

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  
**REM 8439**  
**DOC 2142390**

**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): \_\_\_\_\_

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: \_\_\_\_\_

**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 and sidewall material to confirm no groundwater impact potential exists (see Tables 1-3H).

**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 and sidewall sample results no additional assessment will be necessary beneath the Freshwater, Reserve or Cuttings Pits #1, #2 or #3 (see Tables 1 through 3H).

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

Freshwater and Reserve Pit contents/synthetic liners were removed and transported for offsite disposal at ECDC Environmental in Utah. Cuttings Pit #1, #2 and #3 contents/synthetic liners and Cuttings #1 subliner impacted material was removed and transported for offsite disposal at Wray Gulch Landfill in Meeker, CO. Freshwater and Reserve Pit subliner/sidewall impacted material has been removed and will either be mix/blend processed to below Table 910-1 concentration levels or transported offsite to a disposal/recycling facility. Cuttings Pit #2 subliner impacted material has been removed, mix/blend processed to below Table 910-1 concentration levels and will be used onsite for backfill.

**IMPLEMENTATION SCHEDULE**

Date Site Investigation Began: 7/21/2011	Date Site Investigation Completed: 9/4/2014	Date Remediation Plan Submitted: 10/10/2014
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: \_\_\_\_\_  
Title: Piceance EH&S Supervisor Date: 10/10/2014

OGCC Approved: \_\_\_\_\_ Title: EPS Northwest Date: 10/30/14

## **ATTACHMENT I**

### **PCU 297-11B Pit Closure Workplan, Form 27 Page 1**

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

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

See Form 27 (Rem #8439, Doc #2148974) COGCC approved on 5/19/2014 which established a background Arsenic level of 7.7 mg/kg (See Table 1 and Figure 1).

1. Reserve Pit and Cuttings Pit #2 subliner Arsenic concentrations (7.5 mg/kg and 4.6 mg/kg, respectively) are within the allowable background Arsenic concentration of 7.7 mg/kg. Subliner impacted material has been removed and will used for onsite backfill (see Attachment II for details).

## ATTACHMENT II

### PCU 297-11B Pit Closure Workplan, Form 27 Pages 1 and 2

#### Describe initial action taken:

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

Below is an update to the Site Investigation and Remediation Workplan (Rem #8439, Doc #2148974) COGCC approved on 5/19/2014. See Attachment I, Tables 1 through 3H (15 total) and Figures 1 through 6A (12 total).

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

- Freshwater Pit contents were mixed with the Reserve Pit contents (see Table 1 and Reserve Pit section for lab data).
- Freshwater Pit subliner composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for SAR (13.7), pH (9.87) and Arsenic (3.8 mg/kg) (see Table 1).
- Initial Freshwater Pit assessment was completed via hollow stem drilling and Test Pits where the drill rig could not access to determine the vertical and lateral extent of impacts beneath the Freshwater Pit. Two vertical boreholes and two Test Pits had elevated TPH:
  - **FWV-1 (vertical)** at -9' to -14' TPH: 1627 mg/kg. This sample was a composite of the hollow stem drilling Borehole from -9' to -14'. The TPH concentrations of samples collected and analyzed above (Freshwater Subliner TPH: 223 mg/kg) and below (FWV-2 which is an adjacent borehole at -14' to -20' TPH: 12.3 mg/kg) are both below Table 910-1 concentration levels. Based on assessment in and around this area, it appears that this is an isolated zone and non-contiguous (see Table 2).
  - **FWV-3 (vertical)** at -4' to -7.5' TPH: 5401 mg/kg. This sample was a composite of the hollow stem drilling Borehole from -4' to -7.5'. The TPH concentrations of samples collected and analyzed above (Freshwater Subliner TPH: 223 mg/kg) and below (FWV-3 at -34' to -39' TPH: 495 mg/kg) are both below Table 910-1 concentration levels. Based on assessment in and around this area, it appears that this is an isolated zone and non-contiguous (see Table 2).

1. After review of the sample data from these two borings and USGS Geological maps of the Piceance Basin, it is believed that these elevated TPH levels are representative of oil shale surface deposits in this area.
- **FWTP-1 and FWTP-3 (Test Pits)** in the East and North Sidewalls at -2' laterally indicated TPH results of (1502 mg/kg and 1502 mg/kg, respectively) (see Table 2).
    1. Impacted soils were removed from -0' to -9' in the East Sidewall (see East Sidewall bullet below for details)
    2. Impacted soils were removed from -0' to -9' in the North Sidewall (see North Sidewall bullet below for details).
  - Freshwater Pit Sidewall samples were collected in each of the four sidewalls due to lateral impacts identified during initial drilling assessment:
    - **North Sidewall** composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for TPH (5995 mg/kg), SAR (13.2), pH (9.64) and Arsenic (5.8 mg/kg).
      1. Impacted soils were removed from -0' to -9' in the North Sidewall with confirmation samples collected for TPH. Results ranged from ND to 302 mg/kg (see Table 2A).
    - **South Sidewall** composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for TPH (5052 mg/kg), SAR (12.3), pH (9.83) and Arsenic (5.1 mg/kg).
      1. Impacted soils were removed from -0' to -6' in the South Sidewall with confirmation samples collected for TPH. Results ranged from 8.52 mg/kg to 431 mg/kg (see Table 2B).
    - **East Sidewall** composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for TPH (4774 mg/kg), SAR (17.8), pH (9.39) and Arsenic (3.1 mg/kg).
      1. Impacted soils were removed from -0' to -9' in the East Sidewall with confirmation samples collected for TPH. Results were 132 mg/kg in E-1 and 21.3 mg/kg in E-2 (see Table 2C).
    - **West Sidewall** composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for TPH (6831 mg/kg), SAR (19.5), pH (9.69) and Arsenic (5.6 mg/kg).

1. Impacted soils were removed from -0' to -18' in the West Sidewall with confirmation samples collected for TPH. Results ranged from ND to 252 mg/kg (see Table 2D).

## 2. Reserve Pit

- Reserve Pit contents were mixed with Freshwater Pit contents and sampled for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for TPH (55400 mg/kg), Benzene (9.370 mg/kg), Toluene (154.0 mg/kg), Xylenes (714.0 mg/kg), Napthalene (52.9 mg/kg), SAR (20.4), pH (10.4) and Arsenic (4.1 mg/kg) (see Table 1).
  - Reserve Pit subliner composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for TPH (2578 mg/kg), SAR (14.6), pH (10.79) and Arsenic (7.5 mg/kg) (see Table 1).
  - Reserve Pit subliner impacted soils from -0' to 7' were removed with confirmation samples collected for TPH. Results range from 17.5 mg/kg to 444 mg/kg (see Table 3C).
  - Initial Reserve Pit assessment was completed via hollow stem drilling and Test Pits where the drill rig could not access to determine the vertical and lateral extent of impacts beneath the Reserve Pit. Two vertical soil borings and two Test Pits had elevated TPH:
    - **RPV-2 (vertical)** at -24' to -29' TPH: 997 mg/kg. This sample was a composite of the hollow stem drilling Borehole from -24' to -27.5'. The TPH concentrations of samples collected and analyzed above (RPV-2 at -14' to -19' TPH 39.6 mg/kg) and below (RPV-1 at -31' to -34' TPH: 17.2 mg/kg) are both below Table 910-1 concentration levels. Based on assessment in and around this area, it appears that this is an isolated zone and non-contiguous. (see Table 3).
    - **RPV-3 (vertical)** at -20' to -25' TPH: 1141 mg/kg. This sample was a composite of the hollow stem drilling Borehole from -20' to -25'. The TPH concentrations of samples collected and analyzed above (RPV-3 at -15' to -20' TPH 37.3 mg/kg) and below (RPV-3 at -30' to -34' TPH: 13.8 mg/kg) are both below Table 910-1 concentration levels. Based on assessment in and around this area, it appears that this is an isolated zone and non-contiguous (see Table 3).
1. After review of the sample data from these two borings and USGS Geological maps of the Piceance Basin, it is believed that these elevated TPH levels are representative of oil shale surface deposits in this area.

- **RPTP-1 and RPTP-2 (Test Pits)** in the East Sidewall at -0' and -3', respectively indicated TPH results of (5597 mg/kg and 6872 mg/kg, respectively) (see Table 3A).
  1. Impacted soils were removed from -0' to -6' in the East Sidewall (see East Sidewall bullet below for details).
- Reserve Pit North and South Berm sidewall samples were collected to assess the impacts in the Berm area.
  - **Reserve Pit North Berm** Sidewall composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for TPH (6158 mg/kg), pH (9.57) and Arsenic (6.2 mg/kg) (see Table 3B).
  - **Reserve Pit South Berm** Sidewall composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for TPH (10636 mg/kg), SAR (25.0) pH (10.11) and Arsenic (5.2 mg/kg).
    1. The Reserve Pit Berm was removed along with 3' beneath the berm with confirmation samples collected for TPH. Results ranged from 202 to 385 mg/kg (see Table 3B)
- Reserve Pit Sidewall samples were collected in each of the four sidewalls due to lateral impacts identified during initial drilling assessment:
  - **North Sidewall** composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for TPH (994 mg/kg), SAR (12.6), pH (9.65) and Arsenic (8.2 mg/kg).
    1. Impacted soils were removed from -0' to -6' in the North Sidewall with confirmation samples collected for TPH. Results ranged from 134 to 394 mg/kg (see Table 3E).
  - **South Sidewall** composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for TPH (1054 mg/kg), pH (9.08) and Arsenic (6.1 mg/kg).
    1. Impacted soils were removed from -0' to -12' in the South Sidewall with confirmation samples collected for TPH. Results ranged from ND to 106 mg/kg (see Table 3F).
  - **East Sidewall** composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for TPH (3019 mg/kg), pH (9.84) and Arsenic (7.3 mg/kg).

1. Impacted soils were removed from -0' to -6' in the East Sidewall with confirmation samples collected for TPH. Results ranged from ND to 324 mg/kg (see Table 3G).
- **West Sidewall** composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for TPH (4234 mg/kg), pH (9.85) and Arsenic (7.1 mg/kg).
1. Impacted soils were removed from -0' to -15' in the West Sidewall with confirmation samples collected for TPH. Results ranged from ND to 270 mg/kg (see Table 3H).

### 3. Cuttings Pit #1

- Cuttings Pit #1 content samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for TPH (681 mg/kg), SAR (66.6), pH (11.49) and Arsenic (15.1 mg/kg) (see Table 1).
- Cuttings Pit #1 subliner composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for Benzo(A)anthracene (0.232 mg/kg), Benzo(A)pyrene (0.253 mg/kg), Dibenzo(A,H)anthracene (0.159 mg/kg), Indeno(1,2,3,C,D)pyrene (0.34 mg/kg), SAR (12.4), pH (10.21) and Arsenic (6.8 mg/kg) (see Table 1).
- Cuttings Pit #1 subliner impacted soils from -0' to 1' were removed and confirmation samples were collected for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for pH (9.36) and Arsenic (6.4 mg/kg) (see Table 1).

### 4. Cuttings Pit #2

- Cuttings Pit #2 content samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for Benzene (1.23 mg/kg), EC (5.25 mmhos/cm), pH (11.43) and Arsenic (5.1 mg/kg) (see Table 1).
- Cuttings Pit #2 subliner composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for Benzene (0.276 mg/kg), EC (5.15 mmhos/cm), SAR (15.8), pH (10.9) and Arsenic (4.6 mg/kg) (see Table 1).
- Cuttings Pit #2 subliner impacted soils from -0' to 2' were removed and confirmation samples were collected for Benzene. Benzene sample results are Non-detect (see Table 1).



## 5. Cuttings Pit #3

- Cuttings Pit #3 content samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for Benzene (1.35 mg/kg), EC (8.52 mmhos/cm), pH (12.14) and Arsenic (5.0 mg/kg) (see Table 1).
- Cuttings Pit #3 subliner composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for EC (5.61 mmhos/cm), SAR (15.6), pH (10.34) and Arsenic (4.3 mg/kg) (see Table 1).
- Freshwater and Reserve Pit contents and synthetic liners were removed and transported for disposal at ECDC Environmental in Utah.
- Freshwater and Reserve Pit sidewall impacted material has been removed and will either be mix/blend processed onsite or transported offsite to a permanent disposal/recycling facility.
- Reserve Pit subliner and Berm/Weir impacted material has been removed, mix/blend processed and sampled to ensure Table 910-1 compliance (see Table 3D).
- Cuttings Pit #1, #2 and #3 contents and synthetic liners were removed and transported for offsite disposal at Wray Gulch Landfill in Meeker, CO.
- Cuttings Pit #1 subliner impacted soil was removed and transported for offsite disposal at Wray Gulch Landfill in Meeker, CO.
- Cuttings Pit #2 subliner impacted material was removed and sampled to ensure Table 910-1 compliance (see Table 1).
- Mix/blend processed sidewall/subliner material that meets Table 910-1 concentration levels will be used onsite for backfill.
- Refer to Tables 1 through 3H (15 total) for summaries of the laboratory results and Figures 1 – 6A (12 total) for layout of the pits and sample locations.
- Elevated Arsenic levels above Table 910-1 concentration levels were detected beneath the Freshwater, Reserve and Cuttings Pits #1, #2 and #3.

Please refer to COGCC approved Rem #8439 in which a background Arsenic level of 7.7 mg/kg was approved.

- 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 297-11B**  
**Lab Summary**

Last Update: 10/6/2014

Analytical Parameter	Freshwater Pit	Reserve Pit		Cuttings Pit #1			Cuttings Pit #2				Cuttings Pit #3		Background					COGCC Table 910-1 Concentration Levels	Maximum based on Background
(with units)	FW Subliner	RP Contents	RP Subliner	Cut #1 Contents	Cut #1 Subliner	Cut #1 Subliner (-1')	Cut #2 Contents	Cut #2 Subliner	Cut #2 Subliner (-2')	Cut 2 Ex. Mtrl.	Cut #3 Contents	Cut #3 Subliner	#1	#2	#3	#4	#5		
Accutest Job #	D57201 (4/24/14)	D25800 (7/21/11)	D56577 (4/3/14)	D26785 (8/18/11)	D27137 (8/30/11)	D27490 (9/12/11)	D26786 (8/18/11)	D31167 (1/18/12)	D57114 (4/22/14)	D58107 (5/22/14)	D26787 (8/18/11)	D31248 (1/20/12)	D26543 (8/11/11)					-	-
Sample Type (Composite/Discrete)	C	C	C	C	C	C	C	C	C	C	C	C	D	D	D	D	D	-	-
TPH (GRO) (mg/Kg)	ND	10300	8.38	65.1	9.4	ND	66	16	-	-	42.2	7.31	-	-	-	-	-	-	-
TPH (DRO) (mg/Kg)	223	45100	2570	616	129	31.7	168	98.4	-	-	149	38	-	-	-	-	-	-	-
TPH (GRO + DRO) (mg/Kg)	223	55400	2578	681	138	31.7	234	114	-	-	191	45	-	-	-	-	-	500	-
Benzene (mg/Kg)	ND	9.370	ND	0.165	ND	ND	1.23	0.276	ND	0.0374	1.35	ND	-	-	-	-	-	0.170	-
Toluene (mg/Kg)	ND	154.0	ND	2.74	ND	ND	2.01	0.643	-	-	2.49	ND	-	-	-	-	-	85	-
Ethylbenzene (mg/Kg)	ND	37.4	ND	0.785	ND	ND	0.216	0.0816	-	-	0.274	ND	-	-	-	-	-	100	-
Xylenes (total) (mg/Kg)	ND	714.0	ND	3.64	ND	ND	1.7	0.673	-	-	1.940	ND	-	-	-	-	-	175	-
Acenaphthene (mg/Kg)	ND	3.06	ND	ND	ND	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	1000	-
Anthracene (mg/Kg)	ND	ND	ND	ND	0.0829	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	1000	-
Benzo(A)anthracene (mg/Kg)	ND	ND	ND	ND	0.232	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	0.22	-
Benzo(B)fluoranthene (mg/Kg)	ND	ND	ND	ND	0.163	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	0.253	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	0.022	-
Chrysene (mg/Kg)	0.0027	ND	0.0315	ND	ND	ND	ND	ND	-	-	ND	0.0142	-	-	-	-	-	22	-
Dibenzo(A,H)anthracene (mg/Kg)	ND	ND	ND	ND	0.159	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	0.022	-
Fluoranthene (mg/Kg)	ND	ND	0.0295	ND	0.19	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	1000	-
Fluorene (mg/Kg)	ND	21.1	ND	ND	ND	ND	0.24	0.0393	-	-	ND	0.029	-	-	-	-	-	1000	-
Indeno(1,2,3,C,D)pyrene (mg/Kg)	ND	ND	ND	ND	0.34	ND	ND	ND	-	-	ND	ND	-	-	-	-	-	0.22	-
Napthalene (mg/Kg)	ND	52.9	ND	ND	ND	ND	1.41	0.233	-	-	0.691	0.121	-	-	-	-	-	23	-
Pyrene (mg/Kg)	ND	ND	0.0206	ND	ND	ND	ND	0.0293	-	-	ND	0.0075	-	-	-	-	-	1000	-
Electrical Conductivity (mmhos/cm)	0.824	1.54	1.260	3.76	2.1	1.81	5.25	5.15	-	-	8.52	5.61	-	-	-	-	-	4	-
Sodium Adsorption Ratio (SAR)	13.7	20.4	14.6	66.6	12.4	11.3	9.37	15.8	-	-	10.7	15.6	-	-	-	-	-	12	-
pH	9.87	10.4	10.79	11.49	10.21	9.36	11.43	10.9	-	-	12.14	10.34	-	-	-	-	-	6-9	-
Arsenic (mg/kg)	3.8	4.1	7.5	15.1	6.8	6.4	5.1	4.6	-	-	5.0	4.3	3.5	7.0	4.7	3.9	4.1	0.39	7.7
Barium (mg/kg)	224	9660	2780	1530	639	254	9750	4750	-	-	7340	5910	-	-	-	-	-	15000	-
Cadmium (mg/kg)	<1.2	<2.6	<1.3	<1.5	<1.2	<1.1	<1.3	<1.1	-	-	<1.4	<1.1	-	-	-	-	-	70	-
Chromium (III) (mg/Kg)	49.3	14.1	46.9	18.2	35.8	44.3	8.8	37.3	-	-	11.8	38.4	-	-	-	-	-	120000	-
Chromium (VI) (mg/Kg)	<1.0	1.7	<1.0	<0.54	0.49	<0.44	<0.53	<0.46	-	-	<0.55	0.72	-	-	-	-	-	23	-
Copper (mg/kg)	23.0	20.9	9.5	26.6	13.6	11.4	22.1	15.2	-	-	24.4	13.9	-	-	-	-	-	3100	-
Lead (inorganic) (mg/kg)	7.7	<13	11.7	19.5	12.5	11.8	14.8	14.6	-	-	74.9	12.5	-	-	-	-	-	400	-
Mercury (mg/kg)	<0.097	<0.26	<0.10	<0.14	<0.11	<0.12	<0.14	<0.11	-	-	<0.12	<0.12	-	-	-	-	-	23	-
Nickel (mg/kg)	23.4	10.3	19.6	17	16.9	19	11.5	16.7	-	-	12.9	17	-	-	-	-	-	1600	-
Selenium (mg/kg)	<5.8	<66	<32	<7.4	<5.8	<5.6	<34	<5.6	-	-	<35	<5.7	-	-	-	-	-	390	-
Silver (mg/kg)	<3.5	<7.9	<19	<4.5	<3.5	<3.3	<4.0	<3.4	-	-	<4.2	<3.4	-	-	-	-	-	390	-
Zinc (mg/kg)	47.6	30.1	48.0	54.1	41.1	41.5	43.2	41.7	-	-	50.6	41.2	-	-	-	-	-	23000	-
% Solids	86.3	37.6	78.9	73.0	87.4	89.9	74.1	86.1	93.2	82.6	71.5	85.9	96.5	78.1	85.2	96.8	93.5	-	-

Notes:

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

**Table 2**  
**Location: PCU 297-11B**  
**Lab Summary - Freshwater Pit Assessment**

Last Update: 10/6/2014

Analytical Parameter	FW Subliner	Test Pit Samples (North and East Sidewalls)			Vertical Drill Assessment						Lateral Drill Assessment									COGCC
(with units)	FW Subliner	FW-TP-1 (-2')	FW-TP-2 (-2')	FW-TP-3 (-2')	FWV-1 (9'-14')	FWV-2 (14'-20')	FWV-2 (34'-37.5')	FWV-3 (4'-7.5')	FWV-3 (34'-39')	FWV-3 (49'-54')	FWL-1 (4'-9')	FWL-1 (24'-29')	FWL-1 (54'-59')	FWL-2 (4'-9')	FWL-2 (24'-29')	FWL-2 (34'-39')	FWL-3 (4'-9')	FWL-3 (14'-19')	FWL-3 (39'-44')	Table 910-1 Concentration Levels
Accutest Job #	D57201 (4/24/14)	D30573 (12/14/11)			D30364 (12/13/11)			D30414 (12/14/11)			D30414 (12/14/11)			D31018 (1/11/12)			D31017 (1/11/12)			-
Sample type (Composite/Discrete)	C	C	C	C	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	-
TPH (GRO) (mg/Kg)	ND	12.2	ND	31.5	66.5	ND	ND	211	13.6	ND	86.6	18.6	ND	ND	ND	ND	48.7	ND	ND	-
TPH (DRO) (mg/Kg)	223	1490	379	1470	1560	12.3	52.8	5190	481	25.8	3160	386	52.8	ND	ND	208	1300	53.7	85.7	-
TPH (GRO + DRO) (mg/Kg)	223	1502	379	1502	1627	12.3	52.8	5401	495	25.8	3247	405	52.8	ND	ND	208	1349	53.7	85.7	500
Benzene (mg/Kg)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.170
Toluene (mg/Kg)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0836	ND	ND	ND	ND	ND	ND	ND	85
Ethylbenzene (mg/Kg)	ND	ND	ND	ND	0.0464	ND	ND	0.256	ND	ND	0.0585	0.0367	ND	ND	ND	ND	ND	ND	ND	100
Xylenes (total) (mg/Kg)	ND	ND	ND	ND	ND	ND	ND	1.99	ND	ND	1.09	0.175	ND	ND	ND	ND	0.874	ND	ND	175
Acenaphthene (mg/Kg)	ND	-	-	-	ND	ND	-	-	ND	-	-	ND	-	-	ND	-	-	ND	-	1000
Anthracene (mg/Kg)	ND	-	-	-	ND	ND	-	-	ND	-	-	ND	-	-	ND	-	-	ND	-	1000
Benzo(A)anthracene (mg/Kg)	ND	-	-	-	ND	ND	-	-	ND	-	-	ND	-	-	ND	-	-	ND	-	0.22
Benzo(B)fluoranthene (mg/Kg)	ND	-	-	-	ND	ND	-	-	ND	-	-	ND	-	-	ND	-	-	ND	-	0.22
Benzo(K)fluoranthene (mg/Kg)	ND	-	-	-	ND	ND	-	-	ND	-	-	ND	-	-	ND	-	-	ND	-	2.2
Benzo(A)Pyrene (mg/Kg)	ND	-	-	-	ND	ND	-	-	ND	-	-	ND	-	-	ND	-	-	ND	-	0.022
Chrysene (mg/Kg)	0.0027	-	-	-	0.0170	ND	-	-	ND	-	-	ND	-	-	ND	-	-	ND	-	22
Dibenzo(A,H)anthracene (mg/Kg)	ND	-	-	-	ND	ND	-	-	ND	-	-	ND	-	-	ND	-	-	ND	-	0.022
Fluoranthene (mg/Kg)	ND	-	-	-	ND	ND	-	-	ND	-	-	ND	-	-	ND	-	-	ND	-	1000
Fluorene (mg/Kg)	ND	-	-	-	0.630	ND	-	-	0.106	-	-	0.113	-	-	ND	-	-	0.0136	-	1000
Indeno(1,2,3,C,D)pyrene (mg/Kg)	ND	-	-	-	ND	ND	-	-	ND	-	-	ND	-	-	ND	-	-	ND	-	0.22
Naphthalene (mg/Kg)	ND	-	-	-	1.13	ND	-	-	ND	-	-	0.0114	-	-	ND	-	-	ND	-	23
Pyrene (mg/Kg)	ND	-	-	-	0.0238	ND	-	-	ND	-	-	ND	-	-	ND	-	-	ND	-	1000
Electrical Conductivity (mmhos/cm)	0.824	-	-	-	1.750	0.931	-	-	0.611	-	-	0.325	-	-	0.197	-	-	0.533	-	4
Sodium Adsorption Ratio (SAR)	13.7	-	-	-	8.02	7.86	-	-	2.33	-	-	4.72	-	-	2.95	-	-	6.15	-	12
pH	9.87	-	-	-	9.19	9.60	-	-	9.09	-	-	9.46	-	-	9.60	-	-	9.36	-	6-9
Arsenic (mg/kg)	3.8	-	-	-	4.1	3.8	-	-	3.7	-	-	3.7	-	-	4.1	-	-	8.1	-	0.39
Barium (mg/kg)	224	-	-	-	164.0	646.0	-	-	191.0	-	-	169.0	-	-	218.0	-	-	134.0	-	15000
Cadmium (mg/kg)	<1.2	-	-	-	<1.1	<1.1	-	-	<1.1	-	-	<1.1	-	-	<1.2	-	-	<1.2	-	70
Chromium (III) (mg/Kg)	49.3	-	-	-	48.9	41.6	-	-	31.8	-	-	39.3	-	-	39.3	-	-	52.2	-	120000
Chromium (VI) (mg/Kg)	<1.0	-	-	-	<0.46	<0.45	-	-	<0.45	-	-	<0.46	-	-	<0.45	-	-	0.47	-	23
Copper (mg/kg)	23.0	-	-	-	9.8	12.7	-	-	13.2	-	-	11.2	-	-	11.9	-	-	16.4	-	3100
Lead (inorganic) (mg/kg)	7.7	-	-	-	14.7	13.0	-	-	12.8	-	-	12.8	-	-	12.7	-	-	13.1	-	400
Mercury (mg/kg)	<0.097	-	-	-	<0.11	<0.12	-	-	<0.11	-	-	<0.11	-	-	<0.11	-	-	<0.11	-	23
Nickel (mg/kg)	23.4	-	-	-	18.4	19.7	-	-	16.2	-	-	16.1	-	-	18.8	-	-	21.8	-	1600
Selenium (mg/kg)	<5.8	-	-	-	<5.7	<5.6	-	-	<5.7	-	-	<5.6	-	-	<5.8	-	-	<5.8	-	390
Silver (mg/kg)	<3.5	-	-	-	<3.4	<3.4	-	-	<3.4	-	-	<3.3	-	-	<3.5	-	-	<3.5	-	390
Zinc (mg/kg)	47.6	-	-	-	45.7	41.0	-	-	40.8	-	-	41.6	-	-	41.0	-	-	45.1	-	23000
% Solids	86.3	84.9	85.9	86.0	85.7	88.1	88.1	85.9	86.6	87.9	87.3	86.5	85.6	87.4	87.0	84.7	87.0	85.5	85.5	-

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

**Table 2A**  
**Location: PCU 297-11B**  
**Lab Summary - Freshwater Pit North Sidewall (SW) Assessment**

Last Update: 10/6/2014

Analytical Parameter  (with units)	FW Pit North SW																Ex. Mtrl	COGCC Table 910-1 Concentration Levels	Maximum based on Background
		North SW Discrete					North SW -3'					North SW -6'		North SW -9'					
	North Sidewall	N-1	N-2	N-3	N-4	N-5	N-1	N-2	N-3	N-4	N-5	N-3	N-4	N-3	N-4	Sidewall Ex. Mtrl			
Accutest Job #	D58907 (6/17/14)	D58908 (6/17/14)					D59892 (7/17/14)					D60268 (7/30/14)		D60875 (8/12/14)		D62474 (9/18/14)	-	-	
Sample Type (Composite/Discrete)	C	D	D	D	D	D	D	D	D	D	D	D	D	D	D	C	-	-	
TPH (GRO) (mg/Kg)	14.6	7.34	12.5	15.0	35.7	15.7	ND	ND	53.6	8.37	ND	ND	24.0	ND	ND	7.46	-	-	
TPH (DRO) (mg/Kg)	5980	3500	8110	10500	5020	7070	19.9	ND	4010	1960	14.3	530	2090	302	148	1540	-	-	
TPH (GRO + DRO) (mg/Kg)	5995	3507	8123	10515	5056	7086	19.9	ND	4064	1968	14.3	530	2114	302	148	1547	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)	0.0685	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-	
Benzo(A)anthracene (mg/Kg)	0.0141	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-	
Benzo(B)fluoranthene (mg/Kg)	0.0104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-	
Benzo(K)fluoranthene (mg/Kg)	0.0044	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2	-	
Benzo(A)Pyrene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022	-	
Chrysene (mg/Kg)	0.0531	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	
Dibenzo(A,H)anthracene (mg/Kg)	0.0032	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022	-	
Fluoranthene (mg/Kg)	0.0587	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-	
Fluorene (mg/Kg)	0.114	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-	
Indeno(1,2,3,C,D)pyrene (mg/Kg)	0.0030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-	
Napthalene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-	
Pyrene (mg/Kg)	0.0357	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-	
Electrical Conductivity (mmhos/cm)	0.625	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	
Sodium Adsorption Ratio (SAR)	13.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	
pH	9.64	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6-9	-	
Arsenic (mg/kg)	5.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.39	7.7	
Barium (mg/kg)	149	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15000	-	
Cadmium (mg/kg)	<1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-	
Chromium (III) (mg/Kg)	43.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120000	-	
Chromium (VI) (mg/Kg)	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-	
Copper (mg/kg)	7.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3100	-	
Lead (inorganic) (mg/kg)	<5.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	400	-	
Mercury (mg/kg)	<0.093	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-	
Nickel (mg/kg)	16.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1600	-	
Selenium (mg/kg)	<5.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390	-	
Silver (mg/kg)	<3.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390	-	
Zinc (mg/kg)	36.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23000	-	
% Solids	87.1	89.1	82.4	82.3	89.0	90.0	87.8	88.6	88.8	86.7	89.5	87.9	87.8	87.8	87.6	89.2	-	-	

## Notes:

- 1) ND = not detectable to the laboratory detection limit.
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- 3) "-" indicates no analysis.
- 4) See Figure(s) for sample locations

**Table 2B**  
**Location: PCU 297-11B**  
**Lab Summary - Freshwater Pit South Sidewall (SW) Assessment**

Last Update: 10/6/2014

Analytical Parameter  (with units)	South Sidewall	FW Pit South SW												Ex. Mtrl  Sidewall Ex. Mtrl	COGCC  Table 910-1 Concentration Levels	Maximum based on Background	
		South SW Discrete					South SW -3'					South SW -6'					
		S-1	S-2	S-3	S-4	S-5	S-1	S-2	S-3	S-4	S-5	S-1	S-4				S-5
Accutest Job #	D58907 (6/17/14)	D58909 (6/17/14)					D59339 (7/1/14)					D59892 (7/17/14)			D62474 (9/18/14)	-	-
Sample Type (Composite/Discrete)	C	D	D	D	D	D	D	D	D	D	D	D	D	D	C	-	-
TPH (GRO) (mg/Kg)	22.1	29.0	26.2	49.4	32.7	17.5	ND	ND	ND	54.5	29.2	ND	ND	8.62	7.46	-	-
TPH (DRO) (mg/Kg)	5030	8270	4930	3940	3540	6300	1510	109	350	6820	1470	39.6	8.52	422	1540	-	-
TPH (GRO + DRO) (mg/Kg)	5052	8299	4956	3989	3573	6318	1510	109	350	6875	1499	39.6	8.52	431	1547	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)	0.0377	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Benzo(A)anthracene (mg/Kg)	0.0130	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Benzo(B)fluoranthene (mg/Kg)	0.0086	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Benzo(K)fluoranthene (mg/Kg)	0.0040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2	-
Benzo(A)Pyrene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022	-
Chrysene (mg/Kg)	0.0611	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-
Dibenzo(A,H)anthracene (mg/Kg)	0.0032	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022	-
Fluoranthene (mg/Kg)	0.0663	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Fluorene (mg/Kg)	0.446	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Indeno(1,2,3,C,D)pyrene (mg/Kg)	0.0030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Napthalene (mg/Kg)	0.192	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Pyrene (mg/Kg)	0.0330	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Electrical Conductivity (mmhos/cm)	0.800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-
Sodium Adsorption Ratio (SAR)	12.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-
pH	9.83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6-9	-
Arsenic (mg/kg)	5.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.39	7.7
Barium (mg/kg)	503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15000	-
Cadmium (mg/kg)	<1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-
Chromium (III) (mg/Kg)	39.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120000	-
Chromium (VI) (mg/Kg)	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Copper (mg/kg)	8.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3100	-
Lead (inorganic) (mg/kg)	<5.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	400	-
Mercury (mg/kg)	<0.095	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Nickel (mg/kg)	14.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1600	-
Selenium (mg/kg)	<5.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390	-
Silver (mg/kg)	<3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390	-
Zinc (mg/kg)	36.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23000	-
% Solids	86.1	87.7	90.8	81.7	83.0	84.6	91.6	92.8	93.0	87.0	92.7	88.8	89.5	91.8	89.2	-	-

## 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

**Table 2C**  
**Location: PCU 297-11B**  
**Lab Summary - Freshwater Pit East Sidewall (SW) Assessment**

Last Update: 10/6/2014

Analytical Parameter  (with units)	FW Pit East SW							Ex. Mtrl  Sidewall Ex. Mtrl	COGCC  Table 910-1 Concentration Levels	Maximum based on Background
	East Sidewall	East SW Discrete		East SW -3'		East SW -6'	East SW -9'			
		E-1	E-2	E-1	E-2	E-2	E-2			
Accutest Job #	D58907 (6/17/14)	D58911 (6/17/14)		D59783 (7/15/14)		D60269 (7/30/14)	D60874 (8/12/14)	D62474 (9/18/14)	-	-
Sample Type (Composite/Discrete)	C	D	D	D	D	D	D	C	-	-
TPH (GRO) (mg/Kg)	13.9	15.5	12.5	ND	ND	9.25	ND	7.46	-	-
TPH (DRO) (mg/Kg)	4760	5150	3890	132	1820	4160	21.3	1540	-	-
TPH (GRO + DRO) (mg/Kg)	4774	5166	3903	132	1820	4169	21.3	1547	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)	0.0128	-	-	-	-	-	-	-	1000	-
Benzo(A)anthracene (mg/Kg)	0.0114	-	-	-	-	-	-	-	0.22	-
Benzo(B)fluoranthene (mg/Kg)	0.0067	-	-	-	-	-	-	-	0.22	-
Benzo(K)fluoranthene (mg/Kg)	0.0059	-	-	-	-	-	-	-	2.2	-
Benzo(A)Pyrene (mg/Kg)	ND	-	-	-	-	-	-	-	0.022	-
Chrysene (mg/Kg)	0.0307	-	-	-	-	-	-	-	22	-
Dibenzo(A,H)anthracene (mg/Kg)	0.0036	-	-	-	-	-	-	-	0.022	-
Fluoranthene (mg/Kg)	0.0404	-	-	-	-	-	-	-	1000	-
Fluorene (mg/Kg)	ND	-	-	-	-	-	-	-	1000	-
Indeno(1,2,3,C,D)pyrene (mg/Kg)	0.0031	-	-	-	-	-	-	-	0.22	-
Napthalene (mg/Kg)	ND	-	-	-	-	-	-	-	23	-
Pyrene (mg/Kg)	0.0338	-	-	-	-	-	-	-	1000	-
Electrical Conductivity (mmhos/cm)	1.41	-	-	-	-	-	-	-	4	-
Sodium Adsorption Ratio (SAR)	17.8	-	-	-	-	-	-	-	12	-
pH	9.39	-	-	-	-	-	-	-	6-9	-
Arsenic (mg/kg)	3.1	-	-	-	-	-	-	-	0.39	7.7
Barium (mg/kg)	158	-	-	-	-	-	-	-	15000	-
Cadmium (mg/kg)	<1.1	-	-	-	-	-	-	-	70	-
Chromium (III) (mg/Kg)	43.1	-	-	-	-	-	-	-	120000	-
Chromium (VI) (mg/Kg)	<1.0	-	-	-	-	-	-	-	23	-
Copper (mg/kg)	9.9	-	-	-	-	-	-	-	3100	-
Lead (inorganic) (mg/kg)	<5.5	-	-	-	-	-	-	-	400	-
Mercury (mg/kg)	<0.095	-	-	-	-	-	-	-	23	-
Nickel (mg/kg)	13.1	-	-	-	-	-	-	-	1600	-
Selenium (mg/kg)	<5.5	-	-	-	-	-	-	-	390	-
Silver (mg/kg)	<3.3	-	-	-	-	-	-	-	390	-
Zinc (mg/kg)	38.5	-	-	-	-	-	-	-	23000	-
% Solids	86.5	85.2	86.3	88.5	88.0	87.9	87.2	89.2	-	-

Notes:

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

**Table 2D**  
**Location: PCU 297-11B**  
**Lab Summary - Freshwater Pit West Sidewall (SW) Assessment**

Last Update: 10/6/2014

Analytical Parameter  (with units)	FW Pit West SW																				Ex. Mtrl	COGCC	Maximum based on Background	
	West Sidewall	West SW Discrete			West SW -3'			West SW -6'			West SW -9'			West SW -12'			West SW -15'			West SW -18'		Table 910-1		
		W-1	W-2	W-3	W-1	W-2	W-3	W-1	W-2	W-3	W-1	W-2	W-3	W-1	W-2	W-3	W-1	W-2	W-3	W-1	W-2	Sidewall Ex. Mtrl		Concentration Levels
Accutest Job #	D58907 (6/17/14)	D58910 (6/17/14)			D59929 (7/22/14)			D60337 (8/1/14)			D60876 (8/12/14)			D61381 (8/22/14)			D61701 (8/29/14)			D61884 (9/4/14)		D62474 (9/18/14)	-	-
Sample Type (Composite/Discrete)	C	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	C	-	-	
TPH (GRO) (mg/Kg)	20.8	9.75	36.4	8.85	157	52.1	16.6	60.3	86.8	152	22.9	148	57.4	118	82.2	27.4	80.7	47.8	ND	ND	ND	7.46	-	-
TPH (DRO) (mg/Kg)	6810	4820	9140	5160	4700	3520	1360	5120	3440	5350	2740	6880	3790	6490	3920	3430	3430	6310	252	13.7	ND	1540	-	-
TPH (GRO + DRO) (mg/Kg)	6831	4830	9176	5169	4857	3572	1377	5180	3527	5502	2763	7028	3847	6608	4002	3457	3511	6358	252	13.7	ND	1547	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)	0.0687	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Benzo(A)anthracene (mg/Kg)	0.0113	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Benzo(B)fluoranthene (mg/Kg)	0.0118	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Benzo(K)fluoranthene (mg/Kg)	0.0049	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2	-
Benzo(A)Pyrene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022	-
Chrysene (mg/Kg)	0.0590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-
Dibenzo(A,H)anthracene (mg/Kg)	0.0045	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022	-
Fluoranthene (mg/Kg)	0.0719	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Fluorene (mg/Kg)	0.388	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Indeno(1,2,3,C,D)pyrene (mg/Kg)	0.0036	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Napthalene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Pyrene (mg/Kg)	0.0518	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Electrical Conductivity (mmhos/cm)	0.960	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-
Sodium Adsorption Ratio (SAR)	19.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-
pH	9.69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6-9	-
Arsenic (mg/kg)	5.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.39	7.7
Barium (mg/kg)	3310	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15000	-
Cadmium (mg/kg)	<1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-
Chromium (III) (mg/Kg)	35.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120000	-
Chromium (VI) (mg/Kg)	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Copper (mg/kg)	11.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3100	-
Lead (inorganic) (mg/kg)	<5.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	400	-
Mercury (mg/kg)	<0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Nickel (mg/kg)	14.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1600	-
Selenium (mg/kg)	<5.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390	-
Silver (mg/kg)	<3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390	-
Zinc (mg/kg)	36.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23000	-
% Solids	82.1	84.2	85.3	82.6	89.2	90.5	89.5	88.2	91.1	86.9	87.7	89.9	90.2	88.2	89.7	87.7	86.7	86.6	86.0	86.3	85.7	89.2	-	-

Notes:

1) ND = not detectable to the laboratory detection limit.

2) Results highlighted in yellow exceed Table 910-1 concentration levels. Results highlighted in Gray exceed Table 910-1, but are below background levels.

3) "-" indicates no analysis.

4) See Figure(s) for sample locations



**Table 3**  
**Location: PCU 297-11B**  
**Lab Summary - Reserve Pit Vertical Assessment**

Last Update: 10/6/2014

Analytical Parameter (with units)	RP Subliner	RP Vertical Assessment																COGCC Table 910-1 Concentration Levels
		RPV-1 (9'-12')	RPV-1 (14'-19')	RPV-2 (4'-9')	RPV-2 (14'-19')	RPV-2 (24'-29')	RPV-2 (31'-34')	RPV-3 (5'-10')	RPV-3 (15'-20')	RPV-3 (20'-25')	RPV-3 (30'-34')	RPV-4 (9'-14')	RPV-4 (14'-19')	RPV-5 (4'-9')	RPV-5 (14'-19')	RPV-6 (9'-14')	RPV-6 (19'-24')	
Accutest Job #	D56577 (4/3/14)	D30160 (12/9/11)	D30161 (12/9/11)	D30162 (12/9/11)	D30164 (12/9/11)	D30165 (12/9/11)	D30163 (12/9/11)	D30323 (12/12/11)								D30364 (12/13/11)		-
Sample type (Composite/Discrete)	C	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	-
TPH (GRO) (mg/Kg)	8.38	ND	ND	ND	ND	54.4	ND	ND	ND	61.0	ND	ND	ND	8.71	ND	ND	ND	-
TPH (DRO) (mg/Kg)	2570	39.9	40.3	17.8	39.6	943	17.2	23.1	37.3	1080	13.8	15.3	ND	159	18.8	270	89.8	-
TPH (GRO + DRO) (mg/Kg)	2578	39.9	40.3	17.8	39.6	997	17.2	23.1	37.3	1141	13.8	15.3	ND	168	18.8	270	89.8	500
Benzene (mg/Kg)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.170
Toluene (mg/Kg)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	85
Ethylbenzene (mg/Kg)	ND	ND	ND	ND	ND	0.0660	ND	ND	ND	0.0507	ND	ND	ND	ND	ND	ND	ND	100
Xylenes (total) (mg/Kg)	ND	ND	ND	ND	ND	0.755	ND	ND	ND	0.238	ND	ND	ND	ND	ND	ND	ND	175
Acenaphthene (mg/Kg)	ND	ND	-	-	-	ND	-	-	-	0.121	-	ND	-	ND	-	ND	-	1000
Anthracene (mg/Kg)	ND	ND	-	-	-	ND	-	-	-	0.0086	-	ND	-	ND	-	ND	-	1000
Benzo(A)anthracene (mg/Kg)	ND	ND	-	-	-	ND	-	-	-	ND	-	ND	-	ND	-	ND	-	0.22
Benzo(B)fluoranthene (mg/Kg)	ND	ND	-	-	-	ND	-	-	-	ND	-	ND	-	ND	-	ND	-	0.22
Benzo(K)fluoranthene (mg/Kg)	ND	ND	-	-	-	ND	-	-	-	ND	-	ND	-	ND	-	ND	-	2.2
Benzo(A)Pyrene (mg/Kg)	ND	ND	-	-	-	ND	-	-	-	ND	-	ND	-	ND	-	ND	-	0.022
Chrysene (mg/Kg)	0.0315	ND	-	-	-	0.0077	-	-	-	0.0120	-	ND	-	ND	-	ND	-	22
Dibenzo(A,H)anthracene (mg/Kg)	ND	ND	-	-	-	ND	-	-	-	ND	-	ND	-	ND	-	ND	-	0.022
Fluoranthene (mg/Kg)	0.0295	ND	-	-	-	0.0037	-	-	-	ND	-	ND	-	ND	-	ND	-	1000
Fluorene (mg/Kg)	ND	0.0046	-	-	-	0.217	-	-	-	0.615	-	ND	-	0.0426	-	0.0540	-	1000
Indeno(1,2,3,C,D)pyrene (mg/Kg)	ND	ND	-	-	-	ND	-	-	-	ND	-	ND	-	ND	-	ND	-	0.22
Naphthalene (mg/Kg)	ND	ND	-	-	-	0.737	-	-	-	0.525	-	ND	-	0.0138	-	ND	-	23
Pyrene (mg/Kg)	0.0206	ND	-	-	-	0.0095	-	-	-	0.0160	-	ND	-	ND	-	ND	-	1000
Electrical Conductivity (mmhos/cm)	1.260	0.814	-	-	-	0.778	-	-	-	0.639	-	0.335	-	1.210	-	1.160	-	4
Sodium Adsorption Ratio (SAR)	14.6	7.21	-	-	-	2.30	-	-	-	2.90	-	4.70	-	11.0	-	4.68	-	12
pH	10.79	9.63	-	-	-	9.41	-	-	-	9.46	-	9.80	-	9.69	-	9.12	-	6-9
Arsenic (mg/kg)	7.5	3.1	-	-	-	4.6	-	-	-	4.8	-	3.1	-	6.6	-	3.4	-	0.39
Barium (mg/kg)	2780	119	-	-	-	168	-	-	-	171	-	127	-	141	-	231	-	15000
Cadmium (mg/kg)	<1.3	<1.2	-	-	-	<1.1	-	-	-	<1.1	-	<1.2	-	<1.2	-	<1.1	-	70
Chromium (III) (mg/Kg)	46.9	41.2	-	-	-	34.8	-	-	-	45.6	-	46.7	-	51.7	-	44.4	-	120000
Chromium (VI) (mg/Kg)	<1.0	<0.46	-	-	-	0.47	-	-	-	<0.46	-	<0.46	-	<0.46	-	<0.46	-	23
Copper (mg/kg)	9.5	10.3	-	-	-	12.0	-	-	-	12.7	-	12.5	-	13.1	-	15.6	-	3100
Lead (inorganic) (mg/kg)	11.7	12.5	-	-	-	15.1	-	-	-	15.0	-	13.6	-	13.0	-	13.7	-	400
Mercury (mg/kg)	<0.10	<0.11	-	-	-	<0.11	-	-	-	<0.12	-	<0.11	-	<0.12	-	<0.12	-	23
Nickel (mg/kg)	19.6	17.6	-	-	-	18.0	-	-	-	17.4	-	18.8	-	21.7	-	20.6	-	1600
Selenium (mg/kg)	<32	<5.9	-	-	-	<5.7	-	-	-	<5.7	-	<5.9	-	<5.9	-	<5.6	-	390
Silver (mg/kg)	<19	<3.5	-	-	-	<3.4	-	-	-	<3.4	-	<3.6	-	<3.5	-	<3.4	-	390
Zinc (mg/kg)	48.0	41.9	-	-	-	43.0	-	-	-	48.1	-	44.3	-	45.6	-	49.2	-	23000
% Solids	78.9	85.5	88.5	85.6	84.8	85.5	85.3	86.3	87.6	85.7	87.2	86.2	88.4	86.5	86.1	85.8	86.5	-

Notes:

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

**Table 3A**  
**Location: PCU 297-11B**  
**Lab Summary - Reserve Pit Lateral Assessment**

Last Update: 10/6/2014

Analytical Parameter (with units)	RP Subliner	Test Pit Samples (RP East Sidewall)					RP Lateral Drill Assessment					COGCC Table 910-1 Concentration Levels
		RP TP-1 (0')	RP TP-1 (-2')	RP-TP-2 (-3')	RP-TP-2 (+4')	RP-TP-2 (-3')	RPL-1 (19'-24')	RPL-1 (29'-34')	RPL-2 (19'-24')	RPL-2 (34'-39')	RPL-2 (44'-49')	
Accutest Job #	D56577 (4/3/14)	D30415 12/13/11			D30573 12/14/11		D30431 12/15/11					-
Sample type (Composite/Discrete)	C	C	C	C	C	D	D	D	D	D	D	-
TPH (GRO) (mg/Kg)	8.38	227	13	ND	ND	172	ND	ND	ND	ND	ND	-
TPH (DRO) (mg/Kg)	2570	5370	244	41.3	75.8	6700	90.9	11.7	ND	15.2	ND	-
TPH (GRO + DRO) (mg/Kg)	2578	5597	257	41.3	75.8	6872	90.9	11.7	ND	15.2	ND	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	0.0212	ND	ND	ND	ND	ND	100
Xylenes (total) (mg/Kg)	ND	-	-	-	ND	0.924	ND	ND	ND	ND	ND	175
Acenaphthene (mg/Kg)	ND	-	-	-	-	-	ND	-	ND	-	-	1000
Anthracene (mg/Kg)	ND	-	-	-	-	-	ND	-	ND	-	-	1000
Benzo(A)anthracene (mg/Kg)	ND	-	-	-	-	-	ND	-	ND	-	-	0.22
Benzo(B)fluoranthene (mg/Kg)	ND	-	-	-	-	-	ND	-	ND	-	-	0.22
Benzo(K)fluoranthene (mg/Kg)	ND	-	-	-	-	-	ND	-	ND	-	-	2.2
Benzo(A)Pyrene (mg/Kg)	ND	-	-	-	-	-	ND	-	ND	-	-	0.022
Chrysene (mg/Kg)	0.0315	-	-	-	-	-	ND	-	ND	-	-	22
Dibenzo(A,H)anthracene (mg/Kg)	ND	-	-	-	-	-	ND	-	ND	-	-	0.022
Fluoranthene (mg/Kg)	0.0295	-	-	-	-	-	ND	-	ND	-	-	1000
Fluorene (mg/Kg)	ND	-	-	-	-	-	0.0258	-	ND	-	-	1000
Indeno(1,2,3,C,D)pyrene (mg/Kg)	ND	-	-	-	-	-	ND	-	ND	-	-	0.22
Naphthalene (mg/Kg)	ND	-	-	-	-	-	ND	-	ND	-	-	23
Pyrene (mg/Kg)	0.0206	-	-	-	-	-	ND	-	ND	-	-	1000
Electrical Conductivity (mmhos/cm)	1.260	-	-	-	-	-	0.414	-	0.215	-	-	4
Sodium Adsorption Ratio (SAR)	14.6	-	-	-	-	-	4.53	-	3.18	-	-	12
pH	10.79	-	-	-	-	-	9.65	-	9.79	-	-	6-9
Arsenic (mg/kg)	7.5	-	-	-	-	-	3.5	-	3.6	-	-	0.39
Barium (mg/kg)	2780	-	-	-	-	-	471	-	140	-	-	15000
Cadmium (mg/kg)	<1.3	-	-	-	-	-	<1.1	-	<1.1	-	-	70
Chromium (III) (mg/Kg)	46.9	-	-	-	-	-	67.3	-	40.3	-	-	120000
Chromium (VI) (mg/Kg)	<1.0	-	-	-	-	-	0.98	-	0.53	-	-	23
Copper (mg/kg)	9.5	-	-	-	-	-	8.6	-	10.0	-	-	3100
Lead (inorganic) (mg/kg)	11.7	-	-	-	-	-	9.8	-	13.1	-	-	400
Mercury (mg/kg)	<0.10	-	-	-	-	-	<0.11	-	<0.11	-	-	23
Nickel (mg/kg)	19.6	-	-	-	-	-	20.2	-	16.1	-	-	1600
Selenium (mg/kg)	<32	-	-	-	-	-	<5.3	-	<5.6	-	-	390
Silver (mg/kg)	<19	-	-	-	-	-	<3.2	-	<3.4	-	-	390
Zinc (mg/kg)	48.0	-	-	-	-	-	30.9	-	39.9	-	-	23000
% Solids	78.9	89.0	84.5	88.0	87.8	87.3	92.0	86.4	86.9	87.0	87.1	-

Notes:

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

**Table 3B**  
**Location: PCU 297-11B**  
**Lab Summary - Reserve Pit Berm/Weir Assessment**

Last Update: 10/6/2014

Analytical Parameter  (with units)	Reserve Pit Berm Sidewalls		RP Berm Post Removal				RP Sub- Berm -3'	COGCC	Maximum based on Background
	RP North Berm	RP South Berm	Sub-Berm	Sub-Berm B-1	Sub-Berm B-2	Sub-Berm B-3	Sub-Berm B-1	Table 910-1 Concentration Levels	
Accutest Job #	D28772 10/19/11	D28771 10/19/11	D58962 (6/17/14)	D58966 (6/17/14)			D60085 (7/23/14)	-	-
Sample Type (Composite/Discrete)	C	C	C	D	D	D	D	-	-
TPH (GRO) (mg/Kg)	208	336	ND	7.00	ND	ND	ND	-	-
TPH (DRO) (mg/Kg)	5950	10300	549	1320	202	332	385	-	-
TPH (GRO + DRO) (mg/Kg)	6158	10636	549	1327	202	332	385	500	-
Benzene (mg/Kg)	ND	ND	-	-	-	-	-	0.170	-
Toluene (mg/Kg)	0.167	ND	-	-	-	-	-	85	-
Ethylbenzene (mg/Kg)	0.298	0.128	-	-	-	-	-	100	-
Xylenes (total) (mg/Kg)	9.920	3.080	-	-	-	-	-	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)	ND	ND	-	-	-	-	-	22	-
Dibenzo(A,H)anthracene (mg/Kg)	ND	ND	-	-	-	-	-	0.022	-
Fluoranthene (mg/Kg)	ND	ND	-	-	-	-	-	1000	-
Fluorene (mg/Kg)	1.16	2.26	-	-	-	-	-	1000	-
Indeno(1,2,3,C,D)pyrene (mg/Kg)	ND	ND	-	-	-	-	-	0.22	-
Napthalene (mg/Kg)	1.82	1.53	-	-	-	-	-	23	-
Pyrene (mg/Kg)	ND	ND	-	-	-	-	-	1000	-
Electrical Conductivity (mmhos/cm)	0.789	2.220	-	-	-	-	-	4	-
Sodium Adsorption Ratio (SAR)	6.84	25.0	-	-	-	-	-	12	-
pH	9.57	10.11	-	-	-	-	-	6-9	-
Arsenic (mg/kg)	6.2	5.2	-	-	-	-	-	0.39	7.7
Barium (mg/kg)	195	982	-	-	-	-	-	15000	-
Cadmium (mg/kg)	<1.1	<1.1	-	-	-	-	-	70	-
Chromium (III) (mg/Kg)	42.5	41.1	-	-	-	-	-	120000	-
Chromium (VI) (mg/Kg)	<0.46	<0.46	-	-	-	-	-	23	-
Copper (mg/kg)	8.3	8.3	-	-	-	-	-	3100	-
Lead (inorganic) (mg/kg)	11.8	10.7	-	-	-	-	-	400	-
Mercury (mg/kg)	<0.11	<.12	-	-	-	-	-	23	-
Nickel (mg/kg)	17.0	16.7	-	-	-	-	-	1600	-
Selenium (mg/kg)	<5.6	<5.6	-	-	-	-	-	390	-
Silver (mg/kg)	<3.4	<3.3	-	-	-	-	-	390	-
Zinc (mg/kg)	40.7	36.7	-	-	-	-	-	23000	-
% Solids	86.2	86.4	90.1	90.4	89.0	89.0	89.1		

## Notes:

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

**Table 3C**  
**Location: PCU 297-11B**  
**Lab Summary - Reserve Pit Subliner Assessment**

Last Update: 10/6/2014

Analytical Parameter  (with units)	RP Subliner	RP Subliner Discrete Samples						Post 2' Excavation			Post 4' Ex.		Post 7' Ex.	Ex. Material	COGCC	Maximum based on Background
		RP #1	RP #2	RP #3	RP #4	RP #5	RP #6	RP #1 (-2')	RP #2 (-2')	RP #6 (-2')	RP #1 (-4')	RP #2 (-4')	RP #2 (-7')	Subliner Ex. Mtrl	Table 910-1 Concentration Levels	
Accutest Job #	D56577 (4/3/14)	D56747 (4/3/14)						D57112 (4/22/14)			D57372 (5/2/14)		D58106 (5/22/14)	D58458 (6/4/14)	-	-
Sample type (Composite/Discrete)	C	D	D	D	D	D	D	D	D	D	D	D	D	C	-	-
TPH (GRO) (mg/Kg)	8.38	ND	22.7	ND	ND	ND	ND	15.8	ND	ND	ND	31.0	ND	21.0	-	-
TPH (DRO) (mg/Kg)	2570	597	1580	444	25.5	262	1330	1590	587	38.2	17.5	1150	45.1	2110	-	-
TPH (GRO + DRO) (mg/Kg)	2578	597	1603	444	25.5	262	1330	1606	587	38.2	17.5	1181	45.1	2131	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(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)	0.0315	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-
Dibenzo(A,H)anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022	-
Fluoranthene (mg/Kg)	0.0295	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Fluorene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Indeno(1,2,3,C,D)pyrene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Naphthalene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Pyrene (mg/Kg)	0.0206	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Electrical Conductivity (mmhos/cm)	1.260	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-
Sodium Adsorption Ratio (SAR)	14.6	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-
pH	10.79	-	-	-	-	-	-	-	-	-	-	-	-	-	6-9	-
Arsenic (mg/kg)	7.5	-	-	-	-	-	-	-	-	-	-	-	-	-	0.39	7.7
Barium (mg/kg)	2780	-	-	-	-	-	-	-	-	-	-	-	-	-	15000	-
Cadmium (mg/kg)	<1.3	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-
Chromium (III) (mg/Kg)	46.9	-	-	-	-	-	-	-	-	-	-	-	-	-	120000	-
Chromium (VI) (mg/Kg)	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Copper (mg/kg)	9.5	-	-	-	-	-	-	-	-	-	-	-	-	-	3100	-
Lead (inorganic) (mg/kg)	11.7	-	-	-	-	-	-	-	-	-	-	-	-	-	400	-
Mercury (mg/kg)	<0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Nickel (mg/kg)	19.6	-	-	-	-	-	-	-	-	-	-	-	-	-	1600	-
Selenium (mg/kg)	<32	-	-	-	-	-	-	-	-	-	-	-	-	-	390	-
Silver (mg/kg)	<19	-	-	-	-	-	-	-	-	-	-	-	-	-	390	-
Zinc (mg/kg)	48.0	-	-	-	-	-	-	-	-	-	-	-	-	-	23000	-
% Solids	78.9	80.9	80.9	79.5	81.2	79.7	71.0	87.3	88.4	87.9	83.9	84.2	85.3	83.5	-	-

Notes:

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

**Table 3D**  
**Location: PCU 297-11B**  
**Lab Summary - Reserve Pit Subliner Excavated Material Mix/Blend (MB) Summary**

Last Update: 10/6/2014

Analytical Parameter	RP Subliner Excavated Material MB																							COGCC			
(with units)	RP Subliner	Subliner Ex. Mtrl	MB Day 1	MB Day 2	MB Day 3	MB Day 4	MB Day 5	MB Day 6	MB Day 7	MB Day 8	MB Day 9	MB Day 10	MB Day 11	MB Day 12	MB Day 12 Remix	MB Day 13	MB Day 13 Remix	MB Day 14	MB Day 15	MB Day 15 Remix	MB Day 16	MB Day 16 Remix	MB Day 17	MB Day 18	Day 18 Remix	MB Day 19	Table 910-1 Concentration Levels
Accutest Job #	D56577 (4/3/14)	D58458 (6/4/14)	D59158 (6/25/14)	D59211 (6/26/14)	D59254 (6/27/14)	D59292 (6/30/14)	D59340 (7/1/14)	D59388 (7/2/14)	D59439 (7/3/14)	D59440 (7/3/14)	D59487 (7/7/14)	D59541 (7/8/14)	D59609 (7/9/14)	D59674 (7/10/14)	D59928 (7/18/14)	D59700 (7/11/14)	D59844 (7/16/14)	D59735 (7/14/14)	D59928 (7/18/14)	D60267 (7/30/14)	D59957 (7/21/14)	D60267 (7/30/14)	D60000 (7/22/13)	D60083 (7/23/14)	D60336 (8/1/14)	D60133 (7/24/14)	-
Sample type (Composite/Discrete)	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)	8.38	21.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.90	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
TPH (DRO) (mg/Kg)	2570	2110	108	266	195	201	218	184	244	375	248	317	241	595	168	928	300	408	609	121	574	145	469	503	199	406	-
TPH (GRO + DRO) (mg/Kg)	2578	2131	108	266	195	201	218	184	244	375	248	317	241	604	168	928	300	408	609	121	574	145	469	503	199	406	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(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)	0.0315	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22
Dibenzo(A,H)anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022
Fluoranthene (mg/Kg)	0.0295	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000
Fluorene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000
Indeno(1,2,3,C,D)pyrene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22
Naphthalene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23
Pyrene (mg/Kg)	0.0206	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000
Electrical Conductivity (mmhos/cm)	1.260	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Sodium Adsorption Ratio (SAR)	14.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
pH	10.79	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6-9
Arsenic (mg/kg)	7.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.39
Barium (mg/kg)	2780	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15000
Cadmium (mg/kg)	<1.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70
Chromium (III) (mg/Kg)	46.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120000
Chromium (VI) (mg/Kg)	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23
Copper (mg/kg)	9.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3100
Lead (inorganic) (mg/kg)	11.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	400
Mercury (mg/kg)	<0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23
Nickel (mg/kg)	19.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1600
Selenium (mg/kg)	<32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390
Silver (mg/kg)	<19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390
Zinc (mg/kg)	48.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23000
% Solids	78.9	83.5	93.5	87.7	87.0	87.4	87.4	89.0	86.9	86.7	80.4	87.2	80.5	87.9	87.4	85.2	86.0	87.3	86.7	87.9	88.1	86.7	88.0	89.4	87.6	88.1	-

Notes:

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

**Table 3E**  
**Location: PCU 297-11B**  
**Lab Summary - Reserve Pit North Sidewall (SW) Assessment**

Last Update: 10/6/2014

Analytical Parameter  (with units)	RP North SW										Ex. Mtrl  Sidewall Ex. Mtrl	COGCC	Maximum based on Background
	North Sidewall	North SW Discrete					North SW -3'		North SW -6'			Table 910-1 Concentration Levels	
		N-1	N-2	N-3	N-4	N-5	N-2	N-5	N-2	N-5			
Accutest Job #	D58961 (6/17/14)	D58970 (6/17/14)					D60084 (7/23/14)		D60646 (8/6/14)		D62474 (9/18/14)	-	-
Sample type (Composite/Discrete)	C	D	D	D	D	D	D	D	D	D	C	-	-
TPH (GRO) (mg/Kg)	12.5	ND	56.1	ND	ND	13.4	136	20.1	8.69	ND	9.82	-	-
TPH (DRO) (mg/Kg)	981	203	1950	134	394	1160	6220	2490	322	359	1140	-	-
TPH (GRO + DRO) (mg/Kg)	994	203	2006	134	394	1173	6356	2510	331	359	1150	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(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)	0.0134	-	-	-	-	-	-	-	-	-	-	22	-
Dibenzo(A,H)anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	0.022	-
Fluoranthene (mg/Kg)	0.0205	-	-	-	-	-	-	-	-	-	-	1000	-
Fluorene (mg/Kg)	0.359	-	-	-	-	-	-	-	-	-	-	1000	-
Indeno(1,2,3,C,D)pyrene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	0.22	-
Naphthalene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	23	-
Pyrene (mg/Kg)	0.0136	-	-	-	-	-	-	-	-	-	-	1000	-
Electrical Conductivity (mmhos/cm)	1.350	-	-	-	-	-	-	-	-	-	-	4	-
Sodium Adsorption Ratio (SAR)	12.6	-	-	-	-	-	-	-	-	-	-	12	-
pH	9.65	-	-	-	-	-	-	-	-	-	-	6-9	-
Arsenic (mg/kg)	8.2	-	-	-	-	-	-	-	-	-	-	0.39	7.7
Barium (mg/kg)	186	-	-	-	-	-	-	-	-	-	-	15000	-
Cadmium (mg/kg)	<1.1	-	-	-	-	-	-	-	-	-	-	70	-
Chromium (III) (mg/Kg)	55.5	-	-	-	-	-	-	-	-	-	-	120000	-
Chromium (VI) (mg/Kg)	<1.0	-	-	-	-	-	-	-	-	-	-	23	-
Copper (mg/kg)	9.7	-	-	-	-	-	-	-	-	-	-	3100	-
Lead (inorganic) (mg/kg)	<5.4	-	-	-	-	-	-	-	-	-	-	400	-
Mercury (mg/kg)	<0.093	-	-	-	-	-	-	-	-	-	-	23	-
Nickel (mg/kg)	21.7	-	-	-	-	-	-	-	-	-	-	1600	-
Selenium (mg/kg)	<5.4	-	-	-	-	-	-	-	-	-	-	390	-
Silver (mg/kg)	<3.3	-	-	-	-	-	-	-	-	-	-	390	-
Zinc (mg/kg)	47.2	-	-	-	-	-	-	-	-	-	-	23000	-
% Solids	88.5	89.1	90.0	87.8	88.7	87.8	88.0	88.1	88.8	87.1	88.1	-	-

Notes:

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

**Table 3F**  
**Location: PCU 297-11B**  
**Lab Summary - Reserve Pit South Sidewall (SW) Assessment**

Last Update: 10/6/2014

Analytical Parameter (with units)	RP South SW										Ex. Mtrl Sidewall Ex. Mtrl	COGCC Table 910-1 Concentration Levels	Maximum based on Background
	South Sidewall	South SW Discrete					South -3'	South -6'	South -9'	South -12'			
		S-1	S-2	S-3	S-4	S-5	S-5	S-5	S-5	S-5			
Accutest Job #	D58961 (6/17/14)	D58967 (6/17/14)					D60134 (7/24/14)	D60820 (8/11/14)	D61278 (8/20/14)	D61595 (8/27/14)	D62474 (9/18/14)	-	-
Sample type (Composite/Discrete)	C	D	D	D	D	D	D	D	D	D	C	-	-
TPH (GRO) (mg/Kg)	13.6	ND	ND	ND	ND	58.6	85.1	15.1	ND	ND	9.82	-	-
TPH (DRO) (mg/Kg)	1040	ND	6.59	19.4	106	6070	2270	909	7800	ND	1140	-	-
TPH (GRO + DRO) (mg/Kg)	1054	ND	6.59	19.4	106	6129	2355	924	7800	ND	1150	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(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)	0.0093	-	-	-	-	-	-	-	-	-	-	22	-
Dibenzo(A,H)anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	0.022	-
Fluoranthene (mg/Kg)	0.0135	-	-	-	-	-	-	-	-	-	-	1000	-
Fluorene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	1000	-
Indeno(1,2,3,C,D)pyrene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	0.22	-
Naphthalene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	23	-
Pyrene (mg/Kg)	0.0095	-	-	-	-	-	-	-	-	-	-	1000	-
Electrical Conductivity (mmhos/cm)	0.271	-	-	-	-	-	-	-	-	-	-	4	-
Sodium Adsorption Ratio (SAR)	5.94	-	-	-	-	-	-	-	-	-	-	12	-
pH	9.08	-	-	-	-	-	-	-	-	-	-	6-9	-
Arsenic (mg/kg)	6.1	-	-	-	-	-	-	-	-	-	-	0.39	7.7
Barium (mg/kg)	280	-	-	-	-	-	-	-	-	-	-	15000	-
Cadmium (mg/kg)	<1.1	-	-	-	-	-	-	-	-	-	-	70	-
Chromium (III) (mg/Kg)	43.9	-	-	-	-	-	-	-	-	-	-	120000	-
Chromium (VI) (mg/Kg)	<1.0	-	-	-	-	-	-	-	-	-	-	23	-
Copper (mg/kg)	8.1	-	-	-	-	-	-	-	-	-	-	3100	-
Lead (inorganic) (mg/kg)	<5.5	-	-	-	-	-	-	-	-	-	-	400	-
Mercury (mg/kg)	<0.092	-	-	-	-	-	-	-	-	-	-	23	-
Nickel (mg/kg)	20.5	-	-	-	-	-	-	-	-	-	-	1600	-
Selenium (mg/kg)	<5.5	-	-	-	-	-	-	-	-	-	-	390	-
Silver (mg/kg)	<3.3	-	-	-	-	-	-	-	-	-	-	390	-
Zinc (mg/kg)	47.6	-	-	-	-	-	-	-	-	-	-	23000	-
% Solids	86.3	86.3	86.1	84.8	87.6	85.7	89.2	87.7	87.3	88.2	88.1	-	-

## Notes:

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

**Table 3G**  
**Location: PCU 297-11B**  
**Lab Summary - Reserve Pit East Sidewall (SW) Assessment**

Last Update: 10/6/2014

Analytical Parameter  (with units)	RP East SW													Ex. Mtrl	COGCC	Maximum based on Background
	East Sidewall	East SW Discrete					East SW -3'				East SW -6'				Table 910-1 Concentration Levels	
		E-1	E-2	E-3	E-4	E-5	E-1	E-3	E-4	E-5	E-1	E-4	E-5	Sidewall Ex. Mtrl		
Accutest Job #	D58961 (6/17/14)	D58969 (6/17/14)					D60087 (7/23/14)				D60647 (8/6/14)			D62474 (9/18/14)	-	-
Sample type (Composite/Discrete)	C	D	D	D	D	D	D	D	D	D	D	D	D	C	-	-
TPH (GRO) (mg/Kg)	18.9	25.2	ND	ND	23.7	71.0	11.3	ND	ND	11.9	ND	ND	ND	9.82	-	-
TPH (DRO) (mg/Kg)	3000	2100	254	730	2370	3680	1600	104	722	3840	23.0	324	ND	1140	-	-
TPH (GRO + DRO) (mg/Kg)	3019	2125	254	730	2394	3751	1611	104	722	3852	23.0	324	ND	1150	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(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)	0.0229	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-
Dibenzo(A,H)anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022	-
Fluoranthene (mg/Kg)	0.0424	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Fluorene (mg/Kg)	0.789	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Indeno(1,2,3,C,D)pyrene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Naphthalene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Pyrene (mg/Kg)	0.0229	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Electrical Conductivity (mmhos/cm)	1.460	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-
Sodium Adsorption Ratio (SAR)	11.4	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-
pH	9.84	-	-	-	-	-	-	-	-	-	-	-	-	-	6-9	-
Arsenic (mg/kg)	7.3	-	-	-	-	-	-	-	-	-	-	-	-	-	0.39	7.7
Barium (mg/kg)	195	-	-	-	-	-	-	-	-	-	-	-	-	-	15000	-
Cadmium (mg/kg)	<1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-
Chromium (III) (mg/Kg)	47.2	-	-	-	-	-	-	-	-	-	-	-	-	-	120000	-
Chromium (VI) (mg/Kg)	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Copper (mg/kg)	11.0	-	-	-	-	-	-	-	-	-	-	-	-	-	3100	-
Lead (inorganic) (mg/kg)	6.1	-	-	-	-	-	-	-	-	-	-	-	-	-	400	-
Mercury (mg/kg)	<0.098	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Nickel (mg/kg)	19.9	-	-	-	-	-	-	-	-	-	-	-	-	-	1600	-
Selenium (mg/kg)	<5.6	-	-	-	-	-	-	-	-	-	-	-	-	-	390	-
Silver (mg/kg)	<3.4	-	-	-	-	-	-	-	-	-	-	-	-	-	390	-
Zinc (mg/kg)	46.8	-	-	-	-	-	-	-	-	-	-	-	-	-	23000	-
% Solids	85.3	86.6	86.9	86.3	86.6	80.8	86.0	96.6	97.2	97.5	86.0	85.9	88.9	88.1	-	-

Notes:

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



**Table 3H**  
**Location: PCU 297-11B**  
**Lab Summary - Reserve Pit West Sidewall Assessment**

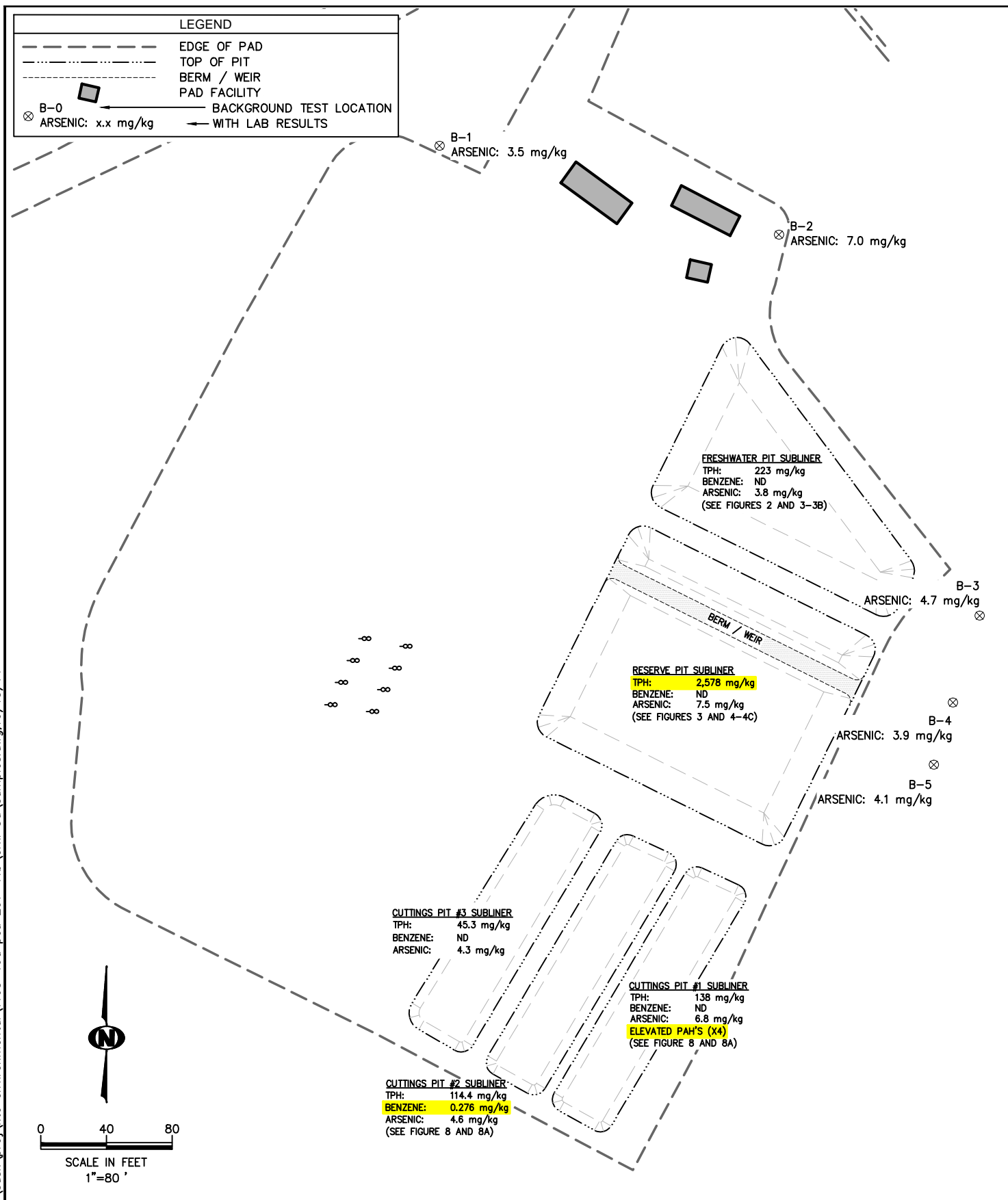
Last Update: 10/6/2014

Analytical Parameter  (with units)	RP West Sidewall Assessment																				Ex. Mtrl  Sidewall Ex. Mtrl	COGCC	Maximum based on Background	
	West Sidewall	West SW Discrete					West SW -3'					West SW -6'				West SW -9'				West -12'		West -15'		Table 910-1 Concentration Levels
		W-1	W-2	W-3	W-4	W-5	W-1	W-2	W-3	W-4	W-5	W-1	W-2	W-3	W-5	W-1	W-2	W-3	W-5	W-2		W-2		
Accutest Job #	D58961 (6/17/14)	D58968 (6/17/14)					D60135 (7/24/14)					D60819 (8/11/14)				D61277 (8/20/14)				D61596 (8/27/14)	D61820 (9/3/14)	D62474 (9/18/14)	-	-
Sample type (Composite/Discrete)	C	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	C	-	-
TPH (GRO) (mg/Kg)	13.6	10.1	13.5	11.1	11.5	45.8	231	165	85.3	ND	109	22.8	181	95.9	142	ND	88.9	ND	101	47.0	ND	9.82	-	-
TPH (DRO) (mg/Kg)	4220	2120	5400	4000	3020	5030	6230	5170	3950	270	3370	2640	8210	5340	5340	ND	3150	10.9	10.1	1350	ND	1140	-	-
TPH (GRO + DRO) (mg/Kg)	4234	2130	5414	4011	3032	5076	6461	5335	4035	270	3479	2663	8391	5436	5482	ND	3239	10.9	111	1397	ND	1150	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(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)	0.0358	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-
Dibenzo(A,H)anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022	-
Fluoranthene (mg/Kg)	0.0625	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Fluorene (mg/Kg)	0.369	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Indeno(1,2,3,C,D)pyrene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Naphthalene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Pyrene (mg/Kg)	0.0360	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Electrical Conductivity (mmhos/cm)	0.509	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-
Sodium Adsorption Ratio (SAR)	10.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-
pH	9.85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6-9	-
Arsenic (mg/kg)	7.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.39	7.7
Barium (mg/kg)	1350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15000	-
Cadmium (mg/kg)	<1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-
Chromium (III) (mg/Kg)	50.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120000	-
Chromium (VI) (mg/Kg)	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Copper (mg/kg)	8.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3100	-
Lead (inorganic) (mg/kg)	<5.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	400	-
Mercury (mg/kg)	<0.094	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Nickel (mg/kg)	19.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1600	-
Selenium (mg/kg)	<5.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390	-
Silver (mg/kg)	<3.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390	-
Zinc (mg/kg)	45.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23000	-
% Solids	86.8	87.5	84.8	85.3	88.1	87.8	88.2	86.9	88.4	88.7	87.9	93.0	87.7	89.9	88.5	88.0	88.7	88.7	89.2	86.0	88.5	88.1	-	-

## Notes:

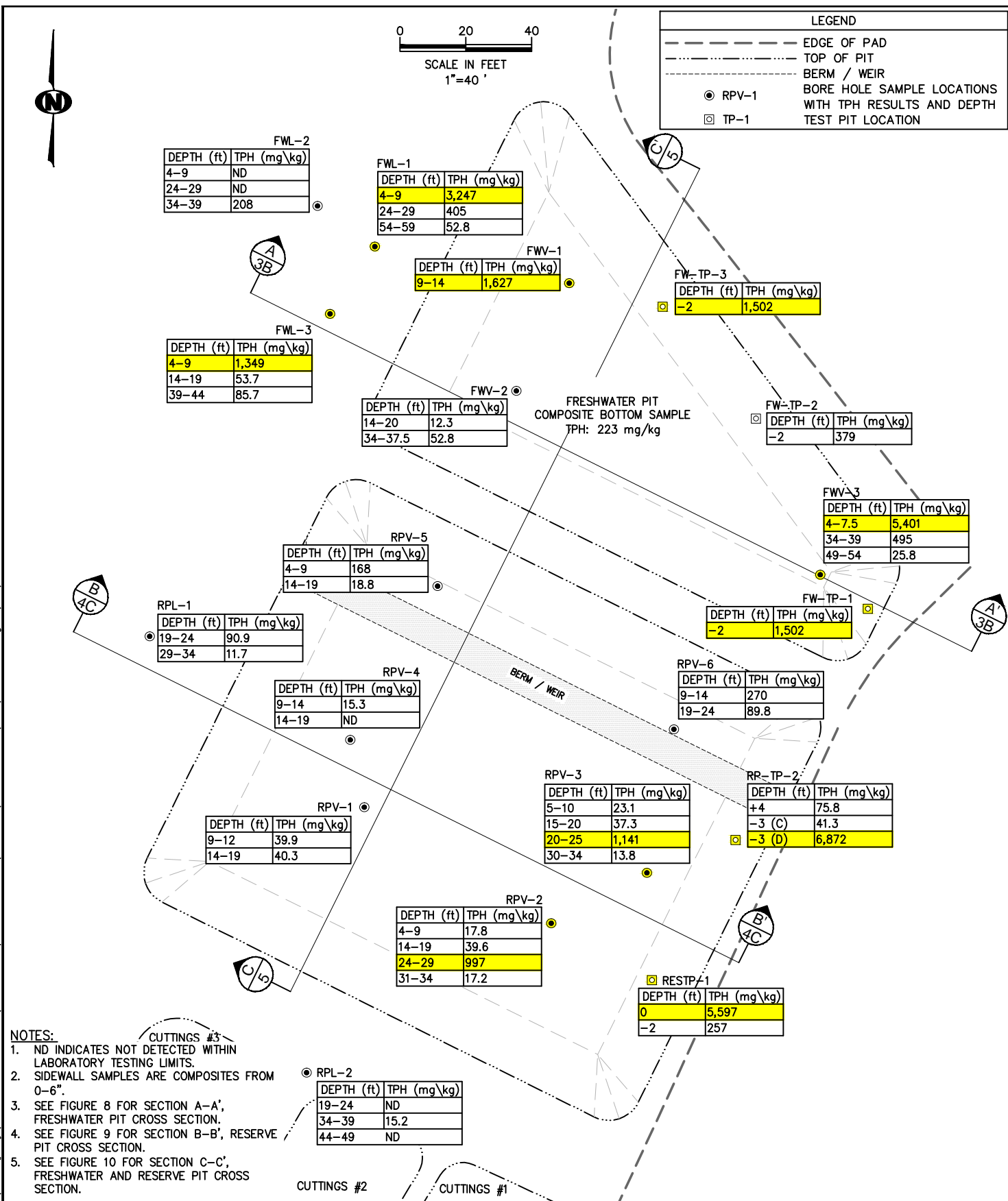
- 1) ND = not detectible to the laboratory detection limit.
- 2) Results highlighted in yellow exceed Table 910-1 concentration levels. Results highlighted in Gray exceed Table 910-1, but are below background levels.
- 3) "-" indicates no analysis.
- 4) See Figure(s) for sample locations.

\\hyper-v03\kwd-co\sdk\proj\cto environmental\1105-19a pcu 297-11b\civil 3d\samples.dwg,10/13/14



DESIGNED: DK	CHECKED: JH	FIGURE 1	DATE	REVISIONS	KRW CONSULTING, INC. 8000 W. 14TH AVENUE, SUITE 200 LAKEWOOD, COLORADO (303) 239-9011	FIGURE 1 PICEANCE CREEK PCU 297-11B OVERVIEW OF PAD WITH COMPOSITE LAB RESULTS PREPARED FOR XTO ENERGY
DATE: 10/6/14	DRAWN: DC					
FILE NAME: samples						
PROJECT NO. 1105-19A						
SHEET NO. 1 of 12						
SCALE: 1" = 80'						

\\hyper-v03\lkwd-co\sdk\proj\cto environmental\1105-19a pcu 297-11b\civil 3d\assessment\samples tab.dwg,10/13/14



DESIGNED: DK	CHECKED: JH	FIGURE 2	DATE	REVISIONS	KRW CONSULTING, INC. 8000 W. 14TH AVENUE, SUITE 200 LAKEWOOD, COLORADO (303) 239-9011	FIGURE 2 PICEANCE CREEK PCU 297-11B SIDEWALL AND SUBLINER DRILL ASSESSMENT PREPARED FOR XTO ENERGY
DATE: 10/13/14	DRAWN: DC	SHEET NO. 2 of 12				
FILE NAME: samples tab		SCALE: 1" = 40'				
PROJECT NO. 1105-19A						

\\hyper-v03\lkw-d-co\sdk\proj\cto environmental\1105-19a pcu 297-11b\civil 3d\samples tab.dwg,10/13/14



0 20 40  
SCALE IN FEET  
1"=40'

LEGEND

--- EDGE OF PAD  
- - - - - TOP OF PIT  
- - - - - BERM / WEIR



NOTES:

1. ND INDICATES NOT DETECTED WITHIN LABORATORY TESTING LIMITS.
2. SIDEWALL SAMPLES ARE COMPOSITES FROM 0-6".

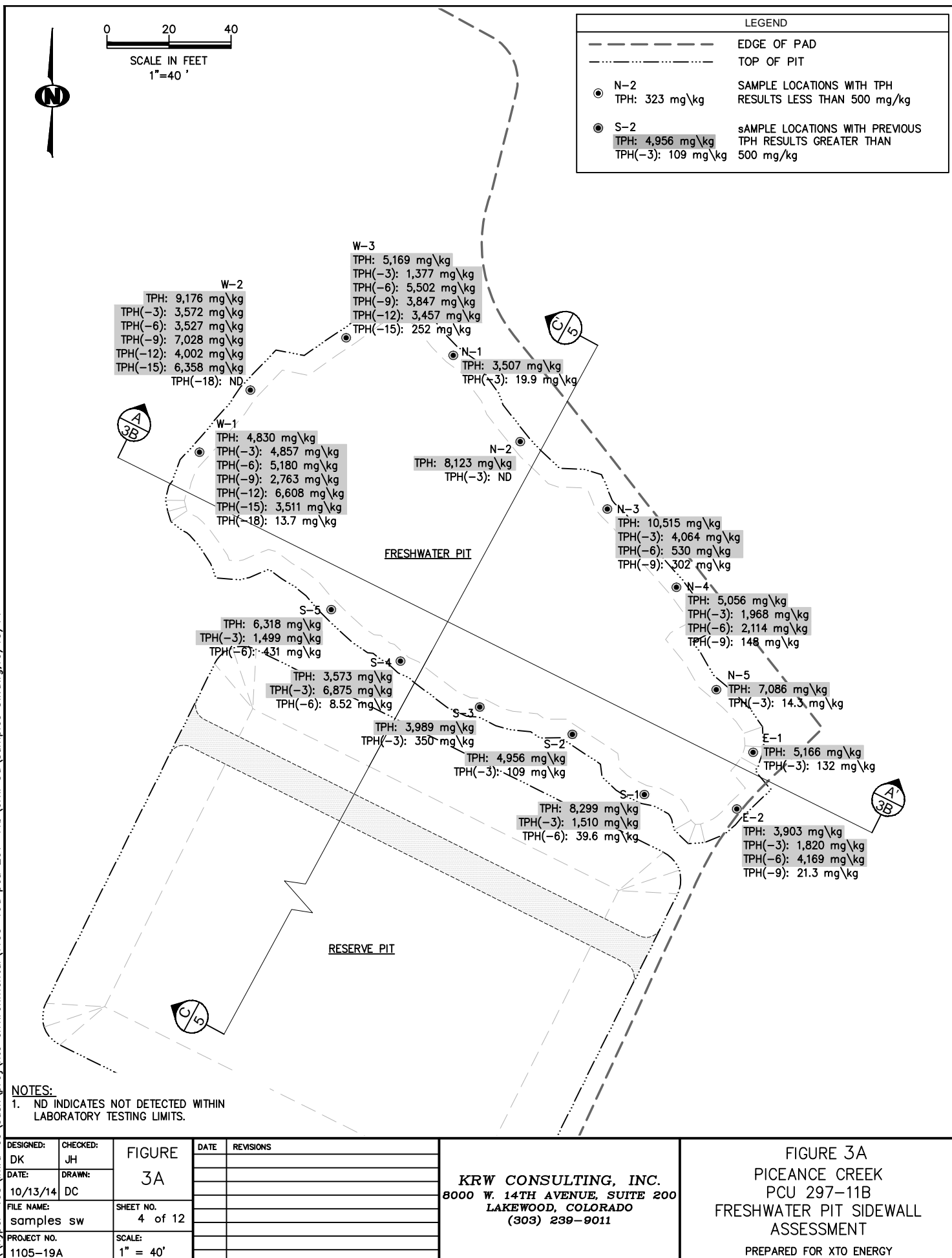
DESIGNED:	CHECKED:	FIGURE	DATE	REVISIONS
DK	JH			
DATE:	DRAWN:	3		
10/13/14	DC			
FILE NAME:	SHEET NO.	3 of 12		
samples tab				
PROJECT NO.	SCALE:	1" = 40'		
1105-19A				

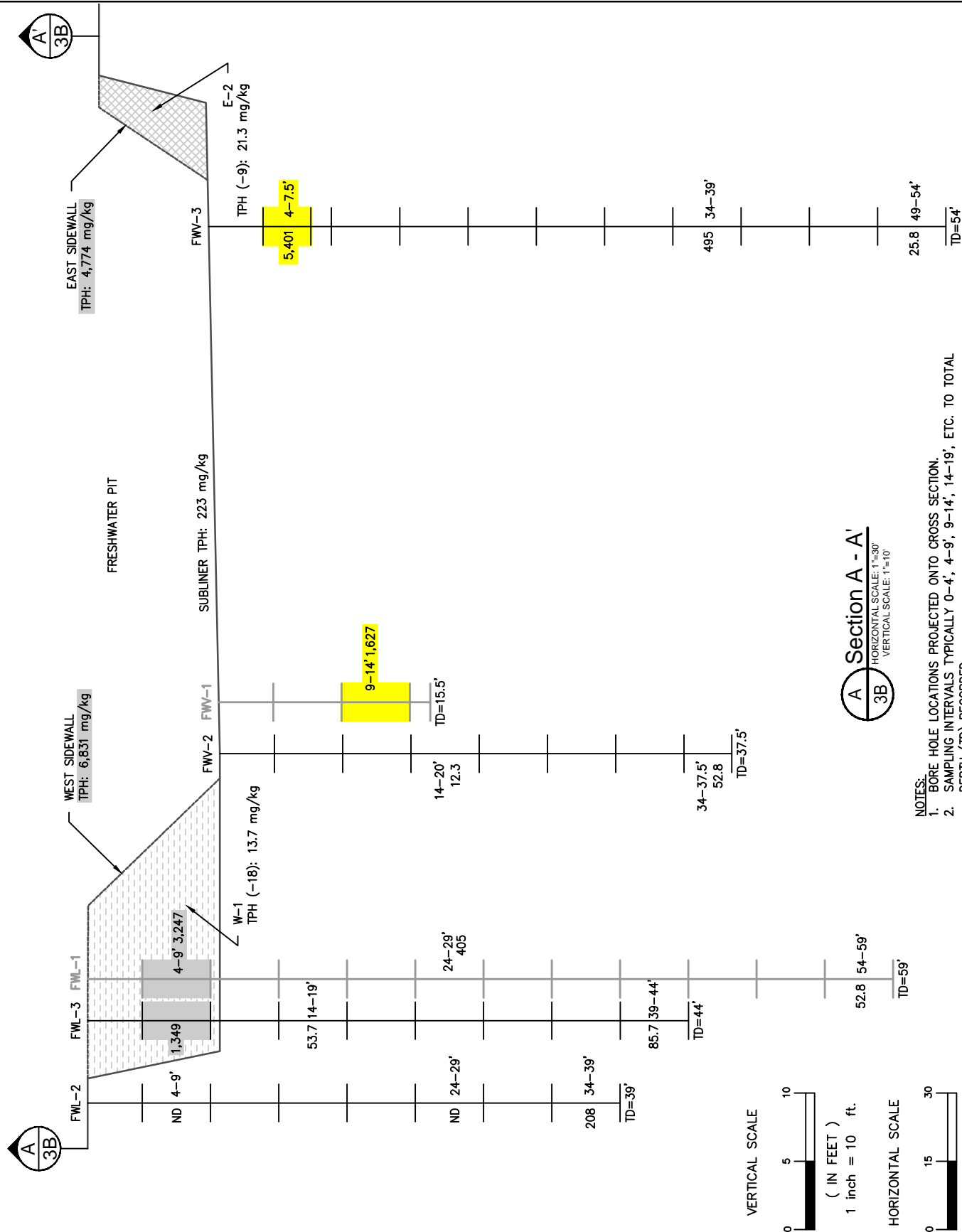
**KRW CONSULTING, INC.**  
8000 W. 14TH AVENUE, SUITE 200  
LAKEWOOD, COLORADO  
(303) 239-9011

**FIGURE 3**  
**PICEANCE CREEK**  
**PCU 297-11B**  
**SIDEWALL ASSESSMENT**

PREPARED FOR XTO ENERGY

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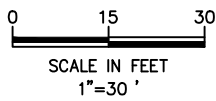
**Section A - A'**  
HORIZONTAL SCALE: 1"=30'  
VERTICAL SCALE: 1"=10'

- NOTES:
1. BORE HOLE LOCATIONS PROJECTED ONTO CROSS SECTION.
  2. SAMPLING INTERVALS TYPICALLY 0'-4', 4'-9', 9'-14', 14'-19', ETC. TO TOTAL DEPTH (TD) RECORDED.
  3. TPH RESULTS (mg/kg) FROM SELECT INTERVALS.
  4. ND INDICATES NOT DETECTED WITHIN LABORATORY DETECTION LIMITS.

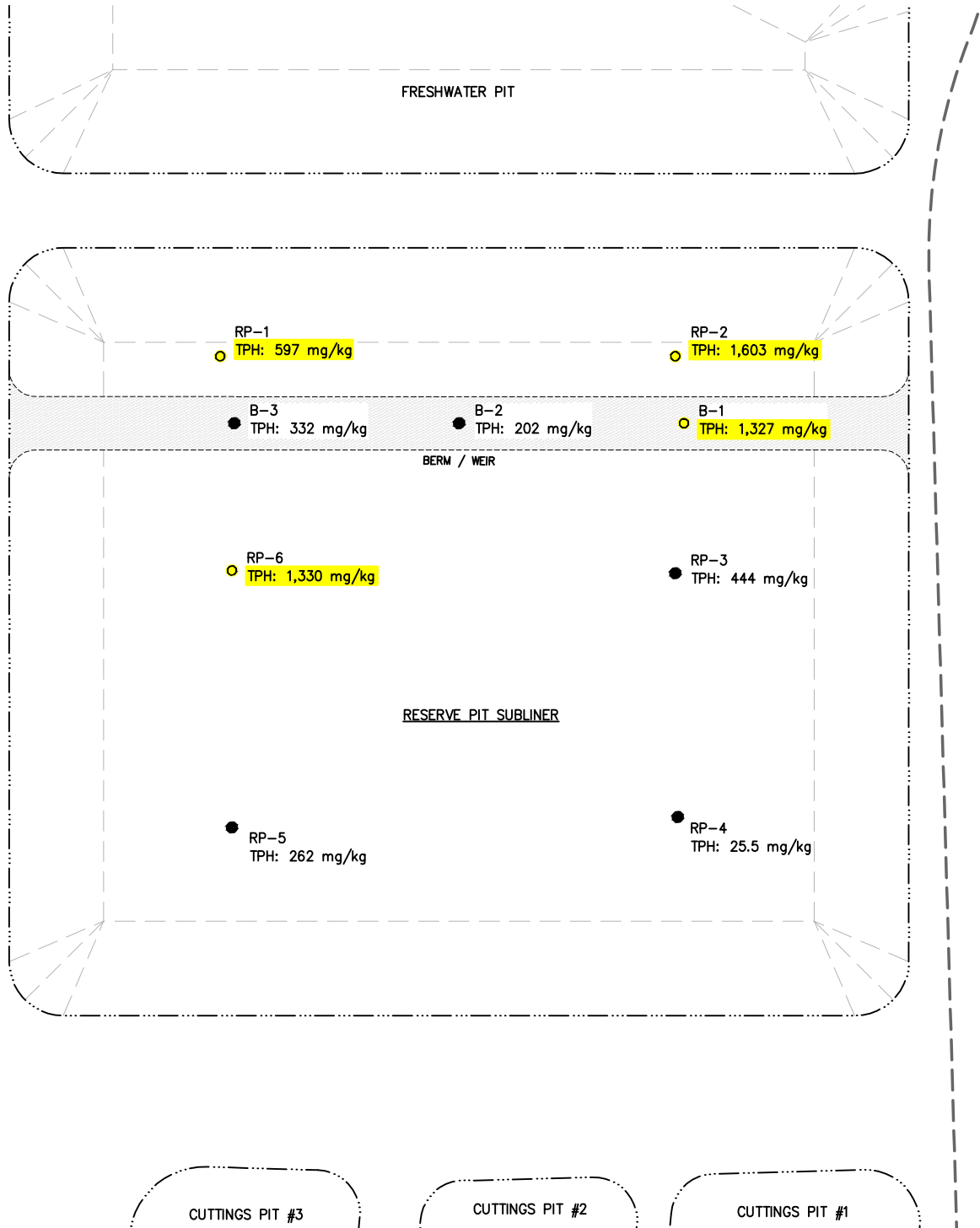
DESIGNED: DK	CHECKED: JH	FIGURE 3B	DATE	REVISIONS
DATE: 10/13/14	DRAWN: DC			
FILE NAME: samples tab				
PROJECT NO. 1105-19A				
		SHEET NO. 8 of 12		
		SCALE: 1" = 30'		

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LAKEWOOD, COLORADO  
(303) 239-9011

**FIGURE 3B**  
PICEANCE CREEK  
PCU 297-11B  
SECTION A-A'  
FRESHWATER PIT  
PREPARED FOR XTO ENERGY



LEGEND	
	EDGE OF PAD
	TOP OF PIT
	BERM / WEIR
	PAD FACILITY
	RP-0 TPH: < 500 mg/kg
	RP-0 TPH: ≥ 500 mg/kg
	DISCRETE SAMPLE LOCATION WITH TPH LAB RESULTS LESS THAN OR EQUAL TO 500 mg/kg
	DISCRETE SAMPLE LOCATION WITH TPH LAB RESULTS GREATER THAN 500 mg/kg

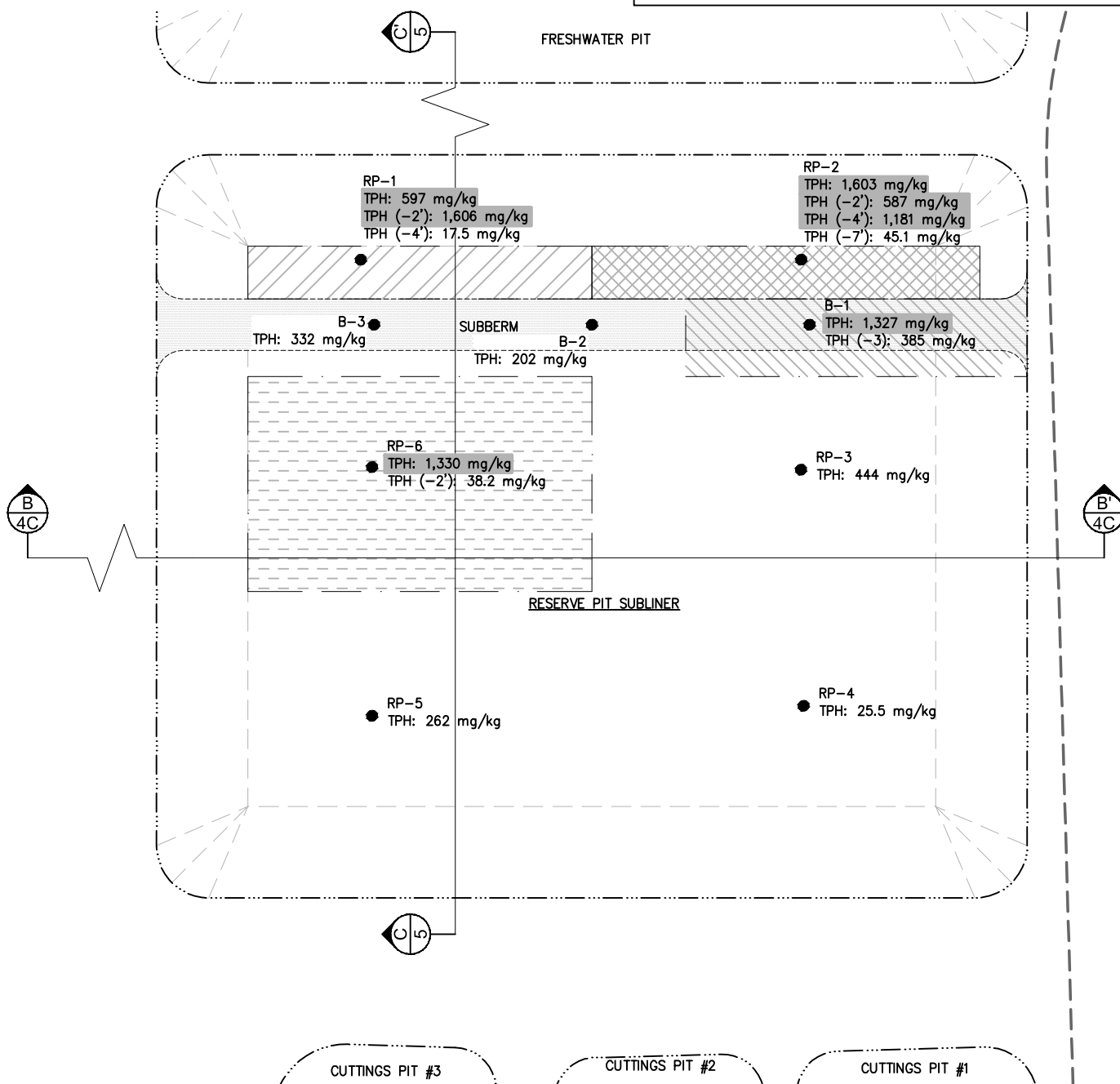


DESIGNED: DK	CHECKED: JH	FIGURE 4	DATE	REVISIONS	<b>KRW CONSULTING, INC.</b> 8000 W. 14TH AVENUE, SUITE 200 LAKEWOOD, COLORADO (303) 239-9011	<b>FIGURE 4</b> PICEANCE CREEK PCU 297-11B RESERVE PIT SUBLINER ASSESSMENT PREPARED FOR XTO ENERGY
DATE: 10/6/14	DRAWN: DC					
FILE NAME: rsrv						
PROJECT NO. 1105-19A						
		SHEET NO. 6 of 12				
		SCALE: 1" = 30'				

0 15 30  
SCALE IN FEET  
1"=30'



LEGEND	
	EDGE OF PAD
	TOP OF PIT
	BERM / WEIR
	RP-0
	TPH: < 500 mg/kg
	RP-0
	TPH: > 500 mg/kg
	TPH: ≤ 500 mg/kg
	-2' EXCAVATION AREA
	-3' EXCAVATION AREA
	-4' EXCAVATION AREA
	-7' EXCAVATION AREA



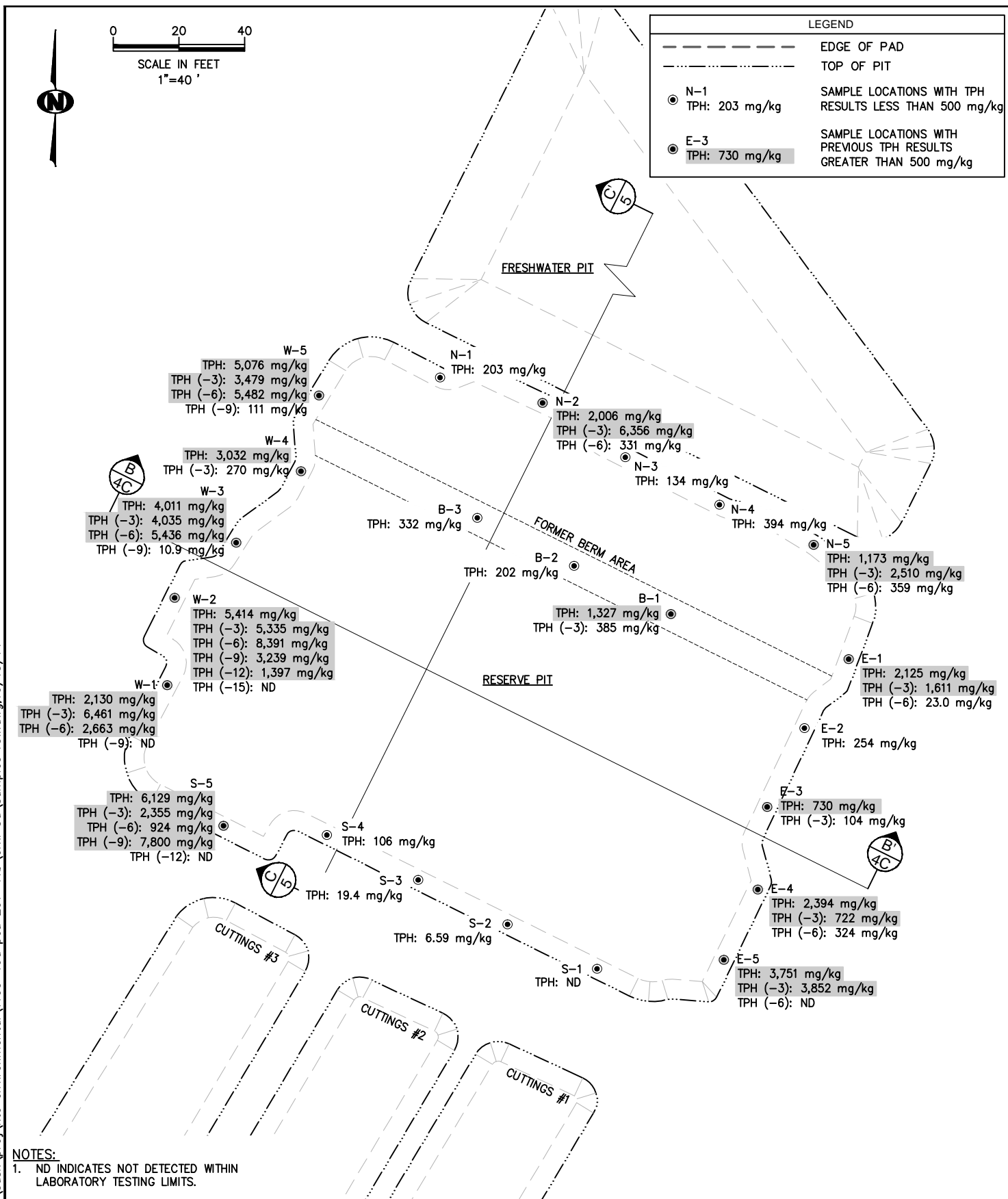
DESIGNED: DK	CHECKED: JH	FIGURE 4A	DATE	REVISIONS
DATE: 10/13/14	DRAWN: DC			
FILE NAME: rsrv cl				
PROJECT NO. 1105-19A	SHEET NO. 7 of 12			
	SCALE: 1" = 30'			

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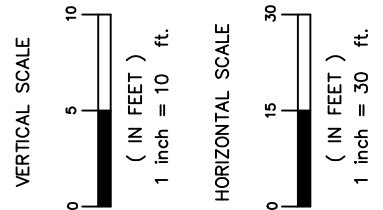
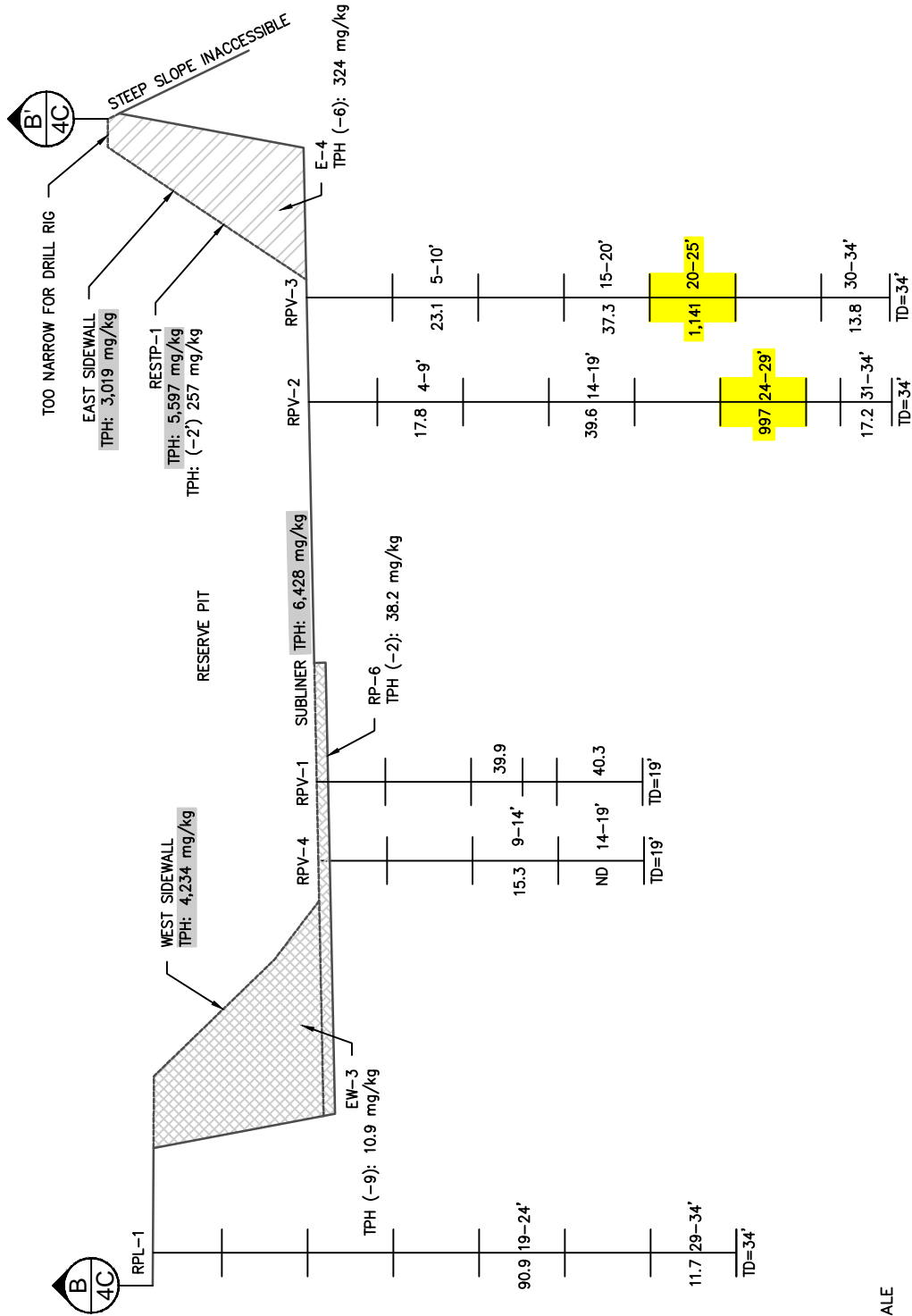
**FIGURE 4A**  
PICEANCE CREEK  
PCU 297-11B  
RESERVE PIT SUBLINER  
ASSESSMENT  
PREPARED FOR XTO ENERGY



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DESIGNED: DK	CHECKED: JH	FIGURE 4B	DATE	REVISIONS	KRW CONSULTING, INC. 8000 W. 14TH AVENUE, SUITE 200 LAKEWOOD, COLORADO (303) 239-9011	FIGURE 4B PICEANCE CREEK PCU 297-11B RESERVE PIT SIDEWALL ASSESSMENT PREPARED FOR XTO ENERGY
DATE: 10/13/14	DRAWN: DC					
FILE NAME: samples rsw						
PROJECT NO. 1105-19A						
		SHEET NO. 8 of 12				
		SCALE: 1" = 40'				



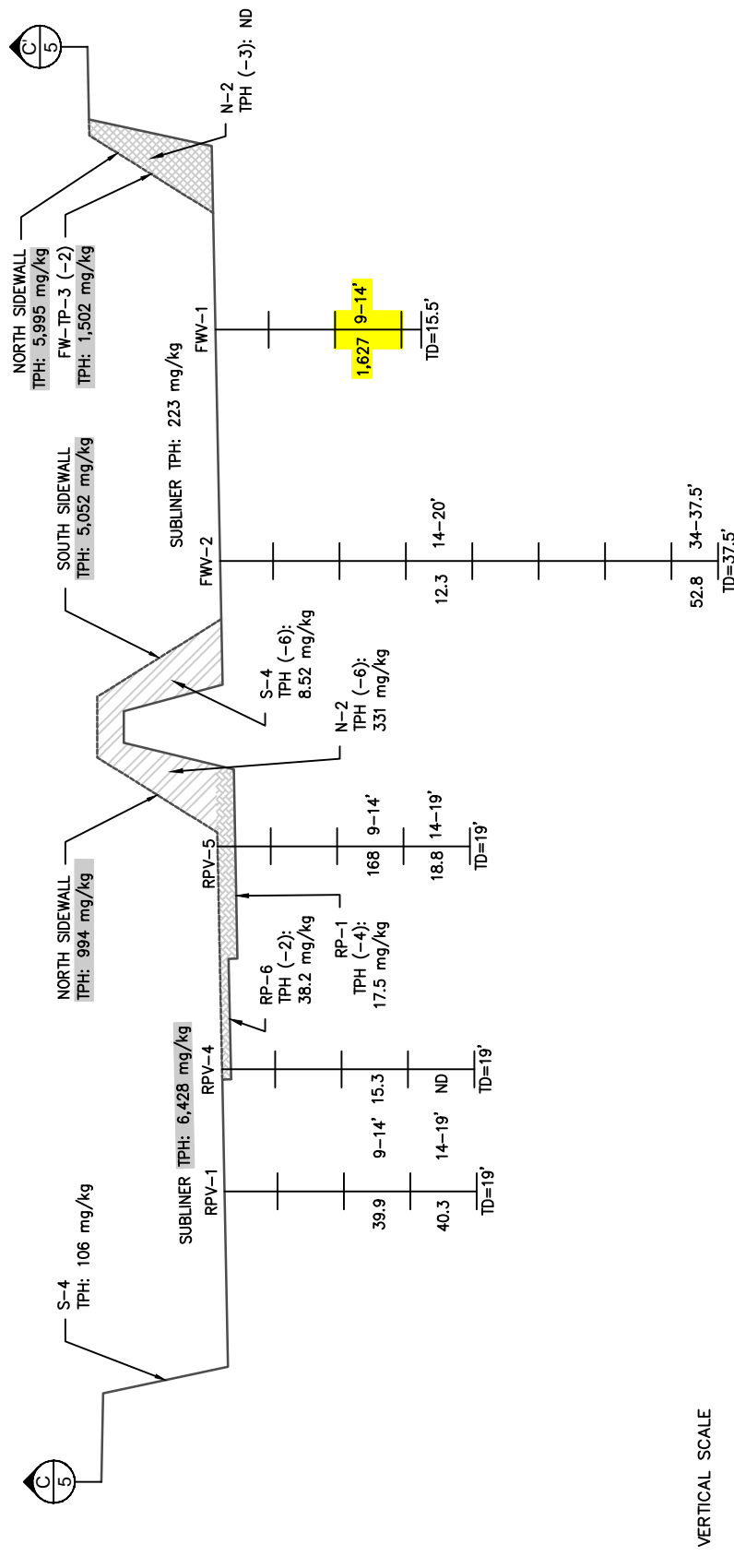
- NOTES:**
1. BORE HOLE LOCATIONS PROJECTED ONTO CROSS SECTION.
  2. SAMPLING INTERVALS TYPICALLY 0-4', 4-9', 9-14', 14-19', ETC. TO TOTAL DEPTH (TD) RECORDED.
  3. TPH RESULTS (mg/kg) FROM SELECT INTERVALS.
  4. ND INDICATES NOT DETECTED WITHIN LABORATORY DETECTION LIMITS.

DESIGNED: DK	CHECKED: JH	FIGURE 4C	DATE	REVISIONS
DATE: 10/13/14	DRAWN: DC			
FILE NAME: samples tab				
PROJECT NO. 1105-19A				
		SHEET NO. 9 of 12		
		SCALE: 1" = 30'		

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

**FIGURE 4C**  
PICEANCE CREEK  
PCU 297-11B  
SECTION B-B'  
RESERVE PIT  
PREPARED FOR XTO ENERGY

DESIGNED: DK	CHECKED: JH	FIGURE  5	DATE	REVISIONS
DATE: 10/13/14	DRAWN: DC			
FILE NAME: samples tab			SHEET NO. 10 of 12	
PROJECT NO. 1105-19A		SCALE: 1" = 40'		



Section C - C'

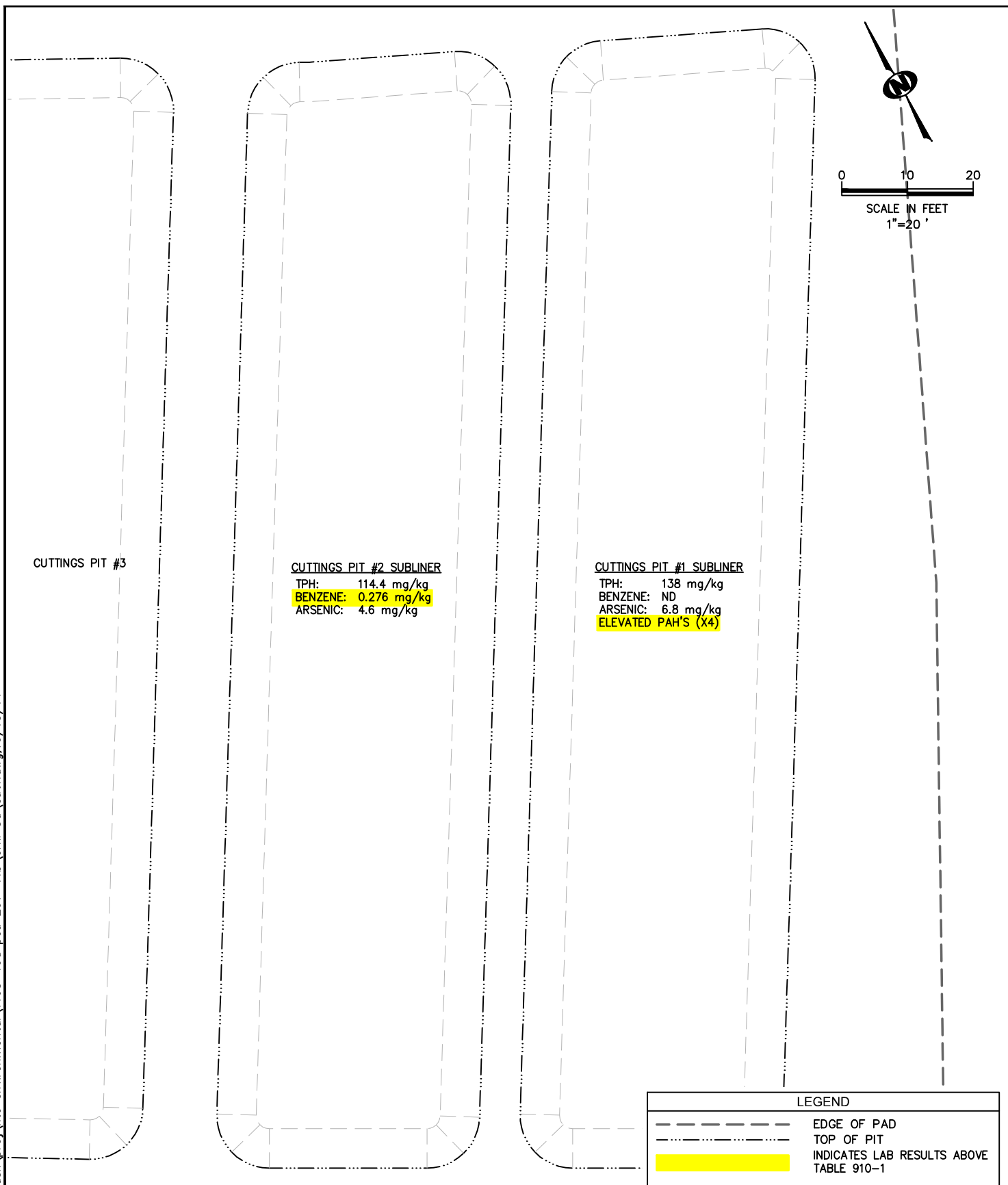
HORIZONTAL SCALE: 1"=40'  
VERTICAL SCALE: 1"=10'

NOTES:

1. BORE HOLE LOCATIONS PROJECTED ONTO CROSS SECTION.
2. SAMPLING INTERVALS TYPICALLY 0'-4', 4'-9', 9'-14', 14'-19', ETC. TO TOTAL DEPTH (TD) RECORDED.
3. TPH RESULTS (mg/kg) FROM SELECT INTERVALS.
4. ND INDICATES NOT DETECTED WITHIN LABORATORY DETECTION LIMITS.

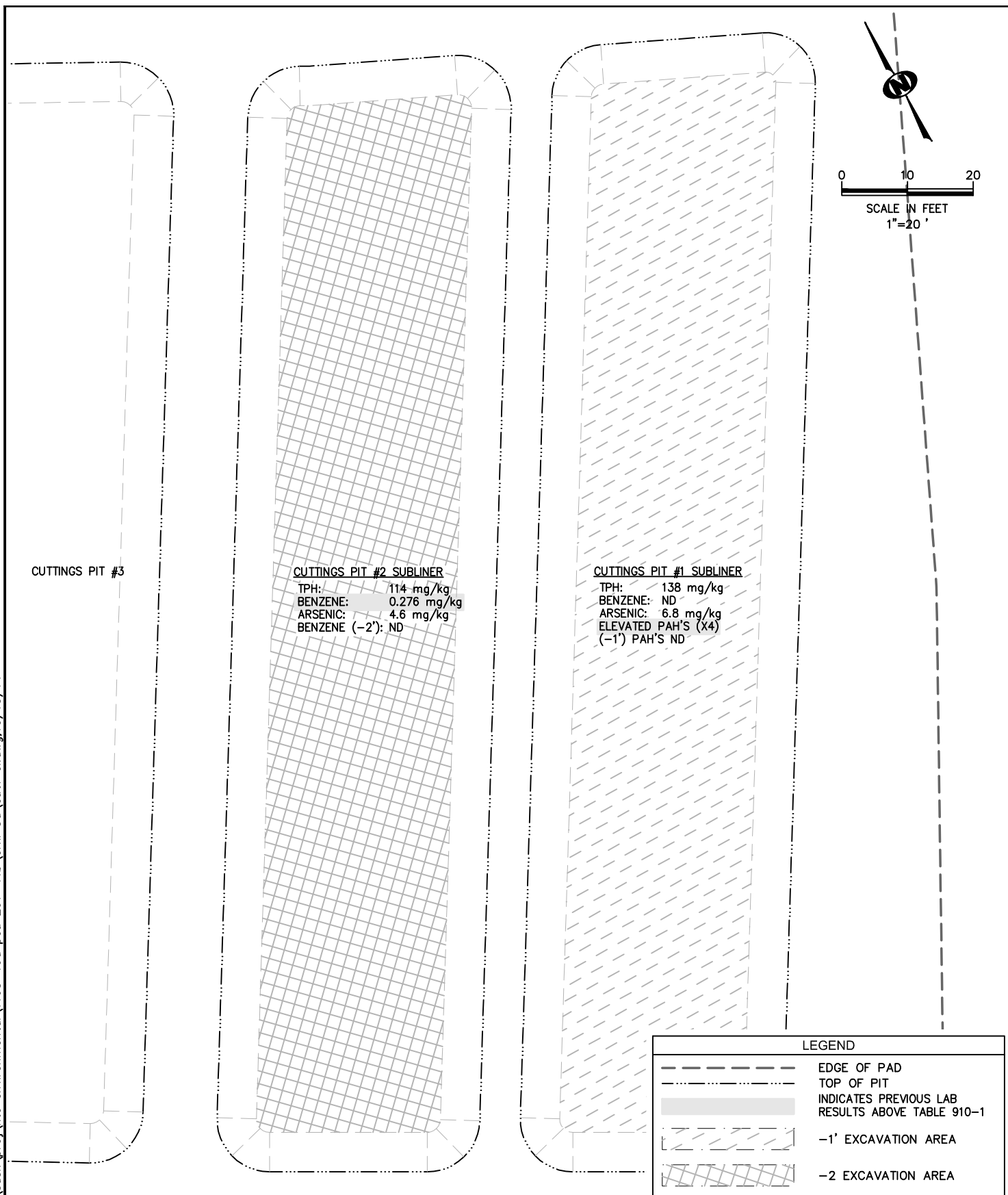
FIGURE 5  
PICEANCE CREEK  
PCU 297-11B  
SECTION C-C'  
FRESHWATER AND RESERVE PIT  
PREPARED FOR XTO ENERGY

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DESIGNED: DK	CHECKED: JH	FIGURE 6	DATE	REVISIONS	KRW CONSULTING, INC. 8000 W. 14TH AVENUE, SUITE 200 LAKEWOOD, COLORADO (303) 239-9011	FIGURE 6 PICEANCE CREEK PCU 297-11B CUTTINGS PIT #1 AND #2 SUBLINER PREPARED FOR XTO ENERGY
DATE: 9/23/14	DRAWN: DC					
FILE NAME: cut1						
PROJECT NO. 1105-19A	SHEET NO. 11 of 12					
	SCALE: 1" = 20'					

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DESIGNED: DK	CHECKED: JH	FIGURE 6A	DATE	REVISIONS	KRW CONSULTING, INC. 8000 W. 14TH AVENUE, SUITE 200 LAKEWOOD, COLORADO (303) 239-9011	FIGURE 6A PICEANCE CREEK PCU 297-11B CUTTINGS PIT #1 AND #2 SUBLINER PREPARED FOR XTO ENERGY
DATE: 9/29/14	DRAWN: DC					
FILE NAME: cut1 cl						
PROJECT NO. 1105-19A	SHEET NO. 12 of 12					
	SCALE: 1" = 20'					