

State of Colorado
Oil and Gas Conservation Commission



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

#6115

FOR OGCC USE ONLY

RECEIVED
8/26/2011

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): Pit closures

OGCC Operator Number: <u>100264</u>	Contact Name and Telephone: <u>Jody Mecham</u>
Name of Operator: <u>XTO Energy, Inc.</u>	No: <u>(435) 722-4521</u>
Address: <u>382 County Road 3100</u>	Fax: <u>(435) 722-5004</u>
City: <u>Aztec</u> State: <u>NM</u> Zip: <u>87410</u>	

API Number: <u>05-103-10655-00</u>	County: <u>Rio Blanco</u>
Facility Name: <u>Piceance Creek</u>	Facility Number: <u>Pit #1 - 414349</u> <u>Pit #2 - 414350</u>
Well Name: <u>Federal #2S-95-15-22</u>	Well Number: <u>Federal #2S-95-15-22</u>
Location: (QtrQtr, Sec, Twp, Rng, Meridian): <u>SENW S15, T2S, R95W, 6th P.M.</u> Latitude: <u>39.87825</u> Longitude: <u>108.045214</u>	

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Drill cuttings and fluids

Site Conditions: Is location within a sensitive area (according to Rule 901e)? Y N If yes, attach evaluation.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Rangeland

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

Potential receptors (water wells within 1/4 mi, surface waters, etc.): There are no water wells or surface waters within 1/4 mile of the location.

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

Impacted Media (check):	Extent of Impact:	How Determined:
<input checked="" type="checkbox"/> Soils	<u>pH</u>	<u>Laboratory analyses on soil samples. The pH values exceed Table 910-1 allowable levels (refer to Table 1 - Laboratory Results Summary Table).</u>
<input type="checkbox"/> Vegetation	_____	_____
<input type="checkbox"/> Groundwater	_____	_____
<input type="checkbox"/> Surface Water	_____	_____

REMEDIALTION WORKPLAN

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

Two (2) pits exist at the 15-22 location which require closure activities (there is no Cuttings Pit, etc.): Freshwater (414349) and Reserve (A&B) (414350). Neither pit contains contents. Pit liners and contents were previously removed and disposed at a permitted landfill facility. The Reserve Pit contains an earthen berm sediment trap. For sampling purposes the larger portion is labeled Reserve Pit A and the smaller portion Reserve Pit B. Sub-liner samples were collected from the Freshwater Pit. Reserve Pit A and Reserve Pit B and submitted to an analytical laboratory for Table 910-1 analysis. In addition, background arsenic samples were collected from five undisturbed areas around the location. Initial laboratory results indicated elevated TPH at 2,070 mg/kg, pH at 9.79 and arsenic at 2.6 mg/kg above Table 910-1 allowable levels in the Freshwater Pit. Laboratory results indicated elevated TPH results of 1,200 mg/kg, a pH result of 9.89 and an arsenic result of 2.9 mg/kg above Table 910-1 allowable levels in Reserve Pit A. Arsenic results of 4.1 mg/kg and a pH of 9.92 exceeded Table 910-1 allowable levels in Reserve Pit B. Three of the five background arsenic sample results exceeded Table 910-1 allowable levels; two samples were below laboratory detection limits. See Table 1 - Laboratory Results Summary for a complete listing of constituent results.

Describe how source is to be removed:

Sub-liner samples collected from the Freshwater Pit and Reserve Pit A indicated TPH concentrations of 2,070 mg/kg and 1,200 mg/kg, respectively, exceeding Table 910-1 allowable levels. TPH concentrations for a sub-liner sample collected at the same time from Reserve Pit B were 356 mg/kg, below Table 910-1 clean-up levels. Pit bottoms of both the Freshwater Pit and Reserve Pit A were ripped with a D-8 dozer in incremental depths up to four (4) feet deep. Samples were collected in the Freshwater Pit at two (2) foot, two (2) to three (3) and four (4) foot intervals and submitted to an analytical laboratory for TPH analysis. Results from all three (3) samples were 404 mg/kg, 307 mg/kg and 291 mg/kg, respectively. Samples were collected in Reserve Pit A at the two (2) foot interval and analyzed for TPH. Results from this analysis indicated a TPH concentration 175 mg/kg, below Table 910-1 clean-up levels. All loose material in the pit bottoms was then mixed/blended with clean on-site spoils, samples collected of the mix and submitted to an analytical laboratory for Table 910-1 analysis. Analytical results for Reserve Pit A and Reserve Pit B indicated all concentration levels were below Table 910-1 with the exception of pH and arsenic. The Freshwater Pit mixed/blended material result for TPH was 549 mg/kg, exceeding Table 910-1 allowable levels. This material was re-mixed with additional clean soil and a sample collected for TPH analysis. Results from this subsequent sample was 298 mg/kg, below Table 910-1 clean-up levels. Please refer to Table 1 - Laboratory Results Summary Table. All remaining pit content material will be buried in place with a minimum 3-foot cover of clean, native soils.

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.:

See attached Form 4 - Sundry Notice regarding arsenic levels.

FORM
27
Rev 6/99

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



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

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.):

N/A

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.

Since TPH concentrations in sub-liner analytical results exceeded Table 910-1 criteria for the Freshwater Pit and Reserve A Pit the pit bottoms were ripped with a D-8 dozer to remove additional impacted material. After removing an additional four (4) feet of material in the Freshwater Pit and an additional two (2) feet of impacted material in Reserve Pit A samples were collected and analyzed for TPH. Analytical results indicated TPH levels at this interval of the pits was below Table 910-1 clean-up criteria. This loose material was then mix/blended with clean on-site spoils to reduce TPH concentrations of the excavated soil and rock. Samples of the mix/blended material were collected to confirm TPH levels were below 500 mg/kg. Only pH and arsenic exceeded Table 910-1 requirements. Please see attached Form 4 - Sundry Notice regarding arsenic levels. All remaining pit content material will be buried in place with a minimum 3-foot cover of clean, native soils, thereby meeting criteria to allow placement of soils exceeding Table 910-1 pH values. Reclamation activities will be as specified in the Surface Use Plan and BLM Conditions of Approval.

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:

Soil samples were collected from each of the pit bottoms (Freshwater, Reserve A&B) and submitted to an analytical laboratory for Table 910-1 constituent analyses. Additionally, five (5) soil samples were collected from undisturbed areas adjacent to the pit locations and submitted to a laboratory to establish the background concentration level for arsenic. Analytical results are presented in the attached Laboratory Results Summary Table. With the exception of pH and arsenic, under-liner impacts were below Table 910-1 constituent levels; sub-liner arsenic levels were below maximum allowable levels when the 10% variability factor is applied to the highest background concentration for arsenic (8.0 mg/kg x 1.1 = 8.8 mg/kg). Complete laboratory reports are available upon request. A minimum 3-foot cover of clean, native soils will be placed over the pit contents; thereby, meeting criteria to allow placement of soils exceeding Table 910-1 pH values.

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

Pit contents and liners were previously removed and disposed at a permitted landfill facility. Pit bottoms were processed on-site by mix/blend methods to reduce TPH constituent concentrations below Table 910-1 levels and will be buried on site. A minimum three (3) feet of clean, native soil will be placed over the buried material.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: 06/28/2011 Date Site Investigation Completed: 08/22/2011 Date Remediation Plan Submitted: 08/26/2011
Remediation Start Date: 9/1/2011 Anticipated Completion Date: TBD 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: Jody Mecham Signed: [Signature]
Title: Construction Coordinator Date: 8/28/2011

OGCC Approved: [Signature] Title: FOR Date: 09/06/2011
Chris Camfield
EPS NW Region

State of Colorado
Oil and Gas Conservation Commission



1120 Lincoln Street, Suite 801, Denver, Colorado 80203 Phone: (303)694-2100 Fax: (303)694-2109

SUNDRY NOTICE

Submit original plus one copy. This form is to be used for general, technical and environmental sundry information. For proposed or completed operations, describe in full on Technical Information Page (Page 2 of this form.) Identify well or other facility by API Number or by OGCC Facility ID. Operator shall send an informational copy of all sundry notices for wells located in High Density Areas to the Local Government Designee (Rule 603b.)

1. OGCC Operator Number: 100264	4. Contact Name: Jody Mecham	Complete the Attachment Checklist OP OGCC
2. Name of Operator: XTO Energy, Inc.	Phone: (435) 722-4521	
3. Address: 382 County Road 3100 City: Aztec State: NM Zip: 87410	Fax: (435) 722-5004	
5. API Number 05-103-10655-00	OGCC Facility ID Number 414349/414350	Survey Plat
6. Well/Facility Name: Federal #25-95-15-22	7. Well/Facility Number: Federal #25-95-15-22	Directional Survey
8. Location (Qtr/Otr, Sec, Twp, Rng, Meridian): SENW S15, T2S, R95W, 6th P.M.		Surface Eqmpt Diagram
9. County: Rio Blanco	10. Field Name: Piceance Creek	Technical Info Page
11. Federal, Indian or State Lease Number: COC 61047		Other

General Notice

CHANGE OF LOCATION: Attach New Survey Plat (a change of surface qtr/qtr is substantive and requires a new permit)

Change of Surface Footage from Exterior Section Lines:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Change of Surface Footage to Exterior Section Lines:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Change of Bottomhole Footage from Exterior Section Lines:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Change of Bottomhole Footage to Exterior Section Lines:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Bottomhole location Qtr/Otr, Sec, Twp, Rng, Mer _____
 Latitude _____ Distance to nearest property line _____ Distance to nearest bldg, public rd, utility or RR _____
 Longitude _____ Distance to nearest lease line _____ Is location in a High Density Area (rule 603b)? Yes/No
 Ground Elevation _____ Distance to nearest well same formation _____ Surface owner consultation date: _____

GPS DATA:
 Date of Measurement _____ PDOP Reading _____ Instrument Operator's Name _____

CHANGE SPACING UNIT

Formation	Formation Code	Spacing order number	Unit Acreage	Unit configuration

Remove from surface bond
 Signed surface use agreement attached

CHANGE OF OPERATOR (prior to drilling):
 Effective Date: _____
 Plugging Bond: Blanket Individual

CHANGE WELL NAME NUMBER
 From: _____
 To: _____
 Effective Date: _____

ABANDONED LOCATION:
 Was location ever built? Yes No
 Is site ready for inspection? Yes No
 Date Ready for inspection: _____

NOTICE OF CONTINUED SHUT IN STATUS
 Date well shut in or temporarily abandoned: _____
 Has Production Equipment been removed from site? Yes No
 MIT required if shut in longer than two years. Date of last MIT _____

SPUD DATE: _____ REQUEST FOR CONFIDENTIAL STATUS (6 mos from date casing set)

SUBSEQUENT REPORT OF STAGE, SQUEEZE OR REMEDIAL CEMENT WORK *submit cbl and cement job summaries

Method used	Cementing tool setting/perf depth	Cement volume	Cement top	Cement bottom	Date

RECLAMATION: Attach technical page describing final reclamation procedures per Rule 1004.
 Final reclamation will commence on approximately _____ Final reclamation is completed and site is ready for inspection

Technical Engineering/Environmental Notice

Notice of Intent Approximate Start Date: _____ Report of Work Done Date Work Completed: _____

Details of work must be described in full on Technical Information Page (Page 2 must be submitted.)

<input type="checkbox"/> Intent to Recomplete (submit form 2)	<input type="checkbox"/> Request to Vent or Flare	<input type="checkbox"/> E&P Waste Disposal
<input type="checkbox"/> Change Drilling Plans	<input type="checkbox"/> Repair Well	<input type="checkbox"/> Beneficial Reuse of E&P Waste
<input type="checkbox"/> Gross Interval Changed?	<input type="checkbox"/> Rule 502 variance requested	<input type="checkbox"/> Status Update/Change of Remediation Plans
<input type="checkbox"/> Casing/Cementing Program Change	<input checked="" type="checkbox"/> Other: See Page 2	for Spills and Releases

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct and complete

Signed: Jody Mecham Date: 8/26/11 Email: Jody-Mecham@XTOenergy.com
 Print Name: Jody Mecham Title: Construction Coordinator

OGCC Approved: Chris Canfield Title: FOR Date: 09/06/2011

CONDITIONS OF APPROVAL, IF ANY:
Chris Canfield
EPS NW Region

TECHNICAL INFORMATION PAGE



FOR OGCC USE ONLY

- 1. OGCC Operator Number: 100264 API Number: 05-103-10655-00
- 2. Name of Operator: XTO Energy, Inc. OGCC Facility ID # 414349/414350
- 3. Well/Facility Name: Federal #2S-95-15-22 Well/Facility Number: #2S-95-15-22
- 4. Location (QtrQtr, Sec, Twp, Rng, Meridian): SENW S15, T2S, R95W, 6th P.M.

This form is to be completed whenever a Sundry Notice is submitted requiring detailed report of work to be performed or completed. This form shall be transmitted within 30 days of work completed as a "subsequent" report and must accompany Form 4, page 1.

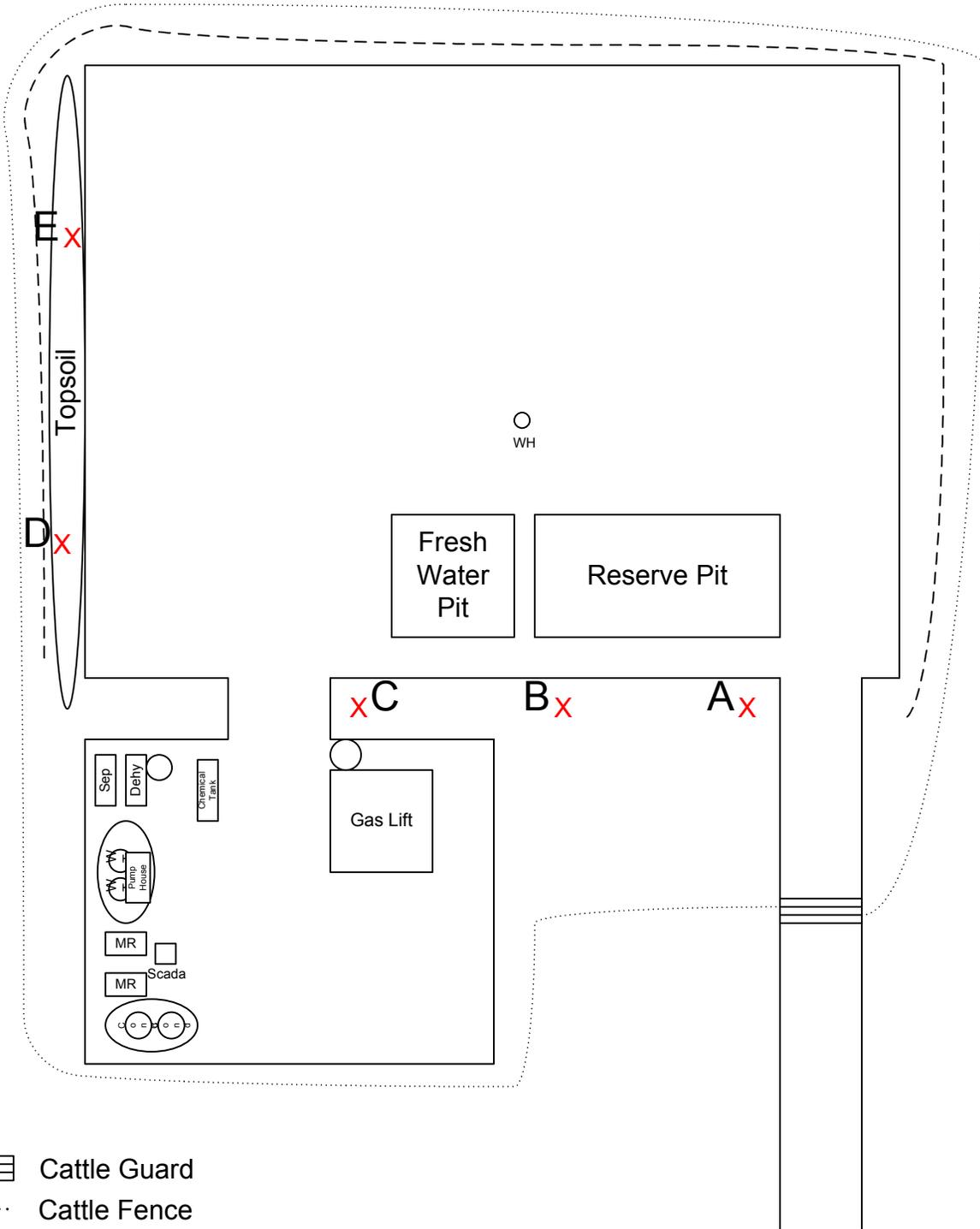
5. **DESCRIBE PROPOSED OR COMPLETED OPERATIONS**

The operator is respectfully requesting a change in the allowable arsenic concentration level at the subject location. Specifically, COGCC Table 910-1 Concentration Levels lists the allowable concentration level for arsenic in soil at 0.39 mg/kg. However, COGCC has allowed site specific changes to allowable concentration levels based upon background concentration levels. 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 (e.g. 5.6 x 1.1 = 6.2). Five representative samples were collected from undisturbed areas adjacent to the subject location. Please see attached figure for background arsenic locations. Arsenic concentrations in those samples ranged from Non-Detect to 8.0 mg/kg. Applying the 10% variability factor to the highest concentration detected results in an allowable arsenic concentration level of 8.8 mg/kg for the subject location.

Federal 2S-95-15-22

Site Plan

SENW, Twp 2S, Sec 15,
Rng 95W, 6th P.M.



-  Cattle Guard
-  Cattle Fence
-  Silt Fence
-  Background Arsenic Sampling Location

*Map Not to Scale

Table 1 - Laboratory Results Summary
Pit Contents, Underliner, and Background Samples
XTO 15-22

Updated 08/26/2011

Analytical Parameter (with units)	15-22 Pits										BACKGROUND SAMPLES 15-22 (10/19/10)					COGCC	Maximum allowable based on background	
	Fresh Water Pit Sub Liner (6/28/11)	Fresh Water Pit 2 ft (07/21/11)	Fresh Water Pit 2 ft - 3 ft (07/21/11)	Fresh Water Pit Bottom Confirmation 4 ft (7/21/11)	Fresh Water Mix/Blend (08/09/11)	Fresh Water Mix/Blend (08/22/11)	Reserve Pit A Sub Liner (6/28/11)	Reserve Pit A Confirmation 2 ft (7/21/11)	Reserve Pit A Mix/Blend (08/09/11)	Reserve Pit B Sub Liner (6/28/11)	Reserve Pit B Mix/Blend (08/09/11)	Bkgrnd A	Bkgrnd B	Bkgrnd C	Bkgrnd D	Bkgrnd E		Table 910-1 Allowable Levels
TPH (TVH and TEPH) (mg/Kg)	2.070	404	307	291	549	298	1,200	175	271	356.0	340.0	-	-	-	-	-	500	-
Benzene (mg/Kg)	0.008	-	-	-	ND	-	0.005	-	ND	0.005	ND	-	-	-	-	-	0.17	-
Toluene (mg/Kg)	0.010	-	-	-	ND	-	0.008	-	ND	0.007	ND	-	-	-	-	-	85	-
Ethylbenzene (mg/Kg)	0.004	-	-	-	ND	-	0.004	-	0.031	0.004	ND	-	-	-	-	-	100	-
Xylenes (total) (mg/Kg)	0.017	-	-	-	0.116	-	0.009	-	0.171	0.010	0.139	-	-	-	-	-	175	-
Acenaphthene (mg/Kg)	ND	-	-	-	ND	-	ND	-	ND	ND	ND	-	-	-	-	-	1,000	-
Anthracene (mg/Kg)	ND	-	-	-	ND	-	ND	-	ND	ND	ND	-	-	-	-	-	1,000	-
Benzo(A)anthracene (mg/Kg)	0.236	-	-	-	ND	-	ND	-	ND	ND	ND	-	-	-	-	-	0.22	-
Benzo(B)fluoranthene (mg/Kg)	0.372	-	-	-	ND	-	ND	-	ND	ND	ND	-	-	-	-	-	0.22	-
Benzo(K)fluoranthene (mg/Kg)	0.137	-	-	-	ND	-	ND	-	ND	ND	ND	-	-	-	-	-	2.2	-
Benzo(A)pyrene (mg/Kg)	-	-	-	-	ND	-	ND	-	ND	ND	ND	-	-	-	-	-	0.022	-
Chrysene (mg/Kg)	0.306	-	-	-	ND	-	ND	-	ND	ND	ND	-	-	-	-	-	22	-
Dibenzo(A,H)anthracene (mg/Kg)	ND	-	-	-	ND	-	ND	-	ND	ND	ND	-	-	-	-	-	0.022	-
Fluoranthene (mg/Kg)	0.405	-	-	-	ND	-	ND	-	ND	ND	ND	-	-	-	-	-	1,000	-
Fluorene (mg/Kg)	0.113	-	-	-	ND	-	0.152	-	ND	0.046	ND	-	-	-	-	-	1,000	-
Indo(1,2,3,C,D)pyrene (mg/Kg)	ND	-	-	-	ND	-	ND	-	ND	ND	ND	-	-	-	-	-	0.22	-
Napthalene (mg/Kg)	ND	-	-	-	ND	-	ND	-	ND	ND	ND	-	-	-	-	-	23	-
Pyrene (mg/Kg)	0.293	-	-	-	ND	-	ND	-	ND	ND	ND	-	-	-	-	-	1,000	-
Electrical Conductivity (mmhos/cm)	0.544	-	-	-	0.222	-	0.532	-	0.191	0.383	0.194	-	-	-	-	-	<4or 2X background	-
Sodium Adsorption Ratio (SAR)	6.13	-	-	-	2.99	-	7.33	-	2.10	7.54	2.35	-	-	-	-	-	<12	-
pH	9.79	-	-	-	9.50	-	9.89	-	9.66	9.92	9.76	-	-	-	-	-	6-9	-
Arsenic (mg/Kg)	2.6	-	-	1.1	2.7	-	2.9	0.93	1.8	4.1	2.0	ND	ND	2.0	8.0	1.6	0.39	8.8
Barium (mg/Kg)	1,160	-	-	-	1,440	-	265	-	845	2,430	639	-	-	-	-	-	15,000	-
Cadmium (mg/Kg)	<1.1	-	-	-	<1.0	-	<0.96	-	<1.1	<1.0	<1.0	-	-	-	-	-	70	-
Chromium (III) (mg/Kg)	33.1	-	-	-	41.5	-	27.2	-	48.1	34.3	50.5	-	-	-	-	-	120,000	-
Chromium (VI) (mg/Kg)	1.0	-	-	-	<0.43	-	0.56	-	<0.44	<0.40	<0.43	-	-	-	-	-	23	-
Copper (mg/Kg)	18.5	-	-	-	15.9	-	12.8	-	12.7	15.0	13.2	-	-	-	-	-	3,100	-
Lead (inorganic) (mg/Kg)	13.0	-	-	-	12.1	-	9.9	-	11.0	14.4	11.0	-	-	-	-	-	400	-
Mercury (mg/Kg)	<0.11	-	-	-	<0.11	-	<0.085	-	<0.10	<0.10	<0.11	-	-	-	-	-	23	-
Nickel (mg/Kg)	18.5	-	-	-	20.7	-	15.6	-	19.3	18.8	20.4	-	-	-	-	-	1,600	-
Selenium (mg/Kg)	<5.4	-	-	-	<5.0	-	<4.8	-	<5.4	<5.1	<5.0	-	-	-	-	-	390	-
Silver (mg/Kg)	<3.2	-	-	-	<3.0	-	<2.9	-	<3.2	<3.1	<3.0	-	-	-	-	-	390	-
Zinc (mg/Kg)	49.0	-	-	-	45.5	-	41.5	-	44.1	42.0	45.5	-	-	-	-	-	23,000	-

- Notes:
- 1) "-" indicates no analysis.
 - 2) ND = not detectible to the laboratory detection limit.
 - 3) Results highlighted in yellow exceed Table 910-1 parameters. Results highlighted in Gray exceed Table 910 but are below maximum background levels.
 - 4) Refer to the attached site map for approximate sample locations.
 - 5) Refer to Appendix B for the complete laboratory results.