

State of Colorado  
Oil and Gas Conservation Commission

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



## 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.)

RECEIVED  
4/25/2013

1. OGCC Operator Number: 96850	4. Contact Name: Karolina Blaney	Complete the Attachment Checklist OP OGCC
2. Name of Operator: WPX Energy Rocky Mountain, LLC	Phone: 970.683.2295	
3. Address: 1058 County Road 215 City: Parachute State: CO Zip: 81635	Fax: 970.285.9573	
5. API Number: 05-045-07664	OGCC Facility ID Number: 324133	Survey Plat
6. Well/Facility Name: Knight PA 311-4	Well/Facility Number: 7	Directional Survey
8. Location (Qtr/Sec, Twp, Rng, Mer): NWNW 54, T7S, R95W, 6PM		Surface Eqpm Diagram
9. County: Garfield	10. Field Name: Parachute	Technical Info Page
11. Federal, Indian or State Lease Number: NA		Other

## General Notice

<input type="checkbox"/> 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"/> FNL/FSL <input type="checkbox"/> FEL/FWL
Change of Surface Footage to Exterior Section Lines:	<input type="checkbox"/>
Change of Bottomhole Footage from Exterior Section Lines:	<input type="checkbox"/>
Change of Bottomhole Footage to Exterior Section Lines:	<input type="checkbox"/> attach directional survey
Bottomhole location Qtr/Sec, Twp, Rng, Mer	
Latitude	Distance to nearest property line
Longitude	Distance to nearest lease line
Ground Elevation	Distance to nearest well same formation
	Is location in a High Density Area (rule 603b)? Yes/No
	Surface owner consultation date:
GPS DATA: Date of Measurement PDOP Reading Instrument Operator's Name	
<input type="checkbox"/> CHANGE SPACING UNIT Formation Formation Code Spacing order number Unit Acreage Unit configuration	
<input type="checkbox"/> Remove from surface bond Signed surface use agreement attached	
<input type="checkbox"/> CHANGE OF OPERATOR (prior to drilling): Effective Date: Plugging Bond: <input type="checkbox"/> Blanket <input type="checkbox"/> Individual	
<input type="checkbox"/> CHANGE WELL NAME From: To: Effective Date:	
<input type="checkbox"/> ABANDONED LOCATION: Was location ever built? <input type="checkbox"/> Yes <input type="checkbox"/> No Is site ready for inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No Date Ready for Inspection:	
<input type="checkbox"/> NOTICE OF CONTINUED SHUT IN STATUS Date well shut in or temporarily abandoned: Has Production Equipment been removed from site? <input type="checkbox"/> Yes <input type="checkbox"/> No MIT required if shut in longer than two years. Date of last MIT	
<input type="checkbox"/> SPUD DATE:	
<input type="checkbox"/> REQUEST FOR CONFIDENTIAL STATUS (6 mos from date casing set)	
<input type="checkbox"/> SUBSEQUENT REPORT OF STAGE, SQUEEZE OR REMEDIAL CEMENT WORK Method used Cementing tool setting/perf depth Cement volume Cement top Cement bottom Date	
<input type="checkbox"/> 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

<input type="checkbox"/> Notice of Intent Approximate Start Date:	<input type="checkbox"/> 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"/> Change Drilling Plans	<input type="checkbox"/> Repair Well
<input type="checkbox"/> Gross Interval Changed?	<input type="checkbox"/> Rule 502 variance requested
<input type="checkbox"/> Casing/Cementing Program Change	<input type="checkbox"/> Other
<input type="checkbox"/> E&P Waste Disposal	
<input type="checkbox"/> Beneficial Reuse of E&P Waste	
<input checked="" type="checkbox"/> 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: Karolina Blaney Date: 4/25/2013 Email: Karolina.Blaney@wpxenergy.com  
Print Name: Karolina Blaney Title: Environmental Specialist

COGCC Approved:

Carolyn Blyden

Title:

EPS #

Date:

04/26/2013

CONDITIONS OF APPROVAL, IF ANY:

NW Region

REF # 4251

TECHNICAL INFORMATION PAGE



FOR OGCC USE ONLY

1. OGCC Operator Number: \_\_\_\_\_ API Number: \_\_\_\_\_

2. Name of Operator: \_\_\_\_\_ OGCC Facility ID # \_\_\_\_\_

3. Well/Facility Name: \_\_\_\_\_ Well/Facility Number: \_\_\_\_\_

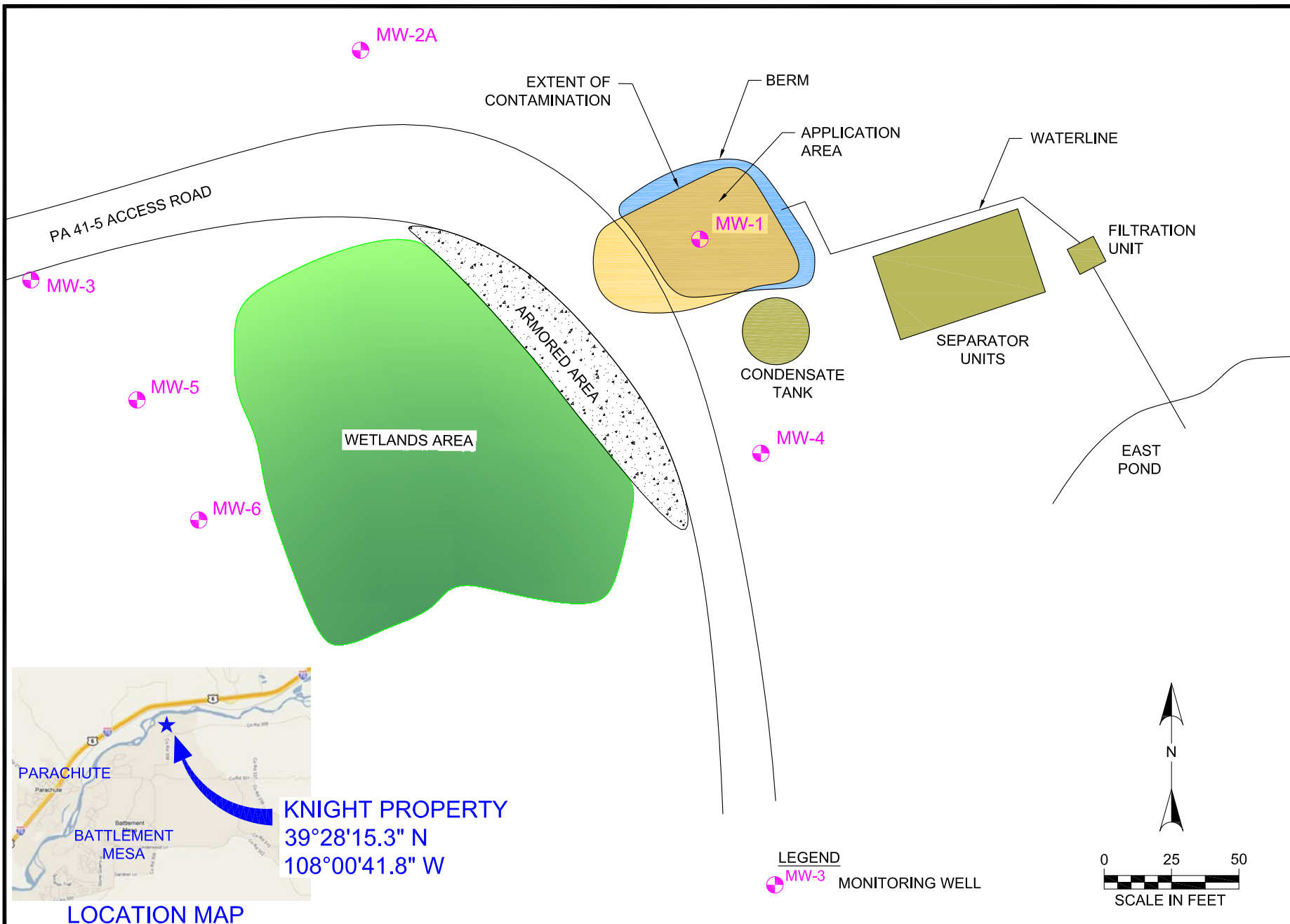
4. Location (QtrQtr, Sec, Twp, Rng, Meridian): \_\_\_\_\_

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.

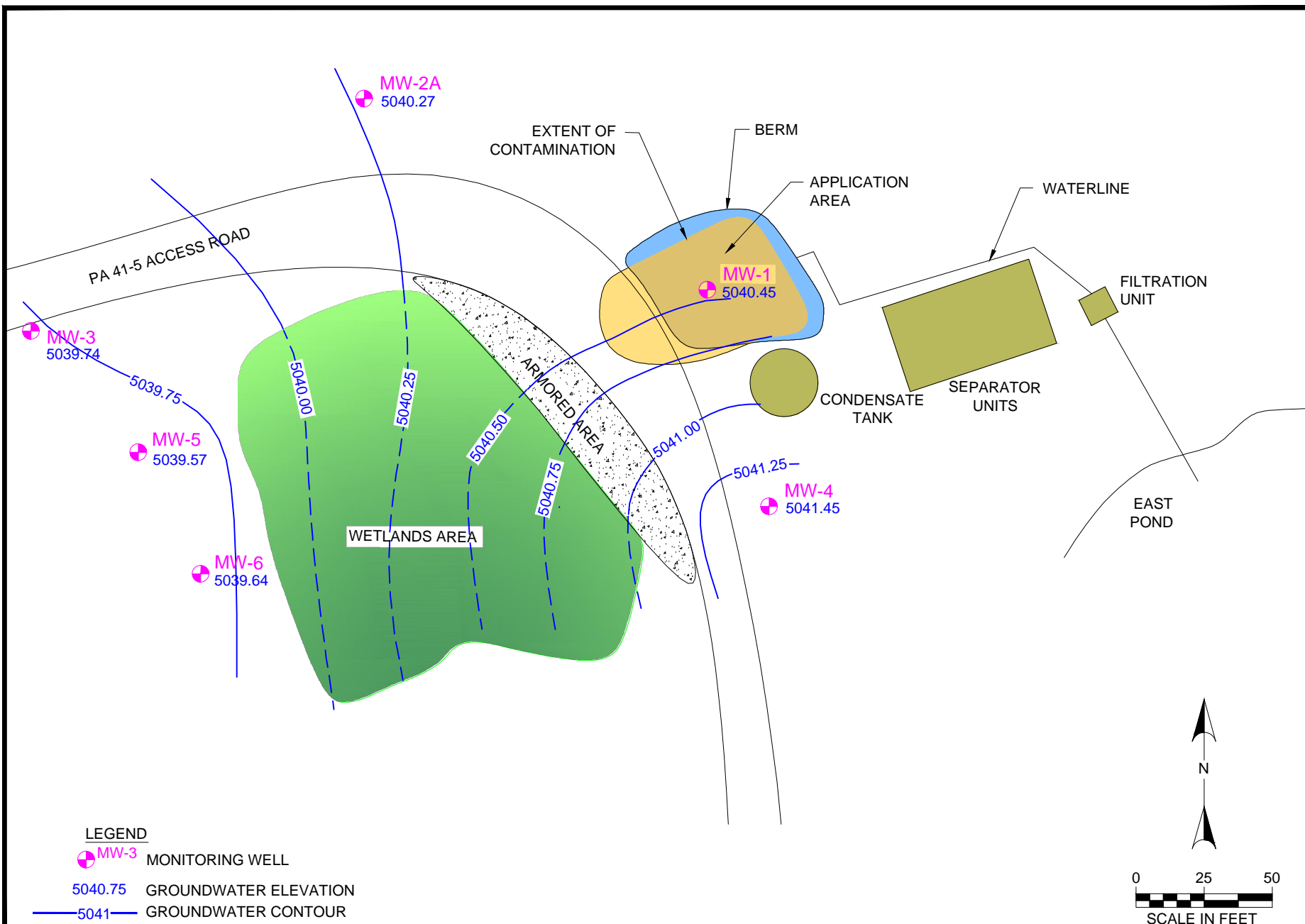
DESCRIBE PROPOSED OR COMPLETED OPERATIONS


F:\Projects\010-1904-Williams Knight 311-4 MUNI\Exhibits\2012\Knight Site Map.dwg Layout: Site

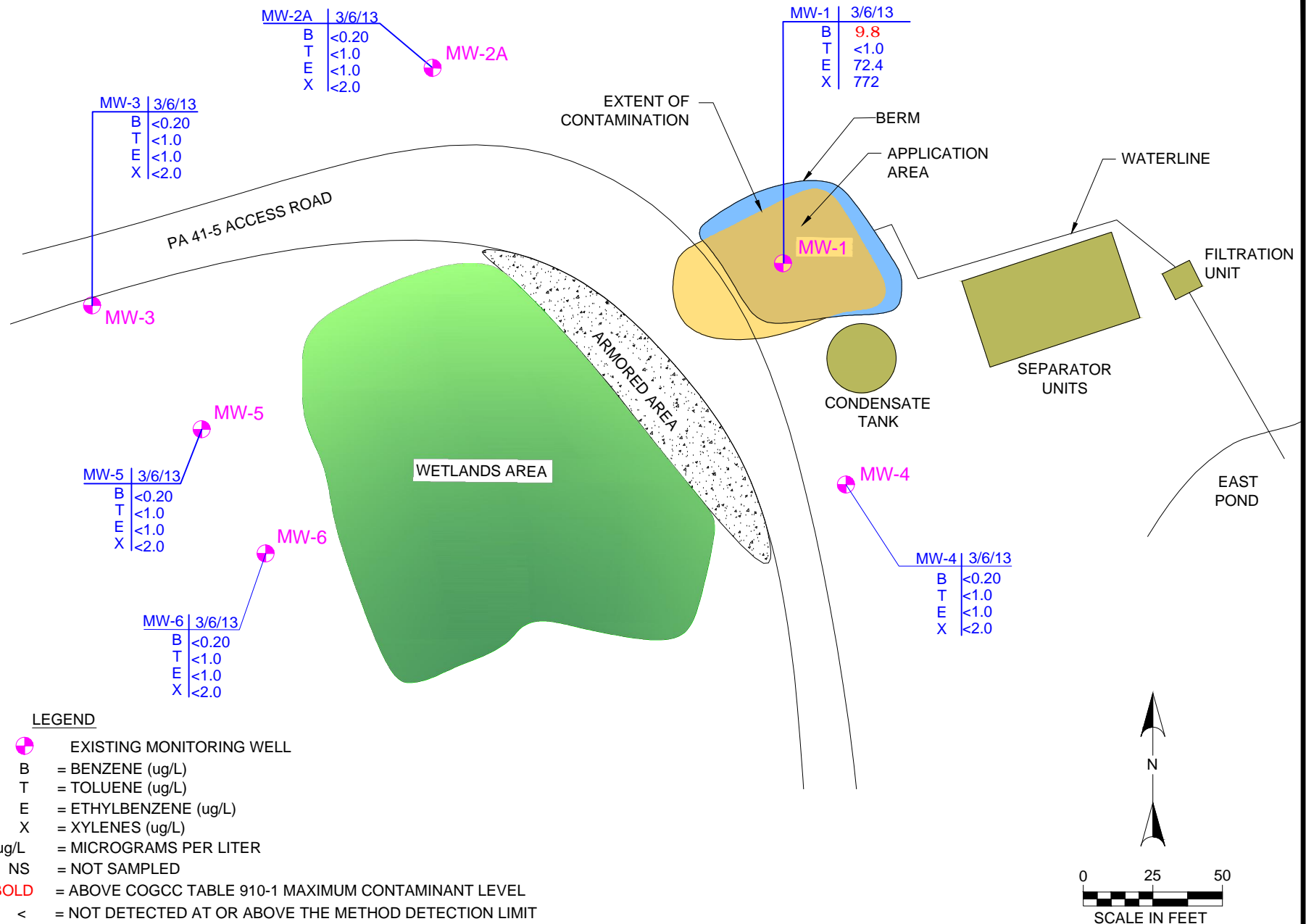


PROJECT NO: 011-1712	SITE MAP KNIGHT PA 311-4 SEC 4, T7S, R95W PARACHUTE, COLORADO	4690 Table Mountain Drive Suite 200 Golden, CO 80403 TEL 303.237.2072 FAX 303.237.2659	FIGURE
DRAWN BY: SDS			
DATE: 01.25.11			1

F:\Projects\010-1904 Williams Knight 311-4\MUN\Exhibits\2013\Mar 2013\Knight GW-Q1-2013.dwg Layout: GW



PROJECT NO: 011-1712	GROUNDWATER - PIEZOMETRIC SURFACE MAP - MARCH 2013 KNIGHT PA 311-4 SEC 4, T7S, R95W PARACHUTE, COLORADO	 <div> 826 21 1/2 Road  Grand Junction, CO 81505  TEL 970.263.7800  FAX 970.263.7456 </div>	FIGURE
DRAWN BY: sds			2
DATE: 4.24.2013			



PROJECT NO:	011-1712
DRAWN BY:	sds
DATE:	4.24.2013

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - MARCH 2013  
 KNIGHT PA 311-4  
 SEC 4, T7S, R95W  
 PARACHUTE, COLORADO



826 21 1/2 Road  
 Grand Junction, CO 81505  
 TEL 970.263.7800  
 FAX 970.263.7456

FIGURE  
 3

SAMPLE SUMMARY			Table 1 Groundwater Monitoring Analytical Summary										
Location Description		Knight Property Monitoring											
Sample Type		Groundwater											
LABORATORY DATA SUMMARY													
Sample ID	COGCC Table 910 1 Standards	UNITS	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-2A	MW-2A	MW-2A	MW-2A
Sampling Period			4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	4th Quarter	1st Quarter	3rd Quarter	4th Quarter	
Depth to Water (feet)			5.57	5.52	5.28	5.52	6.78	6.00	4.93	5.04	4.72	5.65	
Sample Date			11/18/2011	2/14/2012	5/8/2012	8/29/2012	11/26/2012	3/6/2013	11/18/2011	2/14/2012	8/29/2012	11/26/2012	
Analytical Parameters													
TPH													
TPH Gasoline Range Organics	NA	mg/l	1.68	1.56	5.62	2.92	2.01	3.59	< 0.050	< 0.10	<0.10	<0.10	
TPH Diesel Range Organics	NA	mg/l	0.596	0.412	0.996	0.886	0.518	0.405	<0.10	< 0.30	<0.25	<0.17	
BTEX													
Benzene	5	µg/l	7.9	1.2	<0.20	15.9	7.6	9.8	< 1.0	< 0.20	< 0.20	<0.20	
Toluene	560 to 1000	µg/l	1.4	< 1.0	<1.0	7.2 J	<5.0	<1.0	< 1.0	< 1.0	< 1.0	<1.0	
Ethylbenzene	700	µg/l	24.3	< 1.0	<1.0	65.9	37.7	72.4	< 1.0	< 1.0	< 1.0	<1.0	
Xylene (total)	1400 to 10000	µg/l	477	227	26.7	517	421	772	< 3.0	< 2.0	< 2.0	<2.0	
PAHs													
Acenaphthene	NA	µg/l	< 0.2	< 0.60	<0.48	<0.48	<0.48	NT	< 0.2	< 0.60	<0.47	<0.48	
Acenaphthylene	NA	µg/l	< 0.2	< 0.60	<0.48	<0.48	<0.48	NT	< 0.2	< 0.60	<0.47	<0.48	
Anthracene	NA	µg/l	< 0.2	< 0.47	<0.48	<0.48	<0.48	NT	< 0.2	< 0.47	<0.47	<0.48	
Benzo(a)anthracene	NA	µg/l	< 0.2	< 0.47	<0.48	<0.48	<0.48	NT	< 0.2	< 0.47	<0.47	<0.48	
Benzo(a)pyrene	NA	µg/l	< 0.2	< 0.47	<0.48	<0.48	<0.48	NT	< 0.2	< 0.47	<0.47	<0.48	
Benzo(b)fluoranthene	NA	µg/l	< 0.2	< 0.47	<0.48	<0.48	<0.48	NT	< 0.2	< 0.47	<0.47	<0.48	
Benzo(g,h,i)perylene	NA	µg/l	< 0.2	< 0.54	<0.48	<0.48	<0.48	NT	< 0.2	< 0.54	<0.47	<0.48	
Benzo(k)fluoranthene	NA	µg/l	< 0.2	< 0.47	<0.48	<0.48	<0.48	NT	< 0.2	< 0.47	<0.47	<0.48	
Chrysene	NA	µg/l	< 0.2	< 0.47	<0.48	<0.48	<0.48	NT	< 0.2	< 0.47	<0.47	<0.48	
Dibenzo(a,h)anthracene	NA	µg/l	< 0.2	< 0.78	<0.48	<0.48	<0.48	NT	< 0.2	< 0.78	<0.47	<0.48	
Fluoranthene	NA	µg/l	< 0.2	< 0.71	<0.48	<0.48	<0.48	NT	< 0.2	< 0.71	<0.47	<0.48	
Fluorene	NA	µg/l	< 0.2	< 0.55	<0.48	<0.48	<0.48	NT	< 0.2	< 0.55	<0.47	<0.48	
Indeno(1,2,3-cd)pyrene	NA	µg/l	< 0.2	< 1.5	<0.48	<0.48	<0.48	NT	< 0.2	< 1.5	<0.47	<0.48	
1-Methylnapthalene	NA	µg/l	1.1	< 0.68	1.1 J	0.67 J	0.50 J	NT	< 0.2	< 0.68	<0.47	<0.48	
2-Methylnapthalene	NA	µg/l	1.6	0.83 J	2.0 J	1.0 J	<0.48	NT	< 0.2	< 0.68	<0.47	<0.48	
Naphthalene	NA	µg/l	2.9	1.2 J	3.6 J	2.0 J	<0.48	NT	< 0.2	< 0.73	<0.47	<0.48	
Phenanthrene	NA	µg/l	< 0.2	< 0.47	<0.48	<0.48	<0.48	NT	< 0.2	< 0.47	<0.47	<0.48	
Pyrene	NA	µg/l	< 0.2	< 0.47	<0.48	<0.48	<0.48	NT	< 0.2	< 0.47	<0.47	<0.48	
Metals													
Calcium	NA	mg/l	173	88.3	138	170	147	116	129	109	94.6	208	
Iron	NA	mg/l	26.5	5.32	11.6	17.7	19.5	10.6	14	4.77	10.1	33.5	
Magnesium	NA	mg/l	36.7	58.6	54.7	72.5	63.6	82.7	51.4	55.4	61.6	81.6	
Manganese	NA	mg/l	1.13	0.418	0.653	0.947	0.748	0.709	1.72	2.03	1.64	3.37	
Potassium	NA	mg/l	< 10	3.64	4.63	7.7	6.15	5.42	< 10	3.19	6.54	8.6	
Selenium	NA	mg/l	< 0.01	< 0.05	<0.050	<0.050	<0.05	<0.05	< 0.01	< 0.05	< 0.05	<0.05	
Sodium	NA	mg/l	50.2	63.8	64.7	104	80	101	60.4	59.4	96.7	97.8	
General Chemistry													
Alkalinity, Bicarbonate	NA	mg/l	260	488	498	667	746	618	372	440	364	299	
Alkalinity, Carbonate	NA	mg/l	< 5.0	< 5.0	<5.0	<5.0	<5.0	<5.0	< 5.0	< 5.0	<5.0	<5.0	
Alkalinity, Total as CaCO3	NA	mg/l	264	488	497	667	746	618	374	440	364	299	
Biological Oxygen Demand, 5 Day	NA	mg/l	10.5	10.9	22.6	21	28.4	15.4	< 15	< 10	< 10	<10	
Bromide	NA	mg/l	< 0.50	< 0.20	1.3	2.8	<0.25	0.16	< 0.50	< 0.20	<0.10	0.11	
Chemical Oxygen Demand	NA	mg/l	31.6	18.4	62.3	79.6	21.7	45.9	66.9	20.4	49	<10	
Chloride	1.25 x bkgd	mg/l	16.0	11.5	9.0	139	39.2	12.3	15.4	13.2	151	206	
Hydroxide Alkalinity	NA	mg/l	< 5.0	NT	NT	NT	NT	NT	< 5.0	NT	NT	NT	
Nitrogen, Nitrate	NA	mg/l	0.66	< 0.23	<0.23	0.077	<0.050	0.26	0.57	< 0.23	0.063	0.031	
Nitrogen, Nitrite	NA	mg/l	< 0.50	< 0.061	0.010	0.064	0.015	0.064	< 0.50	< 0.061	0.04	<0.0080	
Phosphorus, Total	NA	mg/l	3.5	0.59	1.1	NT	2.0	0.95	0.89	1.3	NT	1.4	
Plate Count, Total	NA	CFU/ml	1590000	110000	300000	360000	150000	NT	70000	6900	5600	8100	
Sulfate	1.25 x bkgd	mg/l	16.8	10.9	5.7	66.2	13.4	117	16.8	44.2	108	155	
Total Organic Carbon	NA	mg/l	13.2	8.8	10.4	18.5	10.2	9.3	4.5	3.9	5.6	4.9	
pH	NA	su	8.34	7.76	7.67	7.38	7.48	7.56	7.14	7.58	7.51	7.49	
Field Readings													
Temperature	NA	deg. C	14.6	6.82	13.89	21.20	14.49	7.80	13.2	8.3	20.9	13.1	
Specific Conductivity	NA	mS/cm	0.511	0.837	0.789	1.234	1.227	1.319	0.651	0.77	1.132	1.34	
Dissolved Oxygen	NA	mg/l	6.55	2.25	3.25	1.51	0.95	1.34	0.24	1.22	1.73	1.22	
pH	NA	su	9.05	7.37	7.71	7.49	7.7	7.3	7.50	7.25	7.56	7.75	
Solids, Total Dissolved	NA	mg/l	0.3	0.5	0.5	0.8	NT	NT	0.4	0.5	0.7	NT	
Turbidity	NA	NTU	264	117	538	386	117	59.9	653	766	1997	345	
Over allowable limit	NA - not applicable		µmhos/cm - micromhos per centimeter			NTU - nephelometric turbidity units			µg/l -micrograms per liter				
	b - Elevated detection limit due to matrix interference		mS/cm - millisiemens per centimeter			CFU/ml - colony forming units per milliliter			mg/l -milligrams per liter				
	c - Elevated detection limit due to dilution required for possible matrix interference		su - standard units			J - indicates an estimated value							

SAMPLE SUMMARY			Table 1 Groundwater Monitoring Analytical Summary										
Location Description		Knight Property Monitoring											
Sample Type		Groundwater											
LABORATORY DATA SUMMARY													
Sample ID	COGCC Table 910 1 Standards	UNITS	MW-2A	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-4	MW-4	MW-4
Sampling Period			1st Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	4th Quarter	1st Quarter	2nd Quarter	
Depth to Water (feet)			5.50	5.68	5.77	5.67	5.56	6.45	6.11	10.64	10.34	10.63	
Sample Date			3/6/2013	11/18/2011	2/14/2012	5/8/2012	8/29/2012	11/26/2012	3/6/2013	11/18/2011	2/14/2012	5/8/2012	
Analytical Parameters													
TPH													
TPH Gasoline Range Organics		NA	mg/l	<0.10	< 0.050	< 0.10	<0.10	<0.10	<0.10	<0.10	< 0.050	< 0.10	<0.10
TPH Diesel Range Organics		NA	mg/l	<0.17	25.1	< 0.30	<0.25	<0.25	<0.17	<0.17	<0.10	< 0.30	<0.25
BTEX													
Benzene	5	µg/l	<0.20	< 1.0	< 0.20	<0.20	<0.20	<0.20	<0.20	<0.20	< 1.0	< 0.20	<0.20
Toluene	560 to 1000	µg/l	<1.0	< 1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	< 1.0	<1.0
Ethylbenzene	700	µg/l	<1.0	< 1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	< 1.0	<1.0
Xylene (total)	1400 to 10000	µg/l	<2.0	< 3.0	< 2.0	<2.0	<2.0	<2.0	<2.0	<2.0	< 3.0	< 2.0	<2.0
PAHs													
Acenaphthene	NA	µg/l	NT	< 0.2	< 0.60	<0.48	<0.48	<0.49	NT	< 0.2	< 0.60	<0.47	<0.47
Acenaphthylene	NA	µg/l	NT	< 0.2	< 0.60	<0.48	<0.48	<0.49	NT	< 0.2	< 0.60	<0.47	<0.47
Anthracene	NA	µg/l	NT	< 0.2	< 0.47	<0.48	<0.48	<0.49	NT	< 0.2	< 0.47	<0.47	<0.47
Benzo(a)anthracene	NA	µg/l	NT	< 0.2	< 0.47	<0.48	<0.48	<0.49	NT	< 0.2	< 0.47	<0.47	<0.47
Benzo(a)pyrene	NA	µg/l	NT	< 0.2	< 0.47	<0.48	<0.48	<0.49	NT	< 0.2	< 0.47	<0.47	<0.47
Benzo(b)fluoranthene	NA	µg/l	NT	< 0.2	< 0.47	<0.48	<0.48	<0.49	NT	< 0.2	< 0.47	<0.47	<0.47
Benzo(g,h,i)perylene	NA	µg/l	NT	< 0.2	< 0.54	<0.48	<0.48	<0.49	NT	< 0.2	< 0.54	<0.47	<0.47
Benzo(k)fluoranthene	NA	µg/l	NT	< 0.2	< 0.47	<0.48	<0.48	<0.49	NT	< 0.2	< 0.47	<0.47	<0.47
Chrysene	NA	µg/l	NT	< 0.2	< 0.47	<0.48	<0.48	<0.49	NT	< 0.2	< 0.47	<0.47	<0.47
Dibenzo(a,h)anthracene	NA	µg/l	NT	< 0.2	< 0.78	<0.48	<0.48	<0.49	NT	< 0.2	< 0.78	<0.47	<0.47
Fluoranthene	NA	µg/l	NT	< 0.2	< 0.71	<0.48	<0.48	<0.49	NT	< 0.2	< 0.71	<0.47	<0.47
Fluorene	NA	µg/l	NT	< 0.2	< 0.55	<0.48	<0.48	<0.49	NT	< 0.2	< 0.55	<0.47	<0.47
Indeno(1,2,3-cd)pyrene	NA	µg/l	NT	< 0.2	< 1.5	<0.48	<0.48	<0.49	NT	< 0.2	< 1.5	<0.47	<0.47
1-Methylnapthalene	NA	µg/l	NT	< 0.2	< 0.68	<0.48	<0.48	<0.49	NT	< 0.2	< 0.68	<0.47	<0.47
2-Methylnapthalene	NA	µg/l	NT	< 0.2	< 0.68	<0.48	<0.48	<0.49	NT	< 0.2	< 0.68	<0.47	<0.47
Naphthalene	NA	µg/l	NT	< 0.2	< 0.73	<0.48	<0.48	<0.49	NT	< 0.2	< 0.73	<0.47	<0.47
Phenanthrene	NA	µg/l	NT	< 0.2	< 0.47	<0.48	<0.48	<0.49	NT	< 0.2	< 0.47	<0.47	<0.47
Pyrene	NA	µg/l	NT	< 0.2	< 0.47	<0.48	<0.48	<0.49	NT	< 0.2	< 0.47	<0.47	<0.47
Metals													
Calcium	NA	mg/l	107	76.7	151	157	133	218	117	73.9	126	107	107
Iron	NA	mg/l	15.7	4.8	6.79	26.8	16.3	35.4	12.7	3.52	6.71	18.1	18.1
Magnesium	NA	mg/l	65.2	37.2	50.3	57.8	62.8	75.1	65.5	40.6	48.6	55.4	55.4
Manganese	NA	mg/l	3.93	0.718	1.43	1.71	1.32	2.31	1.18	1.74	1.71	1.91	1.91
Potassium	NA	mg/l	6.06	< 10	2.95	6.88	7.87	9.53	5.43	< 10	2.89	5.9	5.9
Selenium	NA	mg/l	<0.05	< 0.01	< 0.05	<0.050	<0.050	<0.05	<0.05	< 0.01	< 0.05	<0.050	<0.050
Sodium	NA	mg/l	95.6	56.1	61.4	61.0	92.9	93.9	89.2	62.1	58.3	71.8	71.8
General Chemistry													
Alkalinity, Bicarbonate	NA	mg/l	382	384	462	427	396	309	333	392	364	452	452
Alkalinity, Carbonate	NA	mg/l	<5.0	< 5.0	< 5.0	<5.0	<5.0	<5.0	<5.0	< 5.0	< 5.0	<5.0	<5.0
Alkalinity, Total as CaCO3	NA	mg/l	382	386	462	427	396	309	333	396	364	452	452
Biological Oxygen Demand, 5 Day	NA	mg/l	<10	11.1	< 10	<10	<10	<10	<10	8.1	< 10	<10	<10
Bromide	NA	mg/l	<0.10 <sup>a</sup>	< 0.50	< 0.20	<0.20	<0.10	<0.10	0.13	< 0.50	< 0.20	<0.40	<0.40
Chemical Oxygen Demand	NA	mg/l	<10	21	< 10	<10	49	<10	15.7	28.1	< 10	<10	<10
Chloride	1.25 x bkgd	mg/l	96.4	16.7	14.5	12.9	151	210	161	14.1	6.9	7.2	7.2
Hydroxide Alkalinity	NA	mg/l	NT	< 5.0	NT	NT	NT	NT	NT	< 5.0	NT	NT	NT
Nitrogen, Nitrate	NA	mg/l	0.22	0.58	< 0.23	<0.090	<0.020	0.034	<0.020 <sup>a</sup>	< 0.50	< 0.23	<0.090	<0.090
Nitrogen, Nitrite	NA	mg/l	0.0080 <sup>a</sup>	0.67	< 0.061	<0.010	<0.040	0.015	<0.0080 <sup>a</sup>	< 0.50	< 0.061	<0.010	<0.010
Phosphorus, Total	NA	mg/l	0.44	0.45	1.7	1.3	NT	1.7	0.31	0.14	1.4	1.1	1.1
Plate Count, Total	NA	CFU/ml	NT	120000	8500	10000	14000	12000	NT	120000	4600	5400	5400
Sulfate	1.25 x bkgd	mg/l	98.5	10.9	24	34.7	125	137	161	36.2	40.8	34.2	34.2
Total Organic Carbon	NA	mg/l	4	4.5	4.3	4.2	5.6	4.4	3.7	4.8	3.6	4.5	4.5
pH	NA	su	7.64	7.1	7.64	7.6	7.33	7.46	7.55	7.18	7.73	7.65	7.65
Field Readings													
Temperature	NA	deg. C	9.98	14.8	7.46	13.49	21.37	14.35	7.88	14.2	6.5	13.23	13.23
Specific Conductivity	NA	mS/cm	1.195	0.663	0.763	0.783	1.291	0.417	1.448	0.713	0.682	0.814	0.814
Dissolved Oxygen	NA	mg/l	0.86	0.14	2.43	1.46	1.82	1.67	1	0.15	2.34	2.74	2.74
pH	NA	su	7.31	7.41	7.26	7.8	7.48	7.75	7.25	7.5	7.38	7.93	7.93
Solids, Total Dissolved	NA	mg/l	NT	0.4	0.5	0.5	0.8	NT	NT	0.5	0.4	0.5	0.5
Turbidity	NA	NTU	96.3	568	2000	1854	1102	1971	328	62.7	443	930	930

Over allowable limit

NA - not applicable

b - Elevated detection limit due to matrix interference

c - Elevated detection limit due to dilution required for possible n

SAMPLE SUMMARY			Table 1 Groundwater Monitoring Analytical Summary										
Location Description		Knight Property Monitoring											
Sample Type		Groundwater											
LABORATORY DATA SUMMARY													
Sample ID	COGCC Table 910 1 Standards	UNITS	MW-4	MW-4	MW-4	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-6	
Sampling Period			3rd Quarter	4th Quarter	1st Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	4th Quarter	
Depth to Water (feet)			11.31	11.64	10.77	5.63	6.06	6.11	6.12	6.8	6.6	6.69	
Sample Date			8/29/2012	11/26/2012	3/6/2013	11/18/2011	2/14/2012	5/8/2012	8/29/2012	11/26/2012	3/6/2013	11/18/2011	
Analytical Parameters													
TPH													
TPH Gasoline Range Organics		NA	mg/l	<0.10	<0.10	<0.10	< 0.050	< 0.10	<0.10	<0.10	<0.10	<0.10	< 0.050
TPH Diesel Range Organics		NA	mg/l	<0.25	<0.17	<0.17	<0.10	< 0.30	<0.25	<0.25	<0.17	<0.17	0.213
BTEX													
Benzene	5	µg/l	<0.20	<0.20	<0.20	< 1.0	< 0.20	<0.20	<0.20	<0.20	<0.20	<0.20	< 1.0
Toluene	560 to 1000	µg/l	<1.0	<1.0	<1.0	< 1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0
Ethylbenzene	700	µg/l	<1.0	<1.0	<1.0	< 1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0
Xylene (total)	1400 to 10000	µg/l	<2.0	<2.0	<2.0	< 3.0	< 2.0	<2.0	<2.0	<2.0	<2.0	<2.0	< 3.0
PAHs													
Acenaphthene	NA	µg/l	<0.48	<0.48	NT	< 0.2	< 0.60	<0.48	<0.48	<0.47	NT	< 0.2	
Acenaphthylene	NA	µg/l	<0.48	<0.48	NT	< 0.2	< 0.60	<0.48	<0.48	<0.47	NT	< 0.2	
Anthracene	NA	µg/l	<0.48	<0.48	NT	< 0.2	< 0.47	<0.48	<0.48	<0.47	NT	< 0.2	
Benzo(a)anthracene	NA	µg/l	<0.48	<0.48	NT	< 0.2	< 0.47	<0.48	<0.48	<0.47	NT	< 0.2	
Benzo(a)pyrene	NA	µg/l	<0.48	<0.48	NT	< 0.2	< 0.47	<0.48	<0.48	<0.47	NT	< 0.2	
Benzo(b)fluoranthene	NA	µg/l	<0.48	<0.48	NT	< 0.2	< 0.47	<0.48	<0.48	<0.47	NT	< 0.2	
Benzo(g,h,i)perylene	NA	µg/l	<0.48	<0.48	NT	< 0.2	< 0.54	<0.48	<0.48	<0.47	NT	< 0.2	
Benzo(k)fluoranthene	NA	µg/l	<0.48	<0.48	NT	< 0.2	< 0.47	<0.48	<0.48	<0.47	NT	< 0.2	
Chrysene	NA	µg/l	<0.48	<0.48	NT	< 0.2	< 0.47	<0.48	<0.48	<0.47	NT	< 0.2	
Dibenzo(a,h)anthracene	NA	µg/l	<0.48	<0.48	NT	< 0.2	< 0.78	<0.48	<0.48	<0.47	NT	< 0.2	
Fluoranthene	NA	µg/l	<0.48	<0.48	NT	< 0.2	< 0.71	<0.48	<0.48	<0.47	NT	< 0.2	
Fluorene	NA	µg/l	<0.48	<0.48	NT	< 0.2	< 0.55	<0.48	<0.48	<0.47	NT	< 0.2	
Indeno(1,2,3-cd)pyrene	NA	µg/l	<0.48	<0.48	NT	< 0.2	< 1.5	<0.48	<0.48	<0.47	NT	< 0.2	
1-Methylnapthalene	NA	µg/l	<0.48	<0.48	NT	< 0.2	< 0.68	<0.48	<0.48	<0.47	NT	< 0.2	
2-Methylnapthalene	NA	µg/l	<0.48	<0.48	NT	< 0.2	< 0.68	<0.48	<0.48	<0.47	NT	< 0.2	
Naphthalene	NA	µg/l	<0.48	<0.48	NT	< 0.2	< 0.73	<0.48	<0.48	<0.47	NT	< 0.2	
Phenanthrene	NA	µg/l	<0.48	<0.48	NT	< 0.2	< 0.47	<0.48	<0.48	<0.47	NT	< 0.2	
Pyrene	NA	µg/l	<0.48	<0.48	NT	< 0.2	< 0.47	<0.48	<0.48	<0.47	NT	< 0.2	
Metals													
Calcium	NA	mg/l	121	238	60.4	119	198	157	99.9	333	103	80.8	
Iron	NA	mg/l	19.7	47.5	2.63	18.9	18.2	33.3	11.4	83.1	15.6	16.7	
Magnesium	NA	mg/l	71.5	104	64.5	45.6	62.2	60.8	56.0	108	71.4	51	
Manganese	NA	mg/l	4.4	2.16	0.316	0.977	1.56	1.33	0.808	2.81	0.849	3.25	
Potassium	NA	mg/l	8.73	12.2	5	< 10	3.22	6.71	5.69	12.6	4.34	< 10	
Selenium	NA	mg/l	<0.050	<0.05	<0.05	< 0.01	< 0.05	<0.050	<0.050	<0.05	<0.05	< 0.01	
Sodium	NA	mg/l	99.1	110.0	99.2	55.8	56.4	58.9	8.0	85.1	97.9	53.7	
General Chemistry													
Alkalinity, Bicarbonate	NA	mg/l	616	618	489	364	540	481	429	452	512	388	
Alkalinity, Carbonate	NA	mg/l	<5.0	<5.0	<5.0	< 5.0	< 5.0	<5.0	<5.0	<5.0	<5.0	< 5.0	
Alkalinity, Total as CaCO3	NA	mg/l	616	618	489	366	540	481	429	452	512	390	
Biological Oxygen Demand, 5 Day	NA	mg/l	10.7	<10	<10	< 15	< 10	<10	<10	<10	<10	6.8	
Bromide	NA	mg/l	0.19	0.26	<0.10 <sup>a</sup>	< 0.50	< 4.0	<0.40	<0.10	0.1	0.16	< 0.50	
Chemical Oxygen Demand	NA	mg/l	57	20.3	23.7	40.4	18.1	<10	75.5	10.8	20	96.8	
Chloride	1.25 x bkgd	mg/l	13.1	16.4	8	18.1	20	10.6	133	198	78	21.1	
Hydroxide Alkalinity	NA	mg/l	NT	NT	NT	< 5.0	NT	NT	NT	NT	NT	< 5.0	
Nitrogen, Nitrate	NA	mg/l	<0.020	<0.050	<0.020 <sup>a</sup>	0.51	< 0.45	<0.090	0.039	<0.050	0.022	0.56	
Nitrogen, Nitrite	NA	mg/l	0.008	<0.0080	<0.0080 <sup>a</sup>	< 0.50	< 0.061	<0.010	0.052	0.011	<0.0080 <sup>a</sup>	< 0.50	
Phosphorus, Total	NA	mg/l	NT	1.2	0.10	1.2	2	1.6	NT	1.8	0.53	0.46	
Plate Count, Total	NA	CFU/ml	3800	13000	NT	180000	3300	1900	63000	16000	NT	2210000	
Sulfate	1.25 x bkgd	mg/l	13	110	113	16.2	19	27.8	101	142	109	45.1	
Total Organic Carbon	NA	mg/l	8.5	10.3	3.8	6.1	10.9	5.0	6.4	5.2	5.6	34.6	
pH	NA	su	7.64	7.69	7.81	7.22	7.62	7.65	7.47	7.54	7.6	7.2	
Field Readings													
Temperature	NA	deg. C	19.42	14.68	6.83	12.7	5.77	13.89	20.67	13.05	6.3	12.7	
Specific Conductivity	NA	mS/cm	1.02	1.371	1.15	0.667	0.798	0.727	1.116	1.46	1.369	0.749	
Dissolved Oxygen	NA	mg/l	1.67	1.96	1.24	0.13	1.75	2.24	1.15	1.2	0.85	0.27	
pH	NA	su	7.6	7.85	7.42	7.47	7.22	7.85	7.51	7.76	7.3	7.52	
Solids, Total Dissolved	NA	mg/l	0.7	NT	NT	0.4	0.5	0.5	0.7	NT	NT	0.5	
Turbidity	NA	NTU	1572	554	26.5	896	2000	2000	2000	465	227	478	

Over allowable limit

NA - not applicable

b - Elevated detection limit due to matrix interference

c - Elevated detection limit due to dilution required for possible n

SAMPLE SUMMARY			Table 1				
Location Description	Knight Property Monitoring		Groundwater Monitoring Analytical Summary				
Sample Type	Groundwater						
LABORATORY DATA SUMMARY							
Sample ID	COGCC Table 910 1 Standards	UNITS	MW-6	MW-6	MW-6	MW-6	MW-6
Sampling Period			1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
Depth to Water (feet)			6.70	6.78	6.84	7.35	7.00
Sample Date			2/14/2012	5/8/2012	8/29/2012	11/26/2012	3/6/2013
Analytical Parameters							
TPH							
TPH Gasoline Range Organics	NA	mg/l	< 0.10	<0.10	<0.10	<0.10	<0.10
TPH Diesel Range Organics	NA	mg/l	< 0.30	0.261	0.445	0.347	0.175 J
BTEX							
Benzene	5	µg/l	< 0.20	<0.20	<0.20	<0.20	<0.20
Toluene	560 to 1000	µg/l	< 1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	700	µg/l	< 1.0	<1.0	<1.0	<1.0	<1.0
Xylene (total)	1400 to 10000	µg/l	< 2.0	<2.0	<2.0	<2.0	<2.0
PAHs							
Acenaphthene	NA	µg/l	< 0.60	<0.48	<0.48	<0.48	NT
Acenaphthylene	NA	µg/l	< 0.60	<0.48	<0.48	<0.48	NT
Anthracene	NA	µg/l	< 0.47	<0.48	<0.48	<0.48	NT
Benzo(a)anthracene	NA	µg/l	< 0.47	<0.48	<0.48	<0.48	NT
Benzo(a)pyrene	NA	µg/l	< 0.47	<0.48	<0.48	<0.48	NT
Benzo(b)fluoranthene	NA	µg/l	< 0.47	<0.48	<0.48	<0.48	NT
Benzo(g,h,i)perylene	NA	µg/l	< 0.54	<0.48	<0.48	<0.48	NT
Benzo(k)fluoranthene	NA	µg/l	< 0.47	<0.48	<0.48	<0.48	NT
Chrysene	NA	µg/l	< 0.47	<0.48	<0.48	<0.48	NT
Dibenzo(a,h)anthracene	NA	µg/l	< 0.78	<0.48	<0.48	<0.48	NT
Fluoranthene	NA	µg/l	< 0.71	<0.48	<0.48	<0.48	NT
Fluorene	NA	µg/l	< 0.55	<0.48	<0.48	<0.48	NT
Indeno(1,2,3-cd)pyrene	NA	µg/l	< 1.5	<0.48	<0.48	<0.48	NT
1-Methylnapthalene	NA	µg/l	< 0.68	<0.48	<0.48	<0.48	NT
2-Methylnapthalene	NA	µg/l	< 0.68	<0.48	<0.48	<0.48	NT
Naphthalene	NA	µg/l	< 0.73	<0.48	<0.48	<0.48	NT
Phenanthrene	NA	µg/l	< 0.47	<0.48	<0.48	<0.48	NT
Pyrene	NA	µg/l	< 0.47	<0.48	<0.48	<0.48	NT
Metals							
Calcium	NA	mg/l	72.8	78.8	114	229	103
Iron	NA	mg/l	4.98	13.2	6.90	46.60	14.50
Magnesium	NA	mg/l	57.9	53.8	57.4	92.7	86.7
Manganese	NA	mg/l	1.59	1.17	0.817	3.950	1.07
Potassium	NA	mg/l	2.17	4.43	6.43	9.82	5.24
Selenium	NA	mg/l	< 0.05	<0.050	<0.050	<0.05	<0.50
Sodium	NA	mg/l	59.0	63.9	82.0	82.0	96.5
General Chemistry							
Alkalinity, Bicarbonate	NA	mg/l	435	438	352	356	574
Alkalinity, Carbonate	NA	mg/l	< 5.0	<5.0		<5.0	<5.0
Alkalinity, Total as CaCO3	NA	mg/l	435	438	352	356	574
Biological Oxygen Demand, 5 Day	NA	mg/l	< 10	<10	<10	<10	<10
Bromide	NA	mg/l	< 4.0	1.0	0.063	0.100	0.270
Chemical Oxygen Demand	NA	mg/l	35.3	<10	47.4	10.8	21.3
Chloride	1.25 x bkgd	mg/l	31	11.8	136	198	57.8
Hydroxide Alkalinity	NA	mg/l	NT	NT	NT	NT	NT
Nitrogen, Nitrate	NA	mg/l	< 0.45	<0.23	<0.010	0.056	<0.020 <sup>a</sup>
Nitrogen, Nitrite	NA	mg/l	< 0.061	<0.010	0.04	<0.0080	<0.0080 <sup>a</sup>
Phosphorus, Total	NA	mg/l	0.29	0.83	NT	1.6	0.32
Plate Count, Total	NA	CFU/ml	81000	64000	820000	420000	NT
Sulfate	1.25 x bkgd	mg/l	21.7	13.2	114	114	95.9
Total Organic Carbon	NA	mg/l	11.5	7.3	5.2	5.2	7
pH	NA	su	7.59	7.65	7.39	5.57	7.61
Field Readings							
Temperature	NA	deg. C	5.44	14.02	21.30	12.89	5.30
Specific Conductivity	NA	mS/cm	0.866	0.790	1.145	1.395	1.368
Dissolved Oxygen	NA	mg/l	1.4	2.40	2.30	1.35	2.59
pH	NA	su	7.17	NT	7.49	7.72	7.35
Solids, Total Dissolved	NA	mg/l	0.6	0.5	0.7	0.6	NT
Turbidity	NA	NTU	248	576	201	384	NT

Over allowable limit

NA - not applicable

b - Elevated detection limit due to matrix interference

c - Elevated detection limit due to dilution required for possible n



03/14/13

## Technical Report for

**WPX Energy Rocky Mountain, LLC**

**CORCCOGJ: Knight Property Quarterly Sampling (011.1712)**

**Accutest Job Number: D44138**

**Sampling Date: 03/06/13**

### Report to:

**Olsson Associates**  
**760 Horizon Drive Suite 102**  
**Grand Junction, CO 81506**  
**tdobransky@olssonassociates.com; karolina.blaney@wpxenergy.com**  
**ATTN: Tim Dobransky**

**Total number of pages in report: 72**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

  
**Brad Madadian**  
**Laboratory Director**

**Client Service contact: Renea Jackson 303-425-6021**

Certifications: CO, ID, NE, NM, ND (R-027) (PW), UT (NELAP CO00049), TX (T104704511-12-1)

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# Table of Contents

-1-

<b>Section 1: Sample Summary .....</b>	<b>3</b>
<b>Section 2: Summary of Hits .....</b>	<b>4</b>
<b>Section 3: Sample Results .....</b>	<b>7</b>
<b>3.1: D44138-1: MW-1 .....</b>	<b>8</b>
<b>3.2: D44138-2: MW-2A .....</b>	<b>13</b>
<b>3.3: D44138-3: MW-3 .....</b>	<b>18</b>
<b>3.4: D44138-4: MW-4 .....</b>	<b>23</b>
<b>3.5: D44138-5: MW-5 .....</b>	<b>28</b>
<b>3.6: D44138-6: MW-6 .....</b>	<b>33</b>
<b>Section 4: Misc. Forms .....</b>	<b>38</b>
<b>4.1: Chain of Custody .....</b>	<b>39</b>
<b>Section 5: GC Volatiles - QC Data Summaries .....</b>	<b>43</b>
<b>5.1: Method Blank Summary .....</b>	<b>44</b>
<b>5.2: Blank Spike Summary .....</b>	<b>47</b>
<b>5.3: Matrix Spike/Matrix Spike Duplicate Summary .....</b>	<b>50</b>
<b>Section 6: GC Semi-volatiles - QC Data Summaries .....</b>	<b>53</b>
<b>6.1: Method Blank Summary .....</b>	<b>54</b>
<b>6.2: Blank Spike Summary .....</b>	<b>55</b>
<b>6.3: Matrix Spike/Matrix Spike Duplicate Summary .....</b>	<b>56</b>
<b>Section 7: Metals Analysis - QC Data Summaries .....</b>	<b>57</b>
<b>7.1: Prep QC MP9604: Ca,Fe,Mg,Mn,K,Se,Na .....</b>	<b>58</b>
<b>Section 8: General Chemistry - QC Data Summaries .....</b>	<b>68</b>
<b>8.1: Method Blank and Spike Results Summary .....</b>	<b>69</b>
<b>8.2: Duplicate Results Summary .....</b>	<b>70</b>
<b>8.3: Matrix Spike Results Summary .....</b>	<b>71</b>
<b>8.4: Matrix Spike Duplicate Results Summary .....</b>	<b>72</b>



Sample Summary

WPX Energy Rocky Mountain, LLC

Job No: D44138

CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
D44138-1	03/06/13	15:00 JV	03/07/13	AQ	Ground Water	MW-1
D44138-2	03/06/13	13:30 JV	03/07/13	AQ	Ground Water	MW-2A
D44138-3	03/06/13	12:35 JV	03/07/13	AQ	Ground Water	MW-3
D44138-4	03/06/13	14:20 JV	03/07/13	AQ	Ground Water	MW-4
D44138-5	03/06/13	11:45 JV	03/07/13	AQ	Ground Water	MW-5
D44138-6	03/06/13	10:30 JV	03/07/13	AQ	Ground Water	MW-6

## Summary of Hits

**Job Number:** D44138  
**Account:** WPX Energy Rocky Mountain, LLC  
**Project:** CORCCOGJ: Knight Property Quarterly Sampling (011.1712)  
**Collected:** 03/06/13

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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### D44138-1 MW-1

TPH-GRO (C6-C10) <sup>a</sup>	3.59	0.20	0.10	mg/l	SW846 8015B
Benzene <sup>b</sup>	9.8	1.0	0.20	ug/l	SW846 8021B
Ethylbenzene <sup>b</sup>	72.4	2.0	1.0	ug/l	SW846 8021B
Xylenes (total)	772	10	10	ug/l	SW846 8021B
TPH-DRO (C10-C28)	0.405	0.19	0.17	mg/l	SW846-8015B
Calcium	116000	400		ug/l	SW846 6010C
Iron	10600	70		ug/l	SW846 6010C
Magnesium	82700	200		ug/l	SW846 6010C
Manganese	709	5.0		ug/l	SW846 6010C
Potassium	5420	1000		ug/l	SW846 6010C
Sodium	101000	400		ug/l	SW846 6010C
Alkalinity, Bicarbonate as CaCO <sub>3</sub>	618	5.0		mg/l	SM 2320B-2011
Alkalinity, Total as CaCO <sub>3</sub>	618	5.0		mg/l	SM 2320B-2011
BOD, 5 Day	15.4	10		mg/l	SM 5210B-2011
Bromide	0.16	0.10		mg/l	EPA 300.0/SW846 9056
Chemical Oxygen Demand	45.9	10		mg/l	SM 5220D-2011
Chloride	12.3	1.0		mg/l	EPA 300.0/SW846 9056
Nitrogen, Nitrate	0.26	0.020		mg/l	EPA 300.0/SW846 9056
Nitrogen, Nitrite	0.064	0.0080		mg/l	EPA 300.0/SW846 9056
Phosphorus, Total	0.95	0.020		mg/l	HACH8190/SM4500P-B/E
Solids, Total Dissolved	720	10		mg/l	SM 2540C-2011
Sulfate	117	5.0		mg/l	EPA 300.0/SW846 9056
Total Organic Carbon	9.3	1.0		mg/l	SM 5310B-2011
pH	7.56			su	SM4500HB+ -2011/9040C

### D44138-2 MW-2A

Calcium	107000	400		ug/l	SW846 6010C
Iron	15700	70		ug/l	SW846 6010C
Magnesium	65200	200		ug/l	SW846 6010C
Manganese	3930	5.0		ug/l	SW846 6010C
Potassium	6060	1000		ug/l	SW846 6010C
Sodium	95600	400		ug/l	SW846 6010C
Alkalinity, Bicarbonate as CaCO <sub>3</sub>	382	5.0		mg/l	SM 2320B-2011
Alkalinity, Total as CaCO <sub>3</sub>	382	5.0		mg/l	SM 2320B-2011
Chloride	96.4	5.0		mg/l	EPA 300.0/SW846 9056
Nitrogen, Nitrate	0.22	0.020		mg/l	EPA 300.0/SW846 9056
Phosphorus, Total	0.44	0.010		mg/l	HACH8190/SM4500P-B/E
Solids, Total Dissolved	648	10		mg/l	SM 2540C-2011
Sulfate	98.5	5.0		mg/l	EPA 300.0/SW846 9056
Total Organic Carbon	4.0	1.0		mg/l	SM 5310B-2011
pH	7.64			su	SM4500HB+ -2011/9040C

## Summary of Hits

**Job Number:** D44138  
**Account:** WPX Energy Rocky Mountain, LLC  
**Project:** CORCCOGJ: Knight Property Quarterly Sampling (011.1712)  
**Collected:** 03/06/13

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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### D44138-3 MW-3

Calcium	117000	400			ug/l	SW846 6010C
Iron	12700	70			ug/l	SW846 6010C
Magnesium	65500	200			ug/l	SW846 6010C
Manganese	1180	5.0			ug/l	SW846 6010C
Potassium	5430	1000			ug/l	SW846 6010C
Sodium	89200	400			ug/l	SW846 6010C
Alkalinity, Bicarbonate as CaCO <sub>3</sub>	333	5.0			mg/l	SM 2320B-2011
Alkalinity, Total as CaCO <sub>3</sub>	333	5.0			mg/l	SM 2320B-2011
Bromide	0.13	0.10			mg/l	EPA 300.0/SW846 9056
Chemical Oxygen Demand	15.7	10			mg/l	SM 5220D-2011
Chloride	161	10			mg/l	EPA 300.0/SW846 9056
Phosphorus, Total	0.31	0.010			mg/l	HACH8190/SM4500P-B/E
Solids, Total Dissolved	844	10			mg/l	SM 2540C-2011
Sulfate	161	10			mg/l	EPA 300.0/SW846 9056
Total Organic Carbon	3.7	1.0			mg/l	SM 5310B-2011
pH	7.55				su	SM4500HB+ -2011/9040C

### D44138-4 MW-4

Calcium	60400	400			ug/l	SW846 6010C
Iron	2630	70			ug/l	SW846 6010C
Magnesium	64500	200			ug/l	SW846 6010C
Manganese	316	5.0			ug/l	SW846 6010C
Potassium	5000	1000			ug/l	SW846 6010C
Sodium	99200	400			ug/l	SW846 6010C
Alkalinity, Bicarbonate as CaCO <sub>3</sub>	489	5.0			mg/l	SM 2320B-2011
Alkalinity, Total as CaCO <sub>3</sub>	489	5.0			mg/l	SM 2320B-2011
Chemical Oxygen Demand	23.7	10			mg/l	SM 5220D-2011
Chloride	8.0	1.0			mg/l	EPA 300.0/SW846 9056
Phosphorus, Total	0.10	0.010			mg/l	HACH8190/SM4500P-B/E
Solids, Total Dissolved	628	10			mg/l	SM 2540C-2011
Sulfate	113	5.0			mg/l	EPA 300.0/SW846 9056
Total Organic Carbon	3.8	1.0			mg/l	SM 5310B-2011
pH	7.81				su	SM4500HB+ -2011/9040C

### D44138-5 MW-5

Calcium	103000	400			ug/l	SW846 6010C
Iron	15600	70			ug/l	SW846 6010C
Magnesium	71400	200			ug/l	SW846 6010C
Manganese	849	5.0			ug/l	SW846 6010C
Potassium	4340	1000			ug/l	SW846 6010C
Sodium	97900	400			ug/l	SW846 6010C

## Summary of Hits

**Job Number:** D44138  
**Account:** WPX Energy Rocky Mountain, LLC  
**Project:** CORCCOGJ: Knight Property Quarterly Sampling (011.1712)  
**Collected:** 03/06/13

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Alkalinity, Bicarbonate as CaCO <sub>3</sub>		512	5.0		mg/l	SM 2320B-2011
Alkalinity, Total as CaCO <sub>3</sub>		512	5.0		mg/l	SM 2320B-2011
Bromide		0.16	0.10		mg/l	EPA 300.0/SW846 9056
Chemical Oxygen Demand		20.0	10		mg/l	SM 5220D-2011
Chloride		78.0	5.0		mg/l	EPA 300.0/SW846 9056
Nitrogen, Nitrate		0.022	0.020		mg/l	EPA 300.0/SW846 9056
Phosphorus, Total		0.53	0.010		mg/l	HACH8190/SM4500P-B/E
Solids, Total Dissolved		756	10		mg/l	SM 2540C-2011
Sulfate		109	5.0		mg/l	EPA 300.0/SW846 9056
Total Organic Carbon		5.6	1.0		mg/l	SM 5310B-2011
pH		7.60			su	SM4500HB+ -2011/9040C

### D44138-6 MW-6

TPH-DRO (C10-C28)	0.175 J	0.19	0.17	mg/l	SW846-8015B
Calcium	103000	400		ug/l	SW846 6010C
Iron	14500	70		ug/l	SW846 6010C
Magnesium	86700	200		ug/l	SW846 6010C
Manganese	1070	5.0		ug/l	SW846 6010C
Potassium	5240	1000		ug/l	SW846 6010C
Sodium	96500	400		ug/l	SW846 6010C
Alkalinity, Bicarbonate as CaCO <sub>3</sub>	574	5.0		mg/l	SM 2320B-2011
Alkalinity, Total as CaCO <sub>3</sub>	574	5.0		mg/l	SM 2320B-2011
Bromide	0.27	0.10		mg/l	EPA 300.0/SW846 9056
Chemical Oxygen Demand	21.3	10		mg/l	SM 5220D-2011
Chloride	57.8	1.0		mg/l	EPA 300.0/SW846 9056
Phosphorus, Total	0.32	0.010		mg/l	HACH8190/SM4500P-B/E
Solids, Total Dissolved	812	10		mg/l	SM 2540C-2011
Sulfate	95.9	5.0		mg/l	EPA 300.0/SW846 9056
Total Organic Carbon	7.0	1.0		mg/l	SM 5310B-2011
pH	7.61			su	SM4500HB+ -2011/9040C

- (a) The pH of the sample was > 2 at time of analysis.  
(b) The pH of the sample was > 2 at the time of analysis.

### Sample Results

### Report of Analysis

## Report of Analysis

<b>Client Sample ID:</b>	MW-1	<b>Date Sampled:</b>	03/06/13
<b>Lab Sample ID:</b>	D44138-1	<b>Date Received:</b>	03/07/13
<b>Matrix:</b>	AQ - Ground Water	<b>Percent Solids:</b>	n/a
<b>Method:</b>	SW846 8015B		
<b>Project:</b>	CORCCOGJ: Knight Property Quarterly Sampling (011.1712)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	GA18362.D	1	03/08/13	BR	n/a	n/a	GGA1046
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	3.59	0.20	0.10	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	109%		60-140%		

(a) The pH of the sample was > 2 at time of analysis.

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	MW-1	<b>Date Sampled:</b>	03/06/13
<b>Lab Sample ID:</b>	D44138-1	<b>Date Received:</b>	03/07/13
<b>Matrix:</b>	AQ - Ground Water	<b>Percent Solids:</b>	n/a
<b>Method:</b>	SW846 8021B		
<b>Project:</b>	CORCCOGJ: Knight Property Quarterly Sampling (011.1712)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	TA18362.D	1	03/08/13	BR	n/a	n/a	GTA1046
Run #2	TA18403.D	5	03/11/13	BR	n/a	n/a	GTA1047

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	9.8	1.0	0.20	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	72.4	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	772 <sup>b</sup>	10	10	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	103%	101%	60-140%

(a) The pH of the sample was > 2 at the time of analysis.

(b) Result is from Run# 2

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	MW-1	<b>Date Sampled:</b>	03/06/13
<b>Lab Sample ID:</b>	D44138-1	<b>Date Received:</b>	03/07/13
<b>Matrix:</b>	AQ - Ground Water	<b>Percent Solids:</b>	n/a
<b>Method:</b>	SW846-8015B SW846 3510C		
<b>Project:</b>	CORCCOGJ: Knight Property Quarterly Sampling (011.1712)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD22607.D	1	03/09/13	AV	03/08/13	OP7507	GFD1129
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	0.405	0.19	0.17	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	65%		20-140%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-1	<b>Date Sampled:</b> 03/06/13
<b>Lab Sample ID:</b> D44138-1	<b>Date Received:</b> 03/07/13
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> CORCCOGJ: Knight Property Quarterly Sampling (011.1712)	

## Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	116000	400	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Iron	10600	70	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Magnesium	82700	200	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Manganese	709	5.0	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Potassium	5420	1000	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Selenium	< 50	50	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Sodium	101000	400	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA3349

(2) Prep QC Batch: MP9604

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> MW-1	<b>Date Sampled:</b> 03/06/13
<b>Lab Sample ID:</b> D44138-1	<b>Date Received:</b> 03/07/13
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> CORCCOGJ: Knight Property Quarterly Sampling (011.1712)	

## General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	618	5.0	mg/l	1	03/11/13	JK	SM 2320B-2011
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	03/11/13	JK	SM 2320B-2011
Alkalinity, Total as CaCO <sub>3</sub>	618	5.0	mg/l	1	03/11/13	JK	SM 2320B-2011
BOD, 5 Day	15.4	10	mg/l	1	03/08/13 08:30	JK	SM 5210B-2011
Bromide	0.16	0.10	mg/l	2	03/07/13 14:44	GH	EPA 300.0/SW846 9056
Chemical Oxygen Demand	45.9	10	mg/l	1	03/14/13	JD	SM 5220D-2011
Chloride	12.3	1.0	mg/l	2	03/07/13 14:44	GH	EPA 300.0/SW846 9056
Nitrogen, Nitrate	0.26	0.020	mg/l	2	03/07/13 14:44	GH	EPA 300.0/SW846 9056
Nitrogen, Nitrite	0.064	0.0080	mg/l	2	03/07/13 14:44	GH	EPA 300.0/SW846 9056
Phosphate, Ortho <sup>a</sup>	< 0.13	0.13	mg/l	2	03/07/13 18:01	GH	EPA 300.0/SW846 9056
Phosphorus, Total	0.95	0.020	mg/l	2	03/08/13	JD	HACH8190/SM4500P-B/E
Solids, Total Dissolved	720	10	mg/l	1	03/10/13	JK	SM 2540C-2011
Sulfate	117	5.0	mg/l	10	03/07/13 18:12	GH	EPA 300.0/SW846 9056
Total Organic Carbon	9.3	1.0	mg/l	1	03/11/13 15:28	JML	SM 5310B-2011
pH	7.56		su	1	03/08/13 15:25	JD	SM4500HB+ -2011/9040C

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b>	MW-2A	<b>Date Sampled:</b>	03/06/13
<b>Lab Sample ID:</b>	D44138-2	<b>Date Received:</b>	03/07/13
<b>Matrix:</b>	AQ - Ground Water	<b>Percent Solids:</b>	n/a
<b>Method:</b>	SW846 8015B		
<b>Project:</b>	CORCCOGJ: Knight Property Quarterly Sampling (011.1712)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	GA18363.D	1	03/08/13	BR	n/a	n/a	GGA1046
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.10	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	103%		60-140%		

(a) The pH of the sample was > 2 at time of analysis.

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	MW-2A	<b>Date Sampled:</b>	03/06/13
<b>Lab Sample ID:</b>	D44138-2	<b>Date Received:</b>	03/07/13
<b>Matrix:</b>	AQ - Ground Water	<b>Percent Solids:</b>	n/a
<b>Method:</b>	SW846 8021B		
<b>Project:</b>	CORCCOGJ: Knight Property Quarterly Sampling (011.1712)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	TA18363.D	1	03/08/13	BR	n/a	n/a	GTA1046
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	98%		60-140%

(a) The pH of the sample was > 2 at time of analysis.

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	MW-2A	<b>Date Sampled:</b>	03/06/13
<b>Lab Sample ID:</b>	D44138-2	<b>Date Received:</b>	03/07/13
<b>Matrix:</b>	AQ - Ground Water	<b>Percent Solids:</b>	n/a
<b>Method:</b>	SW846-8015B SW846 3510C		
<b>Project:</b>	CORCCOGJ: Knight Property Quarterly Sampling (011.1712)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD22608.D	1	03/09/13	AV	03/08/13	OP7507	GFD1129
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.19	0.17	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	74%		20-140%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-2A	<b>Date Sampled:</b> 03/06/13
<b>Lab Sample ID:</b> D44138-2	<b>Date Received:</b> 03/07/13
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> CORCCOGJ: Knight Property Quarterly Sampling (011.1712)	

## Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	107000	400	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Iron	15700	70	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Magnesium	65200	200	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Manganese	3930	5.0	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Potassium	6060	1000	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Selenium	< 50	50	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Sodium	95600	400	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA3349

(2) Prep QC Batch: MP9604

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> MW-2A	<b>Date Sampled:</b> 03/06/13
<b>Lab Sample ID:</b> D44138-2	<b>Date Received:</b> 03/07/13
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> CORCCOGJ: Knight Property Quarterly Sampling (011.1712)	

## General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	382	5.0	mg/l	1	03/11/13	JK	SM 2320B-2011
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	03/11/13	JK	SM 2320B-2011
Alkalinity, Total as CaCO <sub>3</sub>	382	5.0	mg/l	1	03/11/13	JK	SM 2320B-2011
BOD, 5 Day	< 10	10	mg/l	1	03/08/13 08:30	JK	SM 5210B-2011
Bromide <sup>a</sup>	< 0.10	0.10	mg/l	2	03/07/13 14:55	GH	EPA 300.0/SW846 9056
Chemical Oxygen Demand	< 10	10	mg/l	1	03/14/13	JD	SM 5220D-2011
Chloride	96.4	5.0	mg/l	10	03/07/13 18:35	GH	EPA 300.0/SW846 9056
Nitrogen, Nitrate	0.22	0.020	mg/l	2	03/07/13 14:55	GH	EPA 300.0/SW846 9056
Nitrogen, Nitrite <sup>a</sup>	< 0.0080	0.0080	mg/l	2	03/07/13 14:55	GH	EPA 300.0/SW846 9056
Phosphate, Ortho <sup>a</sup>	< 0.13	0.13	mg/l	2	03/07/13 18:23	GH	EPA 300.0/SW846 9056
Phosphorus, Total	0.44	0.010	mg/l	1	03/08/13	JD	HACH8190/SM4500P-B/E
Solids, Total Dissolved	648	10	mg/l	1	03/10/13	JK	SM 2540C-2011
Sulfate	98.5	5.0	mg/l	10	03/07/13 18:35	GH	EPA 300.0/SW846 9056
Total Organic Carbon	4.0	1.0	mg/l	1	03/11/13 15:44	JML	SM 5310B-2011
pH	7.64		su	1	03/08/13 15:25	JD	SM4500HB+ -2011/9040C

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b>	MW-3	<b>Date Sampled:</b>	03/06/13
<b>Lab Sample ID:</b>	D44138-3	<b>Date Received:</b>	03/07/13
<b>Matrix:</b>	AQ - Ground Water	<b>Percent Solids:</b>	n/a
<b>Method:</b>	SW846 8015B		
<b>Project:</b>	CORCCOGJ: Knight Property Quarterly Sampling (011.1712)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA18366.D	1	03/08/13	BR	n/a	n/a	GGA1046
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.10	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	105%		60-140%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	MW-3	<b>Date Sampled:</b>	03/06/13
<b>Lab Sample ID:</b>	D44138-3	<b>Date Received:</b>	03/07/13
<b>Matrix:</b>	AQ - Ground Water	<b>Percent Solids:</b>	n/a
<b>Method:</b>	SW846 8021B		
<b>Project:</b>	CORCCOGJ: Knight Property Quarterly Sampling (011.1712)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	TA18366.D	1	03/08/13	BR	n/a	n/a	GTA1046
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	101%		60-140%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	MW-3	<b>Date Sampled:</b>	03/06/13
<b>Lab Sample ID:</b>	D44138-3	<b>Date Received:</b>	03/07/13
<b>Matrix:</b>	AQ - Ground Water	<b>Percent Solids:</b>	n/a
<b>Method:</b>	SW846-8015B SW846 3510C		
<b>Project:</b>	CORCCOGJ: Knight Property Quarterly Sampling (011.1712)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD22609.D	1	03/09/13	AV	03/08/13	OP7507	GFD1129
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.19	0.17	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	75%		20-140%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-3	<b>Date Sampled:</b> 03/06/13
<b>Lab Sample ID:</b> D44138-3	<b>Date Received:</b> 03/07/13
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> CORCCOGJ: Knight Property Quarterly Sampling (011.1712)	

## Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	117000	400	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Iron	12700	70	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Magnesium	65500	200	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Manganese	1180	5.0	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Potassium	5430	1000	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Selenium	< 50	50	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Sodium	89200	400	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA3349

(2) Prep QC Batch: MP9604

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> MW-3	<b>Date Sampled:</b> 03/06/13
<b>Lab Sample ID:</b> D44138-3	<b>Date Received:</b> 03/07/13
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> CORCCOGJ: Knight Property Quarterly Sampling (011.1712)	

## General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	333	5.0	mg/l	1	03/11/13	JK	SM 2320B-2011
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	03/11/13	JK	SM 2320B-2011
Alkalinity, Total as CaCO <sub>3</sub>	333	5.0	mg/l	1	03/11/13	JK	SM 2320B-2011
BOD, 5 Day	< 10	10	mg/l	1	03/08/13 08:30	JK	SM 5210B-2011
Bromide	0.13	0.10	mg/l	2	03/07/13 15:07	GH	EPA 300.0/SW846 9056
Chemical Oxygen Demand	15.7	10	mg/l	1	03/14/13	JD	SM 5220D-2011
Chloride	161	10	mg/l	20	03/07/13 19:19	GH	EPA 300.0/SW846 9056
Nitrogen, Nitrate <sup>a</sup>	< 0.020	0.020	mg/l	2	03/07/13 15:07	GH	EPA 300.0/SW846 9056
Nitrogen, Nitrite <sup>a</sup>	< 0.0080	0.0080	mg/l	2	03/07/13 15:07	GH	EPA 300.0/SW846 9056
Phosphate, Ortho <sup>a</sup>	< 0.13	0.13	mg/l	2	03/07/13 19:08	GH	EPA 300.0/SW846 9056
Phosphorus, Total	0.31	0.010	mg/l	1	03/08/13	JD	HACH8190/SM4500P-B/E
Solids, Total Dissolved	844	10	mg/l	1	03/10/13	JK	SM 2540C-2011
Sulfate	161	10	mg/l	20	03/07/13 19:19	GH	EPA 300.0/SW846 9056
Total Organic Carbon	3.7	1.0	mg/l	1	03/11/13 15:57	JML	SM 5310B-2011
pH	7.55		su	1	03/08/13 15:25	JD	SM4500HB+ -2011/9040C

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b>	MW-4	<b>Date Sampled:</b>	03/06/13
<b>Lab Sample ID:</b>	D44138-4	<b>Date Received:</b>	03/07/13
<b>Matrix:</b>	AQ - Ground Water	<b>Percent Solids:</b>	n/a
<b>Method:</b>	SW846 8015B		
<b>Project:</b>	CORCCOGJ: Knight Property Quarterly Sampling (011.1712)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA18367.D	1	03/08/13	BR	n/a	n/a	GGA1046
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.10	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	107%		60-140%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	MW-4	<b>Date Sampled:</b>	03/06/13
<b>Lab Sample ID:</b>	D44138-4	<b>Date Received:</b>	03/07/13
<b>Matrix:</b>	AQ - Ground Water	<b>Percent Solids:</b>	n/a
<b>Method:</b>	SW846 8021B		
<b>Project:</b>	CORCCOGJ: Knight Property Quarterly Sampling (011.1712)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	TA18367.D	1	03/08/13	BR	n/a	n/a	GTA1046
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	102%		60-140%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	MW-4	<b>Date Sampled:</b>	03/06/13
<b>Lab Sample ID:</b>	D44138-4	<b>Date Received:</b>	03/07/13
<b>Matrix:</b>	AQ - Ground Water	<b>Percent Solids:</b>	n/a
<b>Method:</b>	SW846-8015B SW846 3510C		
<b>Project:</b>	CORCCOGJ: Knight Property Quarterly Sampling (011.1712)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD22610.D	1	03/09/13	AV	03/08/13	OP7507	GFD1129
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.19	0.17	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	82%		20-140%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-4	<b>Date Sampled:</b> 03/06/13
<b>Lab Sample ID:</b> D44138-4	<b>Date Received:</b> 03/07/13
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> CORCCOGJ: Knight Property Quarterly Sampling (011.1712)	

## Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	60400	400	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Iron	2630	70	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Magnesium	64500	200	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Manganese	316	5.0	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Potassium	5000	1000	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Selenium	< 50	50	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Sodium	99200	400	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA3349

(2) Prep QC Batch: MP9604

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> MW-4	<b>Date Sampled:</b> 03/06/13
<b>Lab Sample ID:</b> D44138-4	<b>Date Received:</b> 03/07/13
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> CORCCOGJ: Knight Property Quarterly Sampling (011.1712)	

## General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	489	5.0	mg/l	1	03/11/13	JK	SM 2320B-2011
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	03/11/13	JK	SM 2320B-2011
Alkalinity, Total as CaCO <sub>3</sub>	489	5.0	mg/l	1	03/11/13	JK	SM 2320B-2011
BOD, 5 Day	< 10	10	mg/l	1	03/08/13 08:30	JK	SM 5210B-2011
Bromide <sup>a</sup>	< 0.10	0.10	mg/l	2	03/07/13 15:18	GH	EPA 300.0/SW846 9056
Chemical Oxygen Demand	23.7	10	mg/l	1	03/14/13	JD	SM 5220D-2011
Chloride	8.0	1.0	mg/l	2	03/07/13 15:18	GH	EPA 300.0/SW846 9056
Nitrogen, Nitrate <sup>a</sup>	< 0.020	0.020	mg/l	2	03/07/13 15:18	GH	EPA 300.0/SW846 9056
Nitrogen, Nitrite <sup>a</sup>	< 0.0080	0.0080	mg/l	2	03/07/13 15:18	GH	EPA 300.0/SW846 9056
Phosphate, Ortho <sup>a</sup>	< 0.13	0.13	mg/l	2	03/07/13 19:31	GH	EPA 300.0/SW846 9056
Phosphorus, Total	0.10	0.010	mg/l	1	03/08/13	JD	HACH8190/SM4500P-B/E
Solids, Total Dissolved	628	10	mg/l	1	03/10/13	JK	SM 2540C-2011
Sulfate	113	5.0	mg/l	10	03/07/13 19:42	GH	EPA 300.0/SW846 9056
Total Organic Carbon	3.8	1.0	mg/l	1	03/11/13 16:10	JML	SM 5310B-2011
pH	7.81		su	1	03/08/13 15:25	JD	SM4500HB+ -2011/9040C

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b>	MW-5	<b>Date Sampled:</b>	03/06/13
<b>Lab Sample ID:</b>	D44138-5	<b>Date Received:</b>	03/07/13
<b>Matrix:</b>	AQ - Ground Water	<b>Percent Solids:</b>	n/a
<b>Method:</b>	SW846 8015B		
<b>Project:</b>	CORCCOGJ: Knight Property Quarterly Sampling (011.1712)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA18368.D	1	03/08/13	BR	n/a	n/a	GGA1046
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.10	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	104%		60-140%		

ND = Not detected      MDL - Method Detection Limit  
RL = Reporting Limit  
E = Indicates value exceeds calibration range

J = Indicates an estimated value  
B = Indicates analyte found in associated method blank  
N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	MW-5	<b>Date Sampled:</b>	03/06/13
<b>Lab Sample ID:</b>	D44138-5	<b>Date Received:</b>	03/07/13
<b>Matrix:</b>	AQ - Ground Water	<b>Percent Solids:</b>	n/a
<b>Method:</b>	SW846 8021B		
<b>Project:</b>	CORCCOGJ: Knight Property Quarterly Sampling (011.1712)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	TA18368.D	1	03/08/13	BR	n/a	n/a	GTA1046
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	100%		60-140%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	MW-5	<b>Date Sampled:</b>	03/06/13
<b>Lab Sample ID:</b>	D44138-5	<b>Date Received:</b>	03/07/13
<b>Matrix:</b>	AQ - Ground Water	<b>Percent Solids:</b>	n/a
<b>Method:</b>	SW846-8015B SW846 3510C		
<b>Project:</b>	CORCCOGJ: Knight Property Quarterly Sampling (011.1712)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD22611.D	1	03/09/13	AV	03/08/13	OP7507	GFD1129
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.19	0.17	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	77%		20-140%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-5	<b>Date Sampled:</b> 03/06/13
<b>Lab Sample ID:</b> D44138-5	<b>Date Received:</b> 03/07/13
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> CORCCOGJ: Knight Property Quarterly Sampling (011.1712)	

## Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	103000	400	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Iron	15600	70	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Magnesium	71400	200	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Manganese	849	5.0	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Potassium	4340	1000	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Selenium	< 50	50	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Sodium	97900	400	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA3349

(2) Prep QC Batch: MP9604

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> MW-5	<b>Date Sampled:</b> 03/06/13
<b>Lab Sample ID:</b> D44138-5	<b>Date Received:</b> 03/07/13
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> CORCCOGJ: Knight Property Quarterly Sampling (011.1712)	

## General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	512	5.0	mg/l	1	03/11/13	JK	SM 2320B-2011
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	03/11/13	JK	SM 2320B-2011
Alkalinity, Total as CaCO <sub>3</sub>	512	5.0	mg/l	1	03/11/13	JK	SM 2320B-2011
BOD, 5 Day	< 10	10	mg/l	1	03/08/13 08:30	JK	SM 5210B-2011
Bromide	0.16	0.10	mg/l	2	03/07/13 15:29	GH	EPA 300.0/SW846 9056
Chemical Oxygen Demand	20.0	10	mg/l	1	03/14/13	JD	SM 5220D-2011
Chloride	78.0	5.0	mg/l	10	03/07/13 20:04	GH	EPA 300.0/SW846 9056
Nitrogen, Nitrate	0.022	0.020	mg/l	2	03/07/13 15:29	GH	EPA 300.0/SW846 9056
Nitrogen, Nitrite <sup>a</sup>	< 0.0080	0.0080	mg/l	2	03/07/13 15:29	GH	EPA 300.0/SW846 9056
Phosphate, Ortho <sup>a</sup>	< 0.13	0.13	mg/l	2	03/07/13 19:53	GH	EPA 300.0/SW846 9056
Phosphorus, Total	0.53	0.010	mg/l	1	03/08/13	JD	HACH8190/SM4500P-B/E
Solids, Total Dissolved	756	10	mg/l	1	03/10/13	JK	SM 2540C-2011
Sulfate	109	5.0	mg/l	10	03/07/13 20:04	GH	EPA 300.0/SW846 9056
Total Organic Carbon	5.6	1.0	mg/l	1	03/11/13 16:23	JML	SM 5310B-2011
pH	7.60		su	1	03/08/13 15:25	JD	SM4500HB+ -2011/9040C

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b>	MW-6	<b>Date Sampled:</b>	03/06/13
<b>Lab Sample ID:</b>	D44138-6	<b>Date Received:</b>	03/07/13
<b>Matrix:</b>	AQ - Ground Water	<b>Percent Solids:</b>	n/a
<b>Method:</b>	SW846 8015B		
<b>Project:</b>	CORCCOGJ: Knight Property Quarterly Sampling (011.1712)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	GA18369.D	1	03/08/13	BR	n/a	n/a	GGA1046
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.10	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	105%		60-140%		

(a) The pH of the sample was > 2 at time of analysis.

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	MW-6	<b>Date Sampled:</b>	03/06/13
<b>Lab Sample ID:</b>	D44138-6	<b>Date Received:</b>	03/07/13
<b>Matrix:</b>	AQ - Ground Water	<b>Percent Solids:</b>	n/a
<b>Method:</b>	SW846 8021B		
<b>Project:</b>	CORCCOGJ: Knight Property Quarterly Sampling (011.1712)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	TA18369.D	1	03/08/13	BR	n/a	n/a	GTA1046
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	100%		60-140%

(a) The pH of the sample was > 2 at time of analysis.

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Page 1 of 1

<b>Client Sample ID:</b>	MW-6	<b>Date Sampled:</b>	03/06/13
<b>Lab Sample ID:</b>	D44138-6	<b>Date Received:</b>	03/07/13
<b>Matrix:</b>	AQ - Ground Water	<b>Percent Solids:</b>	n/a
<b>Method:</b>	SW846-8015B SW846 3510C		
<b>Project:</b>	CORCCOGJ: Knight Property Quarterly Sampling (011.1712)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD22612.D	1	03/09/13	AV	03/08/13	OP7507	GFD1129
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	0.175	0.19	0.17	mg/l	J
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	71%		20-140%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-6	<b>Date Sampled:</b> 03/06/13
<b>Lab Sample ID:</b> D44138-6	<b>Date Received:</b> 03/07/13
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> CORCCOGJ: Knight Property Quarterly Sampling (011.1712)	

## Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	103000	400	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Iron	14500	70	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Magnesium	86700	200	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Manganese	1070	5.0	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Potassium	5240	1000	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Selenium	< 50	50	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Sodium	96500	400	ug/l	1	03/08/13	03/08/13 JM	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA3349

(2) Prep QC Batch: MP9604

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> MW-6	<b>Date Sampled:</b> 03/06/13
<b>Lab Sample ID:</b> D44138-6	<b>Date Received:</b> 03/07/13
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> CORCCOGJ: Knight Property Quarterly Sampling (011.1712)	

## General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	574	5.0	mg/l	1	03/11/13	JK	SM 2320B-2011
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	03/11/13	JK	SM 2320B-2011
Alkalinity, Total as CaCO <sub>3</sub>	574	5.0	mg/l	1	03/11/13	JK	SM 2320B-2011
BOD, 5 Day	< 10	10	mg/l	1	03/08/13 08:30	JK	SM 5210B-2011
Bromide	0.27	0.10	mg/l	2	03/07/13 15:40	GH	EPA 300.0/SW846 9056
Chemical Oxygen Demand	21.3	10	mg/l	1	03/14/13	JD	SM 5220D-2011
Chloride	57.8	1.0	mg/l	2	03/07/13 15:40	GH	EPA 300.0/SW846 9056
Nitrogen, Nitrate <sup>a</sup>	< 0.020	0.020	mg/l	2	03/07/13 15:40	GH	EPA 300.0/SW846 9056
Nitrogen, Nitrite <sup>a</sup>	< 0.0080	0.0080	mg/l	2	03/07/13 15:40	GH	EPA 300.0/SW846 9056
Phosphate, Ortho <sup>a</sup>	< 0.13	0.13	mg/l	2	03/07/13 20:15	GH	EPA 300.0/SW846 9056
Phosphorus, Total	0.32	0.010	mg/l	1	03/08/13	JD	HACH8190/SM4500P-B/E
Solids, Total Dissolved	812	10	mg/l	1	03/10/13	JK	SM 2540C-2011
Sulfate	95.9	5.0	mg/l	10	03/07/13 20:27	GH	EPA 300.0/SW846 9056
Total Organic Carbon	7.0	1.0	mg/l	1	03/11/13 16:36	JML	SM 5310B-2011
pH	7.61		su	1	03/08/13 15:25	JD	SM4500HB+ -2011/9040C

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

## Misc. Forms

### Custody Documents and Other Forms

---

Includes the following where applicable:

- Chain of Custody



# Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D44138

Client: OLSSON ASS.

Immediate Client Services Action Required: No

Date / Time Received: 3/7/2013 1:00:00 PM

No. Coolers: 5

Client Service Action Required at Login: No

Project: CORCCOGJ

Airbill #'s: HD-Co

## Cooler Security

Y or N

Y or N

- |                           |                                     |                          |                       |                                     |                          |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present:       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact:  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

## Cooler Temperature

Y or N

- |                              |                                     |                          |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved:   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | Infrared gun                        |                          |
| 3. Cooler media:             | Ice (bag)                           |                          |

## Quality Control Preservation

Y or N

N/A

- |                                 |                                     |                          |                          |
|---------------------------------|-------------------------------------|--------------------------|--------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/>            | <input type="checkbox"/> |                          |
| 2. Trip Blank listed on COC:    | <input type="checkbox"/>            | <input type="checkbox"/> |                          |
| 3. Samples preserved properly:  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                          |
| 4. VOCs headspace free:         | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

## Sample Integrity - Documentation

Y or N

- |  |                                     |                          |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles:   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete:        | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

## Sample Integrity - Condition

Y or N

- |                                  |                                     |                          |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT:       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample:          | Intact                              |                          |

## Sample Integrity - Instructions

Y or N N/A

- |   |                                     |                                     |                                     |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear:           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                     |
| 2. Bottles received for unspecified tests | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                                     |
| 3. Sufficient volume rec'd for analysis:  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                     |
| 4. Compositing instructions clear:        | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear:          | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

Comments

Accutest Laboratories  
V:(303) 425-6021

4036 Youngfield Street  
F: (303) 425-6854

Wheat Ridge, CO  
www.accutest.com





# Industrial LABORATORIES

Industrial Laboratories is your independent,  
third-party analytical testing laboratory.

To: Accutest Mountain States (AMS)  
4036 Youngfield St.

Wheat Ridge CO 80033

Attn: Shea Greiner

## TEST REPORT

ACCUTEST - M

Date Received: 3/7/2013

Date Reported: 3/11/2013

PO Number: D44138X

Note: Sample test procedures conform to EPA 40CFR136 requirements.

Lab No.	Sample Description	Test Method	Result	Units	MDL	Analysis Date/By
130307014-01A	D44138X-1, 3/6/13, 3:00pm	* Heterotrophic Plate Count SM 9215B	220000	CFU/mL		RJ 3/7/2013
130307014-02A	D44138X-2, 3/6/13, 3:30pm	* Heterotrophic Plate Count SM 9215B	1400	CFU/mL		RJ 3/7/2013
130307014-03A	D44138X-3, 3/6/13, 12:35:00pm	* Heterotrophic Plate Count SM 9215B	920	CFU/mL		RJ 3/7/2013
130307014-04A	D44138X-4, 3/6/13, 2:20pm	* Heterotrophic Plate Count SM 9215B	440	CFU/mL		RJ 3/7/2013
130307014-05A	D44138X-5, 3/6/13, 11:45am	* Heterotrophic Plate Count SM 9215B	590	CFU/mL		RJ 3/7/2013
130307014-06A	D44138X-6, 3/6/13, 10:30am	* Heterotrophic Plate Count SM 9215B	64000	CFU/mL		RJ 3/7/2013

\* = Scope Analysis  
# = Subcontracted Analysis  
MDL = Method Detection Limit  
ND = Not Detected at the Method Detection Limit  
Page: 1 of 1

Department Manager

4046 Youngfield Street • Wheat Ridge, Colorado 80033 • (303) 287-9691 • (303) 287-0964 FAX • [www.industriallabs.net](http://www.industriallabs.net)

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D44138: Chain of Custody

Page 4 of 4

## GC Volatiles

5

## QC Data Summaries

---

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

## Method Blank Summary

Page 1 of 1

**Job Number:** D44138

**Account:** WILLCOP WPX Energy Rocky Mountain, LLC

**Project:** CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA1046-MB	GA18359.D	1	03/08/13	BR	n/a	n/a	GGA1046

The QC reported here applies to the following samples:

Method: SW846 8015B

D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.10	mg/l	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	106% 60-140%

## Method Blank Summary

Page 1 of 1

**Job Number:** D44138

**Account:** WILLCOP WPX Energy Rocky Mountain, LLC

**Project:** CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GTA1046-MB	TA18359.D	1	03/08/13	BR	n/a	n/a	GTA1046

The QC reported here applies to the following samples:

Method: SW846 8021B

D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	102% 60-140%

## Method Blank Summary

Page 1 of 1

**Job Number:** D44138

**Account:** WILLCOP WPX Energy Rocky Mountain, LLC

**Project:** CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GTA1047-MB	TA18389.D	1	03/11/13	BR	n/a	n/a	GTA1047

The QC reported here applies to the following samples:

Method: SW846 8021B

D44138-1

CAS No.	Compound	Result	RL	MDL	Units	Q
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	102% 60-140%

## Blank Spike Summary

Page 1 of 1

**Job Number:** D44138

**Account:** WILLCOP WPX Energy Rocky Mountain, LLC

**Project:** CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA1046-BS	GA18360.D	1	03/08/13	BR	n/a	n/a	GGA1046

The QC reported here applies to the following samples:

Method: SW846 8015B

D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-GRO (C6-C10)	2.2	2.56	116	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	110%	60-140%

\* = Outside of Control Limits.

## Blank Spike Summary

Page 1 of 1

**Job Number:** D44138

**Account:** WILLCOP WPX Energy Rocky Mountain, LLC

**Project:** CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GTA1046-BS	TA18360.D	1	03/08/13	BR	n/a	n/a	GTA1046

The QC reported here applies to the following samples:

Method: SW846 8021B

D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	27.2	26.5	97	70-130
100-41-4	Ethylbenzene	45.6	43.8	96	70-130
108-88-3	Toluene	212	197	93	70-130
1330-20-7	Xylenes (total)	216	215	100	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	106%	60-140%

\* = Outside of Control Limits.

## Blank Spike Summary

Page 1 of 1

**Job Number:** D44138

**Account:** WILLCOP WPX Energy Rocky Mountain, LLC

**Project:** CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GTA1047-BS	TA18390.D	1	03/11/13	BR	n/a	n/a	GTA1047

The QC reported here applies to the following samples:

Method: SW846 8021B

D44138-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
1330-20-7	Xylenes (total)	216	211	98	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	106%	60-140%

\* = Outside of Control Limits.

## Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D44138

**Account:** WILLCOP WPX Energy Rocky Mountain, LLC

**Project:** CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D44138-2MS	GA18364.D	1	03/08/13	BR	n/a	n/a	GGA1046
D44138-2MSD	GA18365.D	1	03/08/13	BR	n/a	n/a	GGA1046
D44138-2 <sup>a</sup>	GA18363.D	1	03/08/13	BR	n/a	n/a	GGA1046

The QC reported here applies to the following samples:

Method: SW846 8015B

D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6

CAS No.	Compound	D44138-2 mg/l	Spike Q mg/l	MS mg/l	MS %	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND	2.2	2.46	112	2.43	110	1	60-145/30

CAS No.	Surrogate Recoveries	MS	MSD	D44138-2	Limits
120-82-1	1,2,4-Trichlorobenzene	109%	109%	103%	60-140%

(a) The pH of the sample was > 2 at time of analysis.

\* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D44138

**Account:** WILLCOP WPX Energy Rocky Mountain, LLC

**Project:** CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D44138-2MS	TA18364.D	1	03/08/13	BR	n/a	n/a	GTA1046
D44138-2MSD	TA18365.D	1	03/08/13	BR	n/a	n/a	GTA1046
D44138-2 <sup>a</sup>	TA18363.D	1	03/08/13	BR	n/a	n/a	GTA1046

The QC reported here applies to the following samples:

Method: SW846 8021B

D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6

CAS No.	Compound	D44138-2 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	27.2	26.3	97	25.7	94	2	55-133/30
100-41-4	Ethylbenzene	ND	45.6	43.1	95	42.5	93	1	63-130/30
108-88-3	Toluene	ND	212	192	91	190	90	1	70-130/30
1330-20-7	Xylenes (total)	ND	216	211	98	208	96	1	64-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D44138-2	Limits
120-82-1	1,2,4-Trichlorobenzene	104%	103%	98%	60-140%

(a) The pH of the sample was > 2 at time of analysis.

\* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D44138

**Account:** WILLCOP WPX Energy Rocky Mountain, LLC

**Project:** CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D44204-1MS <sup>a</sup>	TA18392.D	1	03/11/13	BR	n/a	n/a	GTA1047
D44204-1MSD <sup>a</sup>	TA18393.D	1	03/11/13	BR	n/a	n/a	GTA1047
D44204-1 <sup>a</sup>	TA18391.D	1	03/11/13	BR	n/a	n/a	GTA1047

The QC reported here applies to the following samples:

Method: SW846 8021B

D44138-1

CAS No.	Compound	D44204-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
1330-20-7	Xylenes (total)	ND	216	207	96	205	95	1	64-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D44204-1	Limits
120-82-1	1,2,4-Trichlorobenzene	104%	102%	100%	60-140%

(a) The pH of the sample was > 2 at time of analysis.

\* = Outside of Control Limits.

## GC Semi-volatiles

### QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

## Method Blank Summary

Page 1 of 1

**Job Number:** D44138

**Account:** WILLCOP WPX Energy Rocky Mountain, LLC

**Project:** CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7507-MB	FD22599.D	1	03/08/13	AV	03/08/13	OP7507	GFD1129

The QC reported here applies to the following samples:

Method: SW846-8015B

D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.20	0.18	mg/l	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	66% 20-140%

## Blank Spike Summary

Page 1 of 1

**Job Number:** D44138

**Account:** WILLCOP WPX Energy Rocky Mountain, LLC

**Project:** CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7507-BS	FD22600.D	1	03/08/13	AV	03/08/13	OP7507	GFD1129

The QC reported here applies to the following samples:

Method: SW846-8015B

D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-DRO (C10-C28)	20	16.4	82	36-140

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	67%	20-140%

\* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D44138

**Account:** WILLCOP WPX Energy Rocky Mountain, LLC

**Project:** CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7507-MS	FD22601.D	1	03/08/13	AV	03/08/13	OP7507	GFD1129
OP7507-MSD	FD22602.D	1	03/09/13	AV	03/08/13	OP7507	GFD1129
D44041-7	FD22603.D	1	03/09/13	AV	03/08/13	OP7507	GFD1129

The QC reported here applies to the following samples:

Method: SW846-8015B

D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6

CAS No.	Compound	D44041-7 mg/l	Spike Q	MS mg/l	MS %	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	ND	20	14.9	75	12.8	64	15	28-140/30

CAS No.	Surrogate Recoveries	MS	MSD	D44041-7	Limits
84-15-1	o-Terphenyl	72%	61%	79%	20-140%

\* = Outside of Control Limits.

## Metals Analysis

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: D44138  
Account: WILLCOF - WPX Energy Rocky Mountain, LLC  
Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

QC Batch ID: MP9604  
Matrix Type: AQUEOUS

Methods: SW846 6010C  
Units: ug/l

Prep Date: 03/08/13

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	21	25		
Antimony	30	3.6	3.6		
Arsenic	25	5.4	8.4		
Barium	10	.8	1.8		
Beryllium	10	1.3	3.1		
Boron	50	4.3	4.4		
Cadmium	10	.6	.59		
Calcium	400	8.4	16	-5.9	<400
Chromium	10	.3	.56		
Cobalt	5.0	.4	.42		
Copper	10	1.2	3		
Iron	70	1.9	20	2.1	<70
Lead	50	2.4	2.9		
Lithium	2.0	2.8			
Magnesium	200	22	22	-0.30	<200
Manganese	5.0	1.2	1.2	0.30	<5.0
Molybdenum	10	2.1	2.1		
Nickel	30	.5	.57		
Phosphorus	100	14	59		
Potassium	1000	150	150	111	<1000
Selenium	50	6.1	11	0.10	<50
Silicon	50	6.5			
Silver	30	.5	.98		
Sodium	400	21	98	-0.40	<400
Strontium	5.0	.2	1.5		
Thallium	10	2.9	8.6		
Tin	50	12			
Titanium	10	.1			
Uranium	50	4.6	4.6		
Vanadium	10	.3	.48		
Zinc	30	.8	2.4		

Associated samples MP9604: D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6

Results < IDL are shown as zero for calculation purposes  
(\* ) Outside of QC limits

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: D44138  
Account: WILLCOF - WPX Energy Rocky Mountain, LLC  
Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

QC Batch ID: MP9604  
Matrix Type: AQUEOUS

Methods: SW846 6010C  
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D44138  
 Account: WILLCOP - WPX Energy Rocky Mountain, LLC  
 Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

QC Batch ID: MP9604  
 Matrix Type: AQUEOUS

Methods: SW846 6010C  
 Units: ug/l

Prep Date: 03/08/13

Metal	D44043-1F Original MS	Spikelot ICPAL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	anr			
Beryllium				
Boron				
Cadmium	anr			
Calcium	4480	28600	25000	96.5 75-125
Chromium	anr			
Cobalt				
Copper				
Iron	12.0	5290	5000	105.6 75-125
Lead	anr			
Lithium				
Magnesium	840	26100	25000	101.0 75-125
Manganese	13.0	504	500	98.2 75-125
Molybdenum				
Nickel				
Phosphorus				
Potassium	2060	29300	25000	109.0 75-125
Selenium	0.0	1100	1000	110.0 75-125
Silicon				
Silver	anr			
Sodium	110000	137000	25000	108.0 75-125
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP9604: D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D44138

Account: WILLCOF - WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

QC Batch ID: MP9604

Methods: SW846 6010C

Matrix Type: AQUEOUS

Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D44138  
 Account: WILLCOP - WPX Energy Rocky Mountain, LLC  
 Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

QC Batch ID: MP9604  
 Matrix Type: AQUEOUS

Methods: SW846 6010C  
 Units: ug/l

Prep Date: 03/08/13

	D44043-1F		Spikelot		MSD	QC
Metal	Original	MSD	ICPALL2	% Rec	RPD	Limit
Aluminum						
Antimony						
Arsenic	anr					
Barium	anr					
Beryllium						
Boron						
Cadmium	anr					
Calcium	4480	28600	25000	96.5	0.0	20
Chromium	anr					
Cobalt						
Copper						
Iron	12.0	5290	5000	105.6	0.0	20
Lead	anr					
Lithium						
Magnesium	840	26100	25000	101.0	0.0	20
Manganese	13.0	507	500	98.8	0.6	20
Molybdenum						
Nickel						
Phosphorus						
Potassium	2060	29300	25000	109.0	0.0	20
Selenium	0.0	1100	1000	110.0	0.0	20
Silicon						
Silver	anr					
Sodium	110000	137000	25000	108.0	0.0	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP9604: D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D44138

Account: WILLCOF - WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

QC Batch ID: MP9604

Methods: SW846 6010C

Matrix Type: AQUEOUS

Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

## SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D44138

Account: WILLCOP - WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

QC Batch ID: MP9604

Methods: SW846 6010C

Matrix Type: AQUEOUS

Units: ug/l

Prep Date: 03/08/13

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	anr			
Beryllium				
Boron				
Cadmium	anr			
Calcium	24500	25000	98.0	80-120
Chromium	anr			
Cobalt				
Copper				
Iron	5310	5000	106.2	80-120
Lead	anr			
Lithium				
Magnesium	25600	25000	102.4	80-120
Manganese	496	500	99.2	80-120
Molybdenum				
Nickel				
Phosphorus				
Potassium	26200	25000	104.8	80-120
Selenium	1120	1000	112.0	80-120
Silicon				
Silver	anr			
Sodium	25000	25000	100.0	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP9604: D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6

Results &lt; IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D44138

Account: WILLCOF - WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

QC Batch ID: MP9604

Methods: SW846 6010C

Matrix Type: AQUEOUS

Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D44138  
 Account: WILLCOP - WPX Energy Rocky Mountain, LLC  
 Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

QC Batch ID: MP9604  
 Matrix Type: AQUEOUS

Methods: SW846 6010C  
 Units: ug/l

Prep Date: 03/08/13

Metal	D44043-1F Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	anr			
Beryllium				
Boron				
Cadmium	anr			
Calcium	4480	4740	5.9	0-10
Chromium	anr			
Cobalt				
Copper				
Iron	12.0	0.00	100.0 (a)	0-10
Lead	anr			
Lithium				
Magnesium	840	896	6.7	0-10
Manganese	13.0	12.5	3.8	0-10
Molybdenum				
Nickel				
Phosphorus				
Potassium	2060	2680	30.1 (a)	0-10
Selenium	0.00	0.00	NC	0-10
Silicon				
Silver	anr			
Sodium	110000	126000	13.7* (b)	0-10
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP9604: D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits

SERIAL DILUTION RESULTS SUMMARY

Login Number: D44138

Account: WILLCOP - WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

QC Batch ID: MP9604

Methods: SW846 6010C

Matrix Type: AQUEOUS

Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

(b) Serial dilution indicates possible matrix interference.

7.1.4

7

## General Chemistry

### QC Data Summaries

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Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: D44138  
Account: WILLCOG - WPX Energy Rocky Mountain, LLC  
Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Bicarbonate as CaC	GN19239	5.0	0.0	mg/l	100	102	101.5	90-110%
Alkalinity, Carbonate	GN19240	5.0	0.0	mg/l	100	102	101.5	80-120%
Alkalinity, Total as CaCO3	GN19236	5.0	0.0	mg/l	100	102	101.5	90-110%
BOD, 5 Day	GP9523/GN19288	10	0.0	mg/l	198	188	94.9	85-115%
Bromide	GP9507/GN19201	0.050	0.0	mg/l	20	21.3	106.5	90-110%
Chemical Oxygen Demand	GP9560/GN19319	10	0.0	mg/l	100	95.4	95.4	80-120%
Chloride	GP9507/GN19201	0.50	0.0	mg/l	20	20.3	101.5	90-110%
Nitrogen, Nitrate	GP9507/GN19201	0.010	0.0	mg/l	4.52	4.41	97.6	90-110%
Nitrogen, Nitrite	GP9507/GN19201	0.0040	0.0	mg/l	6.09	6.02	98.9	90-110%
Phosphate, Ortho	GP9507/GN19201	0.065	0.0	mg/l	9.78	8.93	91.3	90-110%
Phosphorus, Total	GP9515/GN19221	0.010	0.0	mg/l	0.2	0.20	101.8	80-120%
Phosphorus, Total	GP9524/GN19222	0.010	0.0	mg/l	.2	0.21	104.6	80-120%
Solids, Total Dissolved	GN19230	10	0.0	mg/l	400	404	101.0	90-110%
Sulfate	GP9507/GN19201	0.50	0.0	mg/l	30	30.9	103.0	90-110%
Total Organic Carbon	GP9533/GN19258	1.0	0.0	mg/l	8.82	8.79	99.7	90-110%
pH	GN19225			su	8.00	7.97	99.6	99.3-100

Associated Samples:

Batch GP9507: D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6  
Batch GP9515: D44138-1  
Batch GP9523: D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6  
Batch GP9524: D44138-2, D44138-3, D44138-4, D44138-5, D44138-6  
Batch GP9533: D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6  
Batch GP9560: D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6  
Batch GN19225: D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6  
Batch GN19230: D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6  
Batch GN19236: D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6  
Batch GN19239: D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6  
Batch GN19240: D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6  
(\* ) Outside of QC limits

DUPLICATE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: D44138  
Account: WILLCOP - WPX Energy Rocky Mountain, LLC  
Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO <sub>3</sub>	GN19236	D43868-1	mg/l	137	134	2.2	0-20%
BOD, 5 Day	GP9523/GN19288	D44138-1	mg/l	15.4	16.7	8.1	0-20%
Chemical Oxygen Demand	GP9560/GN19319	D44138-2	mg/l	6.8	7.7	12.7	0-25%
Phosphorus, Total	GP9515/GN19221	D43941-1	mg/l	0.053	0.051	3.5	0-20%
Phosphorus, Total	GP9524/GN19222	D44138-2	mg/l	0.44	0.44	1.2	0-20%
Solids, Total Dissolved	GN19230	D43999-1	mg/l	420	450	6.9	0-20%
Total Organic Carbon	GP9533/GN19258	D44172-4	mg/l	2.2	2.1	4.7	0-20%

Associated Samples:

Batch GP9515: D44138-1  
Batch GP9523: D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6  
Batch GP9524: D44138-2, D44138-3, D44138-4, D44138-5, D44138-6  
Batch GP9533: D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6  
Batch GP9560: D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6  
Batch GN19230: D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6  
Batch GN19236: D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6  
(\*) Outside of QC limits

8.2

8

MATRIX SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: D44138  
Account: WILLCOG - WPX Energy Rocky Mountain, LLC  
Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO <sub>3</sub>	GN19236	D43868-1	mg/l	137	100	231	93.7	80-120%
Bromide	GP9507/GN19201	D44119-1	mg/l	0.0	5	5.3	106.0	80-120%
Chemical Oxygen Demand	GP9560/GN19319	D44138-2	mg/l	6.8	40	47.4	101.5	70-130%
Chloride	GP9507/GN19201	D44119-1	mg/l	7.6	20	28.1	102.5	80-120%
Nitrogen, Nitrate	GP9507/GN19201	D44119-1	mg/l	0.74	1.13	1.9	102.7	80-120%
Nitrogen, Nitrite	GP9507/GN19201	D44119-1	mg/l	0.030	0.609	0.60	93.6	80-120%
Phosphate, Ortho	GP9507/GN19201	D44119-1	mg/l	0.0	40.8	40.5	99.4	80-120%
Phosphorus, Total	GP9515/GN19221	D43941-1	mg/l	0.053	.4	0.43	94.7	80-120%
Phosphorus, Total	GP9524/GN19222	D44138-2	mg/l	0.44	.4	0.85	102.0	80-120%
Sulfate	GP9507/GN19201	D44119-1	mg/l	754	500	1270	103.2	80-120%
Total Organic Carbon	GP9533/GN19258	D44138-2	mg/l	4.0	10	14.5	105.0	80-120%

Associated Samples:

Batch GP9507: D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6

Batch GP9515: D44138-1

Batch GP9524: D44138-2, D44138-3, D44138-4, D44138-5, D44138-6

Batch GP9533: D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6

Batch GP9560: D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6

Batch GN19236: D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits



MATRIX SPIKE DUPLICATE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: D44138  
Account: WILLCOF - WPX Energy Rocky Mountain, LLC  
Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Alkalinity, Total as CaCO <sub>3</sub>	GN19236	D43868-1	mg/l	137	100	233	0.9	20%
Bromide	GP9507/GN19201	D44119-1	mg/l	0.0	5	5.3	0.0	20%
Chemical Oxygen Demand	GP9560/GN19319	D44138-2	mg/l	6.8	40	52.3	9.9	25%
Chloride	GP9507/GN19201	D44119-1	mg/l	7.6	20	28.2	0.4	20%
Nitrogen, Nitrate	GP9507/GN19201	D44119-1	mg/l	0.74	1.13	1.9	0.0	20%
Nitrogen, Nitrite	GP9507/GN19201	D44119-1	mg/l	0.030	0.609	0.63	4.9	20%
Phosphate, Ortho	GP9507/GN19201	D44119-1	mg/l	0.0	40.8	39.6	2.2	20%
Phosphorus, Total	GP9515/GN19221	D43941-1	mg/l	0.053	.4	0.440	2.5	20%
Phosphorus, Total	GP9524/GN19222	D44138-2	mg/l	0.44	.4	0.860	0.8	20%
Sulfate	GP9507/GN19201	D44119-1	mg/l	754	500	1270	0.0	20%
Total Organic Carbon	GP9533/GN19258	D44138-2	mg/l	4.0	10	14.6	0.7	20%

Associated Samples:

Batch GP9507: D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6

Batch GP9515: D44138-1

Batch GP9524: D44138-2, D44138-3, D44138-4, D44138-5, D44138-6

Batch GP9533: D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6

Batch GP9560: D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6

Batch GN19236: D44138-1, D44138-2, D44138-3, D44138-4, D44138-5, D44138-6

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

8.4

8