DOCUMENT #2229053

FORM 4 Rev 12/05

Page 1

State of Colorado
Oil and Gas Conservation Commission

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

DE | ET | OE | ES

RECEIVED 12/16/2011

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: 28700
2. Name of Operator: ExxonMobil Oil Corp.
3. Address: P.O. Box 4358, CORP-MI-P014E-1
   City: Houston State: TX Zip 77210-4358
4. Contact Name: M. Lee Skwirz
   Phone: 281-654-0494
   Fax: 281-654-8487
5. API Number 05- 103-10822 OGCC Facility ID Number
6. Well/Facility Name: Piceance Creek Unit 7. Well/Facility Number 296-7A
8. Location (QtrQtr, Sec, Twp, Rng, Meridian): SESE, 7, 2S, 96W, 6PM
9. County: Rio Blanco 10. Field Name: Piceance Creek
11. Federal, Indian or State Lease Number: COD052141

Complete the Attachment Checklist

	OP	OGCC
Survey Plat		
Directional Survey		
Surface Eqpmt Diagram		
Technical Info Page	X	
Other	X	

General Notice

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

	FNL/FSL		FEL/FWL	
Change of **Surface** Footage **from** Exterior Section Lines:				
Change of **Surface** Footage **to** Exterior Section Lines:				
Change of **Bottomhole** Footage **from** Exterior Section Lines:				
Change of **Bottomhole** Footage **to** Exterior Section Lines:				attach directional survey

Bottomhole location Qtr/Qtr, 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.)

☐ Intent to Recomplete (submit form 2)
☐ Change Drilling Plans
☐ Gross Interval Changed?
☐ Casing/Cementing Program Change
☐ Request to Vent or Flare
☐ Repair Well
☐ Rule 502 variance requested
☐ Other:
☐ E&P Waste Disposal
☐ Beneficial Reuse of E&P Waste
☒ Status Update/Change of Remediation Plans 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: M Lee Skwirz Date: Dec 16, 2011 Email: lee.skwirz@exxonmobil.com

Print Name: M. Lee Skwirz Title: Upstream Operations Team Lead

COGCC Approved: Title FOR Date: 06/08/2012

CONDITIONS OF APPROVAL, IF ANY:

Chris Canfield
EPS NW Region

FORM 4 Rev 12/05

TECHNICAL INFORMATION PAGE

FOR OGCC USE ONLY

1. OGCC Operator Number: 28700 API Number: 05- 103-10822
2. Name of Operator: ExxonMobil Oil Corp. OGCC Facility ID # COC 47666X
3. Well/Facility Name: Piceance Creek Unit Well/Facility Number: 296-7A
4. Location (QtrQtr, Sec, Twp, Rng, Meridian): SESE, 7, 2S, 96W, 6PM

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**

Remediation # 5155

Completed:

Removed hydrocarbon impacted soils, approximately 3 to 4 feet below ground surface, to the top of bedrock in August 2010;
Additional delineation activities and Sensitive Receptor Surveys conducted in 2011;
Hydrocarbon impact within weathered to medium-hard bedrock was encountered beneath the former containment area; and
Sensitive receptors have not been impacted.
See attached report.

Proposed:

Additional excavation, approximately 60 by 35 feet with an average depth of 20 feet below existing ground surface, will be conducted in 2012;
The excavated material will be crushed, mix-blended and used to backfill the excavation or be disposed of at Rio Blanco County Wray Gulch solid waste disposal facility.
An application of crushed gypsum, approximately 5 tons, will be applied to the excavation prior to backfill.

November 8, 2011

Arcadis U.S., Inc.
1687 Cole Blvd., Suite 200
Lakewood, Colorado 80401

Attention: Mary Gilkison, Principal Geologist

Subject: **Assessment Findings Report**
Location PCU 296-7A Former Containment Area
Section 7, Township 2 South, Range 96 West
Piceance Creek Development Project; Rio Blanco County, Colorado
COGCC Remediation No: 5155
KRW Project No. 1104-03B

Dear Ms. Gilkison:

As requested by ARCADIS for ExxonMobil Environmental Services, KRW Consulting, Inc. (KRW) conducted an environmental site assessment at the subject site to evaluate remaining hydrocarbon impacts below a former tank containment area. This letter report presents site assessment findings, laboratory analyses, and a sensitive receptor study for the identified residual impacts.

Background

Well pad PCU 296-7A is located in Section 7, Township 2 South; Range 96 West in Rio Blanco County, Colorado. Refer to Figures 1 and 2 in Appendix A for site location and aerial maps of the project area. A condensate release occurred within the containment area at the subject site and impacted soils beneath and around the secondary containment area (COGCC Spill/Release Tracking No. 2608527).

Initial soil sampling activities were conducted at the site on June 15, 2010. These assessment activities included sampling of the soils from immediately below and surrounding the former containment area. Analytical results indicated elevated hydrocarbon impact (TPH: 689 to 3,003 mg/kg) to the unconsolidated sediments located directly below the former containment area. Interim remediation activities were performed as part of the initial spill response efforts. The objectives for the initial remediation activities were to: (1) remove the previously identified hydrocarbon impacted soils (above COGCC Table 910-1 concentration levels) down to the top of shallow bedrock (encountered at approximately 3.5 feet below existing grade); and then (2) evaluate the bottom of excavation to assess if further remediation and/or assessment was required.

These initial remedial activities were completed on August 22 and 23, 2010. The excavation was advanced into the upper, weathered bedrock to a depth of approximately 3 to 4 feet below ground surface (bgs) across the project area. Due to field findings (stained soils/rock, hydrocarbon sheen on rock); the western portion of the excavation was advanced several feet into the shallow bedrock to a total depth of approximately 6 to 7 feet bgs. Refer to Figure 3 in Appendix A for the configuration of this excavation area. Approximately 550 cubic yards of hydrocarbon impacted soils were excavated and transported under manifest to the Wray Gulch Landfill, near Meeker, Colorado for disposal.

Following soil removal activities sampling was conducted to evaluate remaining soil/rock conditions within the excavation. Sampling included the collection of composite sidewall samples from all four sides of the excavation as well as composite bottom samples from both the 3 to 4 foot and the 6 to 7 foot depths of the excavation. Test results indicated residual impacted soils/rock above Table 910-1 TPH concentration levels (> 500 mg/kg) in the excavation bottom (1,665 mg/kg at 3 to 4 ft; and 3,627 mg/kg at 6 to 7 ft). Table 1 summarizes these analytical results. Soil sample locations are presented on Figure 3 in Appendix A.

Additional Soil Assessment Activities

Additional assessment was subsequently conducted in the base of the excavation using a Central Mine Equipment Co. (CME), truck mounted, model CME-75 rotary drilling rig platform, with hollow-stem auger continuous sampling techniques. This additional assessment was conducted to assess further the lateral and vertical extent of hydrocarbon impacted soils/rock (above Table 910-1 concentration levels) beneath the former containment area. A total of 5 boreholes were advanced within the excavation area with an additional 5 boreholes outside of the excavation. Borehole depths ranged from 23 to 44 feet bgs. No groundwater was encountered during borehole drilling and sampling efforts. Refer to Figure 3 in Appendix A for the location of these assessment borings.

Soils were collected continuously from each boring using a CME 5-foot continuous sampler. The soil borings were generally extended past any potential areas of concern or until field screening indicated no further impacts. The soils from each boring were logged and field screened using an FID and/or PID. Based on field observations soil samples were selected for laboratory analyses to help assess vertical and lateral extent of hydrocarbon impacts above Table 910-1 concentration levels. Samples were analyzed for total petroleum hydrocarbons (TPH) as well as benzene, toluene, ethylbenzene, and xylenes (BTEX). Two samples from within the former tank containment area were also analyzed for the full Table 910-1 list of constituents.

Soil sampling was conducted in general accordance with the soil sampling protocol presented in Appendix B. Given that samples were almost exclusively rock, the samples were processed in a field lab using a soil/rock crusher to facilitate homogeneity across sampling zones. The soil/rock crusher was thoroughly cleaned before and after each sample to prevent cross contamination. Samples were subsequently placed in laboratory provided glass containers and placed on ice for shipment to the laboratory. On completion of drilling/sampling the borings were backfilled with bentonite chips to the surface and hydrated.

Assessment Findings

Weathered to medium-hard to hard bedrock was encountered beneath the site which consists primarily of inter-bedded sandstone and siltstone. Refer to Appendix C for each of the boring logs. Hydrocarbon impact within the bedrock was observed to be limited to the bedding planes and/or the fractured zones within the rock.

Assessment findings indicate that the lateral extent of hydrocarbon impacted soils above Table 910-1 concentration levels (TPH > 500 mg/kg) appears to be confined to the former containment area. In general, the vertical extent of elevated hydrocarbon impacted soils appears to be limited to approximately 3 to 10.5 feet below the existing grade of the excavation. An exception is a lens of impacted soils/rock found within borehole BH-02 at a depth of 18 to 20 ft bgs. Based on surrounding borehole data (BH-01; BH-03; BH-04; and BH-09), it appears that this impacted lens is isolated. Refer to Figures 4 and 5 of Appendix A for cross sections illustrating the approximate vertical delineation of impacted soils above the Table 910-1 concentration levels beneath the project area.

Refer to Tables 1 and 2 for a summary of laboratory analytical results. Refer to Appendix D for the complete laboratory reports.

Sensitive Receptor Study and Ground Truthing

Sensitive Receptor Study

An initial sensitive receptor study and a one-mile radius ground truthing of the subject area were conducted between June 14 and 21, 2011. A follow-up ground-truthing event was conducted the week of August 29, 2011. The purpose of this study and the ground truthing events was to identify potential sensitive receptors (springs, wetlands, active irrigation ditches, water wells, streams, seeps, etc.) that could potentially be impacted by releases from the subject site. Colorado Division of Water Resources Water Well Permit, AquaMap GIS, United States Geologic Survey (USGS), and U.S. Fish and Wildlife Service (Wetlands) databases were searched for nearby water wells, groundwater seeps, springs or other pertinent water related infrastructure within a one-mile radius of the location. Refer to Appendix E for the Database Search Records.

The Water Well Permit database identified 22 water well permits within a one mile radius of the location. Refer to Table 1 in Appendix E for this permit list. The majority of these permits are issued to ExxonMobil for industrial and/or commercial use. The information available indicates these water well permits are not associated with domestic or irrigation water supply. It is our understanding that these listed wells are natural gas production wells permitted due to the production water generated during the well installation process. The exception was two wells permitted to the northeast of the site for industrial use (Permit No. 16130) and commercial use (Permit No. 165768). Well Permit No. 16130 is permitted to El Paso Natural Gas and is located approximately 0.7 miles northeast from the site. Well Permit No. 165768 is permitted to a Colorado Springs address and is located approximately 0.8 miles east/northeast from the site. Refer to Figure 1, Appendix E for the location of these wells. Per Division of Water Resources records, at the time of installation Well Permit No. 165768 had a static water level of 218 feet bgs.

The Water Well Permit database indicates that the closest domestic or agricultural water wells are a BLM stock well located approximately 3.4 miles northeast and the Gunderland domestic well located approximately 4 miles southwest of the project area. Another well, more than likely a stock well, was identified from USGS area maps approximately 1.5 east/southeast of the site area. The locations of these wells are shown on Figure 1 in Appendix E.

The USGS National Water Information System (NWIS) was utilized to identify additional wells in the project area that are reportedly monitored through USGS. This information was also utilized to evaluate groundwater levels in the project area. Refer to Table 2 in Appendix E for a summary of this well information. The well in the nearby vicinity of the site is shown on Figure 1 (Appendix E) with recorded high groundwater level readings. The maximum groundwater level reported in this well was 208 feet bgs.

The Colorado Division of Water Resources AquaMap GIS database was utilized to search for springs, seeps, or other water supply structures or infrastructure within a half-mile radius of the location. The closest potential receptors identified were two springs and associated drainage features located approximately 0.25 miles north and 0.5 miles south of the project area. Two additional springs and drainage features were identified at approximately 0.9 miles from the site, one to the northeast (BLM Spring 160-06) and one to the southwest (Hatch Gulch Diversion Spring). The locations of these springs and drainage features are shown on Figure 1 (Appendix E). Based on U.S. Fish and Wildlife Service wetlands databases, the drainage bottoms in these areas are identified as wetlands classified as R4SBA (Riverine, Intermittent, Streambed, Temporarily Flooded).

Ground Truthing

The terrain within a one mile radius of the location was investigated to validate the database query. KRW employees walked the area to search for springs, potential wetlands, active irrigation ditches, seeps, water wells, ponds, streams, or other water infrastructure that may not have been included in the available

databases. The search focused on canyon and arroyo bottoms and sides at elevations lower than the elevation of PCU 296-7A.

The spring in the drainage to the north was flowing at the time of our ground truthing events with an estimated flow at approximately 0.5 gpm at the origin. This water reaches a confluence with another spring from the north where flow increases. This surface water flows west above ground for approximately one mile before being absorbed by the alluvial soils. Two areas of ponded water were encountered in the drainage approximately 0.5 miles south of the site. This water appeared to be absorbed by the alluvial soils and flow was not visible. The spring identified as BLM Spring 160-06 also had flowing water during both ground truthing events. The Hatch Gulch Diversion Spring also had flowing water. The Hatch Gulch Diversion Spring flow joins the drainages to the north that form the Hatch Gulch drainage area flowing northeast towards Piceance Creek.

Grab samples of water from the north drainage, the south ponded drainage, and the drainage to the west were collected during both ground truthing events. Each of the samples was analyzed for BTEX constituents with non-detect results for both sampling events. Refer to Figure 1 (Appendix E) for these approximate sample locations. Each of these springs/drainages appears to be used for livestock open grazing in the area.

No other potential receptors were identified during the ground-truthing events.

Based on area spring elevations and database groundwater depths, groundwater beneath the site area is estimated to be at a depth of between 150 and 200 feet bgs.

Please contact us should you have any questions related to the findings of this assessment report.

Respectfully Submitted,
KRW Consulting, Inc.

Gregory W. Knell, C.P.G.
Senior Environmental Scientist

Joe Hess, P.E.
Principal Engineer

List of Attachments

Appendix A
Figure 1 – USGS Site Location Map
Figure 2 – 2009 Aerial Map
Figure 3 – Site Map with Select Soil Sample Results
Figure 4 – A-A' Cross Section of Site Area
Figure 5 – B-B' Cross Section of Site Area
Table 1 – Summary of Soil Sample Analytical Results (TPH and BTEX)
Table 2 – Summary of Soil Sample Analytical Results (Table 910-1)

Appendix B – KRW's Soil/Sediment Sampling Protocol

Appendix C – Soil Boring Logs

Appendix D – Laboratory Reports (submitted on separate CD)

Appendix E – Sensitive Receptor Study
Figure 1 – Sensitive Receptor Survey Map
Table 1 – Division of Water Resources Water Well Permit Database Records
Table 2 - USGS National Water Information System Database Records
Attachment 1 – US Fish and Wildlife National Wetlands Inventory

Appendix F – Site Photos – including SRS photos

APPENDIX A

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DESIGNED: GK	CHECKED: GK	FIGURE 1	NOTES: Subject site located in S7, T2S, R96W of the 6th P.M.
DATE: 7/13/10	DRAWN: DRF		
FILE NAME: location		SHEET NO. 1 of 5	DATE / REVISIONS
PROJECT NO. 1104-03B		SCALE: 1"=2000'	

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

FIGURE 1
PICEANCE CREEK
PCU 296-7A FORMER TANK BATTERY
LOCATION MAP

PREPARED FOR EXXONMOBIL

The underground utilities identified were field located and subsequently mapped (see as-built date) only to the accuracy of the underground locating equipment used. Other underground utilities may exist. The drawings provided should serve only as a reference. Prior to any excavation activity on or near this location, a "One-Call" and an area "Line Sweep" must be properly conducted.

SURVEYED: JM	CHECKED: PP	FIGURE 2	NOTES: Aerial photo from USDA field office. Flown September 14, 2009	KRW CONSULTING, INC. 8000 W. 14TH AVENUE, SUITE 200 LAKEWOOD, COLORADO (303) 239-9011	FIGURE 2 PICEANCE CREEK PCU 296-7A FORMER TANK BATTERY AS-BUILT 12/12/09
DATE: 1/2/10	DRAWN: DRF				
FILE NAME: as-built		SHEET NO. 2 of 5	DATE / REVISIONS: 1/11/10 Issued to client		PREPARED FOR EXXONMOBIL
PROJECT NO. 1104-03B		SCALE: 1"=200'			

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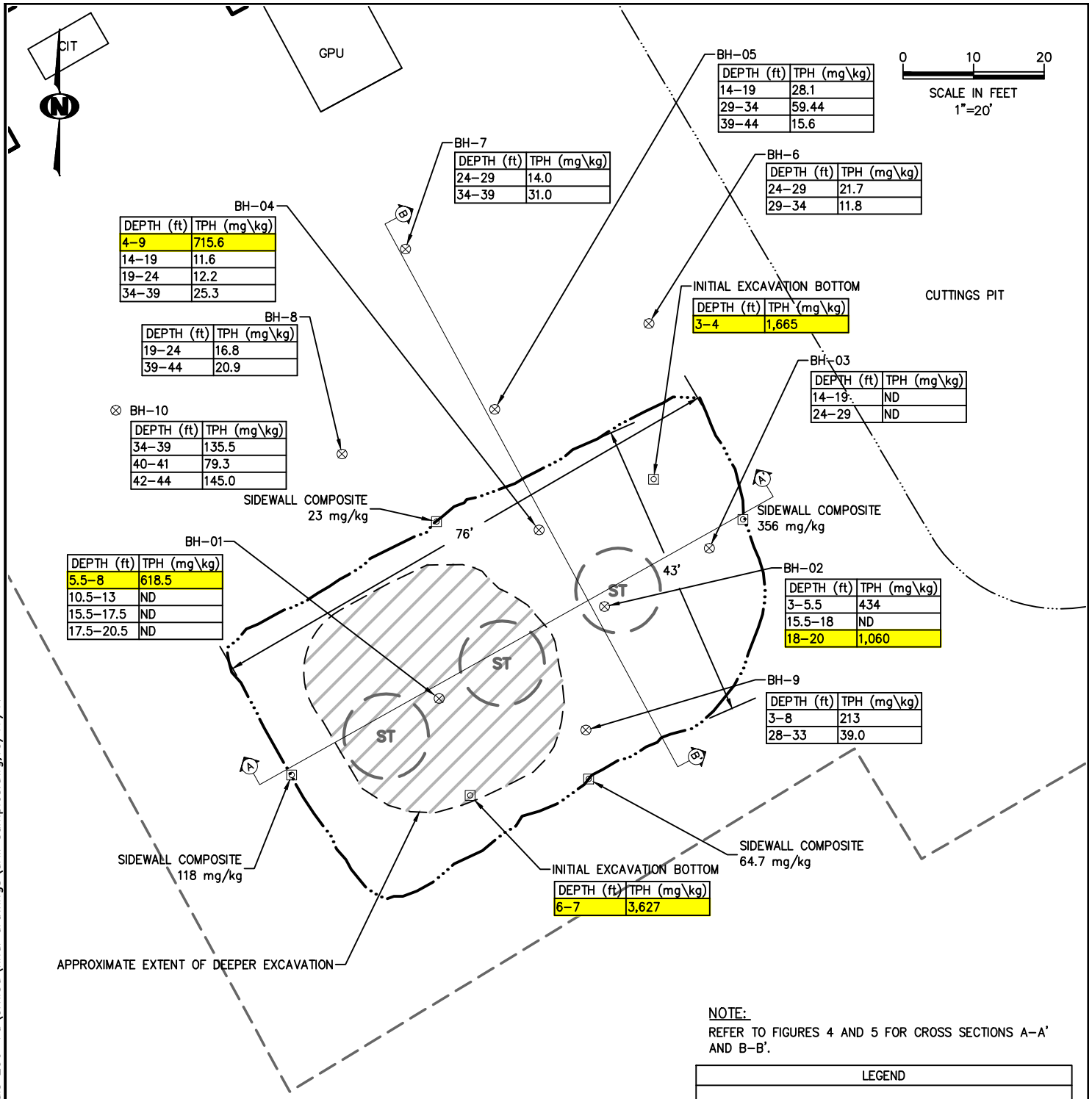

NOTE:
REFER TO FIGURES 4 AND 5 FOR CROSS SECTIONS A–A' AND B–B'.

LEGEND	
ST	FORMER STORAGE TANK LOCATION
	EDGE OF PAD
	INITIAL EXCAVATION AREA
	IMPACTED SOILS
BH-01	BORE HOLE DESIGNATION
⊗ 434 mg/kg (3–5.5')	TPH RESULTS / DEPTH BELOW EXISTING GRADE
⊡ COMP	POST EXCAVATION COMPOSITE SAMPLES (WITH TPH RESULTS)

DESIGNED: JH	CHECKED: JH	FIGURE 3	NOTES:
DATE: 9/26/11	DRAWN: DRF		
FILE NAME: drill samples		SHEET NO. 3 of 5	DATE / REVISIONS
PROJECT NO. 1104–03B		SCALE: 1"=20'	

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

FIGURE 3
PICEANCE CREEK
PCU 296–7A
FORMER TANK CONTAINMENT AREA WITH SELECT LAB RESULTS

PREPARED FOR EXXONMOBIL

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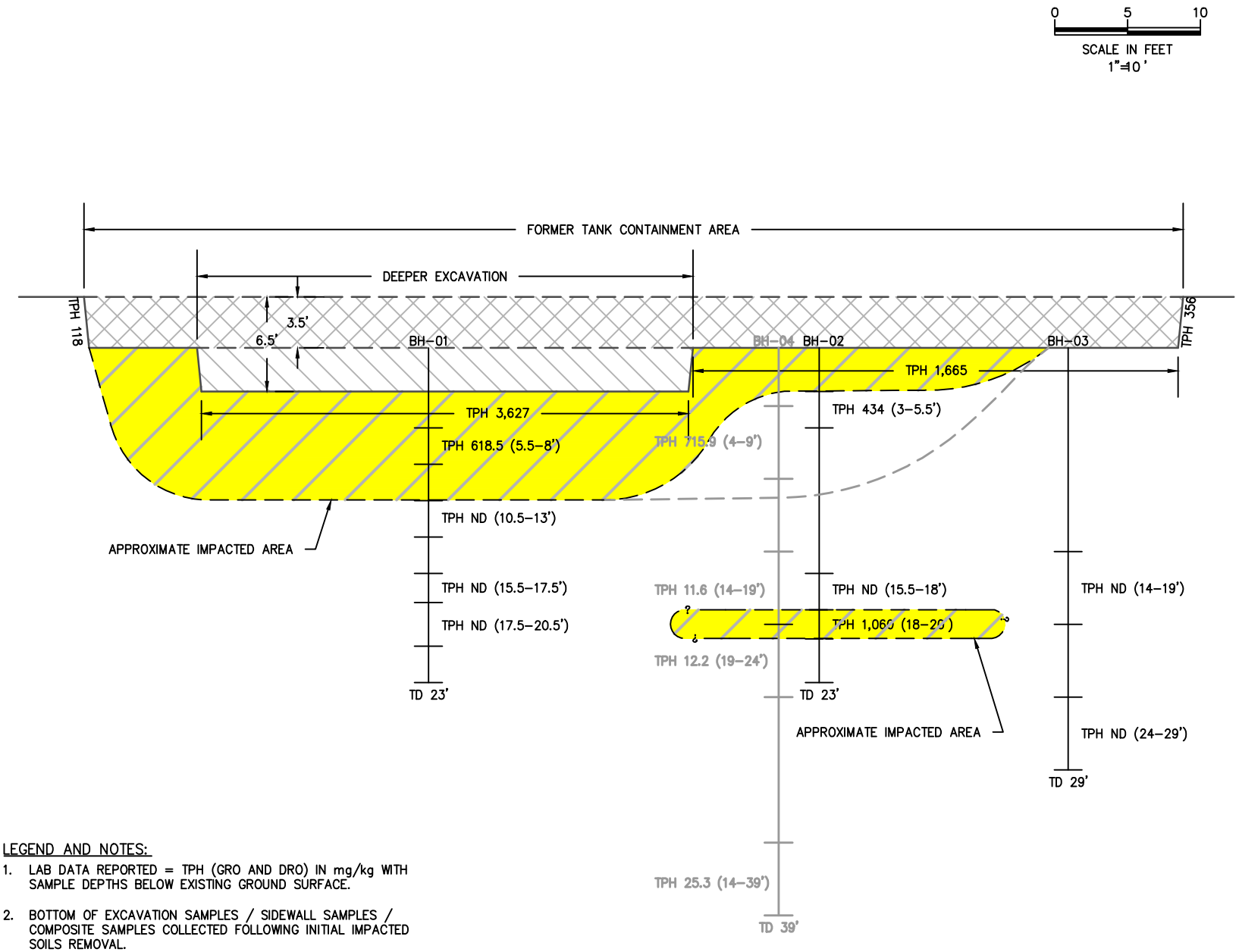

LEGEND AND NOTES:

1. LAB DATA REPORTED = TPH (GRO AND DRO) IN mg/kg WITH SAMPLE DEPTHS BELOW EXISTING GROUND SURFACE.
2. BOTTOM OF EXCAVATION SAMPLES / SIDEWALL SAMPLES / COMPOSITE SAMPLES COLLECTED FOLLOWING INITIAL IMPACTED SOILS REMOVAL.
3. DEEPER EXCAVATION WAS BACKFILLED WITH CLEAN SOILS TO SHALLOW EXCAVATION DEPTH TO ALLOW DRILLING RIG ACCESS.
4. APPROXIMATE EXTENT OF IMPACTED SOILS >500 mg/kg SHOWN ARE PER TABLE 910-1 CONCENTRATION LEVELS.

FIGURE 4
PICEANCE CREEK
PCU 296-7A
FORMER TANK CONTAINMENT AREA
WITH SELECT LAB RESULTS
CROSS SECTION A-A'
PREPARED FOR EXXONMOBIL

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

NOTES:

DATE	REVISIONS

DESIGNED: JH	CHECKED: JH	FIGURE 4	
DATE: 11/8/11	DRAWN: DRF	SHEET NO. 4 of 5	
FILE NAME: drill samples		SCALE: 1"=10'	
PROJECT NO. 1104-03B			

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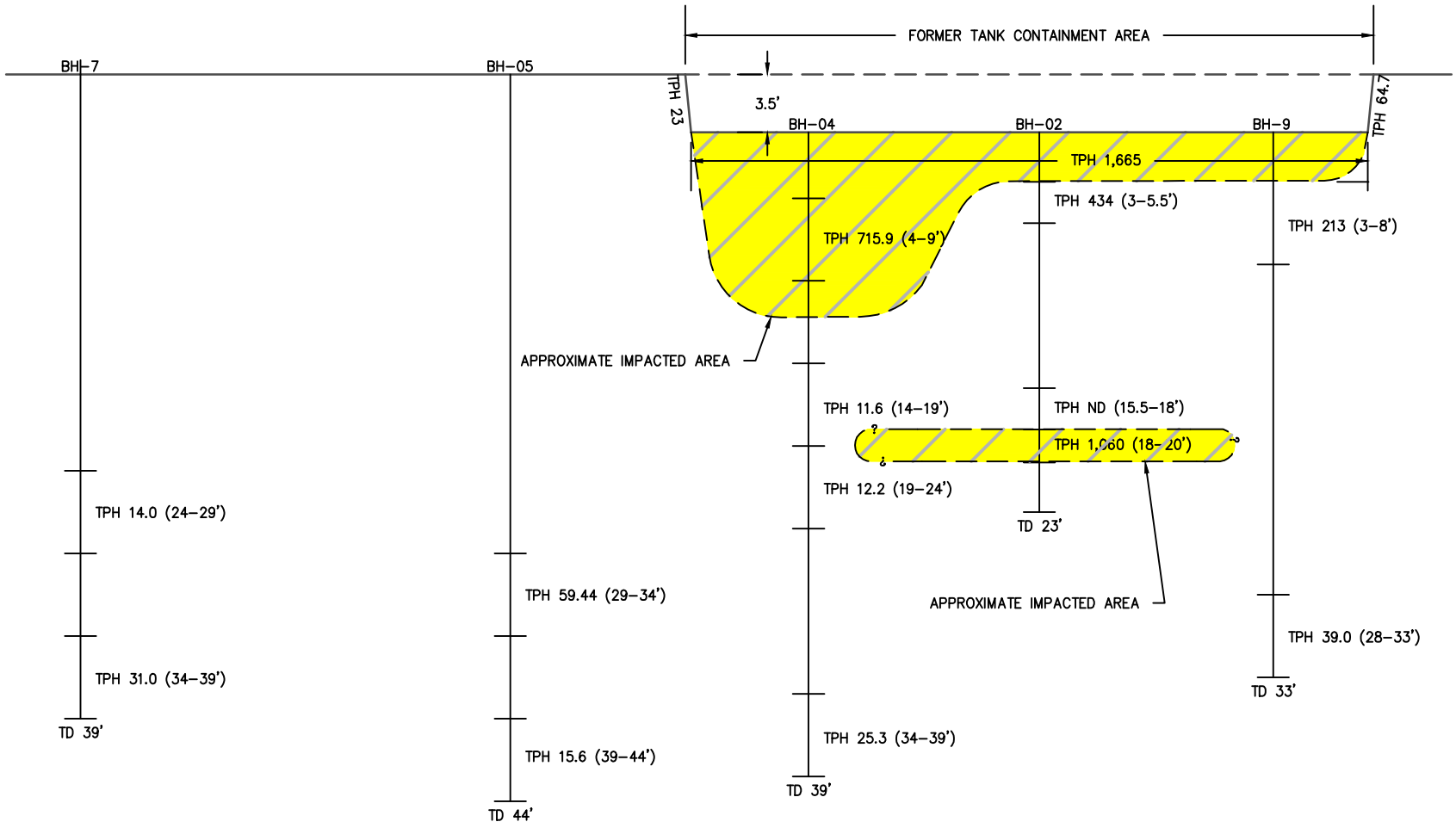

LEGEND AND NOTES:

1. LAB DATA REPORTED = TPH (GRO AND DRO) IN mg/kg WITH SAMPLE DEPTHS BELOW EXISTING GROUND SURFACE.
2. BOTTOM OF EXCAVATION SAMPLES / SIDEWALL SAMPLES / COMPOSITE SAMPLES COLLECTED FOLLOWING INITIAL IMPACTED SOILS REMOVAL.
3. APPROXIMATE EXTENT OF IMPACTED SOILS >500 mg/kg SHOWN ARE PER TABLE 910-1 CONCENTRATION LEVELS.

0 5 10

SCALE IN FEET
1"=10'

FIGURE 5
PICEANCE CREEK
PCU 296-7A
FORMER TANK CONTAINMENT AREA
WITH SELECT LAB RESULTS
CROSS SECTION B-B'
PREPARED FOR EXXONMOBIL

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

NOTES:

DATE	REVISIONS

FIGURE 5

SHEET NO. 5 of 5

SCALE: 1"=10'

DESIGNED: JH
DATE: 11/8/11
CHECKED: JH
DRAWN: DRF
FILE NAME: drill samples
PROJECT NO. 1104-03B

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Table 1
PCU 296-7A Summary of Soil Sample Analytical Results
(Samples Collected Following Initial Impacted Soil Removal Activities in Condensate Tank Containment Area)

Samples	Analytical Parameters						
	TPH (GRO) (mg/kg)	TPH (DRO) (mg/kg)	TPH (GRO+DRO) (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	xylenes (total) (mg/kg)
Soil Removal Evaluation Samples							
EAST WALL (8/23/10)	ND (4.4)	356	356	ND (.0083)	ND (.0093)	ND (.010)	ND (.011)
SOUTH WALL (8/23/10)	ND (4.3)	64.7	64.7	ND (.0081)	ND (.0090)	ND (.010)	ND (.011)
WEST WALL (8/23/10)	ND (4.0)	118	118	ND (.0076)	ND (.0085)	ND (.0096)	ND (.010)
NORTH WALL (8/23/10)	ND (4.2)	23.0	23.0	ND (.0080)	ND (.0089)	ND (.010)	ND (.011)
BOTTOM TIER #1 DOWN 3'	14.9	1,650	1,665	0.0075	ND (.0081)	0.0199	0.0239
BOTTOM TIER #2 DOWN 6'	77	3,550	3,627	ND (.0089)	ND (.010)	ND (.011)	ND (.012)
Additional Assessment Samples							
296-7A_BH-01_5.5-8 (6/7/11)	51.5	567	618.5	-	-	-	-
296-7A_BH-01_10.5-13 (6/7/11)	ND (6.6)	ND (10)	ND	-	-	-	-
296-7A_BH-01_15.5-17.5 (6/7/11)	ND (6.6)	ND (10)	ND	-	-	-	-
296-7A_BH-01_17.5-20.5 (6/7/11)	ND (6.4)	ND (10)	ND	ND (.028)	ND (.064)	ND (.032)	ND (.130)
296-7A_BH-02_3-5.5 (6/8/11)	53.0	381	434	-	-	-	-
296-7A_BH-02_15.5-18 (6/8/11)	ND (6.8)	ND (10)	ND	-	-	-	-
296-7A_BH-02_18-20 (6/8/11)	ND (6.6)	1,060	1,060	ND (.029)	ND (.066)	ND (.033)	ND (.130)
296-7A_BH-03_14-19 (9/22/11)	ND (7.4)	ND (11)	ND	ND (.033)	ND (.074)	ND (.037)	ND (.150)
296-7A_BH-03_24-29 (9/22/11)	ND (6.5)	ND (10)	ND	ND (.029)	ND (.065)	ND (.033)	ND (.130)
296-7A_BH-04_4-9 (9/22/11)	41.9	674	715.9	ND (.031)	ND (.071)	ND (.036)	ND (.140)
296-7A_BH-04_14-19 (9/22/11)	ND (6.7)	11.6	11.6	ND (.029)	ND (.067)	ND (.033)	ND (.130)
296-7A_BH-04_19-24 (9/22/11)	ND (6.4)	12.2	12.2	ND (.028)	ND (.064)	ND (.032)	ND (.130)
296-7A_BH-04_34-39 (9/22/11)	ND (6.4)	25.3	25.3	ND (.028)	ND (.064)	ND (.032)	ND (.130)
296-7A_BH-05_14-19 (9/23/11)	ND (6.7)	28.1	28.1	ND (.029)	ND (.067)	ND (.033)	ND (.130)
296-7A_BH-05_29-34 (9/23/11)	6.74	52.7	59.44	ND (.028)	ND (.064)	ND (.032)	ND (.130)
296-7A_BH-05_39-44 (9/23/11)	ND (6.6)	15.6	15.6	ND (.029)	ND (.066)	ND (.033)	ND (.130)
296-7A_BH-06_24-29 (9/27/11)	ND (6.2)	21.7	21.7	ND (.027)	ND (.062)	ND (.031)	ND (.120)
296-7A_BH-06_29-34 (9/27/11)	ND (6.4)	11.8	11.8	ND (.028)	ND (.064)	ND (.032)	ND (.130)
296-7A_BH-07_24-29 (9/28/11)	ND (6.5)	14.0	14.0	ND (.028)	ND (.065)	ND (.032)	ND (.130)
296-7A_BH-07_34-39 (9/28/11)	ND (6.3)	31.0	31.0	ND (.028)	ND (.063)	ND (.032)	ND (.130)
296-7A_BH-08_19-24 (9/29/11)	ND (6.5)	16.8	16.8	ND (.028)	ND (.065)	ND (.032)	ND (.130)
296-7A_BH-08_39-44 (9/29/11)	ND (6.5)	20.9	20.9	ND (.029)	ND (.065)	ND (.033)	ND (.130)
296-7A_BH-09_3-8 (9/29/11)	7.64	205	213	ND (.029)	ND (.065)	ND (.032)	ND (.130)
296-7A_BH-09_28-33 (9/29/11)	ND (6.4)	39.0	39.0	ND (.028)	ND (.064)	ND (.032)	ND (.130)
296-7A_BH-10_ 34 -39 (9/29/11)	9.47	126.0	135.5	ND (0.029)	ND (.065)	ND (.032)	ND (.130)
296-7A_BH-10_ 40-41 (9/29/11)	ND (6.7)	79.3	79.3	ND (0.029)	ND (.067)	ND (.033)	ND (.130)
296-7A_BH-10_ 42-44 (9/29/11)	ND (6.8)	145.0	145.0	ND (0.030)	ND (.068)	ND (.034)	ND (.130)
COGCC Table 910-1 Concentration Levels	-	-	500	0.17	85	100	175

Notes:
1) ND = not detectable at the laboratory method detection limit shown in parentheses.
2) "-" indicates no analysis was performed.
3) Results highlighted in yellow exceed Table 910-1 concentration levels.
4) "WALL" samples are excavation sidewall samples. "BOTTOM" samples are excavation base samples.
5) Specific conductance, sodium adsorption ratio, and pH analyses were also completed on the soil removal evaluation samples. Table 910-1 concentration levels were not exceeded except for slightly elevated pH values in all samples.
6) Analyses for all Table 910-1 soil parameters were also completed for samples BH-01_17.5-20 & BH-02_18-20 (see Table 2).
7) The date of sample collection is listed in parentheses following the sample number.
8) The numbered interval following the sample borehole number for the assessment samples (e.g. BH-01) indicates sample depth, in feet.

TABLE 2
PCU 296-7A Summary of Table 910-1 Analytical Results for Samples BH-01_17.5-20.5 & BH-02_18-20
Collected Beneath the Containment Area

Analytical Parameter(with units)	296-7A_BH-01_17.5-20.5 (06/07/11)	296-7A_BH-02_18-20 (06/08/11)	COGCC Table 910-1 Concentration Levels (Soils Only)
TPH (GRO) (mg/kg)	ND (6.4)	ND (6.6)	-
TPH (DRO) (mg/kg)	ND (10)	1,060	-
TPH (GRO+DRO) (mg/kg)	ND	1,060	500
Benzene (mg/kg)	ND (0.028)	ND (0.029)	0.17
Toluene (mg/kg)	ND (0.064)	ND (0.066)	85
Ethylbenzene (mg/kg)	ND (0.032)	ND (0.033)	100
Xylenes (total) (mg/kg)	ND (0.130)	ND (0.130)	175
Acenaphthene (mg/kg)	ND (0.0061)	ND (0.0062)	1,000
Anthracene (mg/kg)	ND (0.0069)	ND (0.0070)	1,000
Benzo(A)anthracene (mg/kg)	ND (0.0099)	ND (0.010)	0.22
Benzo(B)fluoranthene (mg/kg)	ND (0.014)	ND (0.014)	0.22
Benzo(K)fuoranthene (mg/kg)	ND (0.0084)	ND (0.0085)	2.2
Benzo(A)pyrene (mg/kg)	ND (0.014)	ND (0.014)	0.022
Chrysene (mg/kg)	ND (0.0084)	ND (0.0085)	22
Dibenzo(A,H)anthracene (mg/kg)	ND (0.014)	ND (0.014)	0.022
Fluoranthene (mg/kg)	ND (0.0076)	ND (0.0078)	1,000
Fluorene (mg/kg)	ND (0.0065)	ND (0.0066)	1,000
Indeno(1,2,3,C,D)pyrene (mg/kg)	ND (0.021)	ND (0.021)	0.22
Naphthalene (mg/kg)	ND (0.0073)	ND (0.0074)	23
Pyrene (mg/kg)	ND (0.0073)	ND (0.0074)	1,000
Electrical Conductivity (mmhos/cm)	0.167	0.149	<4or 2X Bckgrnd
Sodium Adsorption Ratio (SAR)	1.88	1.57	<12
pH	9.52	9.57	6 to 9
Arsenic (mg/kg)	1.6	4.2	0.39 (see Note 5)
Barium (mg/kg)	134	132	15,000
Cadmium (mg/kg)	<1.1	<1.1	70
Chromium (III) (mg/kg)	27.8	32.7	120,000
Chromium (VI) (mg/kg)	<0.45	<0.46	23
Copper (mg/kg)	10.7	10.4	3,100
Lead (inorganic) (mg/kg)	11.6	12.7	400
Mercury (mg/kg)	<0.11	<0.11	23
Nickel (mg/kg)	13.4	14.7	1,600
Selenium (mg/kg)	<5.7	<5.7	390
Silver (mg/kg)	<3.4	<3.4	390
Zinc (mg/kg)	40.6	43.1	23,000

Notes:
1) ND = not detectible to the laboratory method detection limit in parentheses.
2) Results highlighted in yellow exceed Table 910-1 concentration levels.
3) The date of sample collection is listed in parentheses following the sample number.
4) The numbered interval following the sample borehole number indicates sample depth, in feet.
5) Based on background levels established for the site - maximum allowable arsenic levels for this site = 19.2 mg/kg (refer to COGCC project No. 5076).

APPENDIX B
KRW's Soil/Sediment Sampling Protocol

KRW CONSULTING, INC.

SOIL/SEDIMENT SAMPLING PROTOCOL

INTRODUCTION

The purpose of this document is to provide KRW personnel with instructions for the collection of soil/sediment samples consistent with appropriate federal and state regulations and guidelines for soil sampling protocols. The following sections provide information on the equipment requirements, sample collection, and handling procedures. Information regarding important precautions is also provided to help insure the integrity of the sample collection and handling.

This is a "working" document, in that changes will be necessary from time to time to accommodate regulatory changes and site specific conditions.

Sampling personnel are encouraged to call Greg Knell or Bill Brown at KRW, (303) 239-9011, with any questions which may arise during sampling or use of this manual, as well as if revisions to the manual are required.

1. EQUIPMENT REQUIREMENTS

Soil/sediment samples are typically collected using the following types of equipment:

1. drilling rig/drive or continuous sampling
2. Geoprobe® rig (direct push rig)
3. excavator/backhoe
4. sampling spoons/shovels
5. stainless steel trowels
6. stainless steel sampling auger
7. beaker with extendable pole

Field instruments typically used to measure organic gas and vapors during soil sampling include:

1. photoionization detector (PID)
2. flame ionization detector (FID)

Field instruments used to measure approximate field pH and conductivity include:

1. pH/conductivity meter (WTW pH/Cond 3400i with auto temp adjustments)

Field instruments should be calibrated according to the manufactures' specifications, prior to each sampling event.

2. EXPENDABLE SAMPLING SUPPLIES

Expendable sampling supplies which will be required each time soil/sediment samples are collected include:

1. distilled or deionized water (DI water)
2. Liquinox® (or similar) soap
3. Brushes
4. paper towels
5. 5-gallon plastic buckets
6. sample bottle kits

7. ice
8. ball-point pen
9. indelible marker
10. resealable plastic bags
11. disposable rubber gloves
12. disposable teflon sampling spoons
13. mason jars

The majority of these items can be purchased at local grocery stores.

Sample bottle kits are provided by the laboratory and should be ordered by phone at least five working days prior to each planned sampling date. The sample bottle kits will include necessary bottles, labels, and chain of custody forms.

3. RECORD KEEPING

A field book will be used for soil sampling events to record the following minimum information:

1. sampling conditions (i.e. climate);
2. soil sample identification/sampling location/depth of sample (a sketch is especially usefull for documenting sample location and other relevant site features);
3. Surveyed sample location (each sample location will be identified using a Trimble GPS instrument; elevation as well as either latitude and longitude or northing/easting coordinates will be utilized);
4. any notable conditions of the site and/or soil/sediment samples;
5. deviations from recommended sampling protocol (due to equipment failures, or special site conditions);
6. dates and results of calibration of field instruments; and
7. physical description of samples – amounts, color, texture, odor, relative moisture content, etc.
8. sampling rationale (e.g. assessment, confirmation, etc.)

Additional record keeping will include preparation of a chain of custody record for the samples which is consistent with both the field sampling record and sample labels on each of the sample bottles. A ball-point pen will be required to record sampling data and an indelible marker will be required to complete the sample labels.

4. SAMPLING METHODS

Soil sampling will include the following tasks:

1. collection of soil/sediment samples in zip lock-type plastic bags for field screening purposes;
2. head space readings in the plastic bag with PID and/or FID (if required);
3. field pH and conductivity readings on 1:1 soil/DI water mixture (well mixed by shaking) in mason jars (if required);
4. collection of the sample for laboratory analysis directly into laboratory provided containers if a discrete grab sample (if samples are composites they should be collected into zip lock-type bags and throughly mixed prior to placement into laboratory provided containers);
5. packaging and shipment of the samples; and
6. documentation of sampling activities and conditions.

The sampling equipment must be decontaminated prior to the initial collection of soil/sediment samples and prior to collection of each subsequent soil/sediment samples. A solution of Liquinox® (or similar) soap and DI water is used for the decontamination activity, followed by a DI water rinse. Samples must be collected with disposable teflon sampling spoons or decontaminated stainless steel trowels or auger. Disposable rubber gloves must be worn by the sampler during all sampling activities. A new set of gloves must be used for each soil sample collected.

Label the laboratory sample bottles with the following information:

1. time and date of sampling
2. sample identification/location/depth of sample
3. sampler's name
4. company name
5. Additional information, such as requested analyses and sample type (grab versus composite) may also be included

Fill out the appropriate entries on the chain of custody form provided by the laboratory, including:

1. sampler's name
2. sample identification/location/depth
3. sample type (phase: solid, liquid, sludge, etc.)
4. time/date of sample collection (same as sample label)
5. number of sample bottles
6. method of shipment
7. requested analytical parameters

Note: A separate line entry is required on the Chain of Custody form for each soil sample (refer to Figure 1, Example Chain of Custody Form). A parameters list identifying requested analyses can be included with the Chain of Custody for submittal to the laboratory if there is not adequate space on the form to list all requested analyses.

Immediately following the collection of a soil sample, place the containerized sample on ice in the cooler provided. Samples should be packed to prevent breakage during shipping. Sample packaging can be completed following collection of all project samples (but at least, daily) or at the time of each sample collection. The chain of custody form must remain with the samples and should be signed (by both the personnel relinquishing custody and the personnel receiving custody) whenever the sample cooler(s) change hands. The form should be placed in a zip lock-type plastic bag to assure it stays dry.

Ship or deliver the samples as soon as possible to the laboratory.

5. Pit or Trench Sampling (Above Liner)

Drilling pits or trenches (Reserve, Fresh Water and Cuttings) should be sampled in the following manner:

1. Survey location for safety concerns and document in JSA (job safety analysis). Safety concerns are as follows:
    i. Tie-off and life preservers are required if there is any liquid in the pit.
    ii. Only one person is to enter the pit at any time (minimum two man team).
    iii. Fall harness and secured rescue buoey are required for any pit entry.

2. Minimize safety risk by identifing the safest technique for collection of samples including:
    a. Use of equipment such as a backhoe or excavator to collect samples.
        i. Sampling should be completed with utmost caution to ensure liner integrity is not compromised.
    b. Use of a man-lift with an extendable boom and/or extendable sampling equipment can be used as appropriate when pits are accessible from the sides.
    c. Samples should be collected around all four sides and from different depths when possible to allow collection of a representative sample.
    d. If equipment is unavailable and extendable equipment will not provide the desired results, the sampling team may be required to physically enter into pits to obtain samples. In general, climbing into pits should not be attempted if significant standing water is present.
3. Whenever possible, under rig liner samples (soil/sediment on top of liner) should be collected prior to removal of material from the pit to facilitate the collection of a representative composite sample. As best as possible, soil/sediment samples should be collected from various locations atop the liner and composited. In an attempt to collect a representative sample, the sampler should exercise efforts to include all soil/sediment types observed in the pit (including materials with various degrees of soil staining) within the composite. The individual component samples of the composite should be of approximate equal volume and collected with a teflon sampling spoon or decontaminated stainless steel sampling trowel into a zip lock-type bag. The composite sample should be throughly mixed with the same sampling equipment used to collect the composite components, prior to placement into laboratory provided containers.

4. Follow section 4 for sample containerizing and shipping procedures.

6. Pit or Trench Sampling (Below Liner)

Per COGCC requirements, a minimum of one soil/sediment sample is required for collection and table 910-1 analysis at the lowest point beneath each pit liner. Based on evidence of release (staining, odor, PID readings, etc.) additional samples may be required.

1. Once pit liner has been removed the pit should be visually inspected for evidence of a release. If no evidence of a release is discovered one “confirmation” soil/sediment sample should be collected for laboratory analysis. To comply with COGCC requirements, a discrete surficial sample should be collected from the lowest point of elevation within the pit, if an identifiable low point exists. The COGCC directive assumes that there is a identifiable low point in the pit and that a release through the liner would tend to migrate to this low point. However, in many cases drill pits have nearly flat bottoms. If no definable low point is apparent, the confirmation sample should be a composite sample collected from the surface of sub-liner sediments. The composite should be composed of at least four components collected collected at equi-spaced locations within the pit.

2. If pit inspection provides evidence of a release (or if initial confirmation sampling indicates a significant release), activities should be completed to assess the extent and degree of potential impact. Assessment activities should target the area(s) of the pit bottom that exhibit the most evidence of a release to ascertain the “worst-case scenario” for the impact. If inspection indicates the area of impact is isolated (i.e. the entire pit bottom is not impacted), additional assessment should be completed adjacent to the area of impact in an effort to define the lateral extent of the impact. Assessment samples should be discrete samples collected from individual locations at specific depths, as appropriate.

3. Assessment activities should generally be completed using an excavator to facilitate collection of samples to a maximum depth of 10 feet below the bottom of the pit. Samples should be collected at discrete two-foot intervals until "clean conditions" are observed (through visual and olfactory observations, as well as field screening equipment measurements). A log detailing subsurface conditions should be recorded during these relatively shallow depth sampling activities. A confirmation sample should be collected for laboratory analysis from apparently non-impacted material beneath the impacted zone.

4. If assessment activities indicate that significant impact exists below a depth of ten feet beneath the pit bottom, additional equipment must be mobilized to the site to facilitate collection of deeper samples. This additional equipment will generally consist of a hollow-stem auger drill rig, but could also employ "direct push" sampling technology. Continuous samples will be collected, examined and field screened to evaluate the total depth of impact. Susurface samples will also be logged to evaluate geologic and hydrogeologic conditions. A sample will be collected for laboratory analysis from a depth interval below apparent impact to serve as a confirmation sample.

5. If the depth of impact cannot be determined through the use of auger drilling or direct push methods, other technologies will be evaluated and additional assessment implemented as necessary and feasible.

6. Follow section 4 for sample containerizing and shipping procedures.

By defining the depth of impact and the area of impact (as determined by sampling adjacent to the impacted area), a volume of material requiring remediation can be determined. The degree of impact (as indicated by analytical data) will provide useful data in determining the most cost effective remedial option.

7. Sampling Related to a Release

There is a potential for release of fluid products containing hydrocarbons and other contaminants from exploration and production activities. Generally, assessment sampling will be completed following initial spill response clean-up activities, if completed. Assessment must be undertaken to determine the extent and degree of impact so any required remedial actions can be completed consistent with COGCC clean-up guidelines.

1. The release location or area should be visually inspected for evidence of a release. If no evidence of a release is discovered "confirmation" soil/sediment samples should be collected for laboratory analysis. The number of samples to be collected will be determined by the size of the release area, but an adequate number should be collected to provide coverage across the impacted area(s). The samples should be surficial samples collected from locations within the release area that would be most likely impacted.

2. If release area inspection provides evidence of a release (or if initial confirmation sampling indicates a significant release), activities should be completed to assess the extent and degree of potential impact. Assessment activities should target the location(s) within the release area(s) that exhibit the most evidence of a release to ascertain the "worst-case scenario" for the impact. Additional assessment should be completed adjacent to the area(s) of impact in an effort to document the lateral extent of the impact.

3. Assessment activities should generally be completed using an excavator to facilitate collection of samples to a maximum depth of 10 feet below the surface. Alternatively, if equipment is not readily available and if site

conditions are suitable, a stainless steel hand auger can be used to collect shallow subsurface samples. Samples should be collected at discrete two-foot intervals until "clean conditions" are observed (through visual and olfactory observations, as well as field screening equipment measurements). A log detailing subsurface conditions will be recorded during these shallow depth sampling activities. A confirmation sample should be collected for laboratory analysis from apparently non-impacted material beneath the impacted zone.

4. If assessment activities indicate that significant impact exists below a depth of ten feet within the release area(s), additional equipment must be mobilized to the site to facilitate collection of deeper samples. This additional equipment will generally consist of a hollow-stem auger drill rig, but could also employ "direct push" sampling technology. Continuous samples will be collected, examined and field screened to evaluate the total depth of impact. Susurface samples will also be logged to evaluate geologic and hydrogeologic conditions. A sample will be collected for laboratory analysis from a depth interval below apparent impact to serve as a confirmation sample.

5. If the depth of impact cannot be determined through the use of auger drilling or direct push methods, other technologies will be evaluated and additional assessment implemented as necessary and feasible.

6. Follow section 4 for sample containerizing and shipping procedures.

By defining the depth of impact and the area of impact (as determined by sampling adjacent to the impacted area), a volume of material requiring remediation can be determined. The degree of impact (as indicated by analytical data) will provide useful data in determining the most cost effective remedial option.

7. Confirmation Sampling

Samples must be collected following remedial activities to confirm that remaining soil/sediment is not significantly impacted. Since remedial activities typically involve the removal of impacted materials, the remedial excavation must be sampled to document that all significantly impacted materials have been removed. Analytical parameters for these samples will be dependent upon the constituents of concern recognized during assessment sampling.

Typically, excavation side-wall samples should be collected to document that the lateral extent of the impact has been removed. At least four side-wall samples should be collected roughly equi-spaced around the excavation; i.e. on four sides. Side-wall samples will typically be collected as "channel" samples, from ground surface to the base of the excavation. The channel samples are essentially vertical composite samples. The sample will not be composed of discrete components, but rather be composed of "scrapings" along the excavation wall so that the entire vertical interval being sampled is equally represented by all depths.

Samples must also be collected from the remedial excavation base to document that vertical extent of the impact has been removed. Excavation base samples will generally be discrete samples, spaced approximately equal distances apart in a grid pattern. The number of excavation base samples will be dependent upon the size of the remedial excavation, but generally, every 500 square feet of excavation base will be represented by one discrete sample.

If confirmation sampling indicates that remnant significantly impacted materials remain in the excavation, the excavation will likely be advanced to remove indentified materials. Following any additional excavation, confirmation samples must be collected in the additional excavation area(s), as appropriate to document that significantly impacted materials have been removed.

8. Precautions

1. Disposable rubber gloves must be used during all sampling activities. A new set of gloves must be used for each soil sample collected. Disposable gloves used for sampling activities should be constructed of inert rubber or plastic materials.

2. Decontamination of sampling equipment between the collection of each sample is essential for the collection of representative, discrete samples.

3. Always store and transport the sampling equipment and supplies in an environment which is free of chemical odors, dust etc. Do not store this equipment in areas which are exposed to solvents, gasoline, diesel fuel, oil, paints, vehicle exhaust, or any critical or suspect materials.

4. Samples are to remain in iced coolers following collection. Ice should be adequately containerized to prevent leakage of water within the sample coolers.

5. If possible, schedule sampling so that samples can be shipped or delivered to the laboratory the same day.

5. It is essential to keep good records of all sampling activities, including a clear site sketch to document sample location(s) and rationale.

6. Retain a copy of the Chain of Custody form, upon submittal to the laboratory or commercial carrier, for internal records.

7. Submit documentation/field notes, as required, to client.

APPENDIX C
Soil Boring Logs

Project Name: PCU 296-7A

Project No: 1104-03B

Date: June 7, 2011. 14:30-16:50

Boring No.: 296-7A_BH-01

Logged By: S. Moskal

Sheet: 1 of 1

West side of tank battery containment

FID (ppm)	Graphic Log	Sample Location	
		0	0-1.5' No sample, unconsolidated fill.
25			1.5-3' (40% recovery) Sandstone, fine to medium grained, massive, brown, iron staining.
135			3-5.5' (90% recovery) Sandstone, same as above except hydrocarbon staining increasing with depth.
1300		5	5.5-8' (90% recovery) Same as above, increasing hydrocarbons with depth, green staining.
405			8-10.5' (100% recovery) 8-8.5' siltstone layer (quartzitic), hard drilling, then same as above.
21		10	10.5-13' (100% recovery) Same as above with bedding layer around 11-12', decreasing hydrocarbon impact.
20			13-15.5' (100% recovery) Sandstone with lenses of hydrocarbon staining, medium to fine grained, brown.
15		15	15.5-17.5' (100% recovery) Same as above with decreasing staining and odor with depth.
0			17.5-18' (100% recovery) Sandstone, fine to medium grained, gray, no hydrocarbon staining.
0		20	17.5-20.5' (100% recovery) Sandstone, medium grained, friable, brown, no staining.
0			20.5-23' (100% recovery) Same as above with alternating layers of gray sandstone.
			T.D. = 23'
		25	
		30	
		35	
		40	
		45	
		50	

Drilling Method: hollow stem auger

Hole Diameter: 8"

Rig Type: CME - 75

Test Boring Elevation:

Sample Method: continuous barrel

KRW CONSULTING, INC.
8000 W. 14th Avenue
Suite 200
Lakewood, CO 80214
(303) 239-9011

Project Name: PCU 296-7A

Project No: 1104-03B

Date: June 8, 2011. 08:45

Boring No.: 296-7A_BH-02

Logged By: S. Moskal

Sheet: 1 of 1

East side of tank battery containment

FID (ppm)	Graphic Log	Sample Location	
			0–1' (80% recovery) unconsolidated fill.
850			1–3' (80% recovery) Sandstone, fine to medium grained, small lens of quartzitic sandstone, light brown, hydrocarbon odor with no staining.
4500			3–5.5' (80% recovery) Same as above without quartzitic sandstone, hydrocarbon odor present and staining increasing with depth.
1350			5.5–8' (80% recovery) Same as above.
700			8–10.5' (100% recovery) Same as above with defined staining.
700			10.5–13' (100% recovery) Same as above.
600			13–15.5' (100% recovery) Sandstone, fine to medium grained, brown, hydrocarbon staining and odor.
130			15.5–18' (100% recovery) Same as above with decreasing odor and minimal staining.
0			18–20' (100% recovery) Same as above, black staining appears to be organic, no odor.
5			20–23' (100% recovery) Same as above, no black material, no odor, no staining.

T.D. = 23'

Drilling Method: hollow stem auger

Hole Diameter: 8"

Rig Type: CME – 75

Test Boring Elevation:

Sample Method: continuous barrel

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8000 W. 14th Avenue
Suite 200
Lakewood, CO 80214
(303) 239-9011

Project Name: PCU 296-7A

Project No: 1104-03B

Date: September 22, 2011. 11:50-14:00

Boring No.: 296-7A_BH-03

Logged By: R. Rasnic

Sheet: 1 of 1

PID (ppm)	FID (ppm)	Graphic Log	Sample Location	
				0-3' No recovery
90	0			3-4' (30% recovery) Loose fill to sandstone, fine to medium grained, thinly bedded, light brown, no hydrocarbons staining or odors, dry.
2070	0			4-9' (100% recovery) Sandstone, fine to medium grained, thick bedded to thin bedded, very hard, dark brown to light brown, no hydrocarbon staining or odors, dry.
2800	2			9-14' (100% recovery) Same as above, 9-10' black staining but no hydrocarbon odors, iron oxide staining in beds.
1400	4			14-19' (100% recovery) Same as above, no hydrocarbon staining or odor, iron oxide staining.
2080	0.5			19-24' (100% recovery) Same as above except bottom foot brownish green, no hydrocarbon odor or staining.
1980	0.6			24-29' (100% recovery) Same as above, 24-25' dark gray, then turning to yellow brown, no hydrocarbon staining or odors.
				T.D. = 29'

Drilling Method: hollow stem auger

Hole Diameter: 8"

Rig Type: CME - 75

Test Boring Elevation:

Sample Method: continuous barrel

KRW CONSULTING, INC.
8000 W. 14th Avenue
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Lakewood, CO 80214
(303) 239-9011

Project Name: PCU 296–7A

Project No: 1104–03B

Date: September 22, 2011. 15:00–17:50

Boring No.: 296–7A_BH–04

Logged By: R. Rasnic

Sheet: 1 of 1

PID (ppm)	FID (ppm)	Graphic Log	Sample Location	
240	31			0–4' (70% recovery) Loose fill to sandstone, fine to medium grained, thin bedded, yellow brown, iron oxide staining, mild hydrocarbon odors and staining 3–4', dry.
187	1980			4–9' (100% recovery) Sandstone, fine to medium grained, thin bedded, yellow brown, several layers of staining across interval, mild to strong hydrocarbon odors, dry.
25	21			9–14' (100% recovery) Same as above. At least 4 areas in interval exhibiting hydrocarbon migration through fractures, strong hydrocarbon odors and staining.
21	17			14–19' (100% recovery) Sandstone, fine to medium grained, thick bedded to thin bedded, yellow brown, hydrocarbon staining and odors 14–16.5', no odors or staining 16.5–19', dry.
26	11			19–24' (100% recovery) Sandstone, fine to medium grained, thick bedded to thin bedded, no apparent staining or odor 19–22'. 22–24' staining and moderate hydrocarbon odor.
21	9			24–29' (100% recovery) thick bedded to finely bedded; fine to medium brown; greyish brown to yellow brown; dry.
3	3			29–34' (100% recovery) thick bedded to finely bedded; fine to medium brown; greyish brown to yellow brown; dry. Slight hydrocarbon odor at 30'; 31–34' no odor or staining.
14	1			34–39' (100% recovery) thick bedded to finely bedded; greyish brown; dry. Moist area at 37'; Interrupted by driller. Bit broke. Sampler stuck. Left auger in hole. No hydrocarbon odor or staining.
				T.D. = 39' 1750

Drilling Method: hollow stem auger

Hole Diameter: 8"

Rig Type: CME – 75

Test Boring Elevation:

Sample Method: continuous barrel

KRW CONSULTING, INC.
8000 W. 14th Avenue
Suite 200
Lakewood, CO 80214
(303) 239–9011

Project Name: PCU 296-7A

Project No: 1104-03B

Date: September 23, 2011.

Boring No.: 296-7A_BH-05

Logged By: CAB

Sheet: 1 of 1

PID (ppm)	FID (ppm)	Graphic Log	Sample Location	
1490	0			0-4' (60% recovery) Fill clayey sand to sandstone brown to tan, moist to dry, no odor or stain.
1340	0.5			4-9' (100% recovery) Sandstone, thick bedded, fine to medium grained, tan, dry, massive, no odor or staining.
23	9.2			9-14' (100% recovery) Same as above, massive, fine to medium grained, tan, dry, no odor or staining except in sample tip, green stain, hydrocarbon odor.
133	39			14-19' (100% recovery) Sandstone, same as above, massive, tan, dry. Occasional fractures with minor green staining, hydrocarbon odor along thin fracture zones (<¼").
140	21			19-22.5'; 19-20' Black, crystalline, sandstone. Maybe naturally occurring lignite or carbon.
14	14.5			Electric train set odor. 20-22.5' Sandstone, occasional green staining with hydrocarbon odor.
20	14			22.5-24' Sandstone - limestone seam. (3"-6") thick. Trace green staining, mild to no odor.
14	4.8			24-29' Sandstone - same as above. Trcace green staining and fractures at 28' & 27'. Grades to brown/dark brown at 28' to 29'. Mild odor and brown staining.
80	546			29-34' Sandstone. Thinly bedded, fine to medium grain. Yellow brown to light grey. ; dry. hydrocarbon staining/green, mild to moderately strong odors throughout interval.
				34-36.5' Sandstone; thick bedded; fine to medium grain; Light grey; Dry; hydrocarbon odor and staining (green and black)
				36.5-39' Sandstone; Thinly bedded; fine to medium grain; Yellow to brown; Dry; No evidence of odor or staining.
				39-44' thick bedded sandstone. Grey, some crystals; dry, thinly bedded sandstone, yellow brown with iron oxide staining; dry sandy interval towards bottom; No hydrocarbon odor or staining.
				T.D. = 44' 1250

Drilling Method: hollow stem auger

Hole Diameter: 8"

Rig Type: CME - 75

Test Boring Elevation: +4' above pit bottom

Sample Method: continuous barrel

KRW CONSULTING, INC.
8000 W. 14th Avenue
Suite 200
Lakewood, CO 80214
(303) 239-9011

Project Name: PCU 296-7A

Project No: 1104-03B

Date: September 27, 2011. 13:45-17:30

Boring No.: 296-7A_BH-06

Logged By: R. Rasnic

Sheet: 1 of 1

PID (ppm)	FID (ppm)	Graphic Log	Sample Location	
32	0		0-4'	0-4' (50% recovery) Loose rock and gravel fill material to sandstone, thin bedded, yellow brown, no odors or staining, dry.
19	0		4-9'	4-9' (85% recovery) Sandstone, thick bedded to thin bedded, fine to medium grained, brown to yellow brown, dry. ~5' hard layer of massive, fine grained siltstone, light gray, dry.
20	0		9-12'	9-12' (90% recovery) Sandstone, thin bedded, yellow brown, no odors or staining, dry.
			12-13'	12-13' (90% recovery) Limestone, fine grained, hard, light gray, no odors or staining, dry.
			13-14'	13-14' (90% recovery) Sandstone, thick bedded, yellow brown, no odors or staining, dry.
19	0		14-19'	14-19' (100% recovery) Sandstone, fine to medium grained, thin bedded, yellow brown, dry. 14-14.5' thick bedded, gray color. No hydrocarbon staining or odors.
59	0		19-20'	19-20' (100% recovery) Sandstone, fine to medium grained, thick bedded, grayish color, iron oxide staining, no hydrocarbon staining or odors, dry.
			20-24'	20-24' (100% recovery) Sandstone, fine to medium grained, thin bedded, yellow brown, iron oxide staining, no hydrocarbon odor or staining, dry.
530	0		24-26'	24-26' (100% recovery) Sandstone, fine to medium grained, thick bedded, hard, light gray, no hydrocarbon odor or staining, dry.
			26-29'	26-29' (100% recovery) Sandstone, fine to medium grained, thin bedded, gray, no hydrocarbon odor or staining, dry.
29	0		29-34'	29-34' (100% recovery) Sandstone, fine to medium grained, thin bedded, brown to yellow brown, iron oxide staining, no hydrocarbon odor or staining, dry. Hard, light gray siltstone at 34' outside of core damp from condensation with steam present, green staining in middle of interval but not consistent with hydrocarbon staining, more like an oxide of copper. Fracture was perpendicular to bedding plane.
				T.D. = 34'

LAB ANALYTICAL:
24-29', 29-34' BTEX
AND TPH (GRO + DRO)

Drilling Method: hollow stem auger

Hole Diameter: 8"

Rig Type: CME - 75

Test Boring Elevation:

Sample Method: continuous barrel

KRW CONSULTING, INC.
8000 W. 14th Avenue
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Lakewood, CO 80214
(303) 239-9011

Project Name: PCU 296-7A

Project No: 1104-03B

Date: September 28, 2011. 08:45

Boring No.: 296-7A_BH-07

Logged By: R. Rasnic

Sheet: 1 of 1

PID (ppm)	FID (ppm)	Graphic Log	Sample Location	
340	0			0-4' (20% recovery) Loose unconsolidated fill, gravel and rock, yellow brown, no hydrocarbon odor or staining, dry.
1790	0			4-9' (30% recovery) Loose fill material, gravel and rock. Bottom of barrel sandstone, fine to medium grained, massive, hard, yellow brown, no hydrocarbon staining or odors, dry.
290	0			9-11.5' (90% recovery) Sandstone, fine to medium grained, massive, hard, yellow brown, no hydrocarbon staining or odors, dry.
				11.5-14' (90% recovery) Sandstone, massive, yellow brown, iron oxide staining, no hydrocarbon odors or staining, dry.
817	0			14-19' (100% recovery) Sandstone, fine to medium grained, thin bedded to predominantly massive, brown to yellow brown, some iron oxide stains, no hydrocarbon odors or staining, dry.
250	0			19-24' (100% recovery) Sandstone, fine to medium grained, massive, brown, no hydrocarbon odor or staining, dry.
43	0			24-27.5' (100% recovery) Sandstone, fine to medium grained, thick bedded to thin bedded, yellow brown to brown, dry.
				27.5-29' (100% recovery) Sandstone, fine to medium grained, thin bedded, gray, dry. 28.5' greenish stain found, mild hydrocarbon odor, dark brown to black material, organic, fossilized leaf.
500	0			29-34' (100% recovery) Sandstone, fine to medium grained, thick bedded to thin bedded, mostly grayish throughout, no hydrocarbon staining or odors.
1260	0			34-39' (100% recovery) Sandstone, fine to medium grained, thin bedded, yellow brown to gray, no hydrocarbon staining or odors, dry. Moist 34-35'
				T.D. = 39'

LAB ANALYTICAL:
24-29', 34-39' BTEX
AND TPH (GRO + DRO)

Drilling Method: hollow stem auger

Hole Diameter: 8"

Rig Type: CME - 75

Test Boring Elevation:

Sample Method: continuous barrel

KRW CONSULTING, INC.
8000 W. 14th Avenue
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Lakewood, CO 80214
(303) 239-9011

Project Name: PCU 296-7A

Project No: 1104-03B

Date: September 28, 2011. 13:15-16:30

Boring No.: 296-7A_BH-08

Logged By: R. Rasnic

Sheet: 1 of 1

PID (ppm)	FID (ppm)	Graphic Log	Sample Location	
18.5	0			0-4' (20% recovery) Loose unconsolidated fill, gravel and rock, yellow brown, moist.
21	0			4-6.5' (50% recovery) Loose sandy material with rocks and gravel. 6.5-9' (50% recovery) Sandstone, fine to medium grained, massive, yellow brown, no hydrocarbon odor or staining, dry.
25	0			9-10' (85% recovery) Loose sandy material with rocks and gravel, yellow, moist. 10-14' (85% recovery) Sandstone, fine to medium grained, massive, yellow brown, hydrocarbon staining and odor at 14' (mild odor).
7.5	0			14-15' (100% recovery) Sandstone, massive, hydrocarbon staining and odor. 15-16' (100% recovery) Sandstone, thinly bedded, gray, no hydrocarbon staining or odor, dry. 16-18' (100% recovery) Sandstone, thinly bedded to massive, yellow brown, hydrocarbon staining and mild odors along bedding planes. 18-19' (100% recovery) Sandstone, massive, no staining or odors.
37	9			19-24' (100% recovery) Sandstone, fine to medium grained, thinly bedded, yellow brown to brown, hydrocarbon staining and moderate odor 20-24' along bedding planes.
24	1			24-29' (100% recovery) Sandstone, fine to medium grained, thinly bedded, light gray to brown / yellow brown, hydrocarbon staining and odor at 25-26.5', appears to be clean 26.5-29', moist.
32	0			29-30' (100% recovery) Sandstone, fine to medium grained, thinly bedded, brown, hydrocarbon staining and odor. 30-34' (100% recovery) Sandstone, fine to medium grained, thinly bedded, light gray, no hydrocarbon staining or odor. Dark organic material ~33.5' in one bedding plane with staining and odor.
2	1			34-35' (100% recovery) Siltstone, fine grained, light gray, hydrocarbon staining and odor. 35-39' (100% recovery) Sandstone, thinly bedded, light gray, no hydrocarbon staining or odor.
33	0			39-41.5' (100% recovery) Sandstone, fine to medium grained, thinly bedded, yellow brown. 41.5-44' (100% recovery) Sandstone, fine to medium grained, thinly bedded, gray, no evidence of hydrocarbon impact, moist.
				T.D. = 44'

LAB ANALYTICAL:
19-24', 39-44' BTEX
AND TPH (GRO + DRO)

Drilling Method: hollow stem auger

Hole Diameter: 8"

Rig Type: CME - 75

Test Boring Elevation:

Sample Method: continuous barrel

KRW CONSULTING, INC.
8000 W. 14th Avenue
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Project Name: PCU 296-7A

Project No: 1104-03B

Date: September 29, 2011. 09:10-12:00

Boring No.: 296-7A_BH-09

Logged By: R. Rasnic

Sheet: 1 of 1

PID (ppm)	FID (ppm)	Graphic Log	Sample Location	
245	0		0-3'	0-3' (60% recovery) Sandstone, fine to medium grained, thinly bedded, brown, hydrocarbon staining and moderate odor at 2-3', dry.
1690	4		3-5'	3-5' (70% recovery) Sandstone, fine to medium grained, massive, brown, intermittent hydrocarbon staining and mild odor, dry.
			5-8'	5-8' (70% recovery) Sandstone, fine to medium grained, thinly bedded, brown, hydrocarbon staining and stronger odor 5-7', dry.
13	0		8-13'	8-13' (100% recovery) Sandstone, fine to medium grained, mostly thinly bedded, two small intervals massive, one interval clay like material, yellow brown to brown, no hydrocarbon staining or odor, dry.
11	0		13-18'	13-18' (100% recovery) Sandstone, fine to medium grained, thinly bedded, light brown to brown, organic matter particles and iron oxide staining in bottom half of barrel, no hydrocarbon staining or odor, dry.
17	0		18-23'	18-23' (100% recovery) Sandstone, fine to medium grained, thinly bedded, brown to yellow brown, dark brown to gray, gray material at 22-23', no hydrocarbon staining or odor, dry.
18	0		23-28'	23-28' (100% recovery) Sandstone, fine to medium grained, thinly bedded, yellow brown to gray to dark brown to gray, organic material particles and iron oxide staining along bedding planes, no hydrocarbon staining or odor, dry.
17	0		28-33'	28-33' (100% recovery) Sandstone, fine to medium grained, thinly bedded, gray (iron oxide stains) to yellow brown to dark brown, no hydrocarbon odors or staining, dry.

T.D. = 33'

LAB ANALYTICAL:
3-8', 28-33' BTEX AND
TPH (GRO + DRO)

Drilling Method: hollow stem auger

Hole Diameter: 8"

Rig Type: CME - 75

Test Boring Elevation:

Sample Method: continuous barrel

KRW CONSULTING, INC.
8000 W. 14th Avenue
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Lakewood, CO 80214
(303) 239-9011

Project Name: PCU 296-7A

Project No: 1104-03B

Date: September 29, 2011. 13:10-16:45

Boring No.: 296-7A_BH-10

Logged By: R. Rasnic

Sheet: 1 of 1

PID (ppm)	FID (ppm)	Graphic Log	Sample Location	
			0	0-4' (5% recovery) Rocks and gravel, no sample collected.
18	0		5	4-9' (20% recovery) Sand and gravel with rocks, yellow brown, no hydrocarbon staining or odors, moist.
22	0		10	9-14' (95% recovery) Sandstone, fine to medium grained, massive, friable, brown to yellow brown, no hydrocarbon staining or odors, dry.
18	0		15	14-19' (80% recovery) Loose sandy soil with a stringer of hard siltstone, massive to thinly bedded, friable, yellow brown to light brown, no hydrocarbon odors or staining, moist.
19	0		20	19-24' (100% recovery) Sandstone, fine to medium grained, thick bedded to thinly bedded, brown, no hydrocarbon staining or odors, dry.
20	0		25	24-29' (100% recovery) Sandstone, fine to medium grained, thinly bedded, brown to yellow brown to light brown, hydrocarbon stain and slight odor at 27', organic particles at 28', dry.
24	0		30	29-34' (100% recovery) Sandstone, fine to medium grained, thinly bedded, hard layer ~33', light brown, hydrocarbon stain and moderate odor at 32', interval contained organic particles and iron oxide staining.
95	90		35	34-39' (100% recovery) Sandstone, fine to medium grained, thinly bedded, brown to yellow brown to gray at 35', strong hydrocarbon odor and staining 35-36', dry.
43	61		40	39-40' (100% recovery) Sandstone, fine to medium grained, thick bedded to 41', gray, dry. 40-41' (100% recovery) Sandstone, fine to medium grained, thinly bedded, yellow brown, hydrocarbon staining and strong odor, dry.
61	65			41-44' (100% recovery) Sandstone, fine to medium grained, thinly bedded, yellow brown, appears to be clean, dry.
			45	T.D. = 44'
			50	

Drilling Method: hollow stem auger

Hole Diameter: 8"

Rig Type: CME - 75

Test Boring Elevation:

Sample Method: continuous barrel

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APPENDIX D
Laboratory Reports

(submitted on separate CD)

APPENDIX E
Sensitive Receptor Study

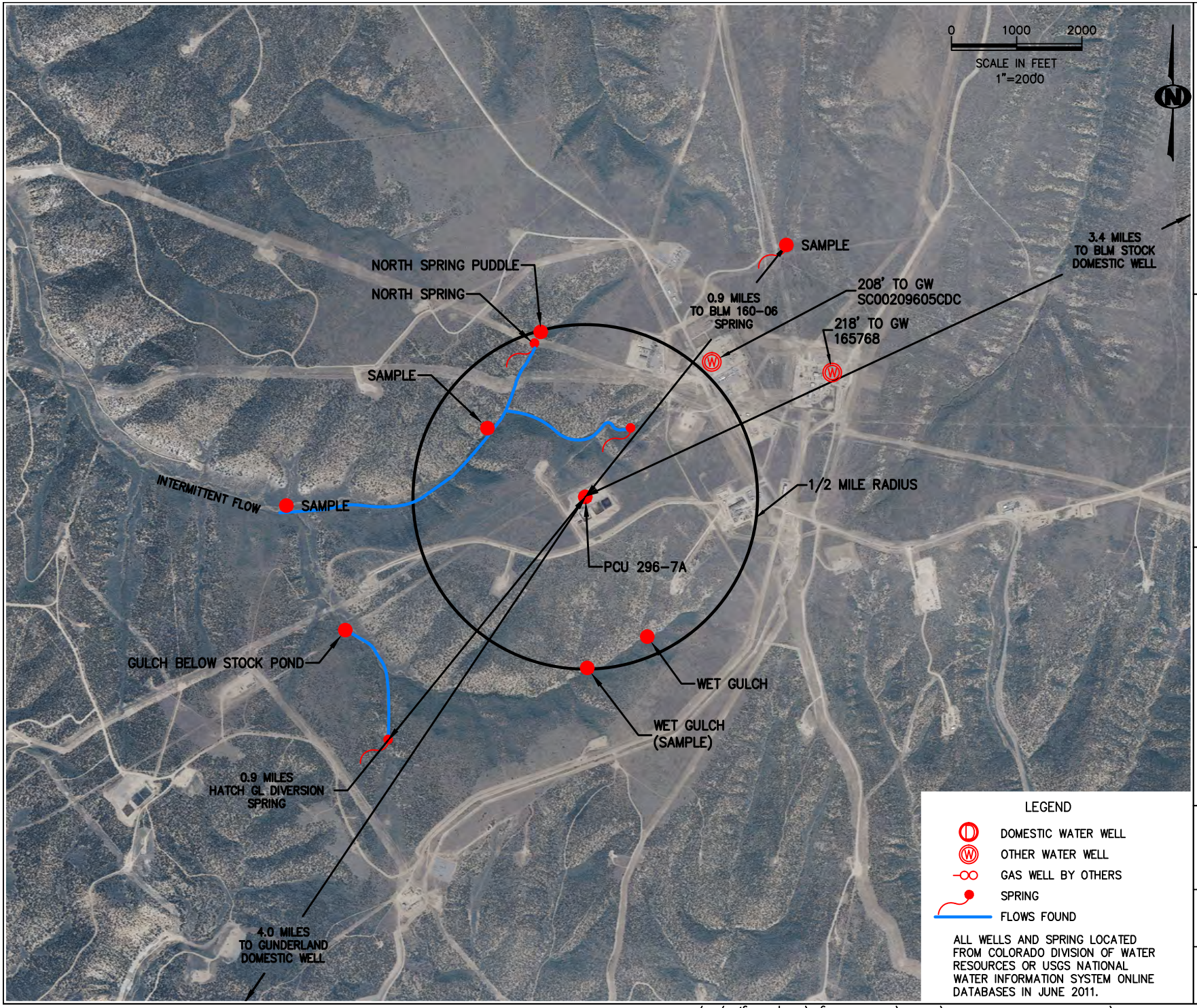

FIGURE 1
PICEANCE CREEK
PCU 296-7A
SENSITIVE RECEPTOR SURVEY
PREPARED FOR EXXONMOBIL

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

NOTES:

DATE	REVISIONS

DESIGNED: CB	CHECKED: JH	FIGURE 1	
DATE: 10/18/11	DRAWN: DRF	SHEET NO. 1 of 1	
FILE NAME: recept		SCALE: 1"=2000'	
PROJECT NO. 1104-03B			

s:\proj\exxonmobil environmental\1104-03b arcadis 296-7a\civil3d\final drawings\recept.dwg,10/18/11

Table 1
PCU 296-7A
Division of Water Resources Water Well Permit Database Search

Colorado Division of Water Resources Well Permit Database Search - 1 mile radius of PCU 296-7A in T2 R96W Section 7 (N4,420,837 E226,114.5)																		
receipt	permitno	status_desc	well_name	UTM_x	UTM_y	loc_accuracy	use1	use2	use3	aquifer1_r	well_depth	static_wat	full_name	mailing_ad	mailing_cit	mailing_st	mailing_ZIP	
0048645Q	68293	Well Constructed	USA-PICEANCE CREEK #26-7G	225089.2	4420477	Spotted from section lines	INDUSTRIAL	COMMERCIAL		ALL UNNA	5840		EXXON MO	PO BOX 43	HOUSTON	TX	77210-4358	
3641189V	68270	Well Constructed	PICEANCE CREEK UNIT #T21X-7G	225111	4421382.5	Spotted from section lines	INDUSTRIAL	COMMERCIAL		ALL UNNA	3502		EXXON MO	PO BOX 43	HOUSTON	TX	77210-4358	
0048645J	68285	Well Constructed	PICEANCE CREEK UNIT #T55X-7G	225724.7	4420459.5	Spotted from section lines	INDUSTRIAL	COMMERCIAL		ALL UNNA	3750		EXXON MO	PO BOX 43	HOUSTON	TX	77210-4358	
0048646L	68355	Well Constructed	USA-PICEANCE CREEK #T73-7G	225895	4420998	Spotted from section lines	INDUSTRIAL	COMMERCIAL		ALL UNNA	3700		EXXON MO	PO BOX 43	HOUSTON	TX	77210-4358	
0048647A	68370	Well Constructed	PICEANCE CREEK UNIT #296-7A6	226104.5	4420840	Spotted from section lines	INDUSTRIAL	COMMERCIAL		ALL UNNA	13454		EXXON MO	PO BOX 43	HOUSTON	TX	77210-4358	
0048648G	68405	Well Constructed	PICEANCE CREEK UNIT #296-7A5	226106.5	4420832.5	Spotted from section lines	INDUSTRIAL	COMMERCIAL		ALL UNNA	13520		EXXON MO	PO BOX 43	HOUSTON	TX	77210-4358	
0048647B	68371	Well Constructed	PICEANCE CREEK UNIT #296-7A7	226108.5	4420843	Spotted from section lines	INDUSTRIAL	COMMERCIAL		ALL UNNA	13414		EXXON MO	PO BOX 43	HOUSTON	TX	77210-4358	
3641189Q	68245	Well Constructed	PICEANCE CREEK UNIT #296-7A4	226110.5	4420835	Spotted from section lines	INDUSTRIAL	COMMERCIAL		ALL UNNA	13600		EXXON MO	PO BOX 43	HOUSTON	TX	77210-4358	
0048647C	68372	Well Constructed	PICEANCE CREEK UNIT #296-7A8	226112.4	4420845	Spotted from section lines	INDUSTRIAL	COMMERCIAL		ALL UNNA	13694		EXXON MO	PO BOX 43	HOUSTON	TX	77210-4358	
3641189N	68242	Well Constructed	PICEANCE CREEK UNIT #296-7A1	226114.5	4420837	Spotted from section lines	INDUSTRIAL	COMMERCIAL		ALL UNNA	13608		EXXON MO	PO BOX 43	HOUSTON	TX	77210-4358	
0048647D	68373	Well Constructed	PICEANCE CREEK UNIT #296-7A9	226116.1	4420847.5	Spotted from section lines	INDUSTRIAL	COMMERCIAL		ALL UNNA	13694		EXXON MO	PO BOX 43	HOUSTON	TX	77210-4358	
3641189P	68244	Well Constructed	PICEANCE CREEK UNIT #296-7A3	226118.2	4420840	Spotted from section lines	INDUSTRIAL	COMMERCIAL		ALL UNNA	13669		EXXON MO	PO BOX 43	HOUSTON	TX	77210-4358	
3641189O	68243	Well Constructed	PICEANCE CREEK UNIT #296-7A2	226122.2	4420842	Spotted from section lines	INDUSTRIAL	COMMERCIAL		ALL UNNA	13724		EXXON MO	PO BOX 43	HOUSTON	TX	77210-4358	
0048649H	68432	Well Constructed	USA-PICEANCE CREEK #F81-18G	226169.8	4419726.5	Spotted from section lines	INDUSTRIAL	COMMERCIAL		ALL UNNA	3600		EXXON MO	PO BOX 43	HOUSTON	TX	77210-4358	
0048648X	68422	Well Constructed	USA-PICEANCE CREEK #F13-8G	226544.1	4420442	Spotted from section lines	INDUSTRIAL	COMMERCIAL		ALL UNNA	3455		EXXON MO	PO BOX 43	HOUSTON	TX	77210-4358	
44709	4030	Application Denied		226563.2	4421626.1	Spotted from quarters	DOMESTIC			ALL UNNAMED AQUIFERS			EL PASO NATRL GAS C	EL PASO	TX	79978		
0048648Q	68415	Well Constructed	PICEANCE CREEK UNIT #T22X-8G	226576.8	4421209.5	Spotted from section lines	INDUSTRIAL	COMMERCIAL		ALL UNNA	13880		EXXON MO	PO BOX 43	HOUSTON	TX	77210-4358	
9119920	13384	Well Constructed		226724.9	4421438.1	Spotted from section lines	INDUSTRIAL			ALL UNNA	486	208	MOBIL OIL	330 S CEN	CASPER	WY	82601	
9119939	16130	Well Constructed		226940.7	4421585.6	Spotted from quarters	INDUSTRIAL			ALL UNNAMED AQUIFERS			EL PASO N	PO BOX 14	EL PASO	TX		
0048645L	68287	Well Constructed	PICEANCE CREEK UNIT #T58X-8G	227144.9	4419780	Spotted from section lines	INDUSTRIAL	COMMERCIAL		ALL UNNA	3550		EXXON MO	PO BOX 43	HOUSTON	TX	77210-4358	
342179	165768	Well Constructed	#1	227263.9	4421434.1	Spotted from section lines	COMMERCIAL			GREEN RIV	485	218	COLORADO	PO BOX 10	CO SPGS	CO	80944	
0048645P	68292	Well Constructed	PICEANCE CREEK UNIT #T64W-8G	227320.7	4420584.5	Spotted from section lines	INDUSTRIAL	COMMERCIAL		ALL UNNA	13905		EXXON MO	PO BOX 43	HOUSTON	TX	77210-4358	
Note: Well Permit No. 13384 is referenced on Figure 1 (Appendix E) as SC00209605CDC well from the USGS database. Per coordinates, depth of well/GW, it appears to be the same well.																		

Table 2
PCU 296-7A
USGS National Water Information System Database

Site Name	Dec. Lat.	Dec. Lon	Elevation	Well depth	High Water	GW Elevation	Aquifer
SC00209605CDC	39.8994171	-108.1967504	7445	486	208	7237	GR

VF - Valley-Fill Deposits
CP - Colorado Plateaus national aquifers
GR - Green River Formation local aquifer.

U.S. Fish and Wildlife Service

National Wetlands Inventory

296-7A

Jun 14, 2011

Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

User Remarks:

Wetlands

APPENDIX F
Site Photos

PCU 296-7A Former Tank Containment Area – Following Initial Soil Removal

PCU 296-7A BH-02 18 to 20 feet

PCU 296-7A Looking North

Confluence of gulches north of PCU 296-7A above sample location.

Evidence of historic stock watering in gulch north of PCU 296-7A.

Wet Gulch South of PCU 296-7A. No flow observed.