mg/Kg)	19.6	16.5	-	-	-	-	-	-	-	-	-	-	-	120000	-
Chromium (VI) (mg/Kg)	<1.0	<1.0	-	-	-	-	-	-	-	-	-	-	-	23	-
Copper (mg/kg)	19.6	29.2	-	-	-	-	-	-	-	-	-	-	-	3100	-
Lead (inorganic) (mg/kg)	16.4	15.1	-	-	-	-	-	-	-	-	-	-	-	400	-
Mercury (mg/kg)	<0.12	<0.11	-	-	-	-	-	-	-	-	-	-	-	23	-
Nickel (mg/kg)	12.0	14.0	-	-	-	-	-	-	-	-	-	-	-	1600	-
Selenium (mg/kg)	<7.2	<6.9	-	-	-	-	-	-	-	-	-	-	-	390	-
Silver (mg/kg)	<4.3	<4.1	-	-	-	-	-	-	-	-	-	-	-	390	-
Zinc (mg/kg)	51.2	50.1	-	-	-	-	-	-	-	-	-	-	-	23000	-
% Solids	72.0	75.4	85.7	88.3	86.5	86.5	87.1	90.4	91.2	88.2	86.2	87.1	85.6	-	-

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.



LEGEND

- UTILITY CORRIDOR
- EDGE OF PAD
- TOP OF PIT
- TOE OF PIT
- BERM / WEIR
- INDICATES TPH LAB RESULTS ABOVE 500 mg/kg
- WELL HEAD
- BG-5 ARSENIC: ⊗ BACKGROUND SAMPLE LOCATION WITH ARSENIC LEVEL RESULTS

0 75 150

SCALE IN FEET
1"=150'

NOTES:

1. BACKGROUND ARSENIC RESULTS ARE DISCRETE SAMPLES.
2. ND INDICATES NOT DETECTED WITHIN LABORATORY DETECTION LIMITS.

DESIGNED: –	CHECKED: DK	FIGURE 1	NOTES:
DATE: 6/14/13	DRAWN: DRF		
FILE NAME: samples		SHEET NO. 1 of 3	DATE / REVISIONS
PROJECT NO. 1202-05		SCALE: 1" = 150'	

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LAKEWOOD, COLORADO
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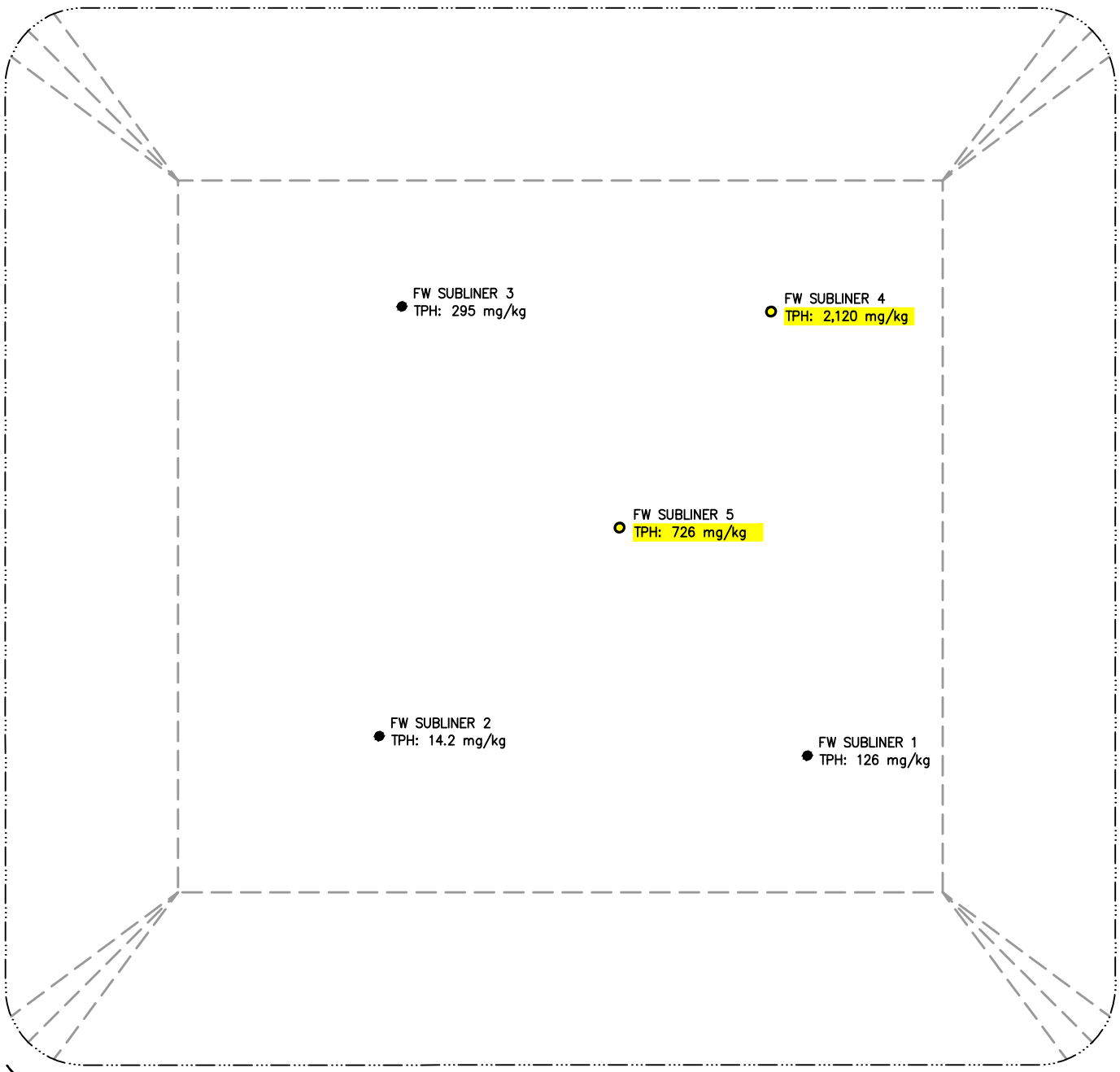
FIGURE 1
PICEANCE CREEK
PCU 297-11A
SAMPLE LOCATIONS WITH SELECT RESULTS
PREPARED FOR XTO ENERGY

\\hyper-v03\lkwd-co\sdsk\proj\xto environmental\1202-05 pcu 297-11a\civil3d\samples.dwg,6/14/13



LEGEND

EDGE OF PAD TOP OF PIT TOE OF PIT	D-0 TPH: ≤ 500 mg/kg	DISCRETE SAMPLE LOCATION WITH TPH LAB RESULTS LESS THAN OR EQUAL TO 500 mg/kg
	D-0 TPH: > 500 mg/kg	DISCRETE SAMPLE LOCATION WITH TPH LAB RESULTS GREATER THAN 500 mg/kg

DESIGNED: –	CHECKED: DK	FIGURE 2	NOTES:
DATE: 6/14/13	DRAWN: DRF		
FILE NAME: freshwater subliner		SHEET NO. 2 of 3	DATE / REVISIONS
PROJECT NO. 1202-05		SCALE: 1" = 20'	

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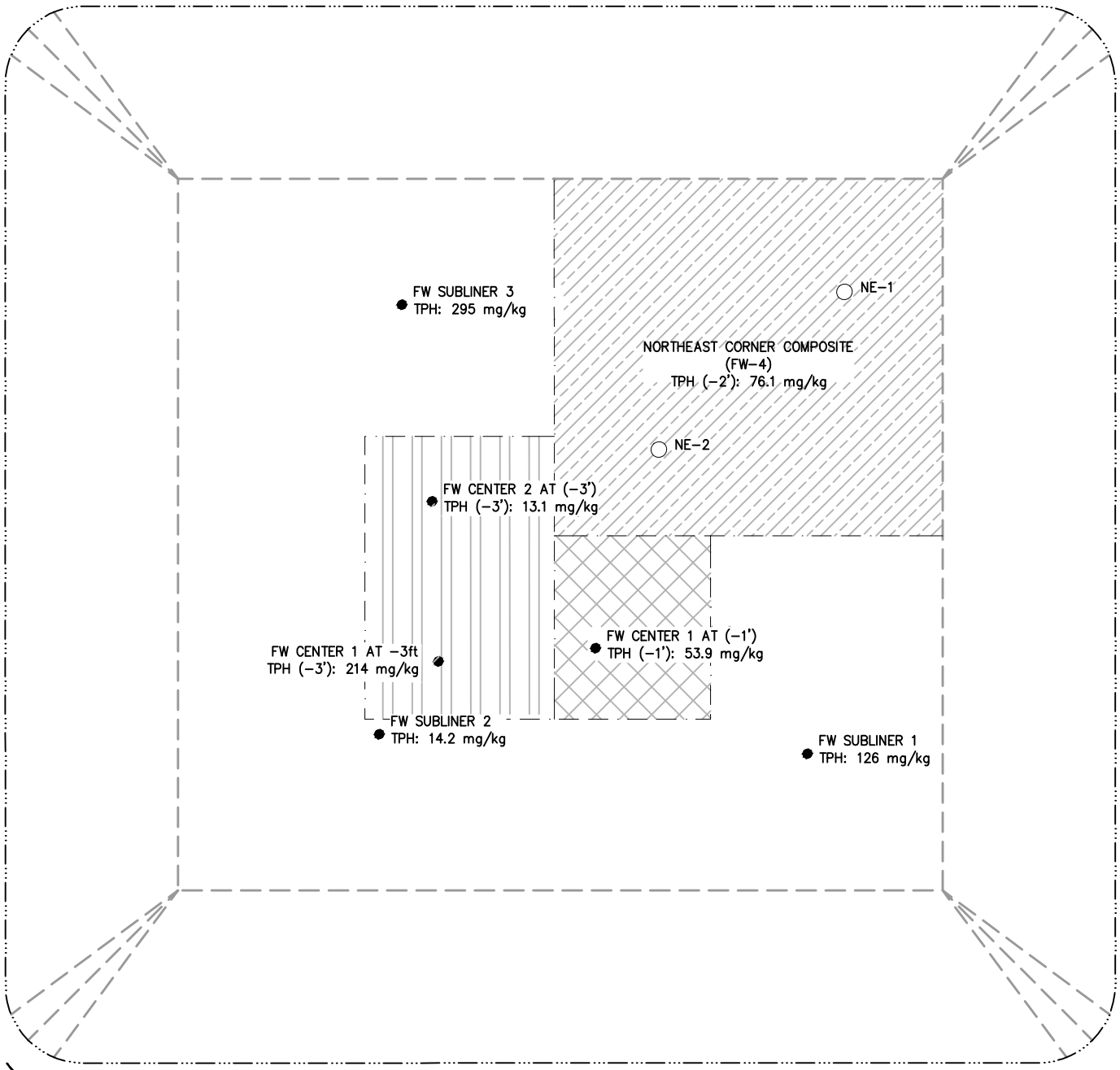
8000 W. 14TH AVENUE, SUITE 200
LAKEWOOD, COLORADO
(303) 239-9011

FIGURE 2
PICEANCE CREEK
PCU 297-11A
FRESHWATER SUBLINER
CONFIRMATION DATA
PREPARED FOR XTO ENERGY

\\hyper-v03\lkwd-co\sdsk\proj\xto environmental\1202-05 pcu 297-11a\civil3d\freshwater subliner.dwg,6/14/13



0 10 20

SCALE IN FEET
1"=20'

LEGEND

EDGE OF PAD
TOP OF PIT
TOE OF PIT

EXCAVATION -1'
EXCAVATION -2'
EXCAVATION -3'

FW-0
TPH: ≤ 500 mg/kg
DISCRETE SAMPLE LOCATION WITH TPH LAB RESULTS LESS THAN OR EQUAL TO 500 mg/kg

NE-0
TPH: ≤ 500 mg/kg
COMPOSITED SAMPLE LOCATION WITH TPH LAB RESULTS LESS THAN OR EQUAL TO 500 mg/kg

DESIGNED: –	CHECKED: DK	FIGURE 2A	NOTES:
DATE: 6/14/13	DRAWN: DRF		
FILE NAME: freshwater sublinercl		SHEET NO. 3 of 3	DATE / REVISIONS
PROJECT NO. 1202-05		SCALE: 1" = 20'	

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LAKEWOOD, COLORADO
(303) 239-9011

FIGURE 2A
PICEANCE CREEK
PCU 297-11A
FRESHWATER PIT SELECT
SAMPLE RESULTS
PREPARED FOR XTO ENERGY

\\hyper-v03\lkwd-co\sdsk\proj\xto environmental\1202-05 pcu 297-11a\civil3d\freshwater sublinercl.dwg,6/14/13

Completed Pit Closure

Photograph #1 – south side of pad looking northwest

Photograph #2 – north side of pad looking southeast

XTO ENERGY	Piceance Creek Unit 297-11A NESE, Sec.11, T2S, R97W, 6th P.M. Lat: 39.891456 Long: -108.239626	SITE PHOTOGRAPH Photo Taken: 1/2/2014