

First Quarter 2017 Lee Ranch Groundwater Analytical

Location		Four Corner in Well	PDL-5	PDL-4	PDL-3	PDL-2	Dr. Springs	Pit 8 Wells
WorkOrder		S1703184	S1703184	S1703184	S1703184	S1703184	S1703184	S1703184
LabID		S1603125-001	S1603125-001	S1603125-001	S1603125-001	S1603125-001	S1603125-001	S1603125-001
Date Sampled		3/13/17	3/13/17	3/13/17	3/13/17	3/13/17	3/13/17	3/13/17
Date Received								
Units	Analyte	Result	Result	Result	Result	Result	Result	Result
s.u.	pH	8.6	8.5	8.7	8.9	9.3	8.8	9.3
µmhos/cm	Electrical Conductivity	949	835	464	536	517	384	943
mg/L	Total Dissolved Solids (180)	600	540	260	300	310	220	580
mg/L	Total Alkalinity (as CaCO3)	260	240	229	266	263	204	483
mg/L	Nitrate Nitrogen (As N)	ND	ND	ND	ND	<0.1	ND	ND
mg/L	Total Cyanide	ND	ND	ND	ND	<0.01	ND	ND
mg/L	Total Recoverable Phenolics	ND	ND	ND	ND	<0.05	ND	ND
	Sodium Adsorption Ratio	5.84	2.48	15.7	23.4	24.9	17.6	33.7
mg/L	Bicarbonate as HCO3	298	273	257	290	245	227	453
mg/L	Carbonate as CO3	9	9	11	17	37	11	67
mg/L	Chloride	9	5	ND	2	1	1	3
mg/L	Fluoride	1.5	0.5	0.9	0.7	0.8	0.6	1.4
mg/L	Sulfate	198	189	14	18	6	9	21
mg/L	Calcium	27	44	3	2	2	2	3
mg/L	Magnesium	14	28	ND	ND	<1	ND	ND
mg/L	Potassium	3	3	1	ND	1	1	4
mg/L	Sodium	151	86	101	121	120	89	220
mg/L	Dissolved Aluminum	ND	ND	ND	ND	<0.1	ND	ND
mg/L	Dissolved Arsenic	ND	ND	ND	ND	<0.005	ND	ND
mg/L	Dissolved Barium	ND	ND	0.1	ND	<0.1	ND	0.1
mg/L	Dissolved Boron	0.2	0.1	0.1	0.1	0.1	ND	0.2
mg/L	Dissolved Cadmium	ND	ND	ND	ND	<0.001	ND	ND
mg/L	Dissolved Chromium	ND	ND	ND	ND	<0.01	ND	ND
mg/L	Dissolved Cobalt	ND	ND	ND	ND	<0.01	ND	ND
mg/L	Dissolved Copper	ND	ND	ND	ND	<0.01	ND	0.03
mg/L	Dissolved Iron	ND	ND	ND	ND	<0.05	ND	ND
mg/L	Dissolved Lead	ND	ND	ND	ND	<0.02	ND	ND
mg/L	Dissolved Manganese	0.02	0.02	ND	ND	<0.02	ND	ND
mg/L	Dissolved Molybdenum	ND	ND	ND	ND	<0.02	ND	ND
mg/L	Dissolved Nickel	ND	ND	ND	ND	<0.01	ND	ND
mg/L	Dissolved Selenium	ND	ND	ND	ND	<0.001	ND	ND
mg/L	Dissolved Silver	ND	ND	ND	ND	<0.003	ND	ND

mg/L	Dissolved Vanadium	ND	ND	ND	ND	<0.02	ND	ND
mg/L	Dissolved Zinc	ND	ND	ND	ND	0.04	ND	ND
mg/L	Total Iron	0.21	1.36	ND	ND	0.14	ND	0.07
mg/L	Total Manganese	0.02	0.02	ND	ND	<0.02	ND	ND
mg/L	Total Mercury	ND	ND	ND	ND	<0.001	ND	ND

Second Quarter 2017 Lee Ranch Groundwater Analytical

Location	Pit 8 Wells	DR Arroyo	PDL 2	PDL 3	PDL 4	PDL 5	our Corner in Well
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WorkOrder	S1706272	S1706272	S1706272	S1706272	S1706272	S1706272	
LabID	S1706272-001	S1706272-001	S1706272-001	S1706272-001	S1706272-001	S1706272-001	
Date Sampled	6/12/17	6/12/17	6/12/17	6/12/17	6/12/17	6/12/17	
DateReceived	6/14/17	6/14/17	6/14/17	6/14/17	6/14/17	6/14/17	
Analyte							
pH	9.3	8.7	9.5	8.8	8.7	8.4	Not sampled
Electrical Conductivity	467	397	554	531	459	840	
Total Dissolved Solids (180)	270	230	310	310	270	530	
Total Alkalinity (as CaCO3)	231	201	287	292	229	239	
Nitrate Nitrogen (As N)	ND	ND	ND	ND	ND	ND	
Total Cyanide	ND	ND	ND	ND	ND	ND	
Total Recoverable Phenolics	ND	ND	ND	ND	ND	ND	
Sodium Adsorption Ratio	17.6	12.6	25.2	23.5	15.2	2.41	
Bicarbonate as HCO3	219	231	246	328	260	282	
Carbonate as CO3	31	7	51	14	9	5	
Chloride	1	ND	1	2	1	5	
Fluoride	0.7	0.6	0.9	0.7	0.9	0.5	
Sulfate	12	11	4	18	15	187	
Calcium	2	3	2	2	3	45	
Magnesium	ND	ND	ND	ND	ND	28	
Potassium	2	1	1	ND	1	3	
Sodium	100	84	123	116	98	84	
Dissolved Aluminum	ND	ND	ND	ND	ND	ND	
Dissolved Arsenic	ND	ND	ND	ND	ND	ND	
Dissolved Barium	0.1	0.1	ND	ND	0.2	ND	
Dissolved Boron	0.1	ND	0.1	0.1	0.1	0.1	
Dissolved Cadmium	ND	ND	ND	ND	ND	ND	
Dissolved Chromium	ND	ND	ND	ND	ND	ND	
Dissolved Cobalt	ND	ND	ND	ND	ND	ND	
Dissolved Copper	ND	ND	ND	ND	ND	ND	
Dissolved Iron	ND	ND	ND	ND	0.07	ND	
Dissolved Lead	ND	ND	ND	ND	ND	ND	
Dissolved Manganese	ND	ND	ND	ND	ND	0.03	
Dissolved Molybdenum	ND	ND	ND	ND	ND	ND	
Dissolved Nickel	ND	ND	ND	ND	ND	ND	
Dissolved Selenium	ND	ND	ND	ND	ND	ND	
Dissolved Silver	ND	ND	ND	ND	ND	ND	
Dissolved Vanadium	ND	ND	ND	ND	ND	ND	
Dissolved Zinc	ND	ND	0.24	ND	ND	ND	

Total Iron	ND	0.08	ND	ND	0.26	6.17
Total Manganese	ND	ND	ND	ND	ND	0.03
Total Mercury	ND	ND	ND	ND	ND	ND

Location San Migal Springs
 WorkOrder S1606192
 LabID S1606192-001
 Date Sampled 6/12/17
 Date Received 6/14/17

Analyte
 pH 8.3
 Electrical Conductivity 183
 Total Dissolved Solids (180) 130
 Total Dissolved Solids (Calc) 90
 Total Alkalinity (as CaCO3) 90
 Hardness (Ca/Mg As CaCO3) 64
 Nitrate Nitrogen (As N) 0.1
 Nitrite Nitrogen (As N) ND
 Total Cyanide ND
 Total Recoverable Phenolics ND
 Resistivity 55
 Sodium Adsorption Ratio 0.57
 Bicarbonate as HCO3 109
 Carbonate as CO3 ND
 Hydroxide as OH ND
 Chloride 3
 Fluoride 0.3
 Nitrate+Nitrite as N 0.12
 Sulfate 2
 Calcium 16
 Magnesium 6
 Potassium 3
 Sodium 11
 Cation Sum 1.81
 Anion Sum 1.94
 Cation-Anion Balance 3.50
 Cation-Anion Difference 0.13
 Gross Alpha ND
 Gross Beta ND

Radium 226 (Dissolved)	ND
Radium 228 (Dissolved)	3.4 ± 3.0
Dissolved Aluminum	ND
Dissolved Arsenic	ND
Dissolved Barium	ND
Dissolved Boron	ND
Dissolved Cadmium	ND
Dissolved Chromium	ND
Dissolved Cobalt	ND
Dissolved Copper	ND
Dissolved Iron	ND
Dissolved Lead	ND
Dissolved Manganese	ND
Dissolved Molybdenum	ND
Dissolved Nickel	ND
Dissolved Selenium	ND
Dissolved Silver	ND
Dissolved Vanadium	ND
Dissolved Zinc	ND
Total Iron	0.78
Total Manganese	0.04
Total Mercury	ND

Third Quarter 2017 Lee Ranch Groundwater Analytical

Location	Pit 8	PDL 3	Dr. Springs	PDL #4	Four Corner in \PDL #5	PDL #2	
WorkOrder	S1707314	S1707314	S1707314	S1707314	S1707314	S1707314	
LabID	S1707314-001	S1707314-001	S1707314-001	S1707314-001	S1707314-001	S1707314-001	
Date Sampled	7/13/17	7/13/17	7/13/17	7/13/17	7/13/17	7/13/17	
DateReceived	7/21/17	7/21/17	7/21/17	7/21/17	7/21/17	7/21/17	
Analyte							
pH	9.6	8.8	8.7	8.8	Not sampled	8.4	9.5
Electrical Conductivity	694	528	396	459		834	574
Total Dissolved Solids (180)	410	320	240	280		550	340
Total Alkalinity (as CaCO3)	343	262	231	231		234	294
Nitrate Nitrogen (As N)	ND	ND	ND	ND		ND	ND
Total Cyanide	ND	ND	ND	ND		ND	ND
Total Recoverable Phenolics	ND	ND	ND	ND		ND	ND
Sodium Adsorption Ratio	21.3	9.92	12.0	14.1		2.29	20.5

Bicarbonate as HCO3	262	290	267	262	276	253
Carbonate as CO3	77	15	8	10	5	52
Chloride	2	2	ND	ND	5	1
Fluoride	1.0	0.7	0.6	0.9	0.5	1.0
Sulfate	16	22	11	14	189	7
Calcium	3	4	3	3	43	2
Magnesium	ND	3	ND	ND	27	ND
Potassium	2	ND	ND	ND	2	ND
Sodium	137	108	77	91	78	118
Dissolved Aluminum	ND	0.3	ND	ND	ND	ND
Dissolved Arsenic	ND	ND	ND	ND	ND	ND
Dissolved Barium	0.2	ND	ND	0.1	ND	ND
Dissolved Boron	0.1	0.1	ND	0.1	0.2	0.1
Dissolved Cadmium	ND	ND	ND	ND	ND	ND
Dissolved Chromium	ND	ND	ND	ND	ND	ND
Dissolved Cobalt	ND	ND	ND	ND	ND	ND
Dissolved Copper	0.01	ND	ND	ND	ND	ND
Dissolved Iron	ND	ND	ND	ND	ND	ND
Dissolved Lead	ND	ND	ND	ND	ND	ND
Dissolved Manganese	ND	ND	ND	ND	ND	ND
Dissolved Molybdenum	ND	ND	ND	ND	ND	ND
Dissolved Nickel	ND	ND	ND	ND	ND	ND
Dissolved Selenium	ND	ND	ND	ND	ND	ND
Dissolved Silver	ND	ND	ND	ND	ND	ND
Dissolved Vanadium	ND	ND	ND	ND	ND	ND
Dissolved Zinc	ND	ND	ND	ND	ND	0.26
Total Iron	ND	ND	0.29	ND	2.55	0.09
Total Manganese	ND	ND	0.02	ND	0.02	ND
Total Mercury	ND	ND	ND	ND	ND	ND

Fourth Quarter 2017 Lee Ranch Groundwater Analytical

Location	Pit 8 Well	Dr. Springs	PDL-2	PDL-3	PDL-4	PDL-5	Four Corner in use well
WorkOrder	S1710396	S1710396	S1710396	S1710396	S1710396	S1710396	S1710396
LabID	S1710396-001	S1710396-001	S1710396-001	S1710396-001	S1710396-001	S1710396-001	S1710396-001
Date Sampled	Pit 8 Well	Dr. Springs	PDL 2	PDL 3	PDL 4	PDL 5	Four Corner in use Well
DateReceived	10/26/17	10/26/17	10/26/17	10/26/17	10/26/17	10/26/17	10/26/17
Analyte							
pH		9.4	8.3	9.6	8.9	8.8	8.4
							8.4

Electrical Conductivity	918	454	580	542	464	830	922
Total Dissolved Solids (180)	600	270	320	310	280	530	590
Total Alkalinity (as CaCO3)	455	227	312	293	230	235	264
Nitrate Nitrogen (As N)	ND	ND	ND	ND	ND	ND	ND
Total Cyanide	ND	ND	ND	ND	ND	ND	ND
Total Recoverable Phenolics	ND	ND	ND	ND	ND	ND	ND
Sodium Adsorption Ratio	34.2	8.46	26.2	25.1	16.3	2.61	4.99
Bicarbonate as HCO3	381	272	260	322	258	277	310
Carbonate as CO3	86	ND	60	17	11	5	6
Chloride	3	1	1	2	1	5	8
Fluoride	1.3	0.6	1.0	0.7	0.8	0.5	1.3
Sulfate	21	12	4	17	14	181	176
Calcium	3	9	2	2	3	41	32
Magnesium	ND	ND	ND	ND	ND	25	17
Potassium	3	2	1	ND	1	2	3
Sodium	222	91	134	121	100	87	141
Dissolved Aluminum	ND	ND	ND	ND	ND	ND	ND
Dissolved Arsenic	ND	ND	ND	ND	ND	ND	ND
Dissolved Barium	0.1	ND	ND	ND	0.1	ND	ND
Dissolved Boron	0.2	ND	0.1	0.1	0.1	0.1	0.2
Dissolved Cadmium	ND	ND	ND	ND	ND	ND	ND
Dissolved Chromium	ND	ND	ND	ND	ND	ND	ND
Dissolved Cobalt	ND	ND	ND	ND	ND	ND	ND
Dissolved Copper	0.01	ND	ND	ND	ND	ND	ND
Dissolved Iron	ND	ND	ND	ND	ND	ND	ND
Dissolved Lead	ND	ND	ND	ND	ND	ND	ND
Dissolved Manganese	ND	ND	ND	ND	ND	0.03	ND
Dissolved Molybdenum	ND	ND	ND	ND	ND	ND	ND
Dissolved Nickel	ND	ND	ND	ND	ND	ND	ND
Dissolved Selenium	ND	ND	ND	ND	ND	ND	ND
Dissolved Silver	ND	ND	ND	ND	ND	ND	ND
Dissolved Vanadium	ND	ND	ND	ND	ND	ND	ND
Dissolved Zinc	ND	ND	0.47	ND	ND	ND	0.04
Total Iron	0.06	0.32	ND	ND	ND	2.50	0.60
Total Manganese	ND	0.08	ND	ND	ND	0.03	ND
Total Mercury	ND	ND	ND	ND	ND	ND	ND