

State of Colorado
Oil and Gas Conservation Commission



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#8308

FOR OGCC USE ONLY

RECEIVED
3/16/2014

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: _____	Contact Name and Telephone: _____
Name of Operator: _____	_____
Address: _____	No: _____
City: _____ State: _____ Zip: _____	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 200 feet below the ground surface. Soil samples were collected for laboratory analysis of subliner material (Freshwater, Reserve and Cuttings Trench/Pits) to confirm no groundwater impact potential exists (see Tables 1 and 2).

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 Trench, Cuttings and NW Cuttings Pits (see Tables 1 and 2).

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

Freshwater Pit contents and synthetic liners from each of the pits were removed and have been or will be transported to an approved offsite disposal/recycling facility. Freshwater and Reserve Pit subliner impacted material was excavated and transported to an approved offsite disposal/recycling facility.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: 1/25/11 Date Site Investigation Completed: in progress Date Remediation Plan Submitted: 3/16/2014
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: Piceance EH&S Supervisor Date: 3/16/2014

OGCC Approved: Stanley C. Spencer Title: EPS COGCC Northwest Date: 4/2/14

Conditions of Approval
PCU T62X-11G Pit Closure Workplan, Facility # 278049

The COGCC has conditionally approved the Form 27 submitted for the closure of five pits at the above referenced facility including a freshwater pit, reserve pit and cuttings trench closed under current rules and two cuttings pits closed prior to 2009. The Conditions of Approval are outlined below.

SAR and pH concentrations in excess of Table 910-1 standards were detected at the facility. Consistent with its prior practice and Rule 1003, the COGCC will generally apply the Table 910-1 concentration levels for pH, SAR, and EC to soils that are within three (3) feet of the ground surface because elevated levels of pH, SAR, and EC in deeper soils should not adversely affect the successful reclamation of the site, which is the objective of these concentration levels. In addition, the COGCC requires that materials with elevated pH, SAR, or EC be buried under a minimum of three (3) feet of backfill cover and soil that satisfies either the Table 910-1 levels for pH, SAR, and EC or the background levels for such contaminants within three (3) feet of the ground surface at the site. In addition, the soil horizons must be replaced in their original relative position and reclaimed in accordance with 1000 Series Rules, including the establishment of vegetative cover on non-cropland and successful crop growth on cropland. Please call Stan Spencer with any questions.

ATTACHMENT I

PCU T62X-11G 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 PCU T62X-11G 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. Eleven representative background samples were collected from undisturbed areas adjacent to the subject location. Arsenic concentrations in those samples ranged from 2.0 mg/kg to 6.6 mg/kg. Applying the 10% variability factor to the highest concentration detected results in an allowable Arsenic concentration level of 7.3 mg/kg.
2. Subliner Arsenic samples were collected from the Freshwater Pit (6.2 mg/kg), Reserve Pit (5.2 mg/kg) and Cuttings Trench (4.7 mg/kg). These subliner Arsenic concentrations are within the allowable background Arsenic concentration of 7.3 mg/kg.
3. Cuttings Stockpile material Arsenic concentration of 7.6 mg/kg is presumed to be the result of material from the Mancos formation. It is our interpretation that there are no anthropogenic affects to the Cuttings Stockpile material and that the elevated Arsenic reflects contributions due to drilling through the Mancos formation (See Table 1).

During pit closure and interim reclamation activities, two additional pits (Cuttings Pit and NW Cuttings Pits) were discovered. Photographic evidence indicates that these two pits were closed prior to the 2009 COGCC Table 910 regulation changes. Per discussions with COGCC's Carlos Lujan and Stan Stevens on 2/13/14, it was agreed that these pits fall under the Pre-2009 rule change regulations.

4. Samples were collected for Arsenic from the Cuttings and NW Cuttings Pit content material and subliners. The NW Cuttings Pit content Arsenic (7.4 mg/kg), NW Cuttings Subliner Arsenic (3.8 mg/kg), Cuttings Pit Content Arsenic (5.4 mg/kg) and Cuttings Pit Subliner Arsenic (4.6 mg/kg) are within the allowable (pre-2009 rule change) Table 910 concentration levels for Arsenic of 41 mg/kg.

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

ATTACHMENT II

PCU T62X-11G Pit Closure Workplan, Form 27 Pages 1 and 2

Describe initial action taken:

Based on initial assessment, the site consisted of a Freshwater Pit, Reserve Pit and a Cuttings Trench (see Figure 1).

1. Freshwater Pit

- Freshwater Pit contents composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for TPH (3745 mg/kg), Benzo(A)anthracene (0.638 mg/kg), Benzo(B)fluoranthene (0.562 mg/kg), pH (11.18) and Arsenic (2.5 mg/kg).
- Freshwater Pit subliner composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for TPH (1369 mg/kg), pH (9.90) and Arsenic (6.1 mg/kg).
- Freshwater Pit subliner impacted soils from 0' to 2' were removed and confirmation samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for pH (9.80) and Arsenic (6.2 mg/kg).
- Freshwater Pit sidewall staining was noted during subliner bottom excavation. The stained material was removed with confirmation samples collected beneath for TPH/BTEX to confirm results are below Table 910-1 parameters (see Table 1).

2. Reserve Pit

- Reserve Pit contents (de minimis) and associated synthetic liners were removed and transported to an offsite permitted disposal/recycling facility.
- Reserve Pit subliner composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for Benzo(A)anthracene (0.370 mg/kg), Benzo(B)fluoranthene (0.715 mg/kg), pH (9.45) and Arsenic (5.7 mg/kg).
- Reserve Pit subliner impacted soils from 0' to 2.5' were removed and confirmation samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for pH (9.83) and Arsenic (5.2 mg/kg) (see Table 1).

3. Cuttings Trench

- Cuttings Trench contents (de minimis) and associated synthetic liners were removed and transported to an offsite permitted disposal/recycling facility.
- Cuttings Trench subliner composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for Arsenic (4.7 mg/kg).
- **Cuttings Stockpile** composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for Benzo(B)fluoranthene (0.372 mg/kg), Benzo(A)pyrene (0.204 mg/kg), Dibenzo(A,H)anthracene (0.0610 mg/kg), Indeno(1,2,3,C,D)pyrene (0.274 mg/kg), SAR (13.30), pH (9.46) and Arsenic (7.6 mg/kg) (see Table 1).

During pit closure and interim reclamation activities, two additional pits (Cuttings Pit and NW Cuttings Pit) were discovered. Photographic evidence indicates that these two pits were closed prior to the 2009 COGCC Table 910 regulation changes. Per discussions with COGCC's Carlos Lujan and Stan Stevens on 2/13/14, it was agreed that these pits fall under the Pre-2009 Table 910 Allowable Concentrations. Form 15 pit report for NW Cuttings Pit is attached.

4. Cuttings Pits (Pre-2009 Table 910-1 Rules)

- **Cuttings Pit Contents:** Composite samples of this material were collected and analyzed for Pre-2009 Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for pH (9.36) (see Table 2).
- **Cuttings Pit Subliner:** Composite samples were collected from the subliner and analyzed for Pre-2009 Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for pH (9.21) (see Table 2).
- **NW Cuttings Pit Contents:** Composite samples of this material were collected and analyzed for Pre-2009 Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for SAR (12.2) and pH (9.24) (see Table 2).
- **NW Cuttings Pit Subliner:** Composite samples of this material were collected and analyzed for Pre-2009 Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for pH (9.54) (see Table 2).
- Any Bird Balls or Pit Liner material found in these pits was or will be removed and transported to an approved offsite disposal/recycling facility.

- Freshwater Pit liner, contents and subliner/sidewall impacted material was removed and transported to an approved offsite disposal/recycling facility.
- Reserve Pit subliner impacted material was removed and transported to an approved offsite disposal/recycling facility.
- Cuttings Pit and NW Cuttings Pit material that meets applicable standards will be used onsite for backfill.
- Elevated Arsenic levels above Table 910-1 concentration were detected beneath the Freshwater Pit, Reserve Pit and Cuttings Trench. 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.
- 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 T62X-11G
Lab Summary

Last update 3/10/2014

Analytical Parameter (with units)	Freshwater Pit				Reserve Pit		Cuttings Trench	Cuttings Stockpile	Background					Deep Background					COGCC	Maximum based on Background		
	FW Pit Contents 8/17/11	FW Subliner ⁵ (-1') 9/9/11	FW Subliner ⁶ (-2') 10/3/11	FW Sidewall 12/2/11	RP Subliner 8/17/11	RP Subliner ⁷ at 2.5' 11/17/11	Cuttings Trench Subliner 8/17/11	Cuttings Stockpile 1/24/12	#1	#2	#3	#4	#5	TP-1 at 3'	TP-1 at 7'	TP-1 at 10'	TP-2 at 4'	TP-2 at 8'	TP-2 at 11'		Table 910-1 Concentration Levels	
Accutest Job #	D26721	D27448	D28274	D29946	D26718	D29630	D26718	D31316	D20677 (1/25/11)					D29628 (11/17/11)					-	-		
Sample type (Composite/Discrete)	C	C	C	C	C	C	C	C	D	D	D	D	D	D	D	D	D	D	D	-	-	
TPH (GRO) (mg/kg)	35.1	18.9	ND	12.7	ND	ND	ND	7.63	-	-	-	-	-	-	-	-	-	-	-	-	-	
TPH (DRO) (mg/kg)	3,710	1,350	91.4	483	288	ND	45.8	466	-	-	-	-	-	-	-	-	-	-	-	-	-	
TPH (GRO + DRO) (mg/kg)	3745	1369	91.4	496	288	ND	45.8	474	-	-	-	-	-	-	-	-	-	-	-	500	-	
Benzene (mg/kg)	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	0.170	-
Toluene (mg/kg)	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	85	-
Ethylbenzene (mg/kg)	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	100	-
Xylenes (total) (mg/kg)	0.663	ND	ND	ND	0.158	ND	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	175	-
Acenaphthene (mg/kg)	ND	ND	ND	-	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Anthracene (mg/kg)	ND	ND	ND	-	ND	ND	ND	0.0415	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Benzo(A)anthracene (mg/kg)	0.638	ND	ND	-	0.370	ND	ND	0.216	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Benzo(B)fluoranthene (mg/kg)	0.562	ND	ND	-	0.715	ND	ND	0.372	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Benzo(K)fluoranthene (mg/kg)	0.311	ND	ND	-	0.404	ND	ND	0.148	-	-	-	-	-	-	-	-	-	-	-	-	2.2	-
Benzo(A)pyrene (mg/kg)	ND	ND	ND	-	ND	ND	ND	0.204	-	-	-	-	-	-	-	-	-	-	-	-	0.022	-
Chrysene (mg/kg)	0.338	ND	ND	-	0.253	ND	ND	0.345	-	-	-	-	-	-	-	-	-	-	-	-	22	-
Dibenzo(A,H)anthracene (mg/kg)	ND	ND	ND	-	ND	ND	ND	0.0610	-	-	-	-	-	-	-	-	-	-	-	-	0.022	-
Fluoranthene (mg/kg)	0.869	ND	ND	-	0.411	ND	ND	0.220	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Fluorene (mg/kg)	ND	0.361	ND	-	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Indeno(1,2,3,C,D)pyrene (mg/kg)	ND	ND	ND	-	ND	ND	ND	0.274	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Naphthalene (mg/kg)	ND	0.351	ND	-	ND	ND	ND	0.183	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Pyrene (mg/kg)	0.418	0.0458	ND	-	0.279	ND	ND	0.316	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Electrical Conductivity (mmhos/cm)	0.462	0.315	0.310	-	0.472	0.224	0.187	2.81	-	-	-	-	-	-	-	-	-	-	-	-	<4 or 2X BG	-
Sodium Adsorption Ratio (SAR)	2.91	2.17	2.67	-	2.59	4.60	3.80	13.30	-	-	-	-	-	-	-	-	-	-	-	-	<12	-
pH	11.18	9.90	9.80	-	9.45	9.83	8.87	9.46	-	-	-	-	-	-	-	-	-	-	-	-	6-9	-
Arsenic (mg/kg)	2.5	6.1	6.2	-	5.7	5.2	4.7	7.6	3.2	4.4	3.5	5.2	3.2	5.7	6.3	4.2	6.6	6.6	2.0	0.39	7.3	-
Barium (mg/kg)	6340	362	149	-	6580	136	2600	3340	-	-	-	-	-	-	-	-	-	-	-	-	15000	-
Cadmium (mg/kg)	<1.5	<1.2	<1.1	-	<1.3	<1.1	<1.3	<1.2	-	-	-	-	-	-	-	-	-	-	-	-	70	-
Chromium (III) (mg/kg)	15.5	39.8	39.3	-	41.4	38.3	29.4	40.3	-	-	-	-	-	-	-	-	-	-	-	-	120000	-
Chromium (VI) (mg/kg)	<0.61	<0.45	<0.44	-	<0.50	<0.46	<0.52	0.67	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Copper (mg/kg)	28.8	9.7	8.0	-	26.7	6.7	15.8	14.5	-	-	-	-	-	-	-	-	-	-	-	-	3100	-
Lead (inorganic) (mg/kg)	12.2	12.5	11.3	-	22.6	11.7	15.9	11.2	-	-	-	-	-	-	-	-	-	-	-	-	400	-
Mercury (mg/kg)	<0.14	<0.11	<0.12	-	<0.13	<0.12	<0.11	<0.12	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Nickel (mg/kg)	9.5	16.2	15.0	-	21.1	15.0	15.7	19.9	-	-	-	-	-	-	-	-	-	-	-	-	1600	-
Selenium (mg/kg)	<39	<5.9	<5.7	-	<33	<5.6	<6.7	<5.8	-	-	-	-	-	-	-	-	-	-	-	-	390	-
Silver (mg/kg)	<4.6	<3.6	<3.4	-	<3.9	<3.3	<4.0	<3.5	-	-	-	-	-	-	-	-	-	-	-	-	390	-
Zinc (mg/kg)	86.2	37.1	39.9	-	67.3	39.3	47.4	32.5	-	-	-	-	-	-	-	-	-	-	-	-	23000	-
% Solids	62.8	87.6	87.9	85.5	78.7	85.5	76.6	87.1	79.0	81.1	80.0	70.2	82.7	98.5	95.3	95.4	85.7	86.8	95.4	-	-	-

- Notes:
- 1) ND = not detectable to the laboratory detection limit.
 - 2) Results highlighted in yellow exceed Table 910-1 concentration. Results highlighted in gray exceed Table 910-1, but are below background levels.
 - 3) "-" indicates no analysis.
 - 4) See site map for sample locations.
 - 5) Shown on chain of custody as "FW Subliner".
 - 6) Shown on chain of custody as "FW Subliner -1 foot". The cumulative total is 2'.
 - 7) Shown on chain of custody as "RP Subliner -1.5'". The cumulative total is 2.5'

Table 2
Location: PCU T62X-11G
Lab Summary - NW Cuttings Pit and Cuttings Pit (PRE-2009 TABLE 910)

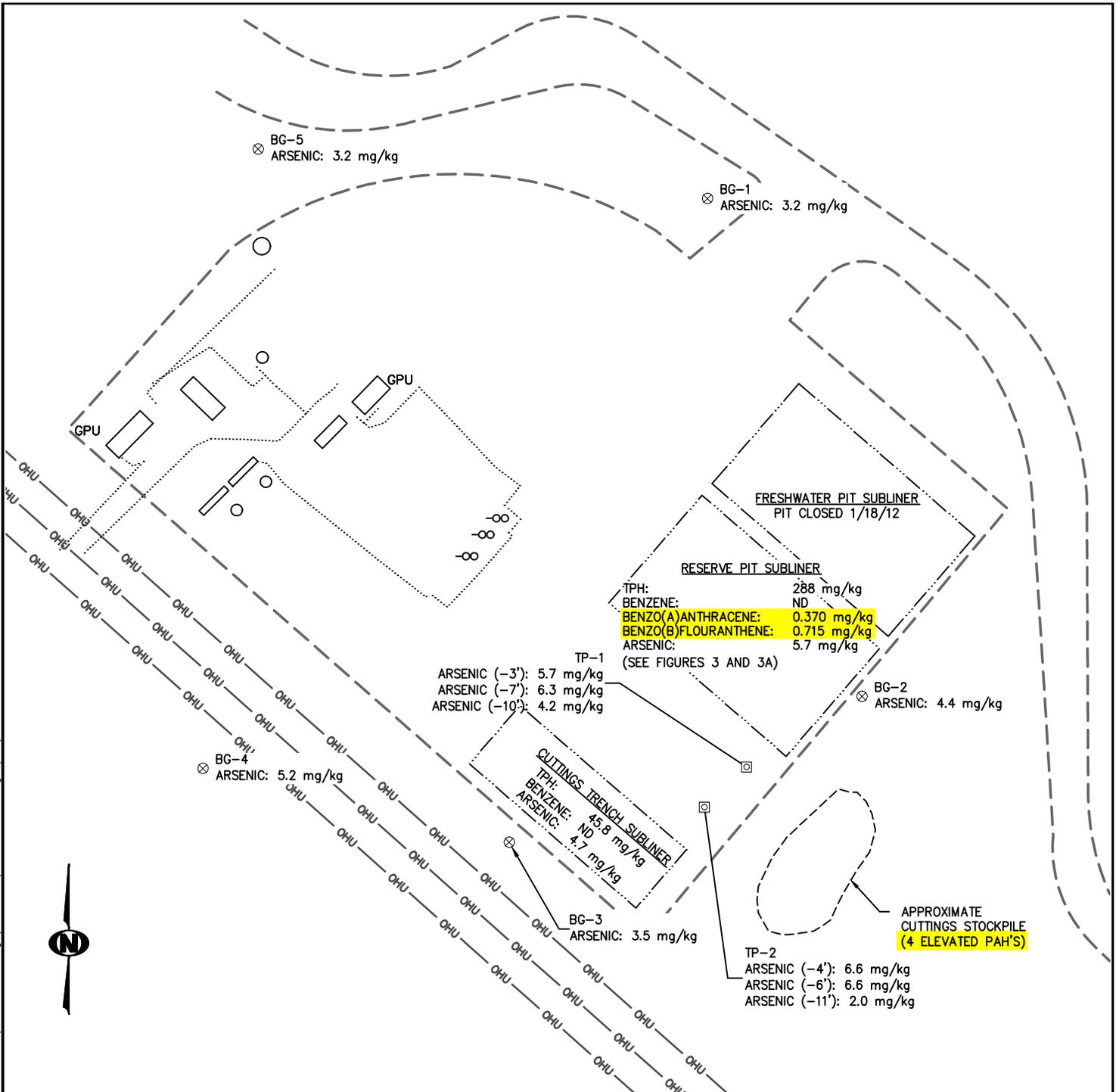
Last update 3/10/2014

Analytical Parameter (with units)	Cuttings Pit		NW Cuttings Pit		COGCC
	Cuttings Pit Contents	Cuttings Pit Subliner	NW Cuttings Pit Contents	NW Cuttings Pit Subliner	Table 910-1 Concentration Levels
Accutest Job #	D55311 (2/21/14)				-
Sample type (Composite/Discrete)	C	C	C	C	-
TPH (GRO) (mg/kg)	ND	ND	ND	ND	-
TPH (DRO) (mg/Kg)	172	57.9	528	144	-
TPH (GRO + DRO) (mg/Kg)	172	57.9	528	144	10000
Electrical Conductivity (mmhos/cm)	1.390	1.310	3.170	0.202	<4 or 2X BG
Sodium Adsorption Ratio (SAR)	9.08	7.53	12.2	4.76	<12
pH	9.36	9.21	9.24	9.54	6-9
Arsenic (mg/kg)	5.4	4.6	7.4	3.8	41
Barium (mg/kg)	6060	2810	7360	4750	180000
Cadmium (mg/kg)	<1.1	<1.2	<1.1	<1.3	26
Chromium (mg/Kg)	23.5	23.6	24.1	19.1	1500
Copper (mg/kg)	17.7	14.0	20.1	10.8	750
Lead (inorganic) (mg/kg)	13.4	14.7	18.0	9.4	300
Mercury (mg/kg)	<0.10	<0.094	<0.091	0.14	17
Nickel (mg/kg)	15.0	15.3	18.2	10.6	210
Selenium (mg/kg)	<5.7	<5.9	<5.7	<6.4	-
Silver (mg/kg)	<3.4	<3.5	<3.4	<3.8	100
Zinc (mg/kg)	38.9	40.7	46.1	30.3	1400
% Solids	81.0	79.7	83.7	77.0	-

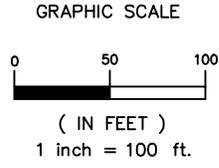
Notes:

- 1) ND = not detectible to the laboratory detection limit.
- 2) Results highlighted in yellow exceed Table 910-1 parameters.
- 3) "-" indicates no analysis or not required.
- 4) See Figure(s) for sample locations.
- 5) The NW Cuttings Pit and Cuttings Pits (discovered during reclamation activities) were closed pre-2009 regulation change as evident in aerial photograph and therefore fall under those regulations as per discussion with Carlos Lujan and Stan Spencer from the COGCC on 2/13/14.

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LEGEND	
	GAS PROCESSING UNIT
	UTILITY CORRIDOR
	EDGE OF PAD
	TOP OF PIT
	OVERHEAD ELECTRIC
	INDICATES LAB RESULTS ABOVE TABLE 910-1
	WELL HEAD
	BACKGROUND TEST LOCATION
	ARSENIC: X.X mg/kg WITH LAB RESULTS
	TEST PIT FOR BACKGROUND ARSENIC



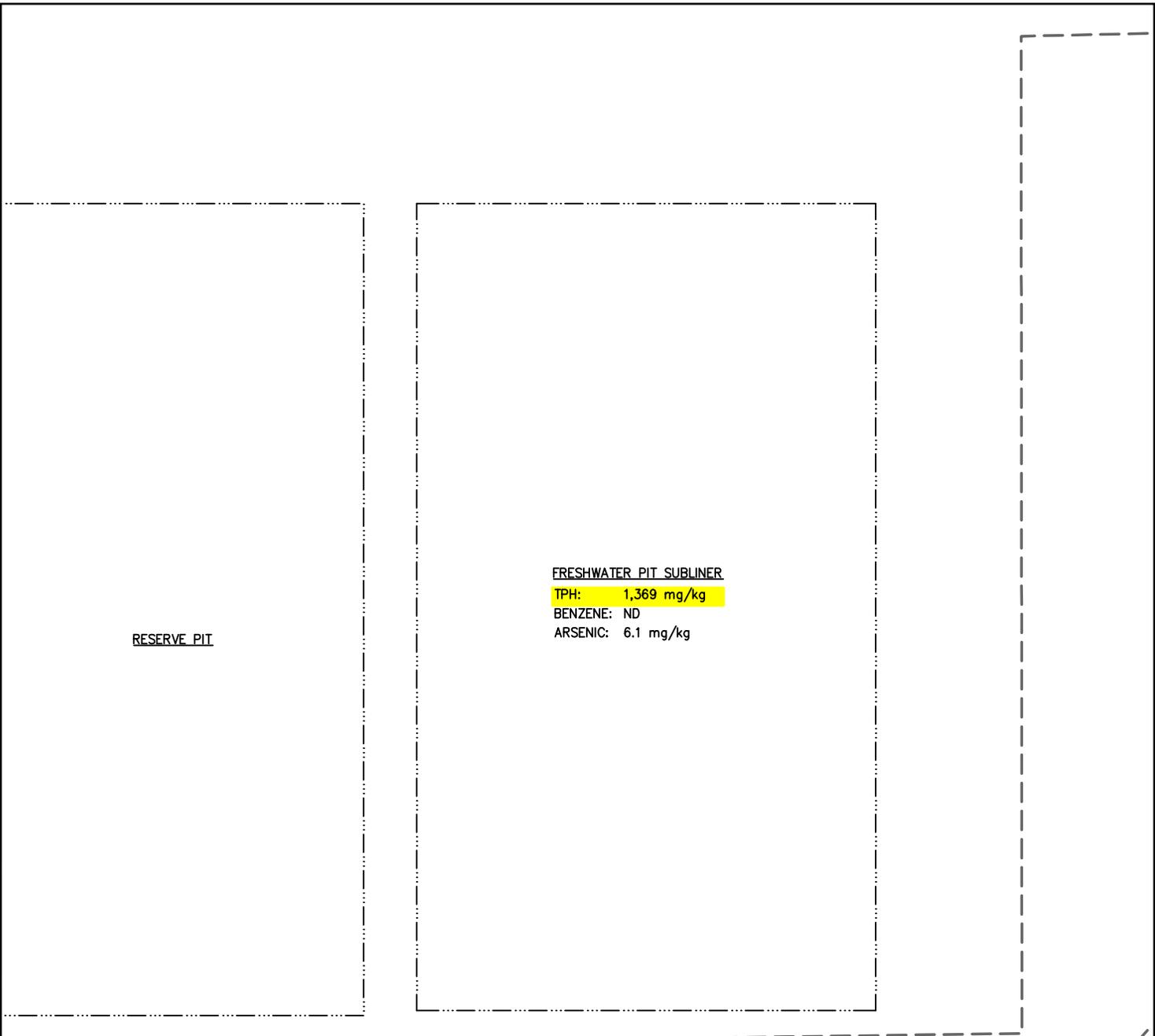
- NOTES:**
1. ND INDICATES NOT DETECTED WITHIN LABORATORY DETECTION LIMITS.
 2. RESULTS SHOWN ARE SUBLINER CONFIRMATION SAMPLES UNLESS OTHERWISE NOTED.

GPS:	CHECKED:	FIGURE	DATE	REVISIONS
TRIMBLE	DK			
DATE:	DRAWN:			
3/11/14	DRF			
FILE NAME:	SHEET NO.			
site select	1 of 8			
PROJECT NO.	SCALE:			
1108-03	1" = 100'			

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

FIGURE 1
 PICEANCE CREEK
 PCU T62X-11G
 SITE MAP
 PREPARED FOR XTO ENERGY

\\hyper-v03\kwd-co\sdk\proj\cto environmental\1108-03a_pcu t62x-11g\civil_3d\fw.dwg,3/11/14



RESERVE PIT

FRESHWATER PIT SUBLINER

TPH: 1,369 mg/kg

BENZENE: ND

ARSENIC: 6.1 mg/kg

ACCESS ROAD



GRAPHIC SCALE



(IN FEET)

1 inch = 30 ft.

NOTES:

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

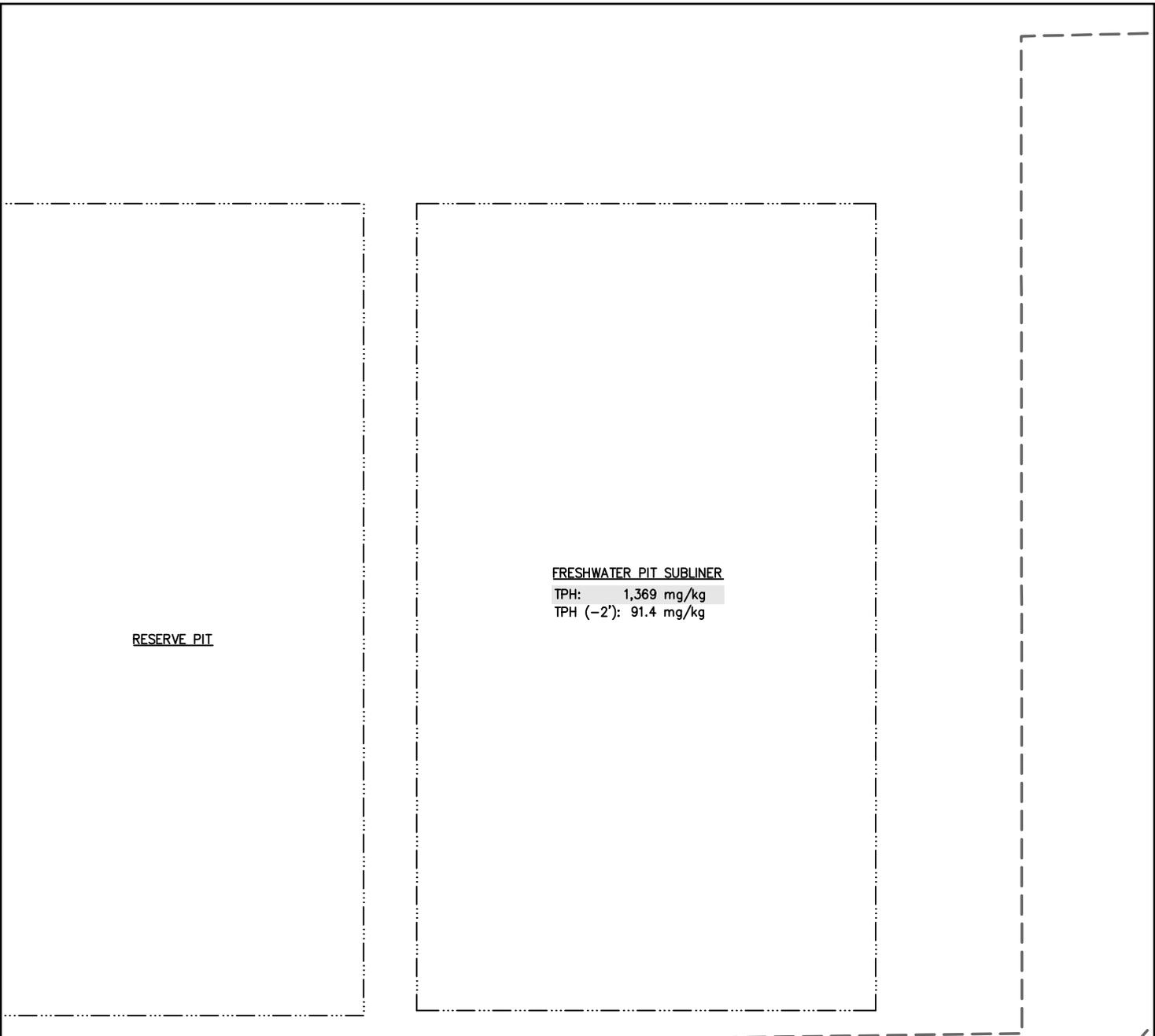
LEGEND	
	EDGE OF PAD
	TOP OF PIT
	INDICATES TPH LAB RESULTS ABOVE 500 mg/kg

GPS: TRIMBLE	CHECKED: DK	FIGURE 2	DATE	REVISIONS
DATE: 3/11/14	DRAWN: DRF			
FILE NAME: fw	SHEET NO. 2 of 8			
PROJECT NO. 1108-03	SCALE: 1" = 30'			

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FIGURE 2
 PICEANCE CREEK
 PCU T62X-11G
 FRESHWATER PIT SUBLINER
 PREPARED FOR XTO ENERGY

\\hyper-v03\lkw-co\sdk\proj\cto environmental\1108-03a_pcu t62x-11g\civil_3d\fw cl.dwg,3/11/14

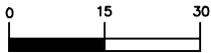


RESERVE PIT

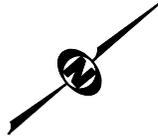
FRESHWATER PIT SUBLINER

TPH: 1,369 mg/kg
 TPH (-2'): 91.4 mg/kg

GRAPHIC SCALE



(IN FEET)
 1 inch = 30 ft.



ACCESS ROAD

NOTES:

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

LEGEND

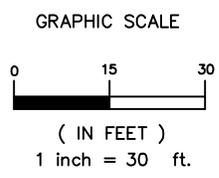
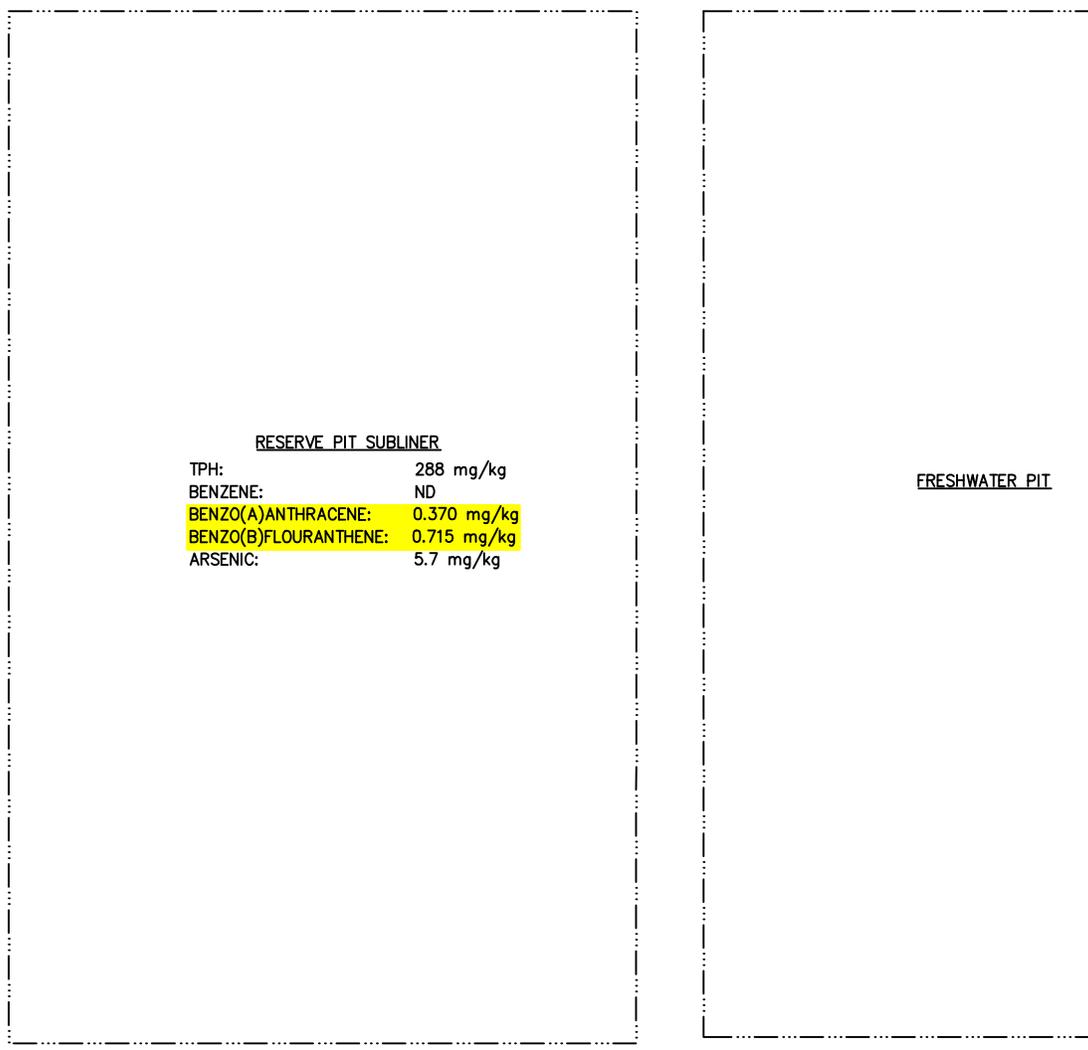
	EDGE OF PAD
	TOP OF PIT
	INDICATES PREVIOUS TPH LAB RESULTS ABOVE 500 mg/kg

GPS: TRIMBLE	CHECKED: DK	FIGURE 2A	DATE	REVISIONS
DATE: 3/11/14	DRAWN: DRF			
FILE NAME: fw cl	SHEET NO. 3 of 8			
PROJECT NO. 1108-03	SCALE: 1" = 30'			

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FIGURE 2A
 PICEANCE CREEK
 PCU T62X-11G
 FRESHWATER PIT SUBLINER
 CONFIRMATION
 PREPARED FOR XTO ENERGY

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

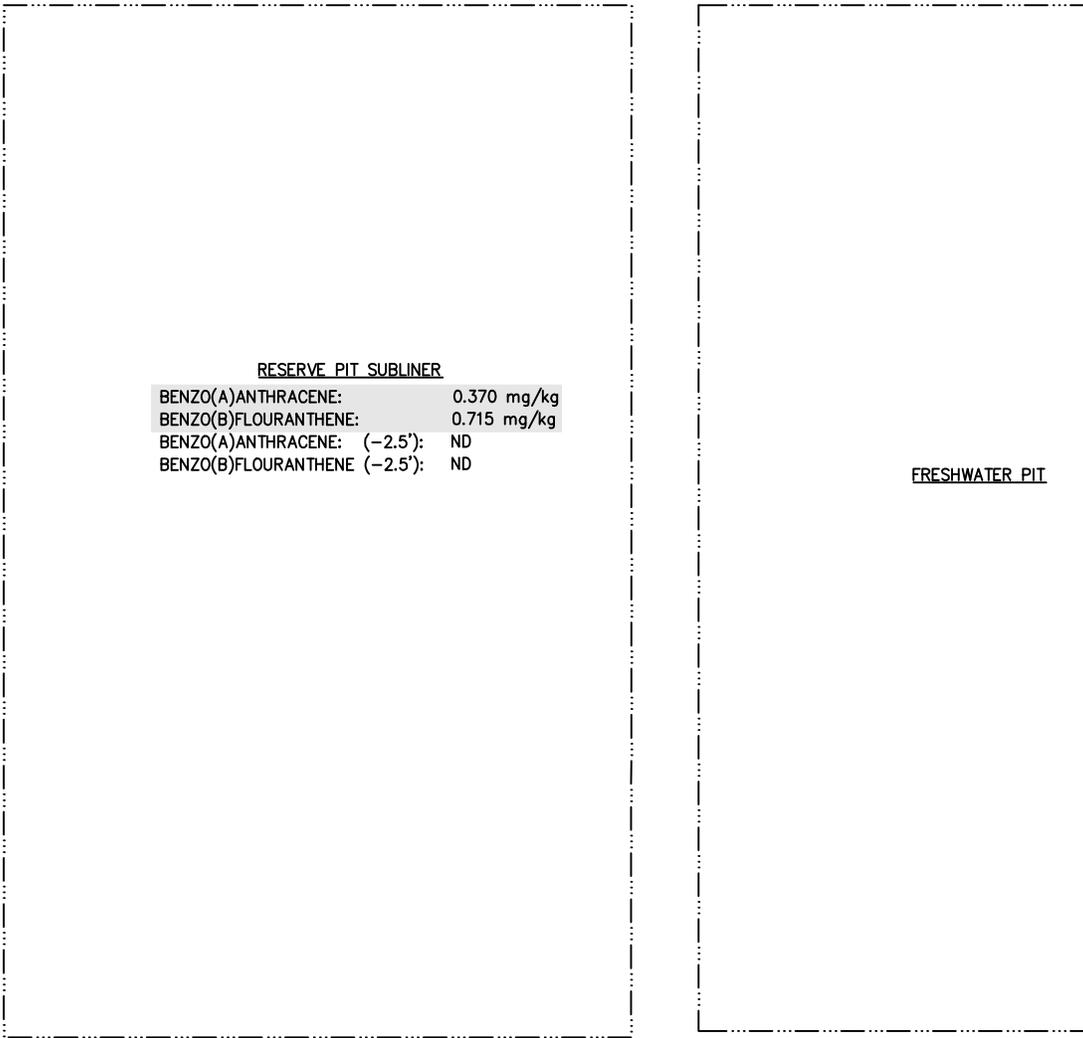
LEGEND	
---	EDGE OF PAD
----	TOP OF PIT
■	INDICATES LAB RESULTS ABOVE TABLE 910 CONCENTRATION LEVELS

GPS:	CHECKED:	FIGURE	DATE	REVISIONS
TRIMBLE	DK			
DATE:	DRAWN:	3		
3/11/14	DRF			
FILE NAME:	SHEET NO.	4 of 8		
rsrv				
PROJECT NO.	SCALE:	1" = 30'		
1108-03				

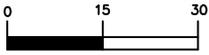
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FIGURE 3
 PICEANCE CREEK
 PCU T62X-11G
 RESERVE PIT SUBLINER
 PREPARED FOR XTO ENERGY

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GRAPHIC SCALE



(IN FEET)

1 inch = 30 ft.



LEGEND

- EDGE OF PAD
- - - - - TOP OF PIT
- INDICATES PREVIOUS LAB RESULTS ABOVE TABLE 910 CONCENTRATION LEVELS

NOTES:

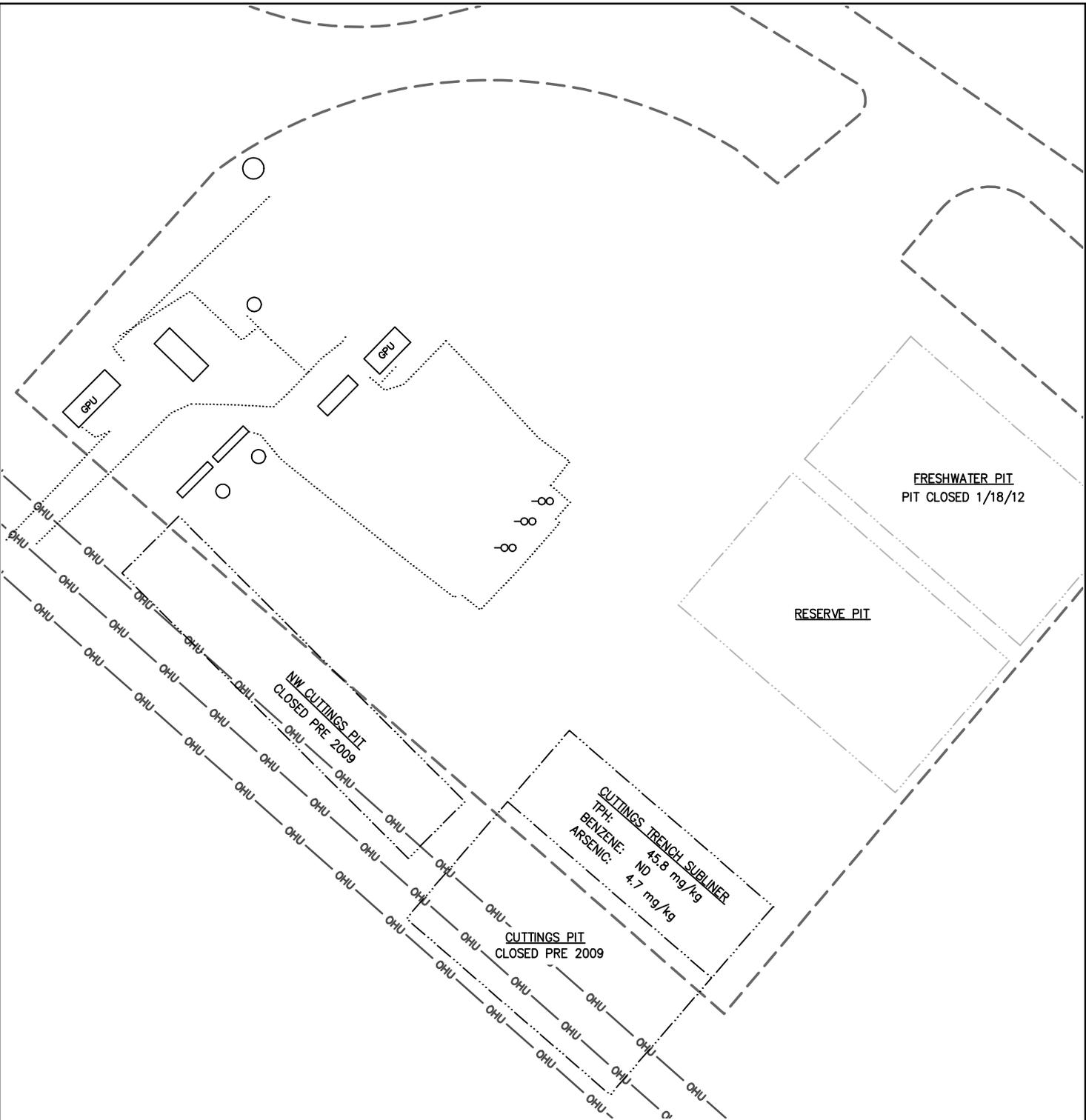
1. ND INDICATES NOT DETECTED WITHIN LABORATORY DETECTION LIMITS.
2. RESULTS SHOWN ARE SUBLINER CONFIRMATION SAMPLES UNLESS OTHERWISE NOTED.

GPS: TRIMBLE	CHECKED: DK	FIGURE 3A	DATE	REVISIONS
DATE: 3/11/14	DRAWN: DRF			
FILE NAME: rsrv cl	SHEET NO. 5 of 8			
PROJECT NO. 1108-03	SCALE: 1" = 30'			

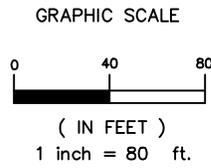
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FIGURE 3A
PICEANCE CREEK
PCU T62X-11G
RESERVE PIT SUBLINER
CONFIRMATION
PREPARED FOR XTO ENERGY

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LEGEND	
GPU	GAS PROCESSING UNIT
-----	UTILITY CORRIDOR
-----	EDGE OF PAD
-----	TOP OF PIT
-----	TOP OF UNDOCUMENTED PIT
OHU OHU	OVERHEAD ELECTRIC
-oo-	WELL HEAD



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

GPS:	CHECKED:	FIGURE	DATE	REVISIONS
TRIMBLE	DK			
DATE:	DRAWN:	4		
3/11/14	DRF			
FILE NAME:	SHEET NO.	6 of 8		
undoc				
PROJECT NO.	SCALE:	1" = 80'		
1108-03				

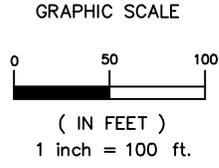
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FIGURE 4
 PICEANCE CREEK
 PCU T62X-11G
 CUTTINGS PIT CLOSED
 PRE-2009 RULE CHANGE
 PREPARED FOR XTO ENERGY

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LEGEND	
--- · · · · ·	TOP OF TRENCH
- - - - -	TOP OF UNDOCUMENTED PIT



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

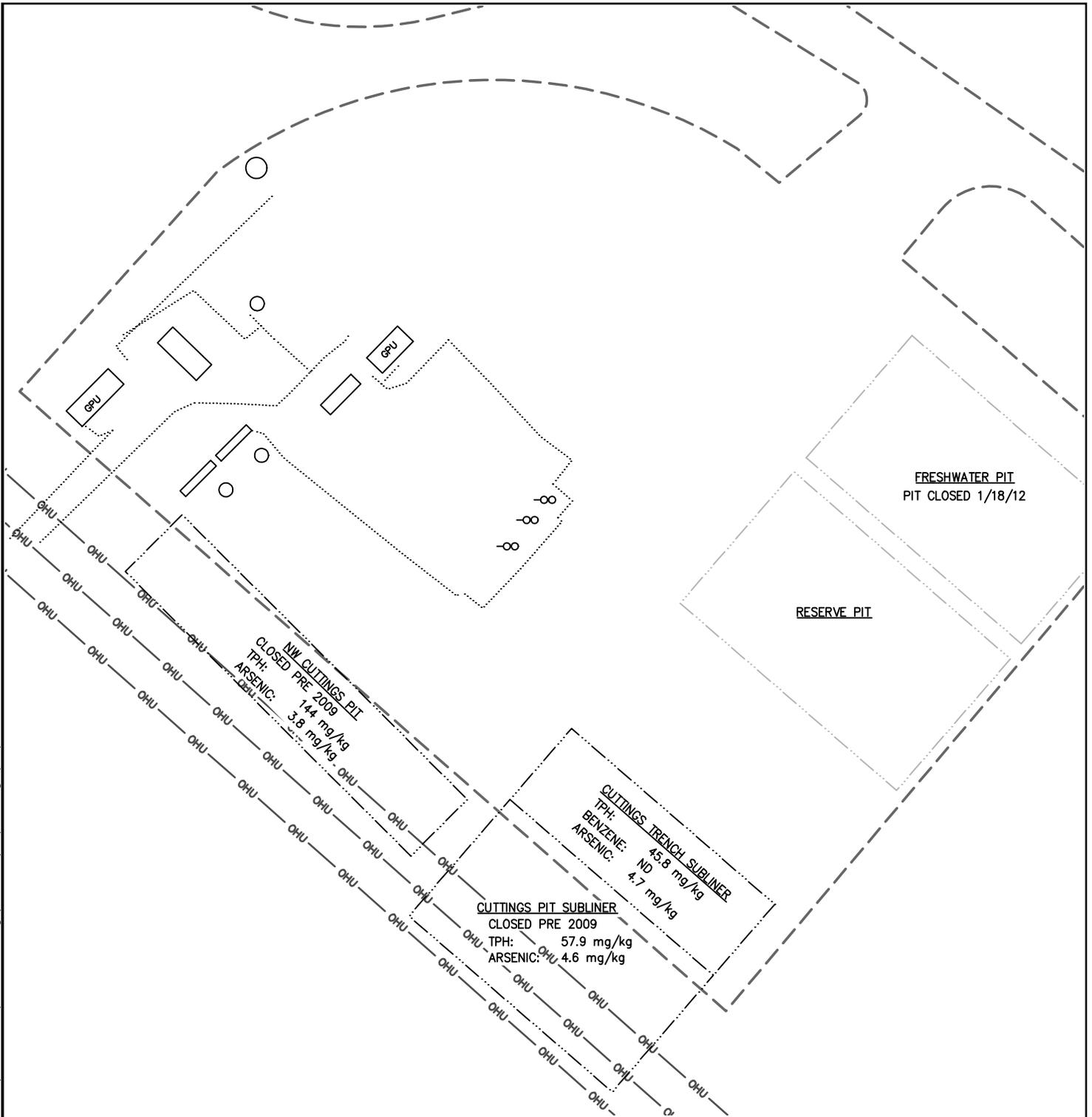
REFERENCES:
AERIAL PHOTO FLOWN SEPTEMBER 14, 2009
FROM USDA FIELD OFFICE.

GPS: TRIMBLE	CHECKED: DK	FIGURE 5	DATE	REVISIONS
DATE: 3/11/14	DRAWN: DRF			
FILE NAME: undoc aerial	SHEET NO. 7 of 8			
PROJECT NO. 1108-03	SCALE: 1" = 100'			

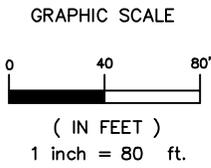
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FIGURE 5
PICEANCE CREEK
PCU T62X-11G
AERIAL PHOTO
FLOWN SEPTEMBER 14, 2009
PREPARED FOR XTO ENERGY

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LEGEND	
GPU	GAS PROCESSING UNIT
-----	UTILITY CORRIDOR
-----	EDGE OF PAD
-----	TOP OF PIT
-----	TOP OF UNDOCUMENTED PIT
OHU OHU	OVERHEAD ELECTRIC
-oo-	WELL HEAD



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

GPS: TRIMBLE	CHECKED: DK	FIGURE 6	DATE	REVISIONS
DATE: 3/11/14	DRAWN: DRF			
FILE NAME: cutpits	SHEET NO. 8 of 8			
PROJECT NO. 1108-03	SCALE: 1" = 80'			

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FIGURE 6
PICEANCE CREEK
PCU T62X-11G
CUTTINGS AND NW
CUTTINGS PITS
PREPARED FOR XTO ENERGY