GWDP
Q4 2018

PARAMETER	UNIT	Maximum Daily Limit for Downgradient Wells Only	QAL008A Nov 2018 11/05/18 (Downgradient)	Q	QAL008D Nov 2018 11/05/18 (Downgradient)	Q	QAL025D Nov 2018 11/05/18	Q	QAL026A Nov 2018 11/05/18	Q	QAL026D Nov 2018 11/05/18	Q	QAL029A Nov 2018 11/06/18	Q	QAL029D Nov 2018 11/06/18	Q	QAL050A Nov 2018 11/05/18 (Downgradient)	Q	QAL051A Nov 2018 11/05/18 (Downgradient)	Q	QAL051D Nov 2018 11/05/18 (Downgradient)	Q	QAL052A Nov 2018 11/05/18 (Downgradient)	Q	QAL053A Nov 2018 11/06/18	Q	QAL055A Nov 2018 11/05/18	Q	QAL056A Nov 2018 11/05/18	Q	QAL057A Nov 2018 11/06/18 (Downgradient)	Q	QAL057D Nov 2018 11/06/18 (Downgradient)	Q	QAL075A Nov 2018 11/05/18 (Downgradient)	Q	QAL075D Nov 2018 11/05/18 (Downgradient)	Q
Field																																						
D.O.	ppm	NA	10		6.8		5.1		11		12		11		7.8		10		11		4.9		4.7		2.7		9.5		9.7		11		6.8		10		0.6	
ORP	mV	NA	36		34		127		167		125		156		47		81		134		22		113		8		15		42		121		133		38		-8	
pH	SU	6.5-9.7	9.3		8.7		8.7		6.6		8.8		7.3		6.6		8.8		8.5		8.6		8.4		8.2		8.2		9.2		8.9		8.3		8.7		8.2	
Specific Conductance	µS/cm @ 25°C	NA	70		102		108		159		74		858		724		152		94		119		124		119		616		68		124		215		86		126	
Temperature	°C	NA	14		11		7.1		7.8		7.2		7.9		7.9		11		8.6		8.3		9.0		8.5		11		13		12		11		8.0		8.3	
Turbidity	NTU	NA	<1		<1		<1		<1		<1		<1		<1		<1		<1		<1		<1		<1		<1		<1		<1		<1		<1		<1	
Water Elevation	ft MSL	NA	1394.34		1355.32		1412.99		1416.66		1409.86		1413.61		1407.06		1365.60		1367.45		1367.36		1354.17		1387.09		1366.95		1395.39		1365.09		1364.79		1349.47		1350.97	
Metals																																						
Aluminum	ug/L	150	<50.0		<50.0		<50.0		60.6		<50.0		<50.0		<50.0		<50.0		<50.0		<50.0		<50.0		<50.0		<50.0		<50.0		<50.0		<50.0		<50.0		<50.0	
Antimony	ug/L	5.0	<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	
Arsenic	ug/L	6.0	<1.0		2.9		2.7		<1.0		<1.0		<1.0		<1.0		<1.0		1.2		4.4		1.2		7.2		<1.0		<1.0		<1.0		2.7		<1.0		1.8	
Barium	ug/L	1000	<5.0		6.5		5.1		7.8		<5.0		136		23.4		7		<5.0		13		5.1		7.6		34.1		<5.0		5.6		8.5		<5.0		5.3	
Beryllium	ug/L	3.0	<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	
Boron	ug/L	285	<20.0		<20.0		<20.0		<20.0		<20.0		<20.0		<20.0		<20.0		<20.0		<20.0		<20.0		30.1		<20.0		<20.0		<20.0		<20.0		<20.0		<20.0	
Cadmium	ug/L	3.0	<0.20		<0.20		<0.20		<0.20		<0.20		<0.20		<0.20		<0.20		<0.20		<0.20		<0.20		<0.20		<0.20		<0.20		<0.20		<0.20		<0.20		<0.20	
Chromium	ug/L	52	<1.0		1.5		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		10.8		<1.0		<1.0		<1.0		<1.0		<1.0	
Cobalt	ug/L	23	<15.0		<15.0		<15.0		<15.0		<15.0		<15.0		<15.0		<15.0		<15.0		<15.0		<15.0		<15.0		103		<15.0		<15.0		<15.0		<15.0		<15.0	
Copper	ug/L	10	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		1.0		<1.0		<1.0		<1.0		<1.0		<1.0		1.1		<1.0		<1.0		<1.0		<1.0		<1.0	
Iron	ug/L	NA	<20.0		<20.0		<20.0		94.8		<20.0		<20.0		<20.0		<20.0		<20.0		<20.0		<20.0		<20.0		37.2		<20.0		<20.0		<20.0		<20.0		<20.0	
Lead	ug/L	3.0	<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	
Lithium	ug/L	88	<8.0		<8.0		<8.0		<8.0		<8.0		<8.0		<8.0		<8.0		<8.0		<8.0		<8.0		<8.0		<8.0		<8.0		<8.0		<8.0		<8.0		<8.0	
Manganese	ug/L	50	<5.0		<5.0		<5.0		<5.0		<5.0		6.8		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0	
Mercury	ng/L	NA	<0.500		<0.500		<0.500		0.700		<0.500		0.910		1.68		<0.500		<0.500		<0.500		<0.500		<0.500		<0.500		<0.500		<0.500		<0.500		<0.500		<0.500	
Molybdenum	ug/L	22	<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0	
Nickel	ug/L	57	<2.0		<2.0		<2.0		<2.0		<2.0		<2.0		<2.0		<2.0		<2.0		<2.0		<2.0		<2.0		3.7		<2.0		<2.0		<2.0		<2.0		<2.0	
Selenium	ug/L	5.0	<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	
Silver	ug/L	0.40	<0.20		<0.20		<0.20		<0.20		<0.20		<0.20		<0.20		<0.20		<0.20		<0.20		<0.20		<0.20		<0.20		<0.20		<0.20		<0.20		<0.20		<0.20	
Strontium	ug/L	2300	9.4		36.4		31.8		30.3		10.5		244		35.4		31.9		17.0		80.2		44.2		74.4		131		9.5		18.3		78.4		16.5		50.8	
Thallium	ug/L	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	
Uranium	ug/L	NA	<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	
Vanadium	ug/L	3.1	2.1		2.4		4.1		<1.0		<1.0		<1.0		<1.0		1.3		4.2		2.4		1.8		1.6		<1.0		1.3		1.1		<1.0		2.7		1.6	
Zinc	ug/L	1200	<10.0		<10.0		<10.0		<10.0		<10.0		<10.0		<10.0		<10.0		<10.0		<10.0		<10.0		<10.0		<10.0		<10.0		<10.0		<10.0		<10.0		<10.0	
Major Anions																																						
Alkalinity, Bicarbonate	mg/L	NA	27.8		47.1		45.1		73.7		28.8		62.0		100		39.7		29.3		48.5		53.5		57.1		72.7		31.3		40.4		85.8		36.7		58.6	
Chloride	mg/L	NA	1.0		1.9		<1.0		<1.0		<1.0		152		142		16		1.8		1.4		2.0		<1.0		132		<1.0		10.5		22.4		1.2		<1.0	
Fluoride	mg/L	1.0	<0.10		<0.10		<0.10		<0.10		<0.10		<0.10		<0.10		<0.10		<0.10		<0.10		<0.10		<0.10		<0.10		<0.10		<0.10		<0.10		<0.10		<0.10	
Nitrogen, Ammonia	mg/L	10	<0.020	e	<0.020	e	<0.020	e	<0.020	e	<0.020	e	<0.020	e	<0.020	e	<0.020	e	<0.020	e	<0.020	e	<0.020	e	<0.020	e	<0.020	e	<0.020	e	<0.020	e	<0.020	e	<0.020	e	<0.020	e
Nitrogen, Nitrate	mg/L	10	1.3	e	0.13	e	0.10	e	0.67	e	0.13	e	3.6	e	0.99	e	0.63	e	2.6	e	0.48	e	0.28	e	<0.050	e	0.95	e	1.0	e	0.95	e	0.26	e	1.1	e	0.055	e
Nitrogen, Nitrite	mg/L	NA	<0.050		<0.050		<0.050		<0.050		<0.050		<0.050		<0.050		<0.050		<0.050		<0.050		<0.050		<0.050		<0.050		<0.050		<0.050		<0.050		<0.050		<0.050	
Nitrogen, Total Inorganic	mg/L	10	1.3		0.14		0.11		0.67		0.13		3.6		1.0		0.63		2.6		0.49		0.28		0.051		0.95		1.0		0.95		0.26		1.1		0.055	
Phosphorus, Total	mg/L	NA	0.051		0.051		0.043		0.028	s	0.037		0.019	s	0.031	s	0.03	s	0.044		0.044		0.038		0.039		0.042		0.064		0.025	s	0.034		0.046		0.071	
Sulfate	mg/L	250	<1.0		4.0		5.4		3.4		1.8		5.1		9.8		3.1		1.7		3.7		4.8		5.7		7.6		<1.0		<1.0		4.0		1.2		6.1	
Major Cations																																						
Calcium	mg/L	NA	7.3		14.1		12.3		18.2		9.9		55		12.4		18.1		12.0		14.7		15.9		14.2		56.2		7.7		14.1		25.5		11.6		17.2	
Magnesium	mg/L	NA	1.1		2.9		2.8		2.7		1.4		10.1		5.1		3.5		2.2		3.1		3.6		3.7		12.7		1.2		2.7		5.7		2.3		3.8	
Potassium	mg/L	NA	0.81		0.85		0.64		1.2		0.50		3.5		1.6		0.89		0.61		1.1		1.0		1.1		1.9		0.82		0.70		1.3		0.63		1.0	
Sodium	mg/L	NA	4.4		1.2		3.5		1.5		0.68		100		127		2.6		1.2		2.5		1.5		1.8		31.1		3.6		2.3		1.8		1.2		1.4	
General																																						
Hardness	mg/L	NA	23		47		42		57		30		179		52		60		39		49		55		51		193		24		46		87		38		59	

Notes:
e: estimated value. The laboratory statement of data qualifications indicates that a quality control limit for this parameter was exceeded.
*The 3.1 ug/L MDL for vanadium does not apply to monitoring wells QAL008A and QAL051A.
Value is outside of maximum daily limit as stipulated in Permit GW1810162 for compliance monitoring locations.