

Table 2.9-8 Non-Radiological Analytical Results for Brule Formation Monitoring Well Quarterly Sampling 2013-2014

Location ID: Date Collected:	BOW 2010-1 12/10/2013		BOW 2010-1 2/25/2014		BOW 2010-1 6/16/2014		BOW 2010-1 9/16/2014		BOW 2010-2 12/10/2013		BOW 2010-2 2/25/2014		BOW 2010-2 6/16/2014		BOW 2010-2 9/16/2014		BOW 2010-3 12/10/2013		
	UNITS	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL
MAJOR IONS																			
Alkalinity, Total as CaCO ₃	mg/L	308	5	268	5	252	5	236	5	255	5	243	5	224	5	201	5	97	5
Bicarbonate as HCO ₃	mg/L	<1	1	<1	1	<1	1	<1	1	<1	1	<1	1	<1	1	<1	1	72	1
Carbonate as CO ₃	mg/L	69	1	70	1	64	1	62	1	112	1	113	1	117	1	116	1	23	1
Chloride	mg/L	502	1	435	1	326	1	326	1	339	1	251	1	182	1	136	1	37	1
Fluoride	mg/L	0.5	0.1	0.5	0.1	0.5	0.1	0.5	0.1	0.5	0.1	0.5	0.1	0.5	0.1	0.5	0.1	0.7	0.1
Magnesium	mg/L	<1	1	<1	1	<1	1	<1	1	<1	1	<1	1	<1	1	<1	1	<1	1
Nitrogen, Ammonia as N	mg/L	<0.05	0.05	0.30	0.05	0.11	0.05	0.35	0.05	<0.05	0.05	0.10	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05
Nitrogen, Nitrate+Nitrite as N	mg/L	0.5	0.1	0.6	0.1	1.0	0.1	0.9	0.1	0.6	0.1	0.8	0.1	1.0	0.1	1	0.1	0.2	0.1
Potassium	mg/L	38	1	31	1	27	1	23	1	35	1	27	1	23	1	18	1	8	1
Silica as SiO ₂	mg/L	183	1	180	1	178	1	174	1	126	1	122	1	108	1	100	1	68	1
Sodium	mg/L	409	1	358	1	326	1	288	1	300	1	253	1	211	1	168	1	79	1
Sulfate	mg/L	62	1	43	1	43	1	37	1	33	1	33	1	34	1	28	1	52	1
PHYSICAL PROPERTIES																			
pH	s.u.	10.7	0.1	10.7	0.1	10.8	0.1	10.7	0.1	10.4	0.1	10.4	0.1	10.3	0.1	10.2	0.1	9.2	0.1
Conductivity @ 25 °C	umhos/cm	2300	1	2030	1	1650	1	1520	1	1730	1	1370	1	1060	1	891	1	486	1
Total Dissolved Solids @ 180 °C	mg/L	1280	10	1190	10	1070	10	1030	10	970	10	850	10	700	10	620	10	340	10
Nitrogen, Nitrite as N	mg/L	0.1	0.1 L	0.2	0.1 L	0.3	0.1 L	0.4	0.1	<0.1	0.1 L	0.1	0.1 L	<0.1	0.1 L	<0.1	0.1	<0.1	0.1 L
METALS, DISSOLVED																			
Aluminum	mg/L	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.05	0.05	<0.1	0.1	<0.1	0.1	<0.1	0.1	0.05	0.05	<0.1	0.1
Arsenic	mg/L	0.007	0.001	0.007	0.001	0.008	0.001	0.009	0.001	0.006	0.001	0.006	0.001	0.006	0.001	0.006	0.001	0.010	0.001
Barium	mg/L	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1
Boron	mg/L	<0.1	0.1	<0.1	0.1	0.1	0.1	0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	0.1	0.1
Cadmium	mg/L	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005
Calcium	mg/L	31	1	29	1	23	1	19	1	20	1	17	1	12	1	8	1	4	1
Chromium	mg/L	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05
Copper	mg/L	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01
Iron	mg/L	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05
Lead	mg/L	<0.001	0.001	<0.001	0.001	<0.001	0.001	0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001
Manganese	mg/L	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01
Mercury	mg/L	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001
Molybdenum	mg/L	<0.1	0.1	<0.1	0.1	<0.01	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1
Nickel	mg/L	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05
Selenium	mg/L	0.008	0.001	0.008	0.001	0.009	0.001	0.012	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.004	0.001
Vanadium	mg/L	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1
Zinc	mg/L	0.07	0.01	0.11	0.01	0.09	0.01	0.1	0.01	0.11	0.01	0.20	0.01	0.23	0.01	0.11	0.01	<0.01	0.01
DATA QUALITY																			
A/C Balance (± 5)	%	3.22	0.01	2.10	0.01	2.53	0.01	2.33	0.01	1.60	0.01	0.70	0.01	0.42	0.01	2.53	0.01	3.27	0.01
Anions	meq/L	21.67	0.01	18.58	0.01	15.22	0.01	14.77	0.01	15.42	0.01	12.70	0.01	10.43	0.01	8.56	0.01	4.12	0.01
Cations	meq/L	20.32	0.01	17.82	0.01	16.01	0.01	14.1	0.01	14.93	0.01	12.52	0.01	10.35	0.01	8.14	0.01	3.86	0.01
Solids Total Dissolved Calculated	mg/L	1410	10	1240	10	1080	10	1010	10	1010	10	850	10	710	10	580	10	310	10
Calculated TDS/TDS Ratio (0.80-1.20)	dec. %	0.91	0.01	0.96	0.01	0.99	0.01	1.02	0.01	0.96	0.01	1.00	0.01	0.99	0.01	1.07	0.01	1.10	0.01

Notes:
mg/L = milligrams per Liter
umhos/cm = micromhos per centimeter
s.u. = standard unit
meq/L = milliequivalents per Liter
RL = Analyte Reporting Limit
L = Analyzed by a contract laboratory

Table 2.9-8 Non-Radiological Analytical Results for Brule Formation Monitoring Well Quarterly Sampling 2013-2014

Location ID: Date Collected:	BOW 2010-3 2/25/2014		BOW 2010-3 6/16/2014		BOW 2010-3 9/16/2014		BOW 2010-4A 12/10/2013		BOW 2010-4A 2/25/2014		BOW 2010-4A 6/16/2014		BOW 2010-4A 9/16/2014		BOW 2010-5 12/16/2013		BOW 2010-5 2/26/2014		
	UNITS	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL
MAJOR IONS																			
Alkalinity, Total as CaCO ₃	mg/L	109	5	117	5	123	1	38	5	56	5	58	5	63	5	150	5	151	5
Bicarbonate as HCO ₃	mg/L	94	1	104	1	112	1	46	1	68	1	70	1	73	1	184	5	181	1
Carbonate as CO ₃	mg/L	19	1	19	1	19	1	<1	1	<1	1	<1	1	2	1	<1	1	1	1
Chloride	mg/L	36	1	23	1	23	1	367	1	293	1	300	1	267	1	3	1	3	1
Fluoride	mg/L	0.6	0.1	0.6	0.1	0.6	0.1	0.4	0.1	0.4	0.1	0.4	0.1	0.4	0.1	1.8	0.1	0.6	0.1
Magnesium	mg/L	<1	1	<1	1	<1	1	2	1	2	1	2	1	2	1	7	1	7	1
Nitrogen, Ammonia as N	mg/L	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05
Nitrogen, Nitrate+Nitrite as N	mg/L	<0.1	0.1	0.4	0.1	0.5	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	0.8	0.1	0.9	0.1
Potassium	mg/L	8	1	9	1	8	1	23	1	18	1	18	1	17	1	4	1	4	1
Silica as SiO ₂	mg/L	71	1	77	1	77	1	26	1	35	1	39	1	37	1	66	1	68	1
Sodium	mg/L	86	1	91	1	84	1	210	1	188	1	188	1	177	1	22	1	22	1
Sulfate	mg/L	59	1	52	1	54	1	40	1	43	1	39	1	41	1	7	1	8	1
PHYSICAL PROPERTIES																			
pH	s.u.	9.1	0.1	9.1	0.1	9	0.1	8.1	0.1	8.3	0.1	8.3	0.1	8.4	0.1	8.2	0.1	8.3	0.1
Conductivity @ 25 °C	umhos/cm	468	1	450	1	468	1	1420	1	1160	1	1110	1	1070	1	327	1	314	1
Total Dissolved Solids @ 180 °C	mg/L	340	10	340	10	360	10	730	10	640	10	630	10	610	10	200	10	240	10
Nitrogen, Nitrite as N	mg/L	<0.1	0.1 L	<0.1	0.1 L	<0.1	0.1 L	<0.1	0.1 L	<0.1	0.1 L	<0.1	0.1 L	<0.1	0.1 L	<0.1	0.1 L	<0.1	0.1 L
METALS, DISSOLVED																			
Aluminum	mg/L	<0.1	0.1	<0.1	0.1	<0.05	0.05	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.05	0.05	<0.1	0.1	<0.1	0.1
Arsenic	mg/L	0.010	0.001	0.012	0.001	0.011	0.001	0.003	0.001	0.005	0.001	0.006	0.001	0.005	0.001	0.003	0.001	0.003	0.001
Barium	mg/L	<0.1	0.1	<0.1	0.1	<0.1	0.1	0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	0.1	0.1	0.1	0.1
Boron	mg/L	0.1	0.1	0.1	0.1	0.1	0.1	<0.1	0.1	0.1	0.1	<0.1	0.1	0.1	0.1	<0.1	0.1	<0.1	0.1
Cadmium	mg/L	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005
Calcium	mg/L	5	1	4	1	4	1	33	1	24	1	25	1	22	1	29	1	30	1
Chromium	mg/L	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05
Copper	mg/L	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	0.02	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01
Iron	mg/L	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05
Lead	mg/L	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	0.003	0.001	0.003	0.001	0.002	0.001	<0.001	0.001	<0.001	0.001
Manganese	mg/L	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01
Mercury	mg/L	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001
Molybdenum	mg/L	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1
Nickel	mg/L	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05
Selenium	mg/L	0.004	0.001	0.005	0.001	0.004	0.001	0.003	0.001	0.002	0.001	0.004	0.001	0.004	0.001	0.001	0.001	<0.001	0.001
Vanadium	mg/L	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1
Zinc	mg/L	<0.01	0.01	<0.01	0.01	<0.02	0.02	0.39	0.01	1.90	0.01	1.35	0.01	0.63	0.01	0.12	0.01	0.13	0.01
DATA QUALITY																			
A/C Balance (± 5)	%	3.29	0.01	3.23	0.01	2.86	0.01	1.96	0.01	1.53	0.01	2.03	0.01	1.49	0.01	4.59	0.01	316	0.01
Anions	meq/L	4.44	0.01	4.1	0.01	4.3	0.01	11.97	0.01	10.26	0.01	10.44	0.01	9.66	0.01	3.38	0.01	3.34	0.01
Cations	meq/L	4.16	0.01	4.38	0.01	4.06	0.01	11.51	0.01	9.95	0.01	10.03	0.01	9.37	0.01	3.08	0.01	3.14	0.01
Solids Total Dissolved Calculated	mg/L	330	10	330	10	330	10	720	10	640	10	650	10	600	10	230	10	240	10
Calculated TDS/TDS Ratio (0.80-1.20)	dec. %	1.03	0.01	1.03	0.01	1.09	0.01	1.00	0.01	1.00	0.01	0.97	0.01	1.02	0.01	0.87	0.01	1.00	0.01

Notes:
mg/L = milligrams per Liter
umhos/cm = micromhos per centimeter
s.u. = standard unit
meq/L = milliequivalents per Liter
RL = Analyte Reporting Limit
L = Analyzed by a contract laboratory

Table 2.9-8 Non-Radiological Analytical Results for Brule Formation Monitoring Well Quarterly Sampling 2013-2014

Location ID: Date Collected:	BOW 2010-5 6/17/2014		BOW 2010-5 9/17/2014		BOW 2010-6 12/16/2013		BOW 2010-6 2/26/2014		BOW 2010-6 6/19/2014		BOW 2010-6 9/17/2014		BOW 2010-7 12/16/2013		BOW 2010-7 2/25/2014		BOW 2010-7 6/16/2014		
	UNITS	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL
MAJOR IONS																			
Alkalinity, Total as CaCO ₃	mg/L	148	5	147	5	137	5	139	5	129	5	140	5	176	5	183	5	184	5
Bicarbonate as HCO ₃	mg/L	177	1	169	1	153	5	162	1	148	1	158	1	184	5	203	1	205	1
Carbonate as CO ₃	mg/L	2	1	5	1	7	1	4	1	4	1	6	1	15	1	10	1	10	1
Chloride	mg/L	4	1	2	1	13	1	11	1	7	1	5	1	24	1	16	1	12	1
Fluoride	mg/L	0.5	0.1	0.6	0.1	0.7	0.1	0.6	0.1	0.6	0.1	0.6	0.1	0.7	0.1	0.6	0.1	0.6	0.1
Magnesium	mg/L	7	1	7	1	6	1	6	1	5	1	6	1	<1	1	<1	1	<1	1
Nitrogen, Ammonia as N	mg/L	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05
Nitrogen, Nitrate+Nitrite as N	mg/L	0.9	0.1	0.9	0.1	0.9	0.1	0.9	0.1	1.0	0.1	1	0.1	0.7	0.1	0.9	0.1	1.0	0.1
Potassium	mg/L	5	1	4	1	5	1	5	1	5	1	5	1	10	1	10	1	10	1
Silica as SiO ₂	mg/L	69	1	67	1	60	1	60	1	61	1	61	1	67	1	68	1	73	1
Sodium	mg/L	24	1	22	1	26	1	25	1	21	1	20	1	97	1	98	1	106	1
Sulfate	mg/L	7	1	7	1	10	1	11	1	10	1	9	1	46	1	50	1	43	1
PHYSICAL PROPERTIES																			
pH	s.u.	8.3	0.1	8.4	0.1	8.5	0.1	8.4	0.1	8.5	0.1	8.4	0.1	8.7	0.1	8.6	0.1	8.7	0.1
Conductivity @ 25 °C	umhos/cm	299	1	315	5	348	1	330	1	289	1	312	1	558	1	513	1	502	1
Total Dissolved Solids @ 180 °C	mg/L	250	10	250	10	250	10	260	10	220	10	240	10	360	10	370	10	370	10
Nitrogen, Nitrite as N	mg/L	<0.1	0.1 L	<0.1	0.1 L	<0.1	0.1 L	<0.1	0.1 L	<0.1	0.1 L	<0.1	0.1	<0.1	0.1 L	<0.1	0.1 L	<0.1	0.1 L
METALS, DISSOLVED																			
Aluminum	mg/L	<0.1	0.1	<0.05	0.05	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.05	0.05	<0.1	0.1	<0.1	0.1	<0.1	0.1
Arsenic	mg/L	0.003	0.001	0.003	0.001	0.004	0.001	0.004	0.001	0.004	0.001	0.005	0.001	0.026	0.001	0.024	0.001	0.028	0.001
Barium	mg/L	0.1	0.1	0.1	0.1	<0.1	0.1	0.1	0.1	<0.1	0.1	0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1
Boron	mg/L	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Cadmium	mg/L	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005
Calcium	mg/L	28	1	28	1	29	1	31	1	26	1	30	1	8	1	9	1	8	1
Chromium	mg/L	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05
Copper	mg/L	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01
Iron	mg/L	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05
Lead	mg/L	<0.001	0.001	<0.001	0.001	<0.001	0.001	0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001
Manganese	mg/L	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01
Mercury	mg/L	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001
Molybdenum	mg/L	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1
Nickel	mg/L	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05
Selenium	mg/L	0.001	0.001	<0.001	0.001	0.001	0.001	<0.001	0.001	0.001	0.001	0.001	0.001	0.139	0.001	0.143	0.001	0.197	0.001
Vanadium	mg/L	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1
Zinc	mg/L	0.13	0.01	0.12	0.01	0.03	0.01	0.43	0.01	0.02	0.01	0.06	0.01	0.03	0.01	0.09	0.01	0.01	0.01
DATA QUALITY																			
A/C Balance (± 5)	%	3.02	0.01	2.75	0.01	3.52	0.01	2.61	0.01	4.79	0.01	3.05	0.01	3.51	0.01	3.23	0.01	2.23	0.01
Anions	meq/L	3.30	0.01	3.25	0.01	3.41	0.01	3.42	0.01	3.07	0.01	3.22	0.01	5.22	0.01	5.27	0.01	5.02	0.01
Cations	meq/L	3.10	0.01	3.08	0.01	3.18	0.01	3.25	0.01	2.79	0.01	3.02	0.01	4.86	0.01	4.94	0.01	5.25	0.01
Solids Total Dissolved Calculated	mg/L	240	10	230	10	240	10	240	10	220	10	230	10	360	10	370	10	370	10
Calculated TDS/TDS Ratio (0.80-1.20)	dec. %	1.04	0.01	1.09	0.01	1.04	0.01	1.08	0.01	1.00	0.01	1.04	0.01	1.00	0.01	1.00	0.01	1.00	0.01

Notes:
 mg/L = milligrams per Liter
 umhos/cm = micromhos per centimeter
 s.u. = standard unit
 meq/L = milliequivalents per Liter
 RL = Analyte Reporting Limit
 L = Analyzed by a contract laboratory

Table 2.9-8 Non-Radiological Analytical Results for Brule Formation Monitoring Well Quarterly Sampling 2013-2014

Location ID: Date Collected:	BOW 2010-7		BOW 2010-8		BOW 2010-8		BOW 2010-8		BOW 2010-8		BOW 9		BOW 9		BOW 9		
	9/16/2014		12/10/2013		2/26/2014		6/16/2014		9/16/2014		11/8/2013		2/26/2014		6/16/2014		
	UNITS	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL
MAJOR IONS																	
Alkalinity, Total as CaCO ₃	mg/L	179	5	160	5	175	5	172	5	168	5	155	5	160	5	166	5
Bicarbonate as HCO ₃	mg/L	199	1	130	1	153	1	136	1	145	1	176	5	187	1	196	1
Carbonate as CO ₃	mg/L	9	1	32	1	30	1	37	1	30	1	6	1	4	1	3	1
Chloride	mg/L	14	1	8	1	5	1	4	1	4	1	10	1	7	1	5	1
Fluoride	mg/L	0.6	0.1	0.7	0.1	0.6	0.1	0.5	0.1	0.6	0.1	0.5	0.1	0.5	0.1	0.5	0.1
Magnesium	mg/L	<1	1	<1	1	<1	1	<1	1	<1	1	8	1	9	1	9	1
Nitrogen, Ammonia as N	mg/L	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05
Nitrogen, Nitrate+Nitrite as N	mg/L	0.9	0.1	0.7	0.1	0.9	0.1	0.9	0.1	0.8	0.1	1.1	0.1	1.0	0.1	1.2	0.1
Potassium	mg/L	9	1	9	1	8	1	9	1	8	1	4	1	4	1	4	1
Silica as SiO ₂	mg/L	71	1	78	1	77	1	81	1	81	1	66	1	67	1	71	1
Sodium	mg/L	97	1	76	1	81	1	87	1	79	1	28	1	20	1	20	1
Sulfate	mg/L	45	1	28	1	27	1	22	1	24	1	9	1	7	1	7	1
PHYSICAL PROPERTIES																	
pH	s.u.	8.6	0.1	9.2	0.1	9.1	0.1	9.3	0.1	9.2	0.1	8.5	0.1	8.4	0.1	8.4	0.1
Conductivity @ 25 °C	umhos/cm	529	1	419	1	423	1	396	1	414	1	346	1	344	1	323	1
Total Dissolved Solids @ 180 °C	mg/L	390	10	280	10	340	10	320	10	330	10	230	10	270	10	250	10
Nitrogen, Nitrite as N	mg/L	<0.1	0.1	<0.1	0.1 L	<0.1	0.1 L	<0.1	0.1 L	<0.1	0.1	<0.1	0.1 L	<0.1	0.1 L	<0.1	0.1 L
METALS, DISSOLVED																	
Aluminum	mg/L	<0.05	0.05	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.05	0.05	<0.1	0.1	<0.1	0.1	<0.1	0.1
Arsenic	mg/L	0.028	0.001	0.008	0.001	0.008	0.001	0.007	0.001	0.007	0.001	0.003	0.001	0.003	0.001	0.003	0.001
Barium	mg/L	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	0.1	0.1	0.1	0.1
Boron	mg/L	0.1	0.1	<0.1	0.1	<0.1	0.1	0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1
Cadmium	mg/L	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005
Calcium	mg/L	8	1	4	1	5	1	5	1	5	1	30	1	34	1	35	1
Chromium	mg/L	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05
Copper	mg/L	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01
Iron	mg/L	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05
Lead	mg/L	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.005	0.005	<0.001	0.001	<0.001	0.001
Manganese	mg/L	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	0.01	0.01
Mercury	mg/L	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001
Molybdenum	mg/L	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1
Nickel	mg/L	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05
Selenium	mg/L	0.153	0.001	0.001	0.001	<0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.002	0.001	0.001	0.001
Vanadium	mg/L	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1
Zinc	mg/L	<0.01	0.01	0.05	0.01	0.05	0.01	0.05	0.01	0.04	0.01	0.03	0.01	<0.01	0.01	<0.01	0.01
DATA QUALITY																	
A/C Balance (± 5)	%	1.66	0.01	3.95	0.01	4.55	0.01	1.70	0.01	2.72	0.01	2.59	0.01	3.59	0.01	3.03	0.01
Anions	meq/L	4.99	0.01	4.07	0.01	4.29	0.01	4.11	0.01	4.06	0.01	3.66	0.01	3.65	0.01	3.70	0.01
Cations	meq/L	4.83	0.01	3.76	0.01	3.92	0.01	4.25	0.01	3.85	0.01	3.48	0.01	3.40	0.01	3.48	0.01
Solids Total Dissolved Calculated	mg/L	360	10	300	10	310	10	320	10	300	10	250	10	250	10	260	10
Calculated TDS/TDS Ratio (0.80-1.20)	dec. %	1.08	0.01	0.93	0.01	1.10	0.01	1.00	0.01	1.1	0.01	0.92	0.01	1.08	0.01	0.96	0.01

Notes:
 mg/L = milligrams per Liter
 umhos/cm = micromhos per centimeter
 s.u. = standard unit
 meq/L = milliequivalents per Liter
 RL = Analyte Reporting Limit
 L = Analyzed by a contract laboratory

Table 2.9-8 Non-Radiological Analytical Results for Brule Formation Monitoring Well Quarterly Sampling 2013-2014

Location ID: Date Collected:	BOW 9		BOW 10		BOW 10		BOW 10		BOW 10		BOW 11		BOW 11		BOW 11		
	UNITS	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL
MAJOR IONS																	
Alkalinity, Total as CaCO ₃	mg/L	154	5	147	5	171	5	153	5	146	5	144	5	148	5	147	5
Bicarbonate as HCO ₃	mg/L	175	1	172	5	205	1	185	1	166	1	170	5	178	1	177	1
Carbonate as CO ₃	mg/L	6	1	4	1	1	1	1	1	6	1	3	1	1	1	1	1
Chloride	mg/L	5	1	11	1	8	1	6	1	4	1	5	1	5	1	4	1
Fluoride	mg/L	0.5	0.1	0.5	0.1	0.5	0.1	0.4	0.1	0.6	0.1	0.6	0.1	0.6	0.1	0.6	0.1
Magnesium	mg/L	9	1	9	1	10	1	10	1	9	1	7	1	7	1	7	1
Nitrogen, Ammonia as N	mg/L	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05
Nitrogen, Nitrate+Nitrite as N	mg/L	1.1	0.1	1.4	0.1	1.4	0.1	1.4	0.1	1.4	0.1	1.5	0.1	1.5	0.1	1.5	0.1
Potassium	mg/L	4	1	4	1	4	1	4	1	3	1	4	1	5	1	5	1
Silica as SiO ₂	mg/L	66	1	66	1	68	1	72	1	66	1	59	1	61	1	61	1
Sodium	mg/L	19	1	26	1	27	1	22	1	21	1	19	1	20	1	18	1
Sulfate	mg/L	7	1	10	1	8	1	7	1	11	1	11	1	11	1	11	1
PHYSICAL PROPERTIES																	
pH	s.u.	8.4	0.1	8.4	0.1	8.4	0.1	8.3	0.1	8.4	0.1	8.4	0.1	8.4	0.1	8.3	0.1
Conductivity @ 25 °C	umhos/cm	337	1	346	1	329	1	328	1	333	1	325	1	330	1	309	1
Total Dissolved Solids @ 180 °C	mg/L	260	10	230	10	250	10	250	10	260	10	250	10	260	10	240	10
Nitrogen, Nitrite as N	mg/L	<0.1	0.1	<0.1	0.1 L	<0.1	0.1 L	<0.1	0.1 L	<0.1	0.1	<0.1	0.1 L	<0.1	0.1 L	<0.1	0.1 L
METALS, DISSOLVED																	
Aluminum	mg/L	<0.05	0.05	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.05	0.05	<0.1	0.1	<0.1	0.1	<0.1	0.1
Arsenic	mg/L	0.003	0.001	0.003	0.001	0.003	0.001	0.003	0.001	0.003	0.001	0.005	0.001	0.005	0.001	0.005	0.001
Barium	mg/L	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Boron	mg/L	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1
Cadmium	mg/L	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005
Calcium	mg/L	32	1	29	1	31	1	32	1	29	1	34	1	35	1	35	1
Chromium	mg/L	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.005	0.005	<0.05	0.05	<0.05	0.05	<0.05	0.05
Copper	mg/L	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01
Iron	mg/L	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05
Lead	mg/L	<0.001	0.001	<0.005	0.005	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.005	0.005	<0.001	0.001	<0.001	0.001
Manganese	mg/L	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01
Mercury	mg/L	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001
Molybdenum	mg/L	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1
Nickel	mg/L	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05
Selenium	mg/L	0.001	0.001	0.002	0.001	0.003	0.001	0.002	0.001	0.001	0.001	0.002	0.001	<0.001	0.001	0.002	0.001
Vanadium	mg/L	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1
Zinc	mg/L	0.01	0.01	0.02	0.01	0.04	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	0.02	0.01	<0.01	0.01
DATA QUALITY																	
A/C Balance (± 5)	%	3.65	0.01	1.89	0.01	3.51	0.01	0.60	0.01	2.8	0.01	2.90	0.01	2.09	0.01	3.00	0.01
Anions	meq/L	3.46	0.01	3.57	0.01	3.91	0.01	3.52	0.01	3.39	0.01	3.38	0.01	3.45	0.01	3.41	0.01
Cations	meq/L	3.22	0.01	3.44	0.01	3.65	0.01	3.48	0.01	3.2	0.01	3.19	0.01	3.31	0.01	3.21	0.01
Solids Total Dissolved Calculated	mg/L	240	10	250	10	260	10	250	10	240	10	230	10	240	10	240	10
Calculated TDS/TDS Ratio (0.80-1.20)	dec. %	1.08	0.01	0.92	0.01	0.96	0.01	1.00	0.01	1.08	0.01	1.09	0.01	1.08	0.01	1.00	0.01

Notes:
mg/L = milligrams per Liter
umhos/cm = micromhos per centimeter
s.u. = standard unit
meq/L = milliequivalents per Liter
RL = Analyte Reporting Limit
L = Analyzed by a contract laboratory

Table 2.9-8 Non-Radiological Analytical Results for Brule Formation Monitoring Well Quarterly Sampling 2013-2014

Location ID:		BOW 11	
Date Collected:		9/17/2014	
	UNITS	RESULTS	RL
MAJOR IONS			
Alkalinity, Total as CaCO ₃	mg/L	153	5
Bicarbonate as HCO ₃	mg/L	178	1
Carbonate as CO ₃	mg/L	4	1
Chloride	mg/L	5	1
Fluoride	mg/L	0.5	0.1
Magnesium	mg/L	7	1
Nitrogen, Ammonia as N	mg/L	<0.05	0.05
Nitrogen, Nitrate+Nitrite as N	mg/L	1.6	0.1
Potassium	mg/L	5	1
Silica as SiO ₂	mg/L	59	1
Sodium	mg/L	19	1
Sulfate	mg/L	7	1
PHYSICAL PROPERTIES			
pH	s.u.	8.4	0.1
Conductivity @ 25 °C	umhos/cm	336	1
Total Dissolved Solids @ 180 °C	mg/L	260	10
Nitrogen, Nitrite as N	mg/L	<0.1	0.1
METALS, DISSOLVED			
Aluminum	mg/L	<0.05	0.05
Arsenic	mg/L	0.005	0.001
Barium	mg/L	0.1	0.1
Boron	mg/L	<0.1	0.1
Cadmium	mg/L	<0.005	0.005
Calcium	mg/L	34	1
Chromium	mg/L	<0.05	0.05
Copper	mg/L	<0.01	0.01
Iron	mg/L	<0.05	0.05
Lead	mg/L	<0.001	0.001
Manganese	mg/L	<0.01	0.01
Mercury	mg/L	<0.001	0.001
Molybdenum	mg/L	<0.1	0.1
Nickel	mg/L	<0.05	0.05
Selenium	mg/L	0.002	0.001
Vanadium	mg/L	<0.1	0.1
Zinc	mg/L	<0.01	0.01
DATA QUALITY			
A/C Balance (± 5)	%	4.18	0.01
Anions	meq/L	3.47	0.01
Cations	meq/L	3.19	0.01
Solids Total Dissolved Calculated	mg/L	230	10
Calculated TDS/TDS Ratio (0.80-1.20)	dec. %	1.13	0.01

Notes:
mg/L = milligrams per Liter
umhos/cm = micromhos per centimeter
s.u. = standard unit
meq/L = milliequivalents per Liter
RL = Analyte Reporting Limit
L = Analyzed by a contract laboratory