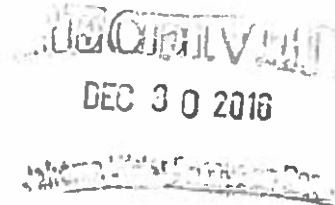




Robin Simmons
Regional Land Manager

December 30, 2016



Kent Wilkins
Oklahoma Water Resources Board
3800 N. Classen
Oklahoma City, OK 73118

Re: Martin Marietta/Material Producers Davis Quarry Q3 2016 Monitoring Report

Dear Mr. Wilkins:

Attached please find the Q3 2016 monitoring report and associated data and calculations for Martin Marietta/Material Producers' Davis Quarry. During Q3 at the Davis Quarry a new water recovery system was built and brought online to maximize the recovery and reuse of water from the plant. In addition, the in pit sump is being relocated to a lower level. As a result of these changes, the monitoring of water levels has been temporarily suspended while the new water retention facilities are established. We expect full monitoring of pond water levels to be established in January 2017.

As is typical at the Davis Quarry, in Q3 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, EIT
Land Manager

North Texas/Oklahoma District
1503 LBJ Parkway Suite 400, Dallas, Texas 75234
t. (972) 350-8228 f. (972) 647-3363 m. (214) 213-6024 e. Robin.Simmons@martinmarietta.com
www.martinmarietta.com

MMM Davis Quarry 2016 Monitoring Report

All volumes are in acre-feet.

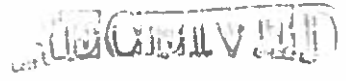

	Total Groundwater Entering Pit		Total Stormwater Diverted from Pit		Total Water Diverted	Water Sent To Holding Basin	Groundwater Augmentation	Streamwater Augmentation	Consumptive Use of Stormwater	Consumptive Use of Groundwater	Groundwater Pumped From Well
	Groundwater Entering Pit	Stormwater Entering Pit	Stormwater Diverted from Pit	Groundwater Entering Pit							
January-16	-2.71	2.26	2.26	-0.44	N/A	-2.71	0.00	0.00	2.78	0.00	0.00
February-16	-5.50	6.43	6.43	0.93	N/A	-5.50	0.00	0.00	3.77	0.00	0.00
March-16	-7.84	11.82	11.82	3.98	N/A	-7.84	0.00	0.00	3.44	0.00	0.00
1st QTR Totals	-16.05	20.52	20.52	4.47	0.00	-16.05	0.00	0.00	9.98	0.00	0.00
April-16	-20.74	28.24	28.24	7.49	N/A	-20.74	0.00	0.00	3.66	0.00	0.00
May-16	-13.77	12.28	12.28	-1.49	N/A	-13.77	0.00	0.00	2.96	0.00	0.00
June-16	-4.43	9.88	9.88	5.45	N/A	-4.43	0.00	0.00	5.84	0.00	0.00
2nd QTR Totals	-38.94	50.39	50.39	11.45	0.00	-38.94	0.00	0.00	12.46	0.00	0.00
July-16		4.08	4.08	4.08	N/A		0.00	0.00	5.79	0.00	0.00
August-16		8.74	8.74	8.74	N/A		0.00	0.00	6.97	0.00	0.00
September-16		9.51	9.51	9.51	N/A		0.00	0.00	4.57	0.00	0.00
3rd QTR Totals		22.33	22.33	22.33	0.00		0.00	0.00	17.32	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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Consumptive Use	January	February	March	April	May	June	July	August	September
Water Truck Usage	0.46	0.52	0.71	0.64	-	1.50	2.46	3.81	1.41
Moisture Content of Product Shipped	2.30	3.25	2.74	3.02	2.96	4.33	3.32	3.16	3.15
Misc on site use	-	-	-	-	-	-	-	-	-
Misc off site	-	-	-	-	-	-	-	-	-
Total	2.76	3.77	3.44	3.66	2.96	5.84	5.79	6.97	4.57

Shipped Tons	January	February	March	April	May	June	July	August	September
Base	35,366	27,088	29,170	28,008	34,258	49,070	23,333	26,974	33,810
Coarse Aggregate	57,982	74,390	65,711	56,491	68,262	61,094	56,061	67,778	52,775
Fine Aggregate	16,218	43,194	30,304	43,155	32,076	63,860	55,748	43,349	44,429
Total	109,566	144,673	125,185	127,655	134,596	174,024	135,142	138,101	131,014
Moisture Shipped	2.30	3.25	2.74	3.02	2.96	4.33	3.32	3.16	3.15


 DEC 30 2016


Davis Water Balance

	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16
		31	29	31	30	31	30	31	31	30
Monitoring Period, Days		15	17	23	21	0	49	85	124	46
Monthly Production, tons		113,229	107,164	120,892	104,186	63,864	114,429	114,544	127,370	115,167
Product Moisture Content		3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Water Truck Loads										
Month End Water Elevs.										
1) Freshwater pond, depth to water	2.619	7.269	9.277	9.937	6.082	10.517	8.442			
2) Pit Sump, depth to water	10.409	9.321	11.648	10.347	10.12	8.193	12.872			
Pond Surface Acres										
1) Freshwater pond	0.937	0.937	0.937	0.937	0.937	0.937	0.937			
2) Pit Sump	0.322	0.322	0.322	0.322	0.322	0.322	0.322			
Total surface acres	1.259	1.259	1.259	1.259	1.259	1.259	1.259			
Pond Water Volume Change										
1) Freshwater pond	-4.357	-1.881	-0.749	-0.618	3.612	-4.156	1.944			
2) Pit Sump	0.350	-0.749	0.419	0.073	0.073	0.620	-1.507			
3) Change in settling pond storage	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Net Volume Change	-4.007	-2.631	-0.079	-0.199	3.685	-3.535	0.438			
Water Inputs, ac-ft										
Rural Water		0.018	0.033	0.043	0.033	0.028	0.014	0.052	0.022	0.000
Lake Water		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Well Water		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Precipitation		2.265	6.432	11.823	28.238	12.276	9.875	4.077	8.743	9.513
Total Water Input		2.283	6.466	11.866	28.271	12.304	9.890	4.129	8.765	9.513
Water Usage, ac-ft										
Product moisture content		2.916	2.760	3.113	2.683	1.645	2.947	2.950	3.280	2.966
Haul road dust control		0.460	0.522	0.706	0.644	0.000	1.504	2.609	3.805	1.412
Evaporation losses		0.207	0.316	0.407	0.515	0.424	0.574	0.000	0.000	0.000
Misc usage										
Total Water Usage, Ac-ft		3.583	3.597	4.226	3.842	2.068	5.024	5.558	7.086	4.378
Net Water Input		-1.300	2.868	7.640	24.429	10.236	4.865	-1.429	1.679	5.135
emergency storage of precipitation and runoff, ac-ft										
Groundwater Inflow		-2.707	-5.499	-7.840	-20.744	-13.771	-4.428			
Groundwater Inflow, Avg Ac-ft/Day		-0.087	-0.190	-0.253	-0.691	-0.444	-0.148			
Groundwater Inflow, Avg Gallons/Day		-28,450	-61,791	-82,407	-225,313	-144,751	-48,093			

11/23/16

DEC 30 2016

11/23/16

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)	54.36	subject to refinement
Pit fringe (area drains to pit)	68.34	subject to refinement
Drainage to Pit (total area)	122.70	subject to refinement

Quarry area Fringe area

Date	Precip, in.	Runoff, in.	Runoff, in.	Evapor, in/day
1-Jul	0.00	0.00	0.00	0.19
2-Jul	0.00	0.00	0.00	0.23
3-Jul	0.10	0.10	0.00	0.19
4-Jul	0.00	0.00	0.00	0.17
5-Jul	0.00	0.00	0.00	0.20
6-Jul	0.00	0.00	0.00	0.24
7-Jul	0.00	0.00	0.00	0.25
8-Jul	0.02	0.02	0.00	0.21
9-Jul	0.01	0.01	0.00	0.14
10-Jul	0.00	0.00	0.00	0.23
11-Jul	0.00	0.00	0.00	0.20
12-Jul	0.00	0.00	0.00	0.24
13-Jul	0.00	0.00	0.00	0.26
14-Jul	0.00	0.00	0.00	0.20
15-Jul	0.69	0.69	0.00	0.16
16-Jul	0.08	0.08	0.00	0.19
17-Jul	0.00	0.00	0.00	0.24
18-Jul	0.00	0.00	0.00	0.22
19-Jul	0.00	0.00	0.00	0.20
20-Jul	0.00	0.00	0.00	0.23
21-Jul	0.00	0.00	0.00	0.23
22-Jul	0.00	0.00	0.00	0.26
23-Jul	0.00	0.00	0.00	0.26
24-Jul	0.00	0.00	0.00	0.23
25-Jul	0.00	0.00	0.00	0.21
26-Jul	0.00	0.00	0.00	0.13
27-Jul	0.00	0.00	0.00	0.18
28-Jul	0.00	0.00	0.00	0.15
29-Jul	0.00	0.00	0.00	0.18
30-Jul	0.00	0.00	0.00	0.20
31-Jul	0.00	0.00	0.00	0.22
		0.90	0.00	

Volume, ac-ft 4.08 0.00 6.432
Total Vol, ac-ft 4.08

RECEIVED
DEC 30 2010
Department of Planning and
Community Development

August 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)	54.36	subject to refinement
Pit fringe (area drains to pit)	68.34	subject to refinement
Drainage to Pit (total area)	122.70	subject to refinement

Quarry area Fringe area

Date	Precip, in.	Runoff, in.	Runoff, in.	Evapor, in/day
1-Aug	0.00	0.00	0.00	0.28
2-Aug	0.00	0.00	0.00	0.28
3-Aug	0.00	0.00	0.00	0.26
4-Aug	0.00	0.00	0.00	0.26
5-Aug	0.00	0.00	0.00	0.24
6-Aug	0.00	0.00	0.00	0.22
7-Aug	0.00	0.00	0.00	0.26
8-Aug	0.00	0.00	0.00	0.20
9-Aug	0.00	0.00	0.00	0.22
10-Aug	0.17	0.17	0.00	0.24
11-Aug	0.00	0.00	0.00	0.27
12-Aug	0.00	0.00	0.00	0.21
13-Aug	0.48	0.48	0.00	0.27
14-Aug	0.13	0.13	0.00	0.25
15-Aug	0.00	0.00	0.00	0.13
16-Aug	0.00	0.00	0.00	0.20
17-Aug	0.00	0.00	0.00	0.18
18-Aug	0.00	0.00	0.00	0.11
19-Aug	0.00	0.00	0.00	0.06
20-Aug	0.61	0.61	0.00	0.08
21-Aug	0.54	0.54	0.00	0.21
22-Aug	0.00	0.00	0.00	0.14
23-Aug	0.00	0.00	0.00	0.18
24-Aug	0.00	0.00	0.00	0.27
25-Aug	0.00	0.00	0.00	0.22
26-Aug	0.00	0.00	0.00	0.18
27-Aug	0.00	0.00	0.00	0.19
28-Aug	0.00	0.00	0.00	0.15
29-Aug	0.00	0.00	0.00	0.13
30-Aug	0.00	0.00	0.00	0.17
31-Aug	0.00	0.00	0.00	0.14
		1.93	0.00	
Volume, ac-ft		8.74	0.00	6.181
Total Vol, ac-ft		8.74		

SUBMITTED

DEC 30 2010

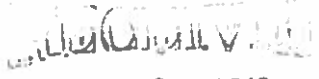
[Signature]

September 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)	54.36	subject to refinement
Pit fringe (area drains to pit)	68.34	subject to refinement
Drainage to Pit (total area)	122.70	subject to refinement

Quarry area Fringe area

Date	Precip, in.	Runoff, in.	Runoff, in.	Evapor, in/day
1-Sep	0.00	0.00	0.00	0.13
2-Sep	0.00	0.00	0.00	0.13
3-Sep	0.00	0.00	0.00	0.17
4-Sep	0.00	0.00	0.00	0.21
5-Sep	0.00	0.00	0.00	0.24
6-Sep	0.00	0.00	0.00	0.21
7-Sep	0.00	0.00	0.00	0.23
8-Sep	0.00	0.00	0.00	0.26
9-Sep	0.00	0.00	0.00	0.24
10-Sep	0.83	0.83	0.00	0.15
11-Sep	0.00	0.00	0.00	0.17
12-Sep	0.00	0.00	0.00	0.20
13-Sep	0.00	0.00	0.00	0.18
14-Sep	0.28	0.28	0.00	0.11
15-Sep	0.05	0.05	0.00	0.08
16-Sep	0.15	0.15	0.00	0.13
17-Sep	0.00	0.00	0.00	0.13
18-Sep	0.41	0.41	0.00	0.16
19-Sep	0.13	0.13	0.00	0.16
20-Sep	0.00	0.00	0.00	0.17
21-Sep	0.00	0.00	0.00	0.15
22-Sep	0.00	0.00	0.00	0.15
23-Sep	0.00	0.00	0.00	0.16
24-Sep	0.00	0.00	0.00	0.18
25-Sep	0.24	0.24	0.00	0.06
26-Sep	0.01	0.01	0.00	0.15
27-Sep	0.00	0.00	0.00	0.11
28-Sep	0.00	0.00	0.00	0.15
29-Sep	0.00	0.00	0.00	0.13
30-Sep	0.00	0.00	0.00	0.10
		0.00	0.00	
		2.10	0.00	
Volume, ac-ft		9.51	0.00	4.76
Total Vol, ac-ft		9.51		


 DEC 30 2010
 State of Michigan Department of Transportation
 2010