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Oklahoma Water Resources Board

Robin Simmons
Regional Land Manager

June 8, 2020

Matt Cogburn
Oklahoma Water Resources Board
3800 N. Classen
Oklahoma City, OK 73118

Re: Martin Marietta/Material Producers Davis Quarry Q1 2020 Monitoring Report

Dear Mr. Cogburn:

Attached please find the Q1 2020 monitoring report and associated data and calculations for Martin Marietta/Material Producers' Davis Quarry.

As is typical at the Davis Quarry, in Q1 we see more precipitation and runoff entering the pit than the total water we use from the pit. Also typically, we do not see a rise in water levels in the pit that correspond to the additional precipitation and runoff that we know is entering the pit and not being used. Thus we still see a net decrease of water within the pit indicating that we continue to augment groundwater through the pit.

Sincerely,

A handwritten signature in blue ink that reads 'Robin L. Simmons'.

Robin L. Simmons
Regional Land Manager

MMM Davis Quarry 2020 Monitoring Report

All volumes are in acre-feet.

	Total Groundwater Entering Pit	Total Stormwater Entering Pit	Total Stormwater Diverted from Pit	Total Water Diverted	Water Sent To Holding Basin	Groundwater Augmentation	Streamwater Augmentation	Consumptive Use of Stormwater	Consumptive Use of Groundwater	Groundwater Pumped From Well
January-20	-1.30	18.47	18.47	17.17	N/A	-1.30	0.00	9.15	0.00	0.00
February-20	-5.66	11.19	11.19	5.53	N/A	-5.66	0.00	5.47	0.00	0.00
March-20	-13.32	21.03	21.03	7.70	N/A	-13.32	0.00	7.17	0.00	0.00
1st QTR Totals	-20.28	50.69	50.69	30.41	0.00	-20.28	0.00	21.79	0.00	0.00

Note: Negative entries for Total Groundwater Entering Pit indicate that stormwater is entering the rock formation via the pit.

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Davis Water Balance

	Jan-20 31	Feb-20 28	Mar-20 31
Monitoring Period, Days			
Monthly Production, tons	127,571	116,816	163,132
Product Moisture Content	3.5%	3.5%	3.5%
Water Truck Loads	12	13	22
Month End Water Elevs.			
1) Freshwater pond, depth to water	19.362	18.223	19.75
2) Pit Sump, depth to water	13.37	13.392	12.251
Pond Surface Acres			
1) Freshwater pond	1.1	1.1	1.1
2) Pit Sump	2.3	2.3	2.3
Total surface acres	3.4	3.4	3.4
Pond Water Volume Change			
1) Freshwater pond	3.656	-1.253	1.680
2) Pit Sump	2.997	0.051	-2.624
3) Change in settling pond storage	0.000	0.000	0.000
Net Volume Change	6.653	-1.202	-0.945
Water Inputs, ac-ft			
Rural Water	0.130	0.132	0.361
Lake Water	0.000	0.000	0.000
Well Water	0.000	0.000	0.000
Precipitation	18.472	11.192	21.025
Total Water Input	18.602	11.323	21.387
Water Usage, ac-ft			
Product moisture content	3.285	3.008	4.201
Haul road dust control	0.368	0.233	0.491
Evaporation losses	0.436	0.480	0.799
Misc usage	6.56	3.14	3.52
Total Water Usage, Ac-ft	10.647	6.864	9.011
Net Water Input	7.955	4.459	12.376
emergency storage of precipitation and runoff, ac-ft			
Groundwater Inflow	-1.302	-5.662	-13.320
Groundwater Inflow, Avg Ac-ft/Day	-0.042	-0.202	-0.430
Groundwater Inflow, Avg Gallons/Day	-13,681	-65,887	-140,014

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Consumptive Use			
	January	February	March
Water Truck Usage	0.37	0.23	0.49
Moisture Content of Product Shipped	2.22	2.10	3.16
Misc on site use	-	-	-
Misc off site	6.56	3.14	3.52
Total	9.15	5.47	7.17

Shipped Tons			
	January	February	March
Base	29,088	30,835	45,028
Coarse Aggregate	52,412	46,515	56,544
Fine Aggregate	20,991	18,524	34,684
Total	102,491	95,875	136,256
Moisture Shipped	2.22	2.10	3.16

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January Precipitation Data

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PIT RUNOFF ASSUMPTIONS

Hydrologic Soil Group	D	
Land Use	gravel road	
AMC Condition	II (ave)	
CN (pit fringe)	88	area draining into pit
CN (pit)	100	area with direct interception
S (pit fringe)	1.364	area draining into pit
S (pit)	0.000	area with direct interception
Pit - Direct Interception (>95 ft deep)	65.19	subject to refinement
Pit fringe (area drains to pit)	94.06	subject to refinement
Drainage to Pit (total area)	159.26	subject to refinement

Quarry areaFringe area

Date	Precip, in.	Runoff, in.	Runoff, in.	Evapor, in/day
1-Jan	0.00	0.00	0.00	0.05
2-Jan	0.00	0.00	0.00	0.04
3-Jan	0.00	0.00	0.00	0.06
4-Jan	0.00	0.00	0.00	0.05
5-Jan	0.00	0.00	0.00	0.07
6-Jan	0.00	0.00	0.00	0.06
7-Jan	0.00	0.00	0.00	0.09
8-Jan	0.00	0.00	0.00	0.09
9-Jan	0.00	0.00	0.00	0.04
10-Jan	0.83	0.83	0.00	0.05
11-Jan	0.04	0.04	0.00	0.04
12-Jan	0.00	0.00	0.00	0.05
13-Jan	0.00	0.00	0.00	0.03
14-Jan	0.01	0.01	0.00	0.08
15-Jan	0.01	0.01	0.00	0.08
16-Jan	0.67	0.67	0.00	0.02
17-Jan	0.89	0.89	0.00	0.03
18-Jan	0.00	0.00	0.00	0.08
19-Jan	0.00	0.00	0.00	0.04
20-Jan	0.00	0.00	0.00	0.05
21-Jan	0.01	0.01	0.00	0.02
22-Jan	0.36	0.36	0.00	0.02
23-Jan	0.06	0.06	0.00	0.05
24-Jan	0.00	0.00	0.00	0.06
25-Jan	0.02	0.02	0.00	0.06
26-Jan	0.01	0.01	0.00	0.06
27-Jan	0.00	0.00	0.00	0.05
28-Jan	0.48	0.48	0.00	0.02
29-Jan	0.01	0.01	0.00	0.02
30-Jan	0.00	0.00	0.00	0.01
31-Jan	0.00	0.00	0.00	0.05
		3.40	0.00	
Volume, ac-ft		18.47	0.00	1.539
Total Vol, ac-ft		18.47		

February Precipitation Data

PIT RUNOFF ASSUMPTIONS

Hydrologic Soil Group	D	
Land Use	gravel road	
AMC Condition	II (ave)	
CN (pit fringe)	88	area draining into pit
CN (pit)	100	area with direct interception
S (pit fringe)	1.364	area draining into pit
S (pit)	0.000	area with direct interception
Pit - Direct Interception (>95 ft deep)	65.19	subject to refinement
Pit fringe (area drains to pit)	94.06	subject to refinement
Drainage to Pit (total area)	159.26	subject to refinement

Quarry areaFringe area

Date	Precip, in.	Runoff, in.	Runoff, in.	Evapor, in/day
1-Feb	0.00	0.00	0.00	0.09
2-Feb	0.00	0.00	0.00	0.11
3-Feb	0.00	0.00	0.00	0.09
4-Feb	0.10	0.10	0.00	0.01
5-Feb	0.41	0.41	0.00	0.01
6-Feb	0.31	0.31	0.00	0.04
7-Feb	0.10	0.10	0.00	0.07
8-Feb	0.00	0.00	0.00	0.07
9-Feb	0.13	0.13	0.00	0.05
10-Feb	0.33	0.33	0.00	0.02
11-Feb	0.03	0.03	0.00	0.02
12-Feb	0.59	0.59	0.00	0.02
13-Feb	0.00	0.00	0.00	0.05
14-Feb	0.00	0.00	0.00	0.06
15-Feb	0.00	0.00	0.00	0.05
16-Feb	0.00	0.00	0.00	0.06
17-Feb	0.01	0.01	0.00	0.08
18-Feb	0.00	0.00	0.00	0.08
19-Feb	0.00	0.00	0.00	0.06
20-Feb	0.02	0.02	0.00	0.04
21-Feb	0.00	0.00	0.00	0.06
22-Feb	0.00	0.00	0.00	0.07
23-Feb	0.00	0.00	0.00	0.03
24-Feb	0.00	0.00	0.00	0.05
25-Feb	0.00	0.00	0.00	0.09
26-Feb	0.03	0.03	0.00	0.07
27-Feb	0.00	0.00	0.00	0.12
28-Feb	0.00	0.00	0.00	0.12
		0.00	0.00	
		0.00	0.00	
		0.00	0.00	
		2.06	0.00	
Volume, ac-ft		11.19	0.00	1.693
Total Vol, ac-ft		11.19		

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March Precipitation Data

PIT RUNOFF ASSUMPTIONS

Hydrologic Soil Group	D	
Land Use	gravel road	
AMC Condition	II (ave)	
CN (pit fringe)	88	area draining into pit
CN (pit)	100	area with direct interception
S (pit fringe)	1.364	area draining into pit
S (pit)	0.000	area with direct interception
Pit - Direct Interception (>95 ft deep)	65.19	subject to refinement
Pit fringe (area drains to pit)	94.06	subject to refinement
Drainage to Pit (total area)	159.26	subject to refinement

Quarry area Fringe area

Date	Precip, in.	Runoff, in.	Runoff, in.	Evapor, in/day
1-Mar	0.00	0.00	0.00	0.13
2-Mar	0.00	0.00	0.00	0.08
3-Mar	0.08	0.08	0.00	0.06
4-Mar	0.02	0.02	0.00	0.03
5-Mar	0.00	0.00	0.00	0.11
6-Mar	0.00	0.00	0.00	0.11
7-Mar	0.00	0.00	0.00	0.11
8-Mar	0.00	0.00	0.00	0.04
9-Mar	0.11	0.11	0.00	0.12
10-Mar	0.00	0.00	0.00	0.11
11-Mar	0.00	0.00	0.00	0.10
12-Mar	0.00	0.00	0.00	0.14
13-Mar	0.44	0.44	0.00	0.02
14-Mar	0.57	0.57	0.00	0.03
15-Mar	0.02	0.02	0.00	0.03
16-Mar	0.06	0.06	0.00	0.04
17-Mar	0.92	0.92	0.00	0.03
18-Mar	0.17	0.17	0.00	0.08
19-Mar	0.79	0.79	0.00	0.12
20-Mar	0.00	0.00	0.00	0.06
21-Mar	0.01	0.01	0.00	0.09
22-Mar	0.19	0.19	0.00	0.04
23-Mar	0.00	0.00	0.00	0.06
24-Mar	0.01	0.01	0.00	0.15
25-Mar	0.00	0.00	0.00	0.18
26-Mar	0.00	0.00	0.00	0.17
27-Mar	0.00	0.00	0.00	0.06
28-Mar	0.00	0.00	0.00	0.24
29-Mar	0.00	0.00	0.00	0.13
30-Mar	0.47	0.47	0.00	0.02
31-Mar	0.01	0.01	0.00	0.12
		3.87	0.00	
Volume, ac-ft		21.03	0.00	2.819
Total Vol, ac-ft		21.03		