



- LEGEND**
- ⊗ MONITORING WELL
 - PRAXAIR MONITORING WELL
 - ⊗ DESTROYED MONITORING WELL
 - ◆ INJECTION WELL

Received 12/12/14
REM 7037
Document 2313688

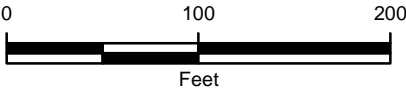


FIGURE 1
SITE MAP
WALDEN WATER FLOOD FACILITY
SENW & NESW SEC 2-T9N-R79W
JACKSON COUNTY, COLORADO
BONANZA CREEK ENERGY OPERATING COMPANY LLC



TABLE 1
GROUNDWATER SAMPLE ANALYTICAL DATA
WALDEN WATER FLOOD FACILITY
BONANZA CREEK ENERGY OPERATING COMPANY LLC

SAMPLE ID	SAMPLE DATE	DTW (feet bgs)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYLBENZENE (ug/L)	XYLENES (Total) (ug/L)
MW01	8/22/2012	9.03	810	1.3	400	840
	11/7/2012	10.30	810	<1.0	160	910
	2/28/2013	10.16	790	<1.0	210	570
	5/21/2013	8.96	620	<1.0	160	440
	8/13/2013	9.90	360	<1.0	150	240
	11/13/2013	9.62	200	<1.0	4.2	140
	2/24/2014	10.64	94	<1.0	<1.0	15
	5/8/2014	8.47	250	<1.0	46	140
	8/20/2014	8.16	150	<1.0	<1.0	53
	11/25/2014	8.21	280	<1.0	33	200
MW02	8/22/2012	9.46	2,100	1.7	670	5,400
	11/7/2012	10.00	2,400	<1.0	700	5,400
	2/28/2013	10.15	3,200	<1.0	740	4,300
	5/21/2013	9.33	790	<1.0	150	960
	8/13/2013	10.09	650	<1.0	210	1,100
	11/13/2013	9.91	720	<1.0	66	960
	2/24/2014	10.76	310	<1.0	<1.0	47
	5/9/2014	8.65	170	<1.0	8.1	160
	8/20/2014	8.52	120	<1.0	<1.0	12
	11/25/2014	8.60	520	<1.0	65	290
MW03	8/22/2012	8.96	560	100	480	2,500
	11/7/2012	9.84	Product	Product	Product	Product
	2/28/2013	Frozen	-	-	-	-
	5/21/2013	Destroyed	-	-	-	-
MW03R*	8/13/2013	10.37	1,900	25	290	1,500
	11/13/2013	10.21	2,100	10	70	1,000
	2/24/2014	11.01	1,600	11	<1.0	210
	5/9/2014	8.89	1,700	130	360	1,500
	8/20/2014	8.91	2,100	3.5	1.6	1,500
	11/25/2014	8.99	1,900	4.2	180	2,100
MW04	8/22/2012	9.13	6.6	7.9	200	410
	11/7/2012	10.50	2.5	<1.0	62	60
	2/28/2013	9.85	4.1	<1.0	66	58
	5/21/2013	8.88	<1.0	<1.0	6.4	6.1
	8/13/2013	9.82	1.6	<1.0	19	13
	11/13/2013	9.57	1.9	<1.0	5.7	15
	2/24/2014	10.51	15	<1.0	22	40
	5/9/2014	8.27	3.6	<1.0	15	22
	8/20/2014	8.26	<1.0	<1.0	<1.0	<1.0
	11/25/2014	8.33	2.6	<1.0	4.4	22

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SAMPLE ID	SAMPLE DATE	DTW (feet bgs)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYLBENZENE (ug/L)	XYLENES (Total) (ug/L)
MW05	8/22/2012	14.13	<1.0	<1.0	<1.0	2.2
	11/7/2012	8.00	<1.0	<1.0	<1.0	<1.0
	2/28/2013	10.18	<1.0	<1.0	<1.0	<1.0
	5/21/2013	9.40	<1.0	<1.0	<1.0	<1.0
	8/13/2013	10.16	<1.0	<1.0	<1.0	<1.0
	11/13/2013	9.92	<1.0	<1.0	<1.0	<1.0
	2/24/2014	10.69	<1.0	<1.0	<1.0	<1.0
	5/8/2014	8.77	<1.0	<1.0	<1.0	<1.0
	8/20/2014	8.48	<1.0	<1.0	<1.0	<1.0
	11/25/2014	8.55	<1.0	<1.0	<1.0	<1.0
MW06	8/22/2012	10.16	1,200	4.9	300	1,200
	11/7/2012	10.72	9.8	1.6	200	540
	2/28/2013	10.76	1,100	1.2	170	360
	5/21/2013	10.01	1,300	3.0	210	710
	8/13/2013	10.70	1,400	5.2	280	1,200
	11/13/2013	10.58	1,400	4.1	290	840
	2/24/2014	11.24	1,500	1.5	27	170
	5/8/2014	9.22	1,300	1.5	67	270
	8/20/2014	9.05	18	<1.0	<1.0	49
	11/25/2014	9.07	600	<1.0	6.0	210
MW07	8/22/2012	9.74	1.5	1.2	4.6	33
	11/7/2012	9.90	2.0	<1.0	1.2	8.7
	2/28/2013	10.44	2.3	<1.0	<1.0	<1.0
	5/21/2013	9.77	2.8	<1.0	1.0	5.4
	8/13/2013	10.44	7.8	<1.0	1.1	2.3
	11/13/2013	10.46	2.7	<1.0	<1.0	<1.0
	2/24/2014	10.97	30	<1.0	1.4	34
	5/9/2014	8.87	100	5.4	31	120
	8/20/2014	8.94	11	<1.0	<1.0	10
	11/25/2014	9.01	55	5.8	14	99
MW08	8/22/2012	10.09	7,000	13,000	830	7,800
	11/7/2012	10.43	Product	Product	Product	Product
	2/28/2013	10.66	Product	Product	Product	Product
	5/21/2013	9.76	8,000	11,000	440	6,700
MW08R*	8/13/2013	10.50	6,700	8,600	520	4,900
	11/13/2013	10.58	7,700	9,300	680	6,200
	2/24/2014	NM	5,400	6,500	670	7,000
	5/9/2014	9.37	6,100	6,900	670	6,800
	8/20/2014	9.28	6,100	7,400	660	7,000
	11/25/2014	9.36	9,100	13,000	1,900	19,000

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SAMPLE ID	SAMPLE DATE	DTW (feet bgs)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYLBENZENE (ug/L)	XYLENES (Total) (ug/L)
MW09	8/22/2012	9.47	1,400	1,700	200	1,700
	11/7/2012	11.41	4,100	4,600	430	3,500
	2/28/2013	10.01	7,200	6,700	680	5,100
	5/21/2013	9.09	5,100	5,000	440	3,900
	8/13/2013	9.96	720	470	67	360
	11/13/2013	9.87	1,100	530	<1.0	520
	2/24/2014	10.47	900	32	<1.0	84
	5/9/2014	8.28	920	85	23	280
	8/20/2014	8.48	1,700	120	14	1,500
	11/25/2014	8.57	2,100	72	50	620
MW10	8/22/2012	7.88	100	<1.0	3.5	14
	11/7/2012	8.66	120	5.2	5.1	30
	2/28/2013	10.75	120	<1.0	2.0	<1.0
	5/21/2013	7.38	70	2.6	<1.0	3.0
	8/13/2013	8.18	19	<1.0	<1.0	<1.0
	11/13/2013	8.28	8.8	1.2	<1.0	<1.0
	2/24/2014	8.81	3.5	<1.0	<1.0	<1.0
	5/8/2014	6.54	3.2	1.1	<1.0	<1.0
	8/20/2014	6.79	<1.0	<1.0	<1.0	<1.0
	11/25/2014	7.08	2.9	6.4	4.0	51
MW11	8/22/2012	14.18	<1.0	<1.0	<1.0	<1.0
	11/7/2012	9.75	<1.0	<1.0	<1.0	<1.0
	2/28/2013	6.87	10	<1.0	2.8	16
	5/21/2013	6.63	<1.0	<1.0	<1.0	<1.0
	8/13/2013	8.04	<1.0	<1.0	<1.0	<1.0
	11/13/2013	7.97	<1.0	<1.0	<1.0	<1.0
	2/24/2014	8.27	<1.0	<1.0	<1.0	<1.0
	5/8/2014	6.21	<1.0	<1.0	<1.0	<1.0
	8/20/2014	6.61	<1.0	<1.0	<1.0	<1.0
	11/25/2014	6.68	1.4	2.4	1.3	17
MW12	8/22/2012	Dry	Dry	Dry	Dry	Dry
	11/7/2012	7.42	<1.0	<1.0	<1.0	<1.0
	2/28/2013	7.52	<1.0	<1.0	<1.0	<1.0
	5/21/2013	6.62	<1.0	<1.0	<1.0	<1.0
	8/13/2013	9.02	<1.0	<1.0	<1.0	<1.0
	11/13/2013	9.01	<1.0	<1.0	<1.0	<1.0
	2/24/2014	9.25	<1.0	<1.0	<1.0	<1.0
	5/8/2014	7.21	<1.0	<1.0	<1.0	<1.0
	8/20/2014	7.67	<1.0	<1.0	<1.0	<1.0
	11/25/2014	7.58	<1.0	1.5	<1.0	6.0

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SAMPLE ID	SAMPLE DATE	DTW (feet bgs)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYLBENZENE (ug/L)	XYLENES (Total) (ug/L)
MW13	8/22/2012	Dry	Dry	Dry	Dry	Dry
	11/7/2012	9.01	<1.0	<1.0	<1.0	<1.0
	2/28/2013	9.27	<1.0	<1.0	<1.0	<1.0
	5/21/2013	7.86	<1.0	1.2	<1.0	<1.0
	8/13/2013	8.27	<1.0	<1.0	<1.0	<1.0
	11/13/2013	8.48	<1.0	<1.0	<1.0	<1.0
	2/24/2014	8.82	<1.0	<1.0	<1.0	<1.0
	5/8/2014	7.25	<1.0	<1.0	<1.0	<1.0
	8/20/2014	7.05	<1.0	<1.0	<1.0	<1.0
	11/25/2014	6.85	<1.0	1.1	<1.0	2.4
MW14	8/22/2012	Dry	Dry	Dry	Dry	Dry
	11/7/2012	10.12	1.1	<1.0	<1.0	<1.0
	2/28/2013	10.01	<1.0	<1.0	<1.0	<1.0
	5/21/2013	7.74	<1.0	<1.0	<1.0	<1.0
	8/13/2013	8.84	<1.0	<1.0	<1.0	<1.0
	11/13/2013	9.01	<1.0	<1.0	<1.0	<1.0
	2/24/2014	8.92	<1.0	<1.0	<1.0	<1.0
	5/8/2014	6.91	<1.0	<1.0	<1.0	<1.0
	8/20/2014	7.61	<1.0	<1.0	<1.0	<1.0
	11/25/2014	7.42	<1.0	<1.0	<1.0	<1.0
MW15	8/22/2012	10.51	4.7	<1.0	<1.0	<1.0
	11/7/2012	8.37	16	<1.0	<1.0	<1.0
	2/28/2013	9.04	19	<1.0	<1.0	<1.0
	5/21/2013	7.79	5.9	<1.0	<1.0	<1.0
	8/13/2013	9.09	3.9	<1.0	<1.0	<1.0
	11/13/2013	8.94	1.7	<1.0	<1.0	<1.0
	2/24/2014	9.38	1.1	<1.0	<1.0	<1.0
	5/8/2014	7.20	<1.0	<1.0	<1.0	<1.0
	8/20/2014	7.73	<1.0	<1.0	<1.0	<1.0
	11/25/2014	7.59	<1.0	<1.0	<1.0	<1.0
MW16	8/22/2012	8.67	<1.0	<1.0	<1.0	<1.0
	11/7/2012	9.16	2.9	<1.0	<1.0	<1.0
	2/28/2013	8.99	2.6	<1.0	<1.0	<1.0
	5/21/2013	7.87	2.1	<1.0	<1.0	<1.0
	8/13/2013	9.08	<1.0	<1.0	<1.0	<1.0
	11/13/2013	8.87	<1.0	<1.0	<1.0	<1.0
	2/24/2014	9.38	<1.0	<1.0	<1.0	<1.0
	5/8/2014	7.20	<1.0	<1.0	<1.0	<1.0
	8/21/2014	7.67	<1.0	<1.0	<1.0	<1.0
	11/24/2014	7.62	<1.0	<1.0	<1.0	<1.0

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SAMPLE ID	SAMPLE DATE	DTW (feet bgs)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYLBENZENE (ug/L)	XYLENES (Total) (ug/L)
MW17	8/13/2013	11.62	<1.0	<1.0	<1.0	<1.0
	11/13/2013	11.66	<1.0	<1.0	<1.0	<1.0
	2/24/2014	12.09	<1.0	<1.0	<1.0	<1.0
	5/8/2014	10.20	<1.0	<1.0	<1.0	<1.0
	8/21/2014	9.90	<1.0	<1.0	<1.0	<1.0
	11/24/2014	9.52	<1.0	<1.0	<1.0	<1.0
MW18	8/13/2013	11.31	<1.0	<1.0	<1.0	<1.0
	11/13/2103	11.34	<1.0	<1.0	<1.0	<1.0
	2/24/2014	11.79	<1.0	<1.0	<1.0	<1.0
	5/8/2014	10.35	<1.0	<1.0	<1.0	<1.0
	8/21/2014	9.50	<1.0	<1.0	<1.0	<1.0
	11/24/2014	9.97	<1.0	<1.0	<1.0	<1.0
MW19	8/13/2013	10.09	1,900	41	470	1,500
	11/13/2013	10.06	2,100	11	420	1,400
	2/24/2014	10.63	1,200	5.7	77	350
	5/9/2014	8.48	1,100	5.0	180	550
	8/21/2014	8.58	1,500	320	380	2,600
	11/24/2014	8.63	1,300	360	500	2,500
MW20	8/13/2013	8.43	<1.0	<1.0	<1.0	<1.0
	11/13/2013	8.48	<1.0	<1.0	<1.0	<1.0
	2/24/2014	9.04	<1.0	<1.0	<1.0	<1.0
	5/8/2014	6.66	<1.0	<1.0	<1.0	<1.0
	8/21/2014	6.96	<1.0	<1.0	<1.0	<1.0
	11/24/2014	7.08	<1.0	<1.0	<1.0	<1.0
MW21	8/13/2013	9.31	520	<1.0	47	18
	11/13/2013	9.25	<1.0	<1.0	<1.0	<1.0
	2/24/2014	9.69	<1.0	<1.0	<1.0	<1.0
	5/9/2014	7.50	180	<1.0	4.7	6.9
	8/21/2014	8.02	200	7.4	1.1	32
	11/24/2014	8.32	<1.0	<1.0	<1.0	<1.0
COGCC Allowable Levels			5	560	700	1,400

Notes:

DTW - Depth to Water

bgs - below ground surface

µg/L - Micrograms per liter

COGCC - Colorado Oil and Gas Conservation Commission

* - Denotes 2" diameter monitoring well

Results noted in bold exceed COGCC Table 910.1 allowable levels.