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DIVISION OF RECLAMATION
MINING AND SAFETY

January 11, 2016

Stephanie Mitchell
Colorado Division of Reclamation, Mining and Safety
101 South 3rd, Suite 301
Grand Junction, CO 81501

Transmittal: Fourth Quarter 2015 Hydrological Report, File No. M-2007-044, Whirlwind Mine, Mesa County, Colorado

Dear Ms. Mitchell:

Attached is the Fourth Quarter 2015 Hydrological Report for Energy Fuels Resources (USA) Inc.'s ("EFRI's") Whirlwind Mine (the "Mine"). This report was prepared to comply with the Environmental Protection Plan approved by the Colorado Division of Reclamation, Mining, and Safety, and the conditions set forth in Attachment B of the Bureau of Land Management's *Decision Record, Finding of No Significant Impact, and Final Environmental Assessment for the Whirlwind Mine Uranium Mining Project*, September 2008.

If you have any questions or comments, please do not hesitate to contact me at 303-389-4167.

Yours very truly,

JAIME MASSEY

ENERGY FUELS RESOURCES (USA) INC.
Jaime Massey
Regulatory Compliance Specialist

cc: Scott Gerwe, BLM
Scott Bakken
Kathy Weinel
David Turk

Whirlwind Mine

Fourth Quarter 2015
Hydrological Monitoring Report

January 2016

Table of Contents

Summary of Quarterly Hydrological Monitoring

Monitoring Activities

This report summarizes the quarterly monitoring activities at Energy Fuels Resources (USA) Inc.'s ("EFRI's") Whirlwind Mine (the "Mine"), as required by the approved Environmental Protection Plan and Attachment B of the Bureau of Land Management's (the "BLM's") *Decision Record, Finding of No Significant Impact, and Final Environmental Assessment for the Whirlwind Mine Uranium Mining Project* (the "EA"). The following field monitoring activities were performed during the fourth quarter of 2015 (October through December 2015) at the Mine:

- Quarterly water level/flow measurements and field parameters were taken at MW-1, DP Spring and PR Spring on November 9, 2015.

Whirlwind Mine Treatment Plant

During periods when the treatment plant is in operation, mine water from the Mine is pumped to the surface, stored in a water tank, treated and discharged to the middle tributary of Lumsden Creek. Discharge of treated water from the Mine is allowed in accordance with the Colorado Wastewater Discharge Permit System, Permit No. CO-0047562.

EFRI has suspended use of the Mine water treatment plant until such time that mining operations resume. No water has been pumped from the Mine since December 2009, and Mine water has been allowed to accumulate in the Mine workings. Refer to Appendix 1, Attachment 1 of this report for a summary of mine water treatment.

Whirlwind Mine and Packrat Mine

The inflow within the Mine decline cannot be measured directly, because it occurs over approximately 100 feet from the entrance of the decline and within the drifts. The water collects in the mine sump, and is subsequently pumped into the untreated water tank on the surface when the Mine is operating. During periods of non-operation, the groundwater inflow can be calculated based on the approximate elevation level of accumulated mine water, and the void volume of the workings.

Access to the Mine decline was restricted during the third quarter of 2012. As a result, flow rate and field parameter measurements were also put on hold until such time that the Mine is reopened. Historical flow rates and field parameters from the Mine decline water are included in Appendix 1, Attachment 2. Analytical data from the previous samples collected from the Mine are summarized in Appendix 2, Table 1.

Characterization of mine water in the Packrat Mine could not be conducted, because the mine is not yet accessible. Appendix 1, Attachment 3 of this report is reserved for field data collected from the Packrat Mine at such time that it becomes accessible and is monitored.

DP Spring

The field parameters were measured at DP Spring on November 9, 2015. The flow is measured by timing the fill rate of a five-gallon bucket. Field parameters from DP Spring are measured in the stock tank located at the spring. The field sampling form is provided in Appendix 3.

Flow rates and field parameters at DP Spring are summarized in Appendix 1, Attachment 4.

PR Spring

The field parameters were measured at PR Spring on November 9, 2015. The flow is measured by timing the fill rate of a five-gallon bucket. Field parameters from PR Spring are measured in the stock tank located at the spring. The field sampling form is provided in Appendix 3.

Flow rates and field parameters at PR Spring are summarized in Appendix 1, Attachment 5. The historical analytical data from PR Spring are summarized in Appendix 2, Table 2.

Monitoring Well W-1

Monitoring Well W-1 was installed on October 12, 2008 for the purpose of characterizing and monitoring groundwater quality downgradient of the waste rock storage area. Monitoring Well W-1 was measured for the static groundwater level and field parameters on November 9, 2015. The water level at Monitoring Well W-1 is consistent with previous measurements. The field sampling form is provided in Appendix 3.

Water levels and field parameters are summarized in Appendix 1, Attachment 6. The historical analytical data from Monitoring Well W-1 are summarized in Appendix 2, Table 3.

Lumsden Canyon Seep

The Lumsden Canyon Seep (also referred to in earlier reports as Lumsden Canyon Spring) was monitored for field parameters and sampled in June and December of 2008. This location was monitored by Western Water & Land, Inc. during hydrologic reconnaissance required by BLM stipulations to the Plan of Operations. No further sampling or field parameter measurement events are scheduled at this time.

Historical field parameters are summarized in Appendix 1, Attachment 7 and the historical analytical data from the Lumsden Canyon Seep samples are summarized in Appendix 2, Table 4.

Rajah 49 Thornton Portal (Rajah Spring)

The Rajah Spring has been sampled annually from 2009 to 2015. Field parameters and a sample were collected on August 5, 2015 during the 2015 Seeps and Springs Survey. The Annual Seeps and Springs Survey notes and photo log are included in Appendix 4. The analytical laboratory

data is provided in Appendix 5. EFRI will continue to include the Rajah Spring in future annual seeps and springs surveys.

The estimated flow rate and measured field parameters are included in Appendix 1, Attachment 8 of this report, and the analytical data is summarized in Appendix 2, Table 5.

Waste Rock

No ore was mined and no waste rock was produced in the fourth quarter 2015. The Mine is currently in temporary cessation status with only maintenance and monitoring activities being conducted. EFRI has suspended the quarterly waste rock sample collection until such time that mining operations resume and waste rock removal from the Mine recommences.

Production rates of ore and waste rock are summarized in Appendix 1, Attachments 9 and 10, respectively. Analytical data from previously collected waste rock samples are summarized in Appendix 2, Table 6.

Sediment Pond

The sediment pond has been monitored since its construction in November 2008 in accordance with the Colorado Division of Reclamation, Mining, and Safety stipulations. Although storm events and significant snow melt events have occurred, none have resulted in stormwater discharge from the pond. As a result, no stormwater samples have been collected from the pond to date. EFRI will continue to monitor the sediment pond for discharge and will collect samples in the event that a discharge is observed.

Dolores River

In accordance with BLM stipulations to the Mine permit, the Dolores River is required to be monitored for selenium upstream and downstream from the confluence of Lumsden Creek when all of the following conditions are met:

1) The Mine treatment plant is discharging treated water,
2) There is continuous flow from the middle tributary of Lumsden Creek to the Dolores River, and
3) Selenium levels have been in exceedance of the CDPS permit effluent limits in the past two years.

Because water treatment of mine water has been suspended, it was unnecessary to monitor Lumsden Creek for discharge to the Dolores River in the fourth quarter 2015. EFRI will commence monitoring the Dolores River for discharge from Lumsden Creek and take samples, as necessary, at such time that treatment and discharge of mine water resumes.

Hydrological Monitoring Summary

Refer to Appendix 2, Table 7 for the hydrological compliance monitoring summary and status for the Mine.

WHIRLWIND MINE, PERMIT NO. M-2007-044
FOURTH QUARTER 2015 HYDROLOGICAL REPORT

Attachment 2. Whirlwind Decline

Monitoring Date	Sample Location	Inflow Rate[(1)] (gpm)	Field pH (s.u.)	Temperature (deg. C)	Dissolved Oxygen (mg/L)	Specific Conductance (uS/cm)	Oxygen-Reduction Potential (mV)	Comments
3/10/2008	WW Sump	2.4	8.30	11.0	NM	NM	NM	See Table 1
6/19/2008	WW Sump	2.8	10.26	11.5	0.78	592	114	See Table 1
9/8/2008	WW Sump	2.2	9.11	11.0	8.48	649	62	See Table 1
12/16/2008	WW Sump	1.7	8.75	10.7	5.22	609	149	See Table 1
3/5/2009	WW Sump	2.1	8.52	11.1	8.24	618	151	No analytical samples collected
4/20/2009	WW Sump	2.2	8.41	11.2	6.68	626	177	No analytical samples collected
8/11/2009	WW Sump	1.6	8.76	11.9	6.44	599	152	No analytical samples collected
12/1/2009	WW Sump	1.4	8.61	11.5	6 54	624	160	No analytical samples collected
2/2/2010	WW Decline	2.0	7.06	11.3	7.02	597	170	No analytical samples collected
4/21/2010	WW Decline	1.9	8.07	12.3	6.76	576	201	See Table 1
9/8/2010	WW Decline	1.7	8.65	11.9	4.53	592	133	No analytical samples collected
11/4/2010	WW Decline	3.4	8.49	11.6	2 22	578	207	No analytical samples collected
2/7/2011	WW Decline	1.7	8.49	11.3	2.26	590	151	See Table 1
6/20/2011	WW Decline	1.2	8.17	11.7	2.42	620	159	No analytical samples collected
8/20/2011	WW Decline	1.3	8.54	11.6	2.54	644	163	No analytical samples collected
10/25/2011	WW Decline	1.0	8.48	11.5	2.63	618	157	No analytical samples collected
11/9/2011	WW Decline	1.0	8.19	11.5	3.09	631	234	See Table 1
3/28/2012	WW Decline	0.7	8.32	11.5	2.41	592	173	See Note (2)

(1) From First Quarter 2008 to Fourth Quarter 2009, the inflow rate was estimated over the quarter by calculating the volume of water pumped out of the mine and treated and estimations of the volume of water evaporated off the untreated water tank and brought out of the mine as moisture in waste rock, ore, and ventilated air. As of the First Quarter 2010, water inflow is estimated based on the approximate water elevation and the void volume of the mine workings.

(2) Access to the mine was temporarily restricted as of the third quarter 2012. Inflow rate measurements will be resumed when the portal is reopened.

Attachment 3. Packrat Mine

Not Accessible

WHIRLWIND MINE, PERMIT NO. M-2007-044
FOURTH QUARTER 2015 HYDROLOGICAL REPORT

Attachment 4. DP Spring

Monitoring Date	Sampled (Y/N)	Inflow Rate (gpm)	Field pH (s.u.)	Temperature (deg. C)	Dissolved Oxygen (mg/L)	Specific Conductance (uS/cm)	Oxygen-Reduction Potential (mV)	Comments
3/10/2008	No	6 to 7	NM	NM	NM	NM	NM	Sunny, Ave. of 2 feet snowpack
6/19/2008	No	7.2	7.42	11.0	7.22	524	126	Sunny, Dry
9/8/2008	No	5.2	8.00	11.9	9.49	544	166	Sunny, Dry
12/15/2008	No	8.2	7.96	4.8	9.42	532	97	Snowing, 4" snowpack
2/10/2009	No	8.5	5.22	4.7	9.30	562	126	Sunny, Cold, 3-4" snowpack
4/20/2009	No	8.3	7.64	6.6	9.16	546	190	Sunny, Dry
8/11/2009	No	5.9	7.68	12.0	8.25	532	190	Sunny, Hot, Dry
12/1/2009	No	7.9	8.11	4.8	10.54	548	115	Cold, clear skies
2/2/2010	No	7.9	6.73	4.7	10.71	526	177	Cold, clear skies, 3 ft of snow
6/2/2010	No	8.3	7.53	8.8	11.62	554	200	Sunny, Dry
7/28/2010	No	6.8	7.68	12.6	7.57	535	114	Sunny, Dry
11/4/2010	No	7.0	7.94	7.1	8.66	535	190	Sunny, Dry
4/18/2011	No	8.1	7.59	6.6	9.23	533	NM*	Make-up for missed 1Q11 monitoring, Sunny, warm, clear skies
5/24/2011	No	9.2	7.81	8.0	8.43	551	62	Light showers, warm
8/15/2011	No	7.9	7.59	12.2	7.07	560	203	Partly cloudy, warm
10/25/2011	No	8.1	7.51	11.8	7.64	545	198	Overcast, light rain
3/28/2012	No	7.7	7.62	10.8	7.98	568	186	Dry and calm
8/7/2012	No	7.5	7.66	12.0	8.06	569	249	Clear water In Tank
11/14/2012	No	NM	6.05	7.8	54.8%	769	129.2	
3/18/2013	No	8.0	7.56	5.3	44.9%	577	231.7	
6/4/2013	No	6.7	8.57	9.6	87.1%	533	217.1	water was clear
8/14/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	field notes were lost
11/12/2013	No	5.9	6.44	10.6	7.66	501	126.8	
Q1 2014	No	NM	NM	NM	NM	NM	NM	Inaccessible due to county road conditions
6/17/2014	No	6.0	6.0	11.36	6.05	629.0	185.1	
9/9/2014	No	6.0	7.1	12.81	4.93	536.6	184.0	
11/13/2014	No	7.0	7.1	7.54	5.64	537.0	119.0	
3/31/2015	No	6.7	7.2	10.00	5.40	578.0	167.0	
5/29/2015	No	7.0	7.1	11.40	8.02	532.7	261.0	
8/5/2015	Yes**	5.0	6.7	12.35	2.19	572.4	419.0	
11/9/2015	No	4.0	6.6	9.0	4.05	528.7	359	

* - ORP Probe broke during 4/18/11 Monitoring Event.

** - A sample was inadvertently collected during the annual sampling event in 2015. While not required, the data are provided in the quarterly report for informational purposes only.

NM = Not Measured

WHIRLWIND MINE, PERMIT NO. M-2007-044
FOURTH QUARTER 2015 HYDROLOGICAL REPORT

Attachment 5. PR Spring

Monitoring Date	Sampled (Y/N)	Inflow Rate (gpm)	Field pH (s.u.)	Temperature (deg. C)	Dissolved Oxygen (mg/L)	Specific Conductance (uS/cm)	Oxygen-Reduction Potential (mV)	Comments
3/10/2008	Yes	4 to 5	8.1	8.6	NM	NM	NM	Sunny, Ave. of 1 foot snowpack, see Table 2
6/19/2008	Yes	4.7	7.90	13.8	9.95	762	140	Sunny, Dry, see Table 2
9/8/2008	Yes	4.1	8.36	13.4	8.39	883	166	Sunny, Dry, see Table 2
12/15/2008	Yes	4.5	8.31	9.1	8.20	790	-35	Overcast, 4" snowpack, see Table 2
2/10/2009	Yes	4.5	6.68	9.2	7.27	923	90	Sunny, Cold, 1-2" snowpack, see Table 2
4/20/2009	Yes	4.5	8.24	12.3	8.45	898	195	Sunny, Dry, see Table 2
8/11/2009	No	4.7	8.48	13.9	8.25	889	133	Sunny, Hot, Dry
12/1/2009	No	1.5	9.15	8.6	11.54	881	116	Flow restricted by vegetation
6/2/2010	Yes	2.3	8.52	13.2	2.27	880	172	Flow restricted by vegetation, see Table 2
7/28/2010	No	5.2	8.44	13.4	8.04	880	99	Sunny, Dry, Vegetation removed
11/4/2010	No	5.1	8.47	10.1	8.51	856	157	Sunny, Dry
4/18/2011	No	4.3	8.46	10.0	9.40	822	NM*	Make-up for missed 1Q11 monitoring, Sunny, warm, clear skies
5/24/2011	Yes	4.8	8.60	10.8	9.09	858	35	Lt showers, warm, see Table 2
8/15/2011	No	4.2	8.43	12.1	6.86	871	225	Partly cloudy, warm
10/25/2011	No	4.2	8.38	11.7	7.14	844	214	Overcast, light rain
3/28/2012	No	4.3	8.42	10.6	6.99	854	199	Dry and calm
5/30/2012	Yes	4.5	8.40	11 5	7.57	901	NM	ORP Probe Broken
8/7/2012	No	4.0	8.32	13.8	6.97	869	223	Clear Water In tank
11/14/2012	No	NM	7.56	11.6	45.7%	1194	96.4	Looks good enough to drink
3/18/2013	No	3.8	8.13	10.5	42.6%	794	219.8	
6/4/2013	Yes	3.9	8.15	11.7	83.5%	844	261.2	water was clear
8/14/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	field notes were lost
11/12/2013	No	2.1	7.36	10.9	7.08	767	85.9	
Q1 2014	No	NM	NM	NM	NM	NM	NM	Inaccessible due to county road conditions
6/17/2014	Yes	2.0	7.7	12.5	4.4	878.0	108.6	
9/9/2014	No	1.4	7.7	13.3	4.9	873.5	273.0	
11/13/2014	No	1.5	6.6	10.0	4.7	1219.0	272.0	
3/31/2015	No	1.6	7.0	10.0	5.0	1100.0	270.0	
5/29/2015	No	1.5	7.6	12.1	8.0	859.2	301.0	
8/5/2015	Yes	1.0	7.6	12.2	2.4	922.0	381.0	
11/9/2015	No	0 5	7.56	10.81	4.99	862.8	341	

* - ORP Probe broken during 4/18/11 Monitoring Event.
Note: PR Spring not accessible in February or March, 2010 due to deep snow

WHIRLWIND MINE, PERMIT NO. M-2007-044
FOURTH QUARTER 2015 HYDROLOGICAL REPORT

NM = Not Measured

WHIRLWIND MINE, PERMIT NO. M-2007-044
FOURTH QUARTER 2015 HYDROLOGICAL REPORT

Attachment 6. Monitoring Well W-1

Monitoring Date	Sampled (Y/N)	Water Level (ft BTOC)	Field pH (s.u.)	Temperature (deg. C)	Dissolved Oxygen (mg/L or %)	Specific Conductance (uS/cm)	Oxygen-Reduction Potential (mV)	Comments
10/21/2008	Yes	73.22	7.96	10.5	0.95	1543	124	Sunny, Dry, see Table 3
12/16/2008	Yes	74.44	7.73	9.9	1.47	1329	187	Overcast, 4" snow, see Table 3
2/10/2009	Yes	74.73	7.82	10.1	0.93	1251	5	Sunny, Cold, 1-2" snowpack, see Table 3
4/20/2009	Yes	75.00	7.34	10.9	0.13	1209	80	Sunny, Dry, see Table 3
6/24/2009	Yes	74.96	7.63	10.9	--	1157	--	Raining, cool, see Table 3
9/11/2009	Yes	74.84	7.91	11.3	0.23	1219	-75	Sunny, dry, see Table 3
12/10/2009	Yes	74.69	7.66	9.8	1.65	1182	80	Cold, overcast, see Table 3
2/4/2010	Yes	74.40	7.01	10.7	0.61	1240	-74	Cold, clear skies, 3 ft of snow, see Table 3
6/7/2010	Yes	73.98	7.73	12.2	0.25	1239	-111	Hot, clear skies, dry, see Table 3
7/28/2010	No	73.48	NM	NM	NM	NM	NM	Water level measurement only
11/4/2010	No	74.00	NM	NM	NM	NM	NM	Water level measurement only
4/18/2011	No	73.94	NM	NM	NM	NM	NM	Make-up for missed 1Q11 monitoring
5/24/2011	Yes	73.77	7.85	11.0	0.11	1210	10	Ptly cloudy, warm, see Table 3
8/16/2011	No	73.72	NM	NM	NM	NM	NM	Water level measurement only
10/25/2011	No	73.94	NM	NM	NM	NM	NM	Water level measurement only, Overcast, light rain
3/28/2012	No	73.98	NM	NM	NM	NM	NM	Water level measurement only, weather dry and calm
5/30/2012	Yes	73.98	7.72	10.9	1.61	1252	NM	ORP Probe Broken
8/7/2012	No	74.00	NM	NM	NM	NM	NM	
11/14/2012	No	74.05	NM	NM	NM	NM	NM	
3/18/2013	No	73.95	NM	NM	NM	NM	NM	
6/17/2013	Yes	74.02	7.31	11.2	37.6%	1216	54.4	first bail the water was clear, but was muddy for the remainder of the purge
8/14/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	field notes were lost
11/8/2013	No	73.89	6.38	10.6	0.206	1186	50.5	
Q1 2014	No	NM	NM	NM	NM	NM	NM	Inaccessible due to county road conditions
6/18/2014	Yes	73.3	6.4	11.3	1.7	1349.0	75.0	
9/9/2014	No	74.2	6.0	14.1	1.4	1386.0	317.0	
11/13/2014	No	74.3	6.6	11.0	4.6	1219.0	272.0	
3/31/2015	No	74.4	6.5	11.4	5.0	1340.0	282.0	
5/29/2015	No	74.4	6.7	12.5	3.0	1438.0	328.0	
8/5/2015	Yes	74.5	7.4	12.2	2.5	1484.0	330.0	
11/9/2015	No	74.39	7.4	11.93	3.52	1250.0	326.0	

NM = Not Measured

Attachment 7. Lumsden Canyon Seep

Sample Date	Sampled (Y/N)	Inflow Rate (gpm)	Field pH (s.u.)	Temperature (deg. C)	Dissolved Oxygen (mg/L)	Specific Conductance (uS/cm)	Oxygen-Reduction Potential (mV)	Comments
6/19/2008	Yes	NM	7.18	18.4	5.56	825	214	Sunny, Dry, see Table 4
12/4/2008	Yes	NM	7.47	11.6	6.69	985	99.5	Overcast, Cold, Dry, see Table 4

Attachment 8. Rajah 49 Mine Thornton Portal

Sample Date	Sampled (Y/N)	Inflow Rate (gpm)	Field pH (s.u.)	Temperature (deg. C)	Dissolved Oxygen (mg/L)	Specific Conductance (uS/cm)	Oxygen-Reduction Potential (mV)	Comments
9/21/2009	Yes	1-2 gpm	8.58	10.6	7.71	938	130	Sunny, dry, see Table 5
6/30/2010	Yes	1-2 gpm	8.9	7.8	10.12	889	153	Hot, clear skies, dry, see Table 5
5/24/2011	Yes	negligible	9.16	11.1	8.03	906	120	Ptly cloudy, warm, see Table 5
5/30/2012	Yes	<1 gpm	9.67	6.4	9.19	939	NM	OPR Probe Broken
6/17/2013	Yes	<1 gpm	8.48	7.95	14.7%	928	-57.2	water was clear
6/17/2014	Yes	<1 gpm	8.64	10.85	6.3	973	146.2	
8/5/2015	Yes	<1gpm	8.35	12.98	3.61	1030	251	

WHIRLWIND MINE, PERMIT NO. M-2007-044
FOURTH QUARTER 2015 HYDROLOGICAL REPORT

Attachment 9. Ore Production and Stockpiling

Month	Mined (ton)	Shipped (ton)	Stockpiled (ton)
2008 Total	0	0	0
2009 Total	0	0	0
2010 Total	0	0	0
2011 Total	0	0	0
2012 Total	0	0	0
2013 Total	0	0	0
2014 Total	0	0	0
Jan-15	0	0	0
Feb-15	0	0	0
Mar-15	0	0	0
Apr-15	0	0	0
May-15	0	0	0
Jun-15	0	0	0
Jul-15	0	0	0
Aug-15	0	0	0
Sep-15	0	0	0
Oct-15	0	0	0
Nov-15	0	0	0
Dec-15	0	0	0
2015 Total	0	0	0
Grand Total	0	0	0

Attachment 10. Waste Production and On-Site Disposal

Month	Mined (ton, dry)
2008 Total	4,259
2009 Total	0
2010 Total	0
2011 Total	0
2012 Total	0
2013 Total	0
2014 Total	0
Jan-15	0
Feb-15	0
Mar-15	0
Apr-15	0
May-15	0
Jun-15	0
Jul-15	0
Aug-15	0
Sep-15	0
Oct-15	0
Nov-15	0
Dec-15	0
2015 Total	0
Grand Total	4,259

Table 1 Whirlwind Mine Water

Sample Information	General Parameters							Major Ions (mg/L)										Metals (mg/L) (i)				
	Flow Rate (gpm)	TSS (mg/L)	TDS (mg/L)	pH (s.u.)	Hard (mg/L)	Alk (mg/L)	Cond (µS/cm)	Na	Ca	Mg	K	Cl	F	NO_3	P	HCO_3	SO_4	Al	Sb	As	Ba	Be
Whirlwind Mine																						
WW-1, EFRC, 9/11/06	NA		390	7.5	57	302	708	144	13	6	10.5	29	0.39	0.72	0.01	365	19			0.015	0.3	
Whirlwind. EFRC, 10/24/06	NA		382	8.3		280		140	12.4	4.8	9.0	20	0.6	1.2			36	1.5		0.023	0.2	
WW Pool, EFRC, 1/17/07	NA	21.3	340	8.60	43.8	266	595	123	9.2	5.0	9.3	17	0.3	0.5	<0.1	314	28	0.2	<0.05	0.027	0.1	<0.01
Whirlwind Pool, EFRC, 4/27/07	NA	<1.0	358	8.72	48.5	268		106	10.2	5.6	9.9	14	0.5	0.5	<0.1	311	27	0.1	<0.0006	0.026	0.1	<0.01
WW Sump, EFRC, 3/10/08	2.4	3,540	661	8.21		296		143	116	22.9	21.9	53	0.4	4.3	2.85	361	38			0.062		<0.01
WW Sump, EFRC, 6/19/08	2.8	132	536	10.0		252	592	150	4	1	6	17	0.7	1.9	0.25	90	88			0.046	0.1	<0.01
WW Sump, EFRC, 9/8/08*	2.2	26	460	9.11		260	649	138	10	7	8	16	0.5	1.8	0.08	318	62			0.044	0.1	<0.01
WW Sump, EFRC, 12/16/08	2.2			8.75			609															
WW Decline, EFRC, 4/21/10	1.9			8.07			576															
WW Decline, EFRC, 2/7/11	1.7			8.49			590															
WW Decline, EFRC, 11/9/11	1.0		356	8.33			631							0.3			42					
Whirlwind Decline (Brushy Basin Formation)																						
Whirlwind Seep, EFRC, 5/3/07	2 to 4		360	8.64		278		119	10.7	5.8	21.8	33	0.5	0.2	<0.3	326	30	0.1		0.024	0.2	
"Upper" Whirlwind Sump, EFRC, 5/3/07	NA		574	8.69		362		188	9.8	4.7	12.0	14	1.6	3.1	<0.3	421	93	1.29		0.032	<0.1	
Colorado Water Standards																						
Ground Water, Domestic				6.5 to 8.5								250	4.0	10.0			250		0.006	0.01	2.0	0.004
Ground Water, Agriculture				6.5 to 8.5									2	100				5		0.1		0.1
Surface Water, Stream (e,f)				6.5 to 9.0													250			0.100		0.100
Surface Water, Domestic				5.0 to 9.0								250	2.0	10.0			250			0.1(g)	1.0	0.004
Surface Water, Agriculture														100						0.1		0.1
EPA Water Standards (h)																						
Maximum		30		6.0 to 9.0																		
Average		20		6.0 to 9.0																		

Notes:

1. Water standards are provided for reference only. These standards do not apply to the mine water unless it is discharged or used for drinking water, irrigation, or other regulated uses.
2. Concentrations or activity levels above a state or federal standard are shaded for reference purposes. Shading indicates that the measured level is elevated compared to certain standards of water use.
3. Metal and radionuclide levels are reported as total recoverable.

* Nitrate sample recollected on 9/18/08 due to hold time exceedance on 9/8/08 sample

DATA TABLES

Table 1 Whirlwind Mine Water

Sample Information	Metals (mg/L) (i) *(continued)*																Radionuclides (pCi/L) (i)					
	B	Cd	Cr	Cu	Fe	Pb	Mn	Hg	Mo	Ni	Se	Ag	Tl	U	V	Zn	U	Gross alpha	Gross Beta	Ra-226	Ra-228	Ra-226 Ra-228
Whirlwind Mine																						
WW-1, EFRC, 9/11/06	0.04	<0.0001	<0.001	<0.001	0.07	<0.001	0.025	<0.00001	0.005		0.040	<0.0001		0.098	<0.01	0.06	66.3			4.6		
Whirlwind. EFRC, 10/24/06		<0.01		<0.01	1.07	<0.005	0.03		<0.1	<0.05	0.016			0.189	<0.1	<0.01	128			9.7		
WW Pool, EFRC, 1/17/07	0.1	<0.01	<0.05	<0.01	0.09	<0.05	<0.01	<0.001	<0.1	<0.05	0.030	<0.01	<0.1	0.130	<0.1	<0.01	88.0	92.3	28.6	3.2	2.0	5.2
Whirlwind Pool, EFRC, 4/27/07	0.1	<0.01	<0.05	<0.01	0.05	<0.05	<0.01	<0.001	<0.1	<0.05	0.022	<0.01	<0.001	0.161	<0.1	<0.01	109	101		6.9	<1.0	<7.9
WW Sump, EFRC, 3/10/08	0.2	<0.01	0.08			0.11	0.93		<0.1	<0.05	0.024			0.210	0.6	0.26	142			40.1	1.4	41.5
WW Sump, EFRC, 6/19/08	0.2	<0.01	<0.05			<0.05	0.09		<0.1	<0.05	0.020			0.104	<0.1	0.05	70.4			2.1	<1.2	<3.3
WW Sump, EFRC, 9/8/08*	0.1	<0.01	<0.05			<0.05	0.03		<0.1	<0.05	0.030			0.463	0.3	0.18	313			16	<1.3	<17
WW Sump, EFRC, 12/16/08											0.015											
WW Decline, EFRC, 4/21/10											0.017									5.3	<1.2	<6.5
WW Decline, EFRC, 2/7/11											0.029									5.1	<0.87	<6.0
WW Decline, EFRC, 11/9/11	<0.1	<0.001	<0.01		0.15	<0.01	0.012			<0.01	0.031			0.211	0.014	0.134	143			5.0	0.9	5.9
Whirlwind Decline (Brushy Basin Formation)																						
Whirlwind Seep, EFRC, 5/3/07		<0.01		<0.01	0.08	<0.05	<0.01		<0.1	<0.05	0.023			0.0828	<0.1	<0.01	55.48			6.5	0.9	7.4
"Upper" Whirlwind Sump, EFRC, 5/3/07		<0.01		<0.01	0.55	<0.05	<0.01		<0.1	<0.05	0.040			0.109	<0.1	<0.01	73.0					
Colorado Water Standards																						
Ground Water, Domestic		0.005	0.1	1	0.3	0.05	0.05	0.002	0.035	0.1	0.05	0.05	0.002	0.03		5	20	15(a)		5(c)	5(c)	5
Ground Water, Agriculture	0.75	0.01	0.1	0.2	5	0.1	0.2	0.01		0.2	0.02				0.1	2			(b)			5
Surface Water, Stream (e,f)	0.75 dis	0.010	0.100	0.200	0.3 dis	0.100	0.200			0.200	0.200			(d)		2				5(c)	5(c)	
Surface Water, Domestic		0.005	0.05	1.0	0.3	0.05	0.05	0.002		0.1	0.05	0.1	0.0005	0.03		5	20			5(c)	5(c)	5
Surface Water, Agriculture	0.75	0.01	0.1	0.2		0.1	0.2			0.2	0.02					2						
EPA Water Standards (h)																						
Maximum														4		1.0				10 dis, 30 tot		
Average														2		0.5				3 dis, 10 tot		

Notes:

1. Water standards are provided for reference only. These standards do not apply to the mine water unless it is discharged or used for drinking water, irrigation, or other regulated uses.
2. Concentrations or activity levels above a state or federal standard are shaded for reference purposes. Shading indicates that the measured level is elevated compared to certain standards of water use.
3. Metal and radionuclide levels are reported as total recoverable.

* Nitrate sample recollected on 9/18/08 due to hold time exceedance on 9/8/08 sample

Table 2 PR Spring

Sample Information	General Parameters							Major Ions (mg/L)										Metals (mg/L) (i)				
	Flow (gpm)	TSS (mg/L)	TDS (mg/L)	pH (s.u.)	Hard (mg/L)	Alk (mg/L)	Cond (µS/cm)	Na	Ca	Mg	K	Cl	F	NO_3	P	HCO_3	SO_4	Al	Sb	As	Ba	Be
PR Spring (aka. Pack Rat Spring, Lower Spring) - Salt Wash																						
Pack Rat Spring, Umetco, 3/21/1980	–		630	7.6				135	23.6	28.2		22				327	109					
Packrat Sp., BLM, 7/7/93	6		830	7.8	258	328	980	138	47	34	6.6	9	0.49	1.39	0.03	397	195			0.210	0.06	
DP-93-6, Peel, 9/9/93	–		552	7.87				158	36.5	22.5	6.2	28				292	162			0.281		
Pack Rat Spring, Umetco, 6/26/96	9	0		7.95			600													0.42		
PRSPRING, WWE, 7/15/97	6.3	<10	528	7.99		308		168	26	15.5	<5	23		0.8		308	125	<0.1		0.379	0.05	<0.05
PRSPRING, WWE, 10/26/97	7.9	<10	492			311		148	23.6	14	6	23		0.8		311	126	<0.05		0.411	0.03	<0.002
Pack Rat Spring, Umetco 6/1/99	5.3	14	509	7.47			894	133	26.4	15	5	24				306	120			0.382		
Pack Rat Spring, Umetco 5/24/00	–	<10	460	8.24		310		160	26	15	<5	22				310	110	<0.05		0.46	0.033	<0.002
Lower Spring, EFRC, 10/24/06	–		538	8.20		312		163	24.8	15.9	5.5	21	0.6	0.4			110	<0.1		0.369	<0.1	
LS Tank, EFRC, 1/17/07	–	<1.0	500	8.36	126	315	847	160	24.6	15.6	5.5	22	0.4	0.4	<0.1	384	120	<0.1	<0.05	0.394	<0.1	<0.1
PS Spring , EFRC, 4/27/07	4.3	<1.0	540	8.38	108	318		147	21.5	13.2	5.2	22	0.6	0.4	<0.1	379	116	<0.1	0.0007	0.357	<0.1	<0.01
PR Springs , EFRC, 3/10/08	4.25	<1	537	8.18		324		162	21.1	13.4	5.6	21	0.4	0.4	0.037	395	121			0.388	<0.1	<0.01
PR Springs , EFRC, 6/19/08	4.7	<1	553	8.25		300	762	172	24	15	6	25	0.4	0.4	0.02	366	122			0.413	<0.1	<0.01
PR Springs , EFRC, 9/8/08*	4.1	<1	534	8.36		303	883	173	23	15	5	23	0.4	0.5	0.02	370	125			0.510	<0.1	<0.01
PR Springs , EFRC, 12/15/08	4.5	8	572	8.31		311	790	171	24	15	5	20	0.4	0.4	0.01	359	123			0.394	<0.1	<0.01
PR Springs , EFRC, 2/10/09	4.5	<1	518	6.68		310	923	152	22	14	4	20	0.4	0.4	0.01	378	120			0.400	<0.1	<0.01
PR Springs , EFRC, 4/20/09	4.5	<4	542	8.24		325	898	150	22	14	5	18	0.5	<0.1	<0.01	387	122			0.384	<0.1	<0.01
PR Springs , EFRC, 6/2/10	2.3	<4	544	8.52		331	880	165	23	14	6	21	0.4	0.4	0.025	384	123			0.406	<0.1	<0.01
PR Springs , EFRC, 5/24/11	4.8	<4	523	8.60		322	858	166	25	14	6	22	0.4	0.4	0.025	393	116			0.425	<0.1	<0.01
PR Spring, EFRC, 5/30/12	4.5	<4	560	8.31		319	901	151	27	17	5	21	0.4	0.3	0.016	371	136			0.377	<0.1	<0.01
PR Spring, EFRC, 6/4/13	3.9	<10	535	8.19		326	844	164	25	15	6	20	0.4	0.3	0.011	394	109			0.367	<0.1	<0.01
PR Spring, EFRC, 6/17/14	2	<10	521	8.12		324	878	147	28	14	5	22	0.4	0.3	0.038	391	108			0.324	<0.1	<0.01
PR Spring, EFRI, 8/5/15	1	<10	539	7.61		327	922	155	27	14	5	21	0.4	0.2	0.01	386	110			0.373	<0.1	<0.01
Colorado Water Standards																						
Ground Water, Domestic				6.5 to 8.5								250	4.0	10.0			250		0.006	0.01	2.0	0.004
Ground Water, Agriculture				6.5 to 8.5									2	100				5		0.1		0.1
Surface Water, Stream (e,f)				6.5 to 9.0													250			0.100		0.100
Surface Water, Domestic				5.0 to 9.0								250	2.0	10.0			250			0.1(g)	1.0	0.004
Surface Water, Agriculture														100						0.1		0.1
EPA Water Standards (h)																						
Maximum		30		6.0 to 9.0																		
Average		20		6.0 to 9.0																		

Notes:

1. Water standards are provided for reference only. These standards do not apply to the spring water unless it is used for drinking water, irrigation, or other regulated uses.
2. Concentrations or activity levels above a state or federal standard are shaded for reference purposes. Shading indicates that the measured level is elevated compared to cetain standards of water use.
3. Metal and radionuclide levels are reported as total recoverable.

* Nitrate sample recollected on 9/18/08 due to hold time exceedance on 9/8/08 sample

Table 2 PR Spring

Sample Information	Metals (mg/L) (i) *(continued)*																Radionuclides (pCi/L) (i)					
	B	Cd	Cr	Cu	Fe	Pb	Mn	Hg	Mo	Ni	Se	Ag	Tl	U	V	Zn	U	Gross alpha	Gross Beta	Ra-226	Ra-228	Ra-226 Ra-228
PR Spring (aka. Pack Rat Spring, Lower Spring) - Salt Wash																						
Pack Rat Spring, Umetco, 3/21/1980														0.23			152					
Packrat Sp., BLM, 7/7/93	0.18	0.0004	0.001	<0.001	0.10	<0.001	0.005	<0.00001	0.120		<0.001	<0.0001		1.80		<0.001	1220	237	210	7.4		
DP-93-6, Peel, 9/9/93		<0.005	<0.01	<0.01	<0.02		<0.01	<0.0002			0.309			1.68		<0.005	1140			5.4		
Pack Rat Spring, Umetco, 6/26/96														1.70		<0.025	1200			3.7	<0.1	<3.8
PRSPRING, WWE, 7/15/97	0.1	0.003	<0.05	<0.01	<0.10	<0.002	<0.05	<0.0002		<0.05	0.193	<0.05		1.60	0.34	<0.025	1100	1,660	353	3	0.8	3.8
PRSPRING, WWE, 10/26/97	<0.1	<0.005	<0.01	<0.01	<0.055	<0.0045	<0.005	<0.0002		<0.04	0.217	<0.01		1.60	0.34	<0.01	1100	1,290	206	3	0.3	3.3
Pack Rat Spring, Umetco 6/1/99											0.187			1.40		<0.025	950			3.3	0.3	3.6
Pack Rat Spring, Umetco 5/24/00	0.12	<0.001	<0.01	<0.01	<0.01	<0.05	0.0078	<0.0002		<0.04	0.21	<0.01		1.50	0.32	0.030	1000	1,300	180	4.0	<0.025	4.0
Lower Spring, EFRC, 10/24/06		<0.01		<0.01	<0.03	<0.05	<0.01		0.10	<0.05	0.160			1.61	0.30	0.01	1090			3.6		
LS Tank, EFRC, 1/17/07	0.1	<0.01	<0.05	<0.01	<0.03	<0.05	<0.01	<0.001	0.10	<0.05	0.202	<0.01	<0.1	1.15	0.30	<0.01	779	869	219	3.9	1.7	5.6
PS Spring , EFRC, 4/27/07	0.1	<0.01	<0.05	<0.01	<0.03	<0.05	<0.01	<0.001	0.10	<0.05	0.168	<0.01	<0.001	1.40	0.30	<0.01	948	804		9.2	<1.0	<10.2
PR Springs , EFRC, 3/10/08	0.1	<0.01	<0.05			<0.05	<0.01		0.10	<0.05	0.183			1.50	0.30	<0.01	1020			3.5	<1.6	<5.1
PR Springs , EFRC, 6/19/08	0.1	<0.01	<0.05			<0.05	<0.01		0.10	<0.05	0.203			1.53	0.30	<0.01	1040			3.4	<1.2	<4.6
PR Springs , EFRC, 9/8/08*	0.2	<0.01	<0.05			<0.05	<0.01		0.10	<0.05	0.243			1.26	0.40	<0.01	853			2.8	<1.3	<4.1
PR Springs , EFRC, 12/15/08	0.1	<0.01	<0.05			<0.05	<0.01		0.10	<0.05	0.184			1.50	0.30	<0.01	1020			3.8	2.2	6
PR Springs , EFRC, 2/10/09	<0.1	<0.01	<0.05			<0.05	<0.01		0.10	<0.05	0.189			1.58	0.40	<0.01	1070			3.6	<0.3	<4.9
PR Springs , EFRC, 4/20/09	<0.1	<0.01	<0.05			<0.05	<0.01		0.10	<0.05	0.186			1.45	0.30	<0.01	982			3.9	<1.1	<5
PR Springs , EFRC, 6/2/10	0.1	<0.01	<0.05			<0.05	<0.01		0.10	<0.05	0.175			1.50	0.40	<0.01	1020			3.7	<1.2	<4.9
PR Springs , EFRC, 5/24/11	<0.1	<0.01	<0.05			<0.05	<0.01		0.10	<0.05	0.179			1.38	0.30	<0.01	934			4.3	<1.4	<5.7
PR Spring, EFRC, 5/30/12	<0.1	<0.01	<0.05			<0.05	<0.01		0.10	<0.05	0.178			1.42	0.30	<0.01	961			3.8	<.73	<4.5
PR Spring, EFRC, 6/4/13	0.1	<0.01	<0.05			<0.05	<0.01		<0.1	<0.05	0.156			1.42	0.30	<0.01	961			4.2	<0.77	<4.97
PR Spring, EFRC, 6/17/14	0.1	<0.01	<0.05			<0.05	<0.01		<0.1	<0.05	0.156			1.26	0.30	<0.01	853			4.3	<0.1	<4.4
PR Spring, EFRI, 8/5/15	0.1	<0.01	<0.05			<0.05	<0.01		0.10	<0.05	0.162			1.32	0.30	<0.01	894			3.4	1.3	4.7
Colorado Water Standards																						
Ground Water, Domestic		0.005	0.1	1	0.3	0.05	0.05	0.002	0.035	0.1	0.05	0.05	0.002	0.03		5	20	15(a)		5(c)	5(c)	5
Ground Water, Agriculture	0.75	0.01	0.1	0.2	5	0.1	0.2	0.01		0.2	0.02				0.1	2			(b)			
Surface Water, Stream (e,f)	0.75 dis	0.010	0.100	0.200	0.3 dis	0.100	0.200			0.200	0.200			(d)		2				5(c)	5(c)	5
Surface Water, Domestic		0.005	0.05	1.0	0.3	0.05	0.05	0.002		0.1	0.05	0.1	0.0005	0.03		5	20			5(c)	5(c)	5
Surface Water, Agriculture	0.75	0.01	0.1	0.2		0.1	0.2			0.2	0.02					2						
EPA Water Standards (h)																						
Maximum														4		1.0				10 dis, 30 tot		
Average														2		0.5				3 dis, 10 tot		

Notes:

1. Water standards are provided for reference only. These standards do not apply to the spring water unless it is used for drinking water, irrigation, or other regulated uses.
2. Concentrations or activity levels above a state or federal standard are shaded for reference purposes. Shading indicates that the measured level is elevated compared to cetain standards of water use.
3. Metal and radionuclide levels are reported as total recoverable.

* Nitrate sample recollected on 9/18/08 due to hold time exceedance on 9/8/08 sample

Table 3 Monitoring Well W-1

Sample Information	General Parameters							Major Ions (mg/L)										Dissolved Metals (mg/L)			
	Aquifer	TSS (mg/L)	TDS (mg/L)	pH (s.u.)	Hard (mg/L)	Alk (mg/L)	Cond (µS/cm)	Na	Ca	Mg	K	Cl	F	NO_3	P	HCO_3	SO_4	Al	As	Ba	Be
Whirlwind Monitoring Well, W-1																					
W-1, EFRC, 10/21/08	LBB	37	901	7.96	165	269	1543	286	43	14	13	173	0.3	<0.1	0.08	328	237	<0.1	0.009	<0.1	<0.01
W-1, EFRC, 12/16/08	LBB	110	824	7.73		287	1329	265	36	12	12	145	0.4	<0.1	0.03	350	174		0.015	<0.1	<0.01
W-1, EFRC, 2/10/09	LBB	2	696	7.82		300	1251	200	24	8	8	42	0.4	<0.1	<0.01	366	149		0.018	<0.1	<0.01
W-1, EFRC, 4/20/09	LBB	<4	698	7.82		298	1209	206	25	8	9	113	0.5	0.4	0.02	363	139		0.022	<0.1	<0.01
W-1, EFRC, 6/24/09	LBB	<4	730	7.63		287	1157	222	27	9	11	113	0.4	<0.1	<0.01	350	158		0.023	<0.1	<0.01
W-1, EFRC, 9/11/09	LBB	<4	733	7.91		294	1219	229	29	9	11	113	0.4	<0.1	<0.005	358	166		0.025	<0.1	<0.01
W-1, EFRC, 12/10/09	LBB	<4	713	7.96		296	1182	220	28	9	11	122	0.4	<0.1	<0.005	361	168		0.026	<0.1	<0.01
W-1, EFRC, 2/4/10	LBB	4	695	7.01		308	1240	216	29	9	10	122	0.4	<0.1	0.008	367	164		0.025	<0.1	<0.01
MW-1, EFRC, 6/7/10	LBB	<4	751	7.73		301	1239	233	31	10	11	113	0.4	<0.1	<0.005	367	159		0.025	<0.1	<0.01
MW-1, EFRC, 5/24/11	LBB	<4	715	7.85		299	1210	240	29	9	11	119	0.4	<0.1	0.009	365	149		0.028	<0.1	<0.01
MW-1, EFRC, 6/4/12	LBB	155	727	7.92		306	1252	208	35	9	11	112	0.4	<0.1	0.076	373	133		0.028	<0.1	<0.01
MW-1, EFRC, 6/17/2013	LBB	235	710	7.31		303	1216	237	30	9	11	114	0.4	<0.1	0.178	370	136		0.028	<0.1	<0.01
MW-1, EFRC, 6/18/2014	LBB	158	724	7.76		313	1349	227	33	10	11	119	0.4	<0.1	0.24	381	141		0.026	<0.1	<0.01
MW-1, EFRI, 8/5/2015	LBB	97	871	7.40		291	1484	259	49	13	13	163	0.4	<0.1	0.066	355	201		0.026	<0.1	<0.01
Colorado Water Standards																					
Ground Water, Domestic				6.5 to 8.5								250	4.0	10.0			250		0.01	2.0	0.004
Ground Water, Agriculture				6.5 to 8.5									2	100				5	0.1		0.1
Surface Water, Stream (e,f)				6.5 to 9.0															0.100		0.100
Surface Water, Domestic				5.0 to 9.0								250	2.0	10			250		0.1(g)	1.0	0.004
Surface Water, Agriculture														100					0.1		0.1
EPA Water Standards (h)																					
Maximum		30		6.0 to 9.0																	
Average		20		6.0 to 9.0																	

Notes:

1. Water standards are provided for reference only. These standards do not apply to the site groundwater unless it is used for drinking water, irrigation, or other regulated uses.
2. Concentrations or activity levels above a state or federal standards are shaded for reference purposes. Shading indicates that the measured level is elevated compared to certain standards of water use.
3. Metal levels are reported as dissolved and radionuclide levels are reported as total recoverable.

Table 3 Monitoring Well W-1

Sample Information	Dissolved Metals (mg/L) *(continued)*													Dissolved Radionuclides (pCi/L)			
	B	Cd	Cr	Cu	Pb	Mn	Mo	Ni	Se	Ag	U	V	Zn	U	Ra-226	Ra-228	Ra-226 Ra-228
Whirlwind Monitoring Well, W-1																	
W-1, EFRC, 10/21/08	0.6	<0.01	<0.05	<0.01	<0.05	0.01	<0.1	<0.05	<0.001	<0.01	0.397	<0.1	<0.01	269	0.84	<1.3	<2.1
W-1, EFRC, 12/16/08	0.7	<0.01	<0.05		<0.05	0.01	<0.1	<0.05	<0.001		0.210	<0.1	<0.01	142	0.46	<1.1	<1.6
W-1, EFRC, 2/10/09	0.5	<0.01	<0.05		<0.05	<0.01	<0.1	<0.05	0.002		0.195	<0.1	<0.01	132	0.50	<1.3	<1.8
W-1, EFRC, 4/20/09	0.6	<0.01	<0.05		<0.05	<0.01	<0.1	<0.05	<0.001		0.161	<0.1	<0.01	109	0.38	<1.1	<1.5
W-1, EFRC, 6/24/09	0.7	<0.01	<0.05		<0.05	<0.01	<0.1	<0.05	<0.001		0.148	<0.1	<0.01	100	0.21	<1.2	<1.4
W-1, EFRC, 9/11/09	0.7	<0.01	<0.05		<0.05	<0.01	<0.1	<0.05	<0.001		0.146	<0.1	<0.01	98.8	0.39	<1.0	<1.4
W-1, EFRC, 12/10/09	0.7	<0.01	<0.05		<0.05	0.01	<0.1	<0.05	<0.001		0.122	<0.1	<0.01	82.6	0.36	<1.1	<1.5
W-1, EFRC, 2/4/10	0.7	<0.01	<0.05		<0.05	0.01	<0.1	<0.05	<0.001		0.139	<0.1	<0.01	94.1	0.34	<0.94	<1.3
MW-1, EFRC, 6/7/10	0.5	<0.01	<0.05		<0.05	0.01	<0.1	<0.05	0.002		0.143	<0.1	0.04	96.8	0.42	<1.3	<1.7
MW-1, EFRC, 5/24/11	0.7	<0.01	<0.05		<0.05	0.01	<0.1	<0.05	0.002		0.118	<0.1	0.04	79.9	0.28	<1.4	<1.7
MW-1, EFRC, 6/4/12	0.7	<0.01	<0.05		<0.05	0.02	<0.1	<0.05	<0.001		0.115	<0.1	<0.01	77.9	1.30	1.7	3
MW-1, EFRC, 6/17/2013	0.7	<0.01	<0.05		<0.05	0.02	<0.1	<0.05	0.002		0.126	<0.1	<0.01	85.3	1.60	<1.7	<3.3
MW-1, EFRC, 6/18/2014	0.7	<0.01	<0.05		<0.05	0.02	<0.1	<0.05	<0.001		0.121	<0.1	0.01	81.9	0.94	<0.34	<1.28
MW-1, EFRI, 8/5/2015	0.6	<0.01	<0.05		<0.05	0.01	<0.1	<0.05	0.004		0.151	<0.1	<0.01	102.2	0.62	1.7	2.32
Colorado Water Standards																	
Ground Water, Domestic		0.005	0.1	1	0.05	0.05	0.035	0.1	0.05	0.05	0.03		5	20	5(c)	5(c)	5
Ground Water, Agriculture	0.75	0.01	0.1	0.2	0.1	0.2		0.2	0.02			0.1	2				
Surface Water, Stream (e,f)	0.75 dis	0.010	0.100	0.200	0.100	0.200		0.200			(d)		2	(d)	5(c)	5(c)	5
Surface Water, Domestic		0.005	0.05	1.0	0.05	0.05		0.1	0.05	0.1	0.03		5	20	5(c)	5(c)	5
Surface Water, Agriculture	0.75	0.01	0.1	0.2	0.1	0.2		0.2	0.02				2				
EPA Water Standards (h)																	
Maximum											4		1.0		10 dis, 30 tot		
Average											2		0.5		3 dis, 10 tot		

Notes:

1. Water standards are provided for reference only. These standards do not apply to the spring water unless it is used for drinking water, irrigation, or other regulated uses.
2. Concentrations or activity levels above a state or federal standard are shaded for reference purposes. Shading indicates that the measured level is elevated compared to certain standards of water use.
3. Metal levels are reported as dissolved and radionuclide levels are reported as total recoverable.

Table 4 Lumsden Canyon Seep

Sample Information	General Parameters						Major Ions (mg/L)									
	Flow	TSS (mg/L)	TDS (mg/L)	pH (s.u.)	Alk (mg/L)	Cond (µS/cm)	Na	Ca	Mg	K	Cl	F	NO_3	P	HCO_3	SO_4
Lumsden Canyon Seep (aka Lumsden Canyon Spring)																
Lumsden Spring, EFRC, 4/25/07	7		648	7.68	264		43.7	118	27.5	4.3	23	0.4	0.5	<0.3	322	232
Lumsden Canyon Mouth, EFRC, 6/19/08	<1.0	4	668	7.57	251	825	44	135	31	4	22	0.4	0.4	0.02	306	252
Lumsden Canyon Mouth, WWL, 12/04/08	<1.0	<1	695	7.71	261	985	46	146	34	4	19	0.4	0.3	<0.01	318	265
Colorado Water Standards																
Ground Water, Domestic				6.5 to 8.5							250	4.0	10.0			250
Ground Water, Agriculture				6.5 to 8.5								2	100			
Surface Water, Stream (e,f)				6.5 to 9.0												
Surface Water, Domestic				5.0 to 9.0							250	2.0	10			250
Surface Water, Agriculture													100			
EPA Water Standards (h)																
Maximum		30		6.0 to 9.0												
Average		20		6.0 to 9.0												

Notes:

1. Water standards are provided for reference only. These standards do not apply to the site groundwater unless it is used for drinking water, irrigation, or other regulated uses.
2. Concentrations or activity levels above a state or federal standards are shaded for reference purposes. Shading indicates that the measured level is elevated compared to certain standards of water use.
3. Metal and radionuclide levels are reported as total recoverable.

Table 4 Lumsden Canyon Seep

Sample Information	Dissolved Metals (mg/L)														Dissolved Radionuclides (pCi/L)			
	As	Ba	Be	B	Cd	Cr	Pb	Mn	Mo	Ni	Se	U	V	Zn	U	Ra-226	Ra-228	Ra-226 Ra-228
Lumsden Canyon Seep (aka Lumsden Canyon Spring)																		
Lumsden Spring, EFRC, 4/25/07	0.004	<0.1			<0.01		<0.05	<0.01	<0.1	<0.05	0.086	0.216	<0.1	<0.01	146	1.3	0.4	1.7
Lumsden Canyon Mouth, EFRC, 6/19/08	0.003	<0.1	<0.01	<0.1	<0.01	<0.05	<0.05	<0.01	<0.1	<0.05	0.085	0.194	<0.1	0.01	131	1.1	0.2	1.3
Lumsden Canyon Mouth, WWL, 12/04/08	0.008	<0.1	<0.01	0.2	<0.01	<0.05	<0.05	0.02	<0.1	<0.05	0.07	0.201	<0.1	<0.01	136	2.5	1.6	4.1
Colorado Water Standards																		
Ground Water, Domestic	0.01	2.0	0.004		0.005	0.1	0.05	0.05	0.035	0.1	0.05	0.03		5	20	5(c)	5(c)	5
Ground Water, Agriculture	0.1		0.1	0.75	0.01	0.1	0.1	0.2		0.2	0.02		0.1	2				
Surface Water, Stream (e,f)	0.100		0.100	0.75 dis	0.010	0.100	0.100	0.200		0.200		(d)		2		5(c)	5(c)	5
Surface Water, Domestic	0.1(g)	1.0	0.004		0.005	0.05	0.05	0.05		0.1	0.05	0.03		5	20	5(c)	5(c)	5
Surface Water, Agriculture	0.1		0.1	0.75	0.01	0.1	0.1	0.2		0.2	0.02			2				
EPA Water Standards (h)																		
Maximum												4		1.0		10 dis, 30 tot		
Average												2		0.5		3 dis, 10 tot		

Notes:

1. Water standards are provided for reference only. These standards do not apply to the spring water unless it is used for drinking water, irrigation, or other regulated uses.
2. Concentrations or activity levels above a state or federal standard are shaded for reference purposes. Shading indicates that the measured level is elevated compared to certain standards of water use.
3. Metal and radionuclide levels are reported as total recoverable.

Table 5 Rajah 49 Mine, Thornton Portal (Rajah Spring)

Sample Information	General Parameters						Major Ions (mg/L)									
	Flow	TSS (mg/L)	TDS (mg/L)	pH (s.u.)	Alk (mg/L)	Cond (µS/cm)	Na	Ca	Mg	K	Cl	F	NO_3	P	HCO_3	SO_4
Thornton Portal (Rajah Spring)																
Thornton Portal, EFRC, 9/21/09	1-2	5	581	8.58	373	938	209	7	3	6	20	0.4	0.3	0.062	412	96
Thornton Portal, EFRC, 6/30/10	1-2	<4	537	8.9	379	889	207	7	3	7	23	0.3	0.2	0.102	431	86
Thornton Portal, EFRC, 5/24/11	<1	<4	571	9.16	360	985	216	7	3	6	24	0.4	0.2	0.091	403	93
Thorton Portal, EFRC, 5/30/12	<1	6	550	8.8	361	939	201	9	3	6	23	0.3	0.2	0.058	404	87
Thorton Portal, EFRC, 6/17/2013	<1	412	691	7.95	379	844	92	9	3	7	25	0.3	0.32	0.192	441	92
Thorton Portal, EFRC, 6/17/2014	<1	<10	579	8.69	366	973	209	7	3	6	24	0.3	0.5	0.196	414	94
Thornton Portal, EFRI, 8/5/15	<1	<10	578	8.35	352	1030	210	8	3	6	24	0.4	0.5	0.053	393	92
Colorado Water Standards																
Ground Water, Domestic				6.5 to 8.5							250	4.0	10.0			250
Ground Water, Agriculture				6.5 to 8.5								2	100			
Surface Water, Stream (e,f)				6.5 to 9.0												
Surface Water, Domestic				5.0 to 9.0							250	2.0	10			250
Surface Water, Agriculture													100			
EPA Water Standards (h)																
Maximum		30		6.0 to 9.0												
Average		20		6.0 to 9.0												

Notes:

1. Water standards are provided for reference only. These standards do not apply to the site groundwater unless it is used for drinking water, irrigation, or other regulated uses.
2. Concentrations or activity levels above a state or federal standards are shaded for reference purposes. Shading indicates that the measured level is elevated compared to certain standards of water use.
3. Metal and radionuclide levels are reported as total recoverable.

Table 5 Rajah 49 Mine, Thornton Portal (Rajah Spring)

Sample Information	Dissolved Metals (mg/L)														Dissolved Radionuclides (pCi/L)			
	As	Ba	Be	B	Cd	Cr	Pb	Mn	Mo	Ni	Se	U	V	Zn	U	Ra-226	Ra-228	Ra-226 Ra-228
Thornton Portal (Rajah Spring)																		
Thornton Portal, EFRC, 9/21/09	1.49	<0.1	<0.01	0.2	<0.01	<0.05	<0.05	<0.01	0.3	<0.05	0.154	2.02	0.3	0.01	1,370	9.7	<0.51	<10.2
Thornton Portal, EFRC, 6/30/10	1.39	<0.1	<0.01	<0.2	<0.01	<0.05	<0.05	<0.01	0.2	<0.05	0.146	1.81	0.5	<0.01	1,230	15	<1.0	<16
Thornton Portal, EFRC, 5/24/11	1.51	<0.1	<0.01	0.2	<0.01	<0.05	<0.05	<0.01	0.3	<0.05	0.142	1.86	0.4	<0.01	1,260	12	<1.4	<13
Thorton Portal, EFRC, 5/30/12	1.75	<0.1	<0.01	0.1	<0.01	<0.05	<0.05	0.01	0.3	<0.05	0.189	2.06	0.4	<0.01	1,390	11	<.68	<12
Thorton Portal, EFRC, 6/17/2013	1.39	<0.1	<0.01	0.1	<0.01	<0.05	<0.05	0.09	0.3	<0.05	0.154	2.43	0.4	<0.01	1,650	16	<1.9	<17.9
Thorton Portal, EFRC, 6/17/2014	1.63	<0.1	<0.01	0.1	<0.01	<0.05	<0.05	0.01	0.3	<0.05	0.19	2.22	0.4	0.01	1,500	9.7	<1.0	<10.7
Thornton Portal, EFRI, 8/5/15	2.28	<0.1	<0.01	0.2	<0.01	<0.05	<0.05	<0.01	0.3	<0.05	0.266	2.04	0.4	<0.01	1,380	7.4	1.8	9.2
Colorado Water Standards																		
Ground Water, Domestic	0.01	2.0	0.004		0.005	0.1	0.05	0.05	0.035	0.1	0.05	0.03		5	20	5(c)	5(c)	5
Ground Water, Agriculture	0.1		0.1	0.75	0.01	0.1	0.1	0.2		0.2	0.02		0.1	2				
Surface Water, Stream (e,f)	0.100		0.100	0.75 dis	0.010	0.100	0.100	0.200		0.200		(d)		2		5(c)	5(c)	5
Surface Water, Domestic	0.1(g)	1.0	0.004		0.005	0.05	0.05	0.05		0.1	0.05	0.03		5	20	5(c)	5(c)	5
Surface Water, Agriculture	0.1		0.1	0.75	0.01	0.1	0.1	0.2		0.2	0.02			2				
EPA Water Standards (h)																		
Maximum												4		1.0		10 dis, 30 tot		
Average												2		0.5		3 dis, 10 tot		

Notes:

1. Water standards are provided for reference only. These standards do not apply to the spring water unless it is used for drinking water, irrigation, or other regulated uses.
2. Concentrations or activity levels above a state or federal standard are shaded for reference purposes. Shading indicates that the measured level is elevated compared to cetain standards of water use.
3. Metal and radionuclide levels are reported as total recoverable.

Table 6 Whirlwind Mine Waste Rock

		Whirlwind Mine Waste Rock Samples			
Sample ID		WW 04	WW 05	WW 06	WW WR
Collection Date(s)		11/18/07	11/18/07	11/18/07	3Q08-4Q09
Constituents	Units				
TOTAL ANALYSES					
Total Major Ions					
Calcium	mg/kg	17100	12000	18900	28300
Magnesium	mg/kg	4020	2760	5720	3300
Phosphorous	mg/kg	174	101	299	247
Potassium	mg/kg	1800	852	6510	1380
Silica	mg/kg	1610	1100	1180	2290
Sodium	mg/kg	101	105	220	211
Total Metals					
Aluminum	mg/kg	8600	5590	17300	4190
Antimony	mg/kg	<0.5	<0.5	<0.5	<0.5
Arsenic	mg/kg	4.6	1.4	3.8	14.5
Barium	mg/kg	558	771	35.9	234
Beryllium	mg/kg	<0.5	<0.5	0.7	<0.5
Boron	mg/kg	5.6	<5.0	11.4	<5.0
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	4.1	2.5	14.6	4.9
Copper	mg/kg	0.7	3.4	7.5	20.4
Iron	mg/kg	2790	3450	13800	5060
Lead	mg/kg	7.8	1.2	4.7	16.1
Manganese	mg/kg	102	90.4	133	190
Mercury	mg/kg	<0.05	<0.05	<0.05	<0.05
Molybdenum	mg/kg	<0.5	<0.5	1.2	<0.5
Nickel	mg/kg	2.7	1.9	11.6	3.2
Selenium	mg/kg	3.0	<0.5	<0.5	4.0
Silver	mg/kg	<0.5	<0.5	<0.5	<0.5
Thallium	mg/kg	<0.5	<0.5	<0.5	<0.5
Uranium	mg/kg	10.9	6.4	2.7	7.8
Uranium as U_3O_8	mg/kg	12.8	7.6	3.2	9.2
Vanadium	mg/kg	336	47.2	88.4	51.8
Vanadium as V_2O_5	mg/kg	599	84.3	158	92.4
Zinc	mg/kg	9.1	9.1	21.0	32.1
Total Radionuclides					
Gross Alpha	pCi/g	20.4	13.0	9.4	21.5
Gross Beta	pCi/g	26.0	17.9	15.0	29.4
Radium-226	pCi/g	4.2	2.8	3.8	3.7
Radium-228	pCi/g	<0.1	<0.1	0.3	<0.5
Radium-226 + -228	pCi/g	<4.3	<2.9	4.1	<4.2
SYNTHETIC PRECIPITATION LEACHING PROCEDURE (SPLP) ANALYSES					
SPLP Extractable Physical Properties					
TDS	mg/L	52	40	52	30
pH	s.u.	10.1	10.2	10.1	9.87
Hardness	mg/L	17.5	17	10.7	13
Alkalinity	mg/L	34	37	36	35
Conductance	µS/cm	83.5	87.9	92.6	96
SPLP Extractable Major Ions					
Sodium	mg/L	10	8.6	11.2	12.3
Calcium	mg/L	5.2	5.3	3.0	3.4
Magnesium	mg/L	1.1	0.9	0.8	1.0
Potassium	mg/L	<0.5	<0.5	2.6	4.0
Chloride	mg/L	<1	<1	<1	2
Flouride	mg/L	<0.1	<0.1	0.1	0.1
Nitrate	mg/L	<0.1	<0.1	<0.1	1.2
Nitrite	mg/L	<0.1	<0.1	<0.1	<0.1
Phosphorous	mg/L	<0.1	<0.1	<0.1	<0.1
Bicarbonate as HCO_3	mg/L	24	25	24	23
Silica	mg/L	2.6	2.8	3.3	4.7
Sulfate	mg/L	4	2	3	6
SPLP Extractable Metals					
Aluminum	mg/L	0.2	0.2	0.2	0.7
Antimony	mg/L	<0.001	<0.001	<0.001	<0.001
Arsenic	mg/L	0.033	0.002	0.026	0.040
Barium	mg/L	<0.1	0.2	<0.1	<0.1
Beryllium	mg/L	<0.001	<0.001	<0.001	<0.001
Boron	mg/L	<0.1	<0.1	<0.1	<0.1
Cadmium	mg/L	<0.002	<0.002	<0.001	<0.001
Chromium	mg/L	<0.05	<0.05	<0.05	<0.05
Copper	mg/L	<0.01	<0.01	<0.01	<0.01
Iron	mg/L	0.07	0.05	0.11	0.32
Lead	mg/L	<0.001	<0.001	<0.001	0.002
Manganese	mg/L	<0.01	<0.01	<0.01	<0.01
Mercury	mg/L	<0.001	<0.001	<0.001	<0.001
Molybdenum	mg/L	<0.1	<0.1	<0.1	<0.1
Nickel	mg/L	<0.05	<0.05	<0.05	<0.05
Selenium	mg/L	0.014	<0.004	<0.004	0.012
Silver	mg/L	<0.01	<0.01	<0.01	<0.01
Thallium	mg/L	<0.001	<0.001	<0.001	<0.001
Uranium	mg/L	<0.0004	<0.0004	<0.0004	0.0066
Uranium as U_3O_8	mg/L	<0.0004	<0.0004	<0.0004	0.0077
Vanadium	mg/L	<0.1	<0.1	<0.1	<0.1
Vanadium as V_2O_5	mg/L	<0.2	<0.2	<0.2	<0.2
Zinc	mg/L	0.05	0.02	0.02	0.01
SPLP Extractable Radionuclides					
Uranium	pCi/L	<0.3	<0.3	<0.3	4.5
Gross Alpha	pCi/L	5.3	2.4	2.6	6.7
Gross Beta	pCi/L	6.4	<2.0	4.7	<5.5
Radium-226	pCi/L	<0.2	<0.2	<0.2	0.20
Radium-228	pCi/L	<1.0	<1.0	<1.0	<1.4
Radium-226 + -228	pCi/L	<1.2	<1.2	<1.2	<1.6

Notes:

1. 3Q08-4Q09 sample was a composite of waste rock grab samples collected on 11/4/08, 3/5/09, 6/19/09 and 9/8/09.

Table 7 Hydrological Monitoring Summary

Sampling Point	Schedule	Status
Treatment Plant Discharge	Sample weekly during discharge	Ongoing; sampling conducted as required during discharge events. Treatment and discharge has been suspended as of December 9, 2009 until further notice.
Whirlwind Decline (Sump)	Sample for 2 quarters and measure flow for 4 quarters	Completed
Packrat Mine Water	Sample for 2 quarters when accessible	Not Started; the Packrat Mine is not yet accessible.
DP Spring	Measure flow quarterly	Ongoing
PR Spring	Sample and measure flow quarterly for 5 quarters	Completed
	Measure flow quarterly and sample annually thereafter	Ongoing
Monitoring Well W-1	8 samples over 15 months	Completed
	Measure quarterly and sample annually thereafter	Ongoing
Lumsden Canyon	As needed in support of Hydrogeological Report to be prepared by Western Water & Land	Completed; Two samples collected from 3 points in Lumsden Canyon. No further sampling events are scheduled at this time.
Seep Surveys	Annually	Ongoing
Rajah 49 Mine, Thornton Portal (Rajah Spring)	Sample as discharge is observed in annual seep surveys	Ongoing
Waste Rock	Collect grab sample quarterly and composite annually for analysis	Suspended; 1 annual composite sample collected to date. Sampling suspended until mining resumes.
Sediment Pond Sampling	Sample quarterly if discharging	Ongoing Monitoring; no samples collected to date.
Dolores River Sampling	Sample during treatment discharge if flowing into Dolores River	Suspended; not required until water treatment plant resumes operation. No samples collected to date.

Abbreviations

Alk = Alkalinity, total as $CaCO_3$
BLM = U.S. Bureau of Land Management
Cond = Specific Conductance
dis = dissolved
EFRC = Energy Fuels Resources Corporation
EFRI = Energy Fuels Resources (USA) Inc.
EPA = U.S. Environmental Protection Agency
Hard = Hardness
gpm = gallons per minute
LBB = Lower Brushy Basin
mg/L = milligrams per liter
Peel = Peel Environmental Services
s.u. = standard units
TDS = total dissolved solids
TSS = total suspended solids
tot = total
Umetco = Umetco Minerals Corporation
WWE = Wright Water Engineers, Inc.
WWL = Western Water & Land, Inc.
ρCi/L = picoCuries per liter
µS/cm = microSiemen per centimeter

Notes:

(a) The gross alpha activity standard excludes alpha activity due to radon and uranium. The majority of the gross alpha count in these samples is attributable to uranium.

(b) The gross beta standard is 4 millirems per year and is based on the sum of beta emitters present and a risk-based analysis with 2-liters per day drinking water intake.

(c) The standard of 5 ρCi/L is for combined Radium-226 and Radium-228.

(d) Uranium levels in the Lower Dolores River Basin cannot be increased above 30 ug/L or background, whichever is greater.

(e) Numeric table values for Segment 3a of the Lower Dolores River water quality standards.

(f) Stream standards are in total concentrations unless indicated otherwise.

(g) The Colorado Water Quality Control Commission has calculated a health-based standard of 0.02 ug/L for arsenic.

(h) The EPA Standards are from Subpart C - uranium, radium, and vanadium ores subcategory of Title 40, Part 440 of the Code of Federal Regulations.

(i) The analytical data includes results for both total and dissolved concentrations. The data has not been differentiated because the water contains very low levels of suspended solids and the dissolved and total concentrations are typically within 10% of each other.

Shading of a constituent concentration or activity level indicates that the value exceeds one or more water quality standards. These standards may not be applicable to the water source and use; however, they do provide a means for assessing whether a value is higher than the norm.

"<" indicates not detected at the analyte reporting limit shown

Uranium values are presented in both mg/L and ρCi/L. The units mg/L are converted to ρCi/L by multiplying by 677 ρCi/mg.

FIELD SAMPLING FORMS

Groundwater Monitoring Field Form

Station/Well: DP springs
Location: Whirlwind
Site:
Description:
Project:
Sampling Instruments:

Date: 11-9-15
Start Time: 0925
End Time: 0930

Observer: Ahl M / Geerson P.
Sampling Team:
Lead Signature:
Date: 11/9/2015

Well Purging Information

Well Depth (d_t): _____ ft Static depth to water (d_w): _____ ft Sample/Set Depth: _____ ft
Bore radius (r_w): _____ in/ft Bore volume ($\pi r^2(d_t-d_w)$): _____ ft^3/gal Casing radius (r_c): _____ in/ft
Casing volume ($\pi r^2(d_t-d_w)(7.48)$): _____ ft^3/gal Total volume: _____ ft^3/gal Total x 3: _____ ft^3/gal

Purge #	Time	Temp (°C)	pH (s.u.)	SpC/Cond (mS/cm, µS/cm)	DO (mg/L, %)	ORP (rmV)	Turb. (NTU)	Water Clarity (poor/ mod/ good)	Volume Purged (Gallons)	Cumulative Volume Purged (Gallons)

Field Measurements at Time of Sampling

Parameter	Reading	Time	Measurement (In situ/Container)	Instrument	Comments
Air Temp °C				Thermometer	
Water Temp °C	9.00	0930		pHCon10, YSI	
pH (s.u.)	6.60	0930		pHCon10/YSI	
SpC/Conductivity (mS/cm, µS/cm)	528.7	0930		pHCon10/YSI	
ORP (rmV)	359	0930		pH310/YSI	
DO (mg/L, %)	35.0	0930		DO310/YSI	
Turbidity (NTU)	2.8	0930		MicroTPI	
Discharge (ft^3/s, L/s, gpm)	4 gpm	0930		Flow meter/ bucket/estimate	
Number and type of filters used:					
GPS Coordinates:					

Groundwater Monitoring Field Form

Station/Well: MW
Location: Whirlwind
Site:
Description:
Project:
Sampling Instruments: Hydro Lab and YSI

Date: 11-9-15
Start Time: 1016
End Time: 1025

Observer: Abel M./Garron P.
Sampling Team:
Lead Signature:
Date: 11 / 9 / 2015

Well Purging Information

Well Depth (d_t): _____ ft Static depth to water (d_w): 74.59 ft Sample/Set Depth: _____ ft
Bore radius (r_w): _____ in/ft Bore volume ($\pi r^2(d_t-d_w)$: _____ ft^3/gal Casing radius (r_c): _____ in/ft
Casing volume ($\pi r^2(d_t-d_w)(7.48)$: _____ ft^3/gal Total volume: _____ ft^3/gal Total x 3: _____ ft^3/gal

Purge #	Time	Temp (°C)	pH (s.u.)	SpC/Cond (mS/cm, µS/cm)	DO (mg/L, %)	ORP (rmV)	Turb. (NTU)	Water Clarity (poor/ mod/ good)	Volume Purged (Gallons)	Cumulative Volume Purged (Gallons)

Field Measurements at Time of Sampling

Parameter	Reading	Time	Measurement (In situ/Container)	Instrument	Comments
Air Temp °C					
Water Temp °C	11.93	1017		Thermometer	
pH (s.u.)	7.40	1017		pHCon10, YSI	
SpC/Conductivity (mS/cm, µS/cm)	1250	1017		pHCon10/YSI	
ORP (rmV)	326	1017		pHCon10/YSI	
DO (mg/L, %)	32.6	1017		pH310/YSI	
Turbidity (NTU)	7.4	1017		DO310/YSI	
Discharge (ft^3/s, L/s, gpm)				MicroTPI	
				Flow meter/ bucket/estimate	
Number and type of filters used:					
GPS Coordinates:					

Groundwater Monitoring Field Form

Station/Well: PR Spring | Date: 11-9-15 | Observer: Abel M./Garrett

Location: Whirlwind | Start Time: 948 | Sampling

Site: _____ | End Time: 1013 | Team: _____

Description: _____ | _____ | Lead Signature: _____

Project: _____ | _____ | Date: 11/9/2015

Sampling Instruments: Hydrolab and YSI

Well Purging Information

Well Depth (d_t): _____ ft Static depth to water (d_w): _____ ft Sample/Set Depth: _____ ft

Bore radius (r_w): _____ in/ft Bore volume ($\pi r^2(d_t-d_w)$): _____ ft^3/gal Casing radius (r_c): _____ in/ft

Casing volume ($\pi r^2(d_t-d_w)(7.48)$): _____ ft^3/gal Total volume: _____ ft^3/gal Total x 3: _____ ft^3/gal

Purge #	Time	Temp (°C)	pH (s.u.)	SpC/Cond (mS/cm, µS/cm)	DO (mg/L, %)	ORP (rmV)	Turb. (NTU)	Water Clarity (poor/ mod/ good)	Volume Purged (Gallons)	Cumulative Volume Purged (Gallons)

Field Measurements at Time of Sampling

Parameter	Reading	Time	Measurement (In situ/Container)	Instrument	Comments
Air Temp °C					
Water Temp °C	10.81	1000		Thermometer	
pH (s.u.)	7.56	1000		pHCon10, YSI	
SpC/Conductivity (mS/cm, µS/cm)	862.8	1000		pHCon10/YSI	
ORP (rmV)	341	1000		pHCon10/YSI	
DO (mg/L, %)	45.0	1000		pH310/YSI	
Turbidity (NTU)	0	1000		DO310/YSI	
Discharge (ft^3/s, L/s, gpm)	.5 gpm	1000		MicroTPI	
				Flow meter/ bucket/estimate	

Number and type of filters used:

GPS Coordinates:

ANNUAL SEEPS AND SPRINGS FIELD SURVEY

Annual Seeps and Springs survey was conducted during the third quarter. This appendix has been deliberately left blank.

LABORATORY ANALYSIS

Annual sampling was conducted during the third quarter. This appendix has been deliberately left blank.