



Robin Simmons  
Regional Land Manager

June 19, 2018

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**JUN 19 2019**

**Oklahoma Water Resources Board**

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

Re: Martin Marietta/Material Producers Davis Quarry Q1 2019 Monitoring Report

Dear Mr. Cogburn:

Attached please find the Q1 2019 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 cursive script that reads 'Robin L. Simmons'.

Robin L. Simmons  
Regional Land Manager

### MMM Davis Quarry 2019 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-19	-7.82	9.24	9.24	1.42	N/A	-7.82	0.00	14.84	0.00	0.00
February-19	-10.70	10.42	10.42	-0.28	N/A	-10.70	0.00	2.96	0.00	0.00
March-19	-0.55	10.05	10.05	9.50	N/A	-0.55	0.00	4.06	0.00	0.00
<b>1st QTR Totals</b>	<b>-19.07</b>	<b>29.71</b>	<b>29.71</b>	<b>10.64</b>	<b>0.00</b>	<b>-19.07</b>	<b>0.00</b>	<b>21.86</b>	<b>0.00</b>	<b>0.00</b>

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## Davis Water Balance

	Jan-19	Feb-19	Mar-19
<b>Monitoring Period, Days</b>	31	28	31
<b>Monthly Production, tons</b>	126,209	133,315	140,391
<b>Product Moisture Content</b>	3.5%	3.5%	3.5%
<b>Water Truck Loads</b>	22	39	29
<b>Month-End Water Elevs.</b>			
1) Freshwater pond, depth to water	17.433	17.808	13.326
2) Pit Sump, depth to water	15	7.607	11.733
<b>Pond Surface Acres</b>			
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
<b>Pond Water Volume Change</b>			
1) Freshwater pond	-3.160	0.413	-4.930
2) Pit Sump	-9.669	-4.209	9.490
3) Change in settling pond storage	0.000	0.000	0.000
<b>Net Volume Change</b>	<b>-12.830</b>	<b>-3.797</b>	<b>4.560</b>
<b>Water Inputs, ac-ft</b>			
Rural Water	1.336	0.810	0.882
Lake Water	0.000	0.000	0.000
Well Water	0.000	0.000	0.000
Precipitation	9.244	10.420	10.045
<b>Total Water Input</b>	<b>10.580</b>	<b>11.230</b>	<b>10.927</b>
<b>Water Usage, ac-ft</b>			
Product moisture content	3.250	3.433	3.615
Haul road dust control	0.430	0.485	0.890
Evaporation losses	0.369	0.406	0.857
Misc usage	11.54	-	0.46
<b>Total Water Usage, Ac-ft</b>	<b>15.586</b>	<b>4.324</b>	<b>5.818</b>
<b>Net Water Input</b>	<b>-5.007</b>	<b>6.905</b>	<b>5.109</b>
<b>emergency storage of precipitation and runoff, ac-ft</b>			
<b>Groundwater Inflow</b>	<b>-7.823</b>	<b>-10.702</b>	<b>-0.549</b>
<b>Groundwater Inflow, Avg Ac-ft/Day</b>	<b>-0.252</b>	<b>-0.382</b>	<b>-0.018</b>
<b>Groundwater Inflow, Avg Gallons/Day</b>	<b>-82,229</b>	<b>-124,542</b>	<b>-5,772</b>

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Consumptive-Use

	January	February	March
Water Truck Usage	0.43	0.48	0.89
Moisture Content of Product Shipped	2.87	2.47	2.71
Misc on site use	-	-	-
Misc off site	11.54	-	0.46
Total	14.84	2.96	4.06

Shipped Tons	January	February	March
Base	52,546	41,837	37,631
Coarse Aggregate	55,131	63,716	85,063
Fine Aggregate	21,328	14,093	15,190
Total	129,005	119,646	137,885
Moisture Shipped	2.87	2.47	2.71

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January 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)	64.12	subject to refinement
Pit fringe (area drains to pit)	161.49	subject to refinement
Drainage to Pit (total area)	225.61	subject to refinement

Quarry area Fringe area

Date	Precip, in.	Runoff, in.	Runoff, in.	Evapor, in/day
1-Jan	0.00	0.00	0.00	0.01
2-Jan	0.00	0.00	0.00	0.00
3-Jan	0.51	0.51	0.00	0.00
4-Jan	0.12	0.12	0.00	0.05
5-Jan	0.00	0.00	0.00	0.06
6-Jan	0.00	0.00	0.00	0.07
7-Jan	0.00	0.00	0.00	0.10
8-Jan	0.00	0.00	0.00	0.06
9-Jan	0.00	0.00	0.00	0.06
10-Jan	0.00	0.00	0.00	0.03
11-Jan	0.79	0.79	0.00	0.01
12-Jan	0.02	0.02	0.00	0.01
13-Jan	0.00	0.00	0.00	0.01
14-Jan	0.00	0.00	0.00	0.04
15-Jan	0.00	0.00	0.00	0.02
16-Jan	0.00	0.00	0.00	0.02
17-Jan	0.00	0.00	0.00	0.04
18-Jan	0.01	0.01	0.00	0.05
19-Jan	0.17	0.17	0.00	0.02
20-Jan	0.06	0.06	0.00	0.04
21-Jan	0.00	0.00	0.00	0.06
22-Jan	0.05	0.05	0.00	0.02
23-Jan	0.00	0.00	0.00	0.06
24-Jan	0.00	0.00	0.00	0.04
25-Jan	0.00	0.00	0.00	0.03
26-Jan	0.00	0.00	0.00	0.06
27-Jan	0.00	0.00	0.00	0.10
28-Jan	0.00	0.00	0.00	0.06
29-Jan	0.00	0.00	0.00	0.04
30-Jan	0.00	0.00	0.00	0.06
31-Jan	0.00	0.00	0.00	0.04
		1.73	0.00	
<b>Volume, ac-ft</b>		<b>9.24</b>	<b>0.00</b>	<b>1.302</b>
<b>Total Vol, ac-ft</b>		<b>9.24</b>		

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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)	64.12	subject to refinement
Pit fringe (area drains to pit)	161.49	subject to refinement
Drainage to Pit (total area)	225.61	subject to refinement

**Quarry area Fringe area**

Date	Precip, in.	Runoff, in.	Runoff, in.	Evapor, in/day
1-Feb	0.00	0.00	0.00	0.03
2-Feb	0.00	0.00	0.00	0.02
3-Feb	0.00	0.00	0.00	0.07
4-Feb	0.00	0.00	0.00	0.09
5-Feb	0.43	0.43	0.00	0.05
6-Feb	0.17	0.17	0.00	0.01
7-Feb	0.48	0.48	0.00	0.04
8-Feb	0.00	0.00	0.00	0.04
9-Feb	0.00	0.00	0.00	0.02
10-Feb	0.02	0.02	0.00	0.01
11-Feb	0.17	0.17	0.00	0.02
12-Feb	0.00	0.00	0.00	0.08
13-Feb	0.00	0.00	0.00	0.10
14-Feb	0.00	0.00	0.00	0.13
15-Feb	0.00	0.00	0.00	0.04
16-Feb	0.00	0.00	0.00	0.01
17-Feb	0.00	0.00	0.00	0.07
18-Feb	0.00	0.00	0.00	0.04
19-Feb	0.32	0.32	0.00	0.01
20-Feb	0.01	0.01	0.00	0.07
21-Feb	0.00	0.00	0.00	0.05
22-Feb	0.25	0.25	0.00	0.01
23-Feb	0.05	0.05	0.00	0.17
24-Feb	0.00	0.00	0.00	0.10
25-Feb	0.00	0.00	0.00	0.10
26-Feb	0.00	0.00	0.00	0.05
27-Feb	0.05	0.05	0.00	0.01
28-Feb	0.00	0.00	0.00	0.01
		0.00	0.00	
		0.00	0.00	
		0.00	0.00	
		1.95	0.00	
<b>Volume, ac-ft</b>		<b>10.42</b>	<b>0.00</b>	<b>1.434</b>
<b>Total Vol, ac-ft</b>		<b>10.42</b>		

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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)	64.12	subject to refinement
Pit fringe (area drains to pit)	161.49	subject to refinement
Drainage to Pit (total area)	225.61	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	0.03
2-Mar	0.03	0.03	0.00	0.01
3-Mar	0.05	0.05	0.00	0.02
4-Mar	0.00	0.00	0.00	0.06
5-Mar	0.00	0.00	0.00	0.08
6-Mar	0.00	0.00	0.00	0.10
7-Mar	0.00	0.00	0.00	0.08
8-Mar	0.00	0.00	0.00	0.03
9-Mar	0.19	0.19	0.00	0.20
10-Mar	0.30	0.30	0.00	0.02
11-Mar	0.13	0.13	0.00	0.04
12-Mar	0.48	0.48	0.00	0.02
13-Mar	0.59	0.59	0.00	0.19
14-Mar	0.00	0.00	0.00	0.18
15-Mar	0.00	0.00	0.00	0.12
16-Mar	0.00	0.00	0.00	0.11
17-Mar	0.00	0.00	0.00	0.13
18-Mar	0.00	0.00	0.00	0.14
19-Mar	0.00	0.00	0.00	0.15
20-Mar	0.03	0.03	0.00	0.12
21-Mar	0.00	0.00	0.00	0.14
22-Mar	0.00	0.00	0.00	0.12
23-Mar	0.00	0.00	0.00	0.10
24-Mar	0.00	0.00	0.00	0.13
25-Mar	0.00	0.00	0.00	0.12
26-Mar	0.00	0.00	0.00	0.13
27-Mar	0.00	0.00	0.00	0.13
28-Mar	0.00	0.00	0.00	0.11
29-Mar	0.00	0.00	0.00	0.08
30-Mar	0.08	0.08	0.00	0.04
31-Mar	0.00	0.00	0.00	0.11
		1.88	0.00	
<b>Volume, ac-ft</b>		<b>10.05</b>	<b>0.00</b>	<b>3.024</b>
<b>Total Vol, ac-ft</b>		<b>10.05</b>		

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