

Table 2.9-43 Marsland Expansion Area Non-Radiological Analytical Results (Q4 2013 - Q3 2014) – Arikaree Wells

Location ID: Date Collected:	AOW-3 11/8/2013		AOW-3 2/25/2014		AOW-3 6/16/2014		AOW-3 9/16/2014		AOW-4 11/8/2013		AOW-4 2/25/2014		AOW-4 6/16/2014		AOW-4 9/17/2014		AOW-5 11/8/2013		
	UNITS	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL
<b>MAJOR IONS</b>																			
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	188	5	185	5	181	5	169	5	148	5	148	5	150	5	145	5	149	5
Bicarbonate as HCO <sub>3</sub>	mg/L	220	5	219	1	221	1	206	1	170	5	174	1	179	1	173	1	174	5
Carbonate as CO <sub>3</sub>	mg/L	4	1	3	1	<1	1	<1	1	5	1	3	1	2	1	2	1	4	1
Chloride	mg/L	1	1	2	1	1	1	2	1	7	1	5	1	4	1	4	1	2	1
Fluoride	mg/L	0.7	0.1	0.7	0.1	0.7	0.1	0.5	0.1	0.6	0.1	0.6	0.1	0.6	0.1	0.6	0.1	0.5	0.1
Magnesium	mg/L	18	1	17	1	16	1	14	1	7	1	6	1	7	1	6	1	8	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	1.9	0.1	2.0	0.1	1.4	0.1	1	0.3	0.8	0.1	0.8	0.1	0.9	0.1	0.5	0.1	1.2	0.1
Potassium	mg/L	2	1	2	1	3	1	2	1	4	1	4	1	4	1	4	1	4	1
Silica as SiO <sub>2</sub>	mg/L	76	1	73	1	77	1	64	1	60	1	63	1	66	1	60	1	64	1
Sodium	mg/L	13	1	14	1	12	1	13	1	19	1	26	1	17	1	18	1	19	1
Sulfate	mg/L	4	1	4	1	4	1	4	1	9	1	9	1	8	1	8	1	7	1
<b>PHYSICAL PROPERTIES</b>																			
pH	s.u.	8.4	0.1	8.4	0.1	8.3	0.1	8.3	0.1	8.5	0.1	8.4	0.1	8.4	0.1	8.5	0.1	8.4	0.1
Conductivity @ 25 °C	umhos/cm	370	1	360	1	347	1	348	1	324	1	316	1	310	1	308	1	313	1
Total Dissolved Solids @ 180 °C	mg/L	280	10	240	10	280	10	300	10	230	10	240	10	240	10	240	10	220	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
<b>METALS, DISSOLVED</b>																			
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	0.0003	0.001	0.003	0.001	0.003	0.001	0.002	0.001	0.005	0.001	0.004	0.001	0.004	0.001	0.005	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	37	1	37	1	36	1	34	1	35	1	36	1	38	1	35	1	31	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	0.03	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	<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	<0.005	0.005	0.002	0.001	0.002	0.001	0.002	0.001	<0.005	0.005	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.005	0.005
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	0.002	0.001	<0.001	0.001	<0.001	0.001	0.002	0.001	0.002	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	<0.1	0.1
Zinc	mg/L	1.97	0.01	1.08	0.01	2.15	0.01	1.38	0.01	0.23	0.01	0.29	0.01	0.31	0.01	0.23	0.01	0.11	0.01
<b>DATA QUALITY</b>																			
A/C Balance (± 5)	%	1.80	0.01	1.15	0.01	2.33	0.01	1.36	0.01	2.56	0.01	3.04	0.01	0.40	0.01	1.64	0.01	2.21	0.01
Anions	meq/L	4.04	0.01	4.01	0.01	3.88	0.01	3.61	0.01	3.41	0.01	3.37	0.01	3.35	0.01	3.27	0.01	3.30	0.01
Cations	meq/L	3.89	0.01	3.92	0.01	3.70	0.01	3.51	0.01	3.24	0.01	3.58	0.01	3.32	0.01	3.16	0.01	3.16	0.01
Solids Total Dissolved Calculated	mg/L	270	10	270	10	260	10	240	10	230	10	240	10	240	10	230	10	230	10
Calculated TDS/TDS Ratio (0.80-1.20)	dec. %	1.04	0.01	0.89	0.01	1.08	0.01	1.25	0.01	1.00	0.01	1.00	0.01	1.00	0.01	1.04	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 = Analytical by a contract laboratory  
 AOW-1 & AOW-7; Do not produce sufficient  
 water volume to produce sample  
 AOW-2 - Not drilled

Table 2.9-43 Marsland Expansion Area Non-Radiological Analytical Results (Q4 2013 - Q3 2014) – Arikaree Wells

Location ID: Date Collected:	AOW-5		AOW-5		AOW-5		AOW-6		AOW-6		AOW-6		AOW-6		AOW-8		AOW-8		AOW-8		
	2/26/2014	6/17/2014	9/15/2014	11/8/2013	2/26/2014	6/17/2014	9/17/2014	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	RESULTS	RL	RESULTS	RL	
<b>MAJOR IONS</b>																					
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	154	5	153	5	147	5	163	5	163	5	159	5	162	5	133	5	138	5	131	5
Bicarbonate as HCO <sub>3</sub>	mg/L	188	1	183	1	179	1	193	5	199	1	193	1	185	1	155	5	169	1	160	1
Carbonate as CO <sub>3</sub>	mg/L	<1	1	2	1	<1	1	3	1	<1	1	<1	1	6	1	3	1	<1	1	<1	1
Chloride	mg/L	3	1	2	1	2	1	8	1	5	1	4	1	4	1	8	1	5	1	1	1
Fluoride	mg/L	0.5	0.1	0.5	0.1	0.5	0.1	0.6	0.1	0.6	0.1	0.5	0.1	0.6	0.1	0.4	0.1	0.4	0.1	0.4	0.1
Magnesium	mg/L	8	1	8	1	8	1	8	1	8	1	7	1	8	1	12	1	11	1	11	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	<0.05	0.05
Nitrogen, Nitrate+Nitrite as N	mg/L	1.1	0.1	1.2	0.1	1.2	0.1	2.6	0.1	2.3	0.1	2.4	0.1	2.5	0.1	1.2	0.1	1.6	0.1	0.9	0.1
Potassium	mg/L	4	1	4	1	4	1	5	1	5	1	5	1	5	1	1	1	1	1	1	1
Silica as SiO <sub>2</sub>	mg/L	67	1	67	1	64	1	57	1	60	1	59	1	57	1	72	1	74	1	77	1
Sodium	mg/L	18	1	18	1	20	1	20	1	19	1	18	1	18	1	6	1	6	1	6	1
Sulfate	mg/L	7	1	7	1	7	1	12	1	11	1	10	1	10	1	3	1	3	1	1	1
<b>PHYSICAL PROPERTIES</b>																					
pH	s.u.	8.3	0.1	8.3	0.1	8.4	0.1	8.4	0.1	8.3	0.1	8.3	0.1	8.4	0.1	8.4	0.1	8.3	0.1	8.3	0.1
Conductivity @ 25 °C	umhos/cm	319	1	300	1	312	1	377	1	362	1	341	1	360	1	287	1	288	1	248	1
Total Dissolved Solids @ 180 °C	mg/L	250	10	250	10	240	10	260	10	280	10	260	10	260	10	220	10	240	10	220	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	<0.1	0.1 L
<b>METALS, DISSOLVED</b>																					
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	<0.1	0.1
Arsenic	mg/L	0.003	0.001	0.003	0.001	0.003	0.001	0.005	0.001	0.005	0.001	0.005	0.001	0.005	0.001	0.002	0.001	0.002	0.001	0.002	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	<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	<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	<0.005	0.005
Calcium	mg/L	33	1	32	1	32	1	42	1	42	1	40	1	40	1	33	1	33	1	34	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	<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	<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	<0.05	0.05
Lead	mg/L	<0.001	0.001	<0.001	0.001	<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	<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	<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	<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	<0.05	0.05
Selenium	mg/L	<0.001	0.001	<0.001	0.001	0.001	0.001	0.002	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
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	<0.1	0.1
Zinc	mg/L	0.10	0.01	0.10	0.01	0.1	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	0.19	0.01	0.20	0.01	0.28	0.01
<b>DATA QUALITY</b>																					
A/C Balance (± 5)	%	2.83	0.01	3.61	0.01	0.32	0.01	2.62	0.01	2.64	0.01	2.37	0.01	3.12	0.01	1.95	0.01	3.74	0.01	2.53	0.01
Anions	meq/L	3.40	0.01	3.36	0.01	3.25	0.01	3.93	0.01	3.82	0.01	3.70	0.01	3.77	0.01	3.03	0.01	3.09	0.01	2.76	0.01
Cations	meq/L	3.22	0.01	3.13	0.01	3.23	0.01	3.73	0.01	3.62	0.01	3.53	0.01	3.54	0.01	2.91	0.01	2.86	0.01	2.91	0.01
Solids Total Dissolved Calculated	mg/L	240	10	230	10	230	10	260	10	260	10	250	10	250	10	220	10	220	10	210	10
Calculated TDS/TDS Ratio (0.80-1.20)	dec. %	1.04	0.01	1.09	0.01	1.04	0.01	1.00	0.01	1.08	0.01	1.04	0.01	1.04	0.01	1.00	0.01	1.09	0.01	1.05	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 = Analytical by a contract laboratory  
 AOW-1 & AOW-7; Do not produce sufficient  
 water volume to produce sample  
 AOW-2 - Not drilled

**Table 2.9-43 Marsland Expansion Area Non-Radiological Analytical Results (Q4 2013 - Q3 2014) – Arikaree Wells**

Location ID: Date Collected:	AOW-8		AOW-9		AOW-9		AOW-9		AOW-9		AOW-10		AOW-10		AOW-10		AOW-10		
	UNITS	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL
<b>MAJOR IONS</b>																			
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	136	5	153	5	160	5	161	5	154	6	150	5	156	5	154	5	154	5
Bicarbonate as HCO <sub>3</sub>	mg/L	163	1	178	5	194	1	194	1	179	1	182	5	186	1	186	1	177	1
Carbonate as CO <sub>3</sub>	mg/L	2	1	4	1	<1	1	<1	1	4	1	<1	1	2	1	<1	1	6	1
Chloride	mg/L	<1	1	4	1	4	1	4	1	4	1	4	1	6	1	3	1	6	1
Fluoride	mg/L	0.4	0.1	0.5	0.1	0.5	0.1	0.4	0.1	0.5	0.1	0.5	0.1	0.5	0.1	0.4	0.1	3	1
Magnesium	mg/L	10	1	8	1	8	1	8	1	8	1	9	1	9	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	<0.05	0.05
Nitrogen, Nitrate+Nitrite as N	mg/L	1.4	0.1	1.2	0.1	1.3	0.1	1.4	0.1	1.3	0.1	2.1	0.1	2.1	0.1	2.4	0.1	2.3	0.1
Potassium	mg/L	1	1	4	1	4	1	4	1	4	1	3	1	3	1	4	1	4	1
Silica as SiO <sub>2</sub>	mg/L	78	1	64	1	67	1	65	1	64	1	63	1	65	1	68	1	63	1
Sodium	mg/L	6	1	19	1	18	1	18	1	18	1	21	1	24	1	20	1	20	1
Sulfate	mg/L	2	1	8	1	8	1	8	1	7	1	8	1	8	1	6	1	7	1
<b>PHYSICAL PROPERTIES</b>																			
pH	s.u.	8.3	0.1	8.4	0.1	8.3	0.1	8.3	0.1	8.4	0.1	8.4	0.1	8.3	0.1	8.3	0.1	8.4	0.1
Conductivity @ 25 °C	umhos/cm	281	1	325	1	333	1	327	1	331	1	328	1	332	1	324	1	295	1
Total Dissolved Solids @ 180 °C	mg/L	270	10	220	10	270	10	260	10	250	10	230	10	240	10	260	10	270	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
<b>METALS, DISSOLVED</b>																			
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	<0.05	0.05
Arsenic	mg/L	0.001	0.001	0.003	0.001	0.002	0.001	0.002	0.001	0.003	0.001	0.002	0.001	0.002	0.001	0.002	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	32	1	34	1	35	1	36	1	34	1	32	1	34	1	34	1	32	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	0.06	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	0.002	0.001	<0.005	0.005	<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	0.002	0.001	<0.001	0.001	0.002	0.001	0.001	0.001	0.002	0.001	0.002	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	0.21	0.01	0.22	0.01	0.31	0.01	0.40	0.01	0.42	0.01	0.21	0.01	0.23	0.01	0.26	0.01	0.26	0.01
<b>DATA QUALITY</b>																			
A/C Balance (± 5)	%	2.12	0.01	2.25	0.01	4.65	0.01	4.11	0.01	3.14	0.01	1.92	0.01	<0.01	0.01	0.92	0.01	3.72	0.01
Anions	meq/L	2.88	0.01	3.44	0.01	3.58	0.01	3.61	0.01	3.46	0.01	3.46	0.01	3.61	0.01	3.51	0.01	3.52	0.01
Cations	meq/L	2.76	0.01	3.29	0.01	3.26	0.01	3.33	0.01	3.25	0.01	3.33	0.01	3.61	0.01	3.44	0.01	3.26	0.01
Solids Total Dissolved Calculated	mg/L	220	10	240	10	240	10	250	10	240	10	240	10	250	10	250	10	240	10
Calculated TDS/TDS Ratio (0.80-1.20)	dec. %	1.23	0.01	0.92	0.01	1.12	0.01	1.04	0.01	1.04	0.01	0.96	0.01	0.96	0.01	1.04	0.01	1.12	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 = Analytical by a contract laboratory  
 AOW-1 & AOW-7; Do not produce sufficient  
 water volume to produce sample  
 AOW-2 - Not drilled

**Table 2.9-43 Marsland Expansion Area Non-Radiological Analytical Results (Q4 2013 - Q3 2014) – Arikaree Wells**

Location ID: Date Collected:	AOW-11		AOW-11		AOW-11		AOW-11		
	11/8/2013		2/26/2014		6/17/2014		9/17/2014		
	UNITS	RESULTS	RL	RESULTS	RL	RESULTS	RL	RESULTS	RL
<b>MAJOR IONS</b>									
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	166	5	171	5	167	5	165	5
Bicarbonate as HCO <sub>3</sub>	mg/L	195	5	207	1	201	1	194	1
Carbonate as CO <sub>3</sub>	mg/L	4	1	1	1	1	1	4	1
Chloride	mg/L	10	1	7	1	7	1	4	1
Fluoride	mg/L	0.6	0.1	0.5	0.1	0.5	0.1	0.5	0.1
Magnesium	mg/L	9	1	8	1	8	1	8	1
Nitrogen, Ammonia as N	mg/L	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05
Nitrogen, Nitrate+Nitrite as N	mg/L	3.6	0.1	3.1	0.1	3.3	0.1	3.2	0.1
Potassium	mg/L	5	1	4	1	5	1	5	1
Silica as SiO <sub>2</sub>	mg/L	57	1	59	1	59	1	58	1
Sodium	mg/L	18	1	16	1	16	1	15	1
Sulfate	mg/L	10	1	9	1	9	1	9	1
<b>PHYSICAL PROPERTIES</b>									
pH	s.u.	8.4	0.1	8.3	0.1	8.3	0.1	8.4	0.1
Conductivity @ 25 °C	umhos/cm	398	1	379	1	366	1	338	1
Total Dissolved Solids @ 180 °C	mg/L	260	10	290	10	280	10	290	1
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
<b>METALS, DISSOLVED</b>									
Aluminum	mg/L	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.05	0.05
Arsenic	mg/L	0.004	0.001	0.004	0.001	0.004	0.001	0.004	0.001
Barium	mg/L	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
Cadmium	mg/L	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005
Calcium	mg/L	48	1	46	1	46	1	44	1
Chromium	mg/L	<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
Iron	mg/L	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05
Lead	mg/L	<0.005	0.005	<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
Mercury	mg/L	<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
Nickel	mg/L	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05
Selenium	mg/L	0.002	0.001	<0.001	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
Zinc	mg/L	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01
<b>DATA QUALITY</b>									
A/C Balance (± 5)	%	1.23	0.01	4.15	0.01	2.30	0.01	2.6	0.01
Anions	meq/L	4.09	0.01	4.05	0.01	3.99	0.01	3.86	0.01
Cations	meq/L	3.99	0.01	3.72	0.01	3.81	0.01	3.66	0.01
Solids Total Dissolved Calculated	mg/L	270	10	270	10	270	10	260	10
Calculated TDS/TDS Ratio (0.80-1.20)	dec. %	0.96	0.01	1.07	0.01	1.04	0.01	1.12	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 = Analytical by a contract laboratory  
AOW-1 & AOW-7; Do not produce sufficient  
water volume to produce sample  
AOW-2 - Not drilled