

2019 1st Quarter Report

Report 2019

North Troy Quarry

Mill Creek, OK

Vulcan Materials Company

VMC North Troy 2019 Monitoring Report

All volumes are in acre-feet.

	All Water Pumped	Total Stormwater Entering Pit note(a)	Total Groundwater Diverted	Pit Water Sent To Holding Basin	Groundwater Augmentation	Streamwater Augmentation	Defined Elements of Consumptive Use of Pit Water	Streamwater Pumped From Mill Creek	Groundwater Pumped From Wells	Total Annual Groundwater Allocation, Ac-ft
January-19	527.45	20.72	506.73	268.19	261.76	0.00	4.94	0.00	0.00	219.50
February-19	495.32	16.28	479.04	85.04	415.52	0.00	5.37	0.00	0.00	219.50
March-19	554.33	19.15	535.18	139.14	417.25	0.00	7.10	0.00	0.00	219.50
1st QTR Totals	1577.10	56.15	1520.95	492.37	1094.53	0.00	17.41	0.00	0.00	N/A
April-19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	219.50
May-19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	219.50
June-19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	219.50
2nd QTR Totals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
July-19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	219.50
August-19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	219.50
September-19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	219.50
3rd QTR Totals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
October-19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	219.50
November-19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	219.50
December-19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	219.50
4th QTR Totals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
2019 Totals	1577.10	56.15	1520.95	492.37	1094.53	0.00	17.41	0.00	0.00	219.50
2019 Total (adj)	1577.10	56.15	1520.95	492.37	1094.53	0.00	17.41	0.00	0.00	219.50

1st Qtr notes Production well electric issue - unable pump / no sample
 New pond - transducer offline

2nd Qtr notes
 3rd Qtr notes
 4th Qtr notes

(a) Total Stormwater = Volume of precipitation that falls into producing mine pit and volume of precipitation that falls onto producing mine and flows over the land surface into the mine pit.

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MILL CREEK 2019 AUGMENTATION and GAUGE DATA

Start Date	Start Time	Stop Date	Stop Time	Begin Reading	End Reading	Augmentation Ac - Ft pumped	Stormwater Pumped AF	Mill Creek Stream gauge Reading		Time Read	Stream height	Stream flow
January 2019	No water Pumped to Mill creek					0.00						
February 2019	No water Pumped to Mill creek					0.00						
March 2019	No water Pumped to Mill creek					0.00						
April 2019						0.00						
May 2019						0.00						
June 2019						0.00						
July 2019						0.00						
August 2019						0.00						
September 2019						0.00						
October 2019						0.00						
November 2019						0.00						
December 2019						0.00						
Total						0.00						

0.00 Pumped to Mill Creek

0.00 Augmented to Mill Creek

Stormwater collected entering pit

0 Stormwater pumped to Mill Creek

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January Precipitation/Evaporation 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)	1,303,36.94	area draining into pit	
S (pit)	2	area with direct interception	
Pit - Direct Interception (+95 ft deep)	111.00	subject to refinement	
Pit fringe (area drains to pit)	77.00	subject to refinement	
Drainage to Pit (total area)	188.00	subject to refinement	

Date	Precip. in.	Quarry area Runoff, in.	Fringe area Runoff, in.	Daily Evaporation, in.
1-Jan	0.00	0.00	0.00	0.04
2-Jan	0.00	0.00	0.00	0.02
3-Jan	0.92	0.92	0.00	0.02
4-Jan	0.09	0.09	0.00	0.07
5-Jan	0.00	0.00	0.00	0.08
6-Jan	0.00	0.00	0.00	0.13
7-Jan	0.00	0.00	0.00	0.12
8-Jan	0.00	0.00	0.00	0.13
9-Jan	0.00	0.00	0.00	0.07
10-Jan	0.00	0.00	0.00	0.07
11-Jan	0.80	0.80	0.00	0.09
12-Jan	0.12	0.12	0.00	0.04
13-Jan	0.00	0.00	0.00	0.03
14-Jan	0.00	0.00	0.00	0.04
15-Jan	0.00	0.00	0.00	0.03
16-Jan	0.00	0.00	0.00	0.05
17-Jan	0.00	0.00	0.00	0.04
18-Jan	0.00	0.00	0.00	0.07
19-Jan	0.12	0.12	0.00	0.11
20-Jan	0.08	0.08	0.00	0.05
21-Jan	0.00	0.00	0.00	0.14
22-Jan	0.17	0.17	0.00	0.04
23-Jan	0.00	0.00	0.00	0.08
24-Jan	0.00	0.00	0.00	0.08
25-Jan	0.00	0.00	0.00	0.04
26-Jan	0.00	0.00	0.00	0.06
27-Jan	0.00	0.00	0.00	0.09
28-Jan	0.00	0.00	0.00	0.11
29-Jan	0.00	0.00	0.00	0.05
30-Jan	0.00	0.00	0.00	0.07
31-Jan	0.00	0.00	0.00	0.05
sum	2.24	2.24	0.00	2.69

Volume, ac-ft 29.72
Total Vol, ac-ft 29.72
Pan Evaporation from Sulphur Mesonet

February Precipitation/Evaporation 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)	1,303,36.94	area draining into pit	
S (pit)	2	area with direct interception	
Pit - Direct Interception (+95 ft deep)	111.00	subject to refinement	
Pit fringe (area drains to pit)	77.00	subject to refinement	
Drainage to Pit (total area)	188.00	subject to refinement	

Date	Precip. in.	Quarry area Runoff, in.	Fringe area Runoff, in.	Daily Evaporation, in.
1-Feb	0.00	0.00	0.00	0.04
2-Feb	0.00	0.00	0.00	0.05
3-Feb	0.00	0.00	0.00	0.13
4-Feb	0.00	0.00	0.00	0.13
5-Feb	0.00	0.00	0.00	0.09
6-Feb	0.44	0.44	0.00	0.05
7-Feb	0.40	0.40	0.00	0.22
8-Feb	0.00	0.00	0.00	0.07
9-Feb	0.00	0.00	0.00	0.06
10-Feb	0.04	0.04	0.00	0.07
11-Feb	0.48	0.48	0.00	0.03
12-Feb	0.00	0.00	0.00	0.12
13-Feb	0.00	0.00	0.00	0.18
14-Feb	0.00	0.00	0.00	0.26
15-Feb	0.00	0.00	0.00	0.11
16-Feb	0.00	0.00	0.00	0.02
17-Feb	0.00	0.00	0.00	0.12
18-Feb	0.00	0.00	0.00	0.09
19-Feb	0.00	0.00	0.00	0.04
20-Feb	0.28	0.28	0.00	0.11
21-Feb	0.00	0.00	0.00	0.08
22-Feb	0.04	0.04	0.00	0.03
23-Feb	0.08	0.08	0.00	0.21
24-Feb	0.00	0.00	0.00	0.19
25-Feb	0.00	0.00	0.00	0.23
26-Feb	0.00	0.00	0.00	0.09
27-Feb	0.00	0.00	0.00	0.05
28-Feb	0.00	0.00	0.00	0.02
		0.00	0.00	
		0.00	0.00	
		0.00	0.00	
sum	1.76	1.76	0.00	3.77

Volume, ac-ft 16.24
Total Vol, ac-ft 16.24
Pan Evaporation from Sulphur Mesonet

March Precipitation/Evaporation 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)	1,303,36.94	area draining into pit	
S (pit)	2	area with direct interception	
Pit - Direct Interception (+95 ft deep)	111.00	subject to refinement	
Pit fringe (area drains to pit)	77.00	subject to refinement	
Drainage to Pit (total area)	188.00	subject to refinement	

Date	Precip. in.	Quarry area Runoff, in.	Fringe area Runoff, in.	Daily Evaporation, in.
1-Mar	0.00	0.00	0.00	0.04
2-Mar	0.00	0.00	0.00	0.03
3-Mar	0.04	0.04	0.00	0.04
4-Mar	0.00	0.00	0.00	0.09
5-Mar	0.00	0.00	0.00	0.11
6-Mar	0.00	0.00	0.00	0.17
7-Mar	0.00	0.00	0.00	0.15
8-Mar	0.00	0.00	0.00	0.06
9-Mar	0.24	0.24	0.00	0.31
10-Mar	0.20	0.20	0.00	0.09
11-Mar	0.29	0.29	0.00	0.07
12-Mar	0.44	0.44	0.00	0.06
13-Mar	0.75	0.75	0.00	0.29
14-Mar	0.00	0.00	0.00	0.28
15-Mar	0.00	0.00	0.00	0.22
16-Mar	0.00	0.00	0.00	0.13
17-Mar	0.00	0.00	0.00	0.15
18-Mar	0.00	0.00	0.00	0.16
19-Mar	0.00	0.00	0.00	0.21
20-Mar	0.04	0.04	0.00	0.15
21-Mar	0.00	0.00	0.00	0.18
22-Mar	0.00	0.00	0.00	0.22
23-Mar	0.04	0.04	0.00	0.18
24-Mar	0.00	0.00	0.00	0.21
25-Mar	0.00	0.00	0.00	0.18
26-Mar	0.00	0.00	0.00	0.16
27-Mar	0.00	0.00	0.00	0.25
28-Mar	0.00	0.00	0.00	0.25
29-Mar	0.00	0.00	0.00	0.15
30-Mar	0.04	0.04	0.00	0.17
31-Mar	0.00	0.00	0.00	0.17
sum	2.57	2.57	0.00	3.51

Volume, ac-ft 19.15
Total Vol, ac-ft 19.15
Pan Evaporation from Sulphur Mesonet

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Monthly Water Data, ac-ft

	Water Diverted From Pit	Storm Water Entering Pit	Net Sump Volume Change	Groundwater Sent To Holding Basin	Groundwater Sent To Infiltration Areas	Groundwater Used For Stream Augmentation	Evaporation	Moisture Content of Product Shipped	Water Truck Usage	Misc Pit Water Use On Site	Misc Pit Water Use Off Site	Production Well Permit 2002-602	North Well Permit 20060601A
January-19	527.45	20.72	-3.98	268.19	259.26	0.00	0.29	3.78	0.87	0.00	0.00	0.00	0.00
February-19	495.32	16.28	-1.40	85.04	410.28	0.00	0.39	4.09	0.88	0.00	0.00	0.00	0.00
March-19	554.33	19.15	-1.12	139.14	415.19	0.00	0.70	4.20	2.21	0.00	0.00	0.00	0.00
April-19	0.00	0.00				0.00	0.00	0.00		0.00	0.00		0.00
May-19	0.00	0.00				0.00	0.00	0.00		0.00	0.00		0.00
June-19	0.00	0.00				0.00	0.00	0.00		0.00	0.00		0.00
July-19	0.00	0.00				0.00	0.00	0.00		0.00	0.00		0.00
August-19	0.00	0.00				0.00	0.00	0.00		0.00	0.00		0.00
September-19	0.00	0.00				0.00	0.00	0.00		0.00	0.00		0.00
October-19	0.00	0.00				0.00	0.00	0.00		0.00	0.00		0.00
November-19	0.00	0.00				0.00	0.00	0.00		0.00	0.00		0.00
December-19	0.00	0.00				0.00	0.00	0.00		0.00	0.00		0.00

Pit Sump Volumes

	West Sump					905 Sump					New Freshwater Pond					Pit area		
	Month End Depth-to- Water, Ft	Width, Ft	Length, Ft	Sump Volume Change, Ac-ft	Evaporation, ac- ft	Month End Depth-to-Water, Ft	Width, Ft	Length, Ft	Sump Volume Change, Ac-ft	Evaporation, ac-ft	Month End Depth-to- Water, Ft	Width, Ft	Length, Ft	Pond Volume Change, Ac-ft	Evaporation, ac-ft	Total Evaporation, ac-ft	Acres	Evaporation, ac-ft
January-19	8	125	325	-3.98	0.15	4	50	50	0.00	0.01	4		750	0.00	0.00	0.17	1.7	0.29
February-19	9.5	125	325	-1.40	0.22	4	50	50	0.00	0.01	4		750	0.00	0.00	0.23	1.7	0.39
March-19	10.7	125	325	-1.12	0.35	4	50	50	0.00	0.02	4		750	0.00	0.00	0.41	1.7	0.70
April-19		125	325		0.00	4	50	50	0.00	0.00			750		0.00	0.00	1.7	0.00
May-19		125	325		0.00	4	50	50	0.00	0.00			750		0.00	0.00	1.7	0.00
June-19		125	325		0.00	4	50	50	0.00	0.00			750		0.00	0.00	1.7	0.00
July-19		125	325		0.00	4	50	50	0.00	0.00			750		0.00	0.00	1.7	0.00
August-19		125	325		0.00	4	50	50	0.00	0.00			750		0.00	0.00	1.7	0.00
September-19		125	325		0.00	4	50	50	0.00	0.00			750		0.00	0.00	1.7	0.00
October-19		125	325		0.00	4	50	50	0.00	0.00			750		0.00	0.00	1.7	0.00
November-19		125	325		0.00	4	50	50	0.00	0.00			750		0.00	0.00	1.7	0.00
December-19		125	325		0.00	4	50	50	0.00	0.00			750		0.00	0.00	1.7	0.00

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January Shipments			February Shipments			March Shipments		
	Tons Shipped	Ac-ft of water shipped		Tons Shipped	Ac-ft of water shipped		Tons Shipped	Ac-ft of water shipped
Base Products	1,125	0.028	Base Products	1,191	0.029	Base Products	4,172	0.102
Coarse			Coarse			Coarse		
Aggregates	260,281	3.128	Aggregates	217,628	2.616	Aggregates	320,702	3.854
			Fine					
Fine Aggregates	19,491	0.619	Aggregates	45,507	1.446	Fine Aggregates	7,608	0.242
	280,897	3.775		264,326	4.091		332,482	4.198

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