



STATE OF
COLORADO

Ebert - DNR, Jared <jared.ebert@state.co.us>

M-1980-183 Pit 29 Groundwater Level Monitoring

Joshua Oliver <joliver@brannan1.com>

Fri, Jan 18, 2019 at 4:59 PM

To: "Jared.Ebert@state.co.us" <Jared.Ebert@state.co.us>

Cc: Fred Marvel <fmarvel@brannan1.com>, Alex Schatz <aschatz@brannan1.com>

Jared,

Please find the attached Q4 2018 groundwater level monitoring reports.

Let me know if there are any questions.

Joshua Oliver

Environmental Manager



joliver@brannan1.com

O: 303.853.5159 |M: 303.472.1736 |F: 303.853.5233



4 attachments



Q4 2018 Well Measurement Letter.pdf
44K



MW4 and Reservoir Chart.pdf
979K



Piezometer Depth to Groundwater Chart.pdf
307K



Q4 2018 Piezometer Table.pdf
33K



January 18, 2019
Colorado Division of Reclamation, Mining and Safety
1313 Sherman St. Room 215
Denver, CO 80203

Re: Pit 29 M-1980-183 Groundwater Level Monitoring

Mr. Jared Ebert:

Please find the attached MW-1, MW-2 and MW-4 quarterly readings for the Pit 29 location.

MW-4 datalogger monitoring and manual depth to groundwater monitoring continues to verify the functionality of the French drain project, which was completed in 2015 along the southern boundary of the western half of the property.

Groundwater level in MW-2 is within normal seasonal fluctuation ranges as compared to the last two years. Groundwater level in MW-1 appears to be elevated by several feet, as compared to historical data. There are no known offsite impacts, and monitoring will continue to be conducted.

Brannan has not identified any issues during analysis of this data.

Sincerely,

A handwritten signature in blue ink that reads "Josh Oliver". The signature is fluid and extends with a long horizontal line to the right.

Joshua Oliver
Environmental Manager
(303) 472-1736
joliver@brannan1.com

Brannan Pit #29				
Water Level Measurements				
Date Month-Year	Depth to Water (ft)			
	MW-1 OUT	MW-2 OUT	MW-3 OUT	MW-4 OUT
12/1/2005	21.50	22.50	11	NA
1/1/2006	23.00	23.00	13	NA
3/1/2006	22.00	20.00	11.5	NA
5/1/2006	21.50	20.00	10.5	NA
6/1/2010	20.50	17.70	N/A	NA
9/1/2010	20.00	18.90	N/A	21.40
12/1/2010	20.90	23.17	N/A	26.25
3/1/2011	20.57	19.40	N/A	24.66
6/1/2011	19.40	15.74	N/A	21.80
9/1/2011	18.94	18.63	N/A	21.08
12/1/2011	20.20	21.10	N/A	21.15
3/1/2012	20.95	10.30	N/A	17.75
6/1/2012	20.89	18.47	N/A	14.09
9/12/2012	20.97	19.21	N/A	5.64
11/12/2012	-	-	N/A	4.84
12/12/2012	21.79	20.54	N/A	5.67
4/13/2013	22.84	18.16	N/A	5.61
4/22/2013	22.55	19.70	N/A	5.30
6/13/2013	22.48	18.78	N/A	5.60
9/1/2013	21.66	19.15	N/A	4.52
12/13/2013	23.19	20.60	N/A	5.60
3/14/2014	24.15	16.75	N/A	6.09
6/14/2014	23.32	17.76	N/A	5.18
9/14/2014	22.91	18.80	N/A	4.64
11/14/2014	23.60	19.62	N/A	5.22
12/1/2014	24.85	20.48	N/A	6.02
3/31/2015	26.87	17.50	N/A	6.78
6/15/2015	21.79	16.69	N/A	4.79
9/15/2015	19.94	17.75	N/A	5.27
12/15/2015	21.42	19.15	N/A	6.54
4/6/2016	23.11	20.06	N/A	9.15
7/13/2016	20.66	18.64	N/A	6.33
8/30/2016	20.61	19.86	N/A	9.01
9/27/2016	20.78	20.37	N/A	8.77
10/31/2016	20.53	20.91	N/A	9.09
11/21/2016	20.58	21.05	N/A	9.05
12/28/2016	21.61	21.93	N/A	9.15
1/26/2017	22.49	22.31	N/A	9.20
2/27/2017	23.44	22.60	N/A	9.20
3/28/2017	23.35	19.78	N/A	9.19
5/22/2017	21.12	19.25	N/A	8.90
6/14/2017	20.76	18.88	N/A	8.91
7/17/2017	19.68	18.60	N/A	8.94
8/11/2017	19.81	19.5	N/A	8.11
9/11/2017	19.97	19.60	N/A	8.96
10/16/2017	20.42	20.30	N/A	8.99
11/21/2017	22.48	21.58	N/A	9.12
12/19/2017	22.39	22.14	N/A	9.06
1/19/2018	23.32	22.58	N/A	9.22
2/16/2018	23.90	22.81	N/A	9.27
3/12/2018	24.48	23.00	N/A	9.38
4/30/2018	22.80	20.19	N/A	9.22
5/21/2018	21.95	19.75	N/A	9.18
6/22/2018	20.80	19.08	N/A	9.05
7/12/2018	20.50	19.24	N/A	9.06

8/15/2018	20.60	19.83	N/A	9.01
9/5/2018	21.75	20.11	NA	9.05
10/18/2018	17.95	20.81	NA	9.05
11/19/2018	17.04	21.48	NA	9.15
12/14/2018	17.34	21.87	NA	9.20

--	--	--	--	--



