

2023 2nd Quarter Report

Report 2023

North Troy Quarry

Mill Creek, OK

Vulcan Materials Company

VMC North Troy 2023 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-23	499.50	12.03	487.48	6.50	497.74	0.00	8.01	0.00	0.00	219.50
February-23	525.00	27.20	497.81	9.00	518.39	0.00	5.12	0.00	0.00	219.50
March-23	582.00	39.31	542.69	23.00	565.24	0.00	8.01	0.00	0.00	219.50
1st QTR Totals	1606.50	78.53	1527.97	38.50	1581.36	0.00	21.14	0.00	0.00	N/A
April-23	611.00	16.84	594.17	24.00	589.17	0.00	8.89	0.00	0.00	219.50
May-23	501.00	24.79	476.21	75.00	426.61	0.00	8.83	0.00	0.00	219.50
June-23	642.00	50.59	591.41	70.00	572.00	0.00	8.28	0.00	0.00	219.50
2nd QTR Totals	1754.00	92.22	1661.78	169.00	1587.78	0.00	25.99	0.00	0.00	N/A
July-23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	219.50
August-23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	219.50
September-23	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-23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	219.50
November-23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	219.50
December-23	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
2023 Totals	3360.50	170.75	3189.75	207.50	3169.15	0.00	47.13	0.00	0.00	219.50
2023 Total (adj)	3360.50	170.75	3189.75	207.50	3169.15	0.00	47.13	0.00	0.00	219.50

1st Qtr notes Production well electric issue - unable pump / no sample

2nd Qtr notes

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MILL CREEK 2023 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 2023	No water Pumped to Mill creek					0.00						
February 2023	No water Pumped to Mill creek					0.00						
March 2023	No water Pumped to Mill creek					No water Pumped to Mill creek						
April 2023	No water Pumped to Mill creek					No water Pumped to Mill creek						
May 2023	No water Pumped to Mill creek					No water Pumped to Mill creek						
June 2023	No water Pumped to Mill creek					No water Pumped to Mill creek						
July 2023												
August 2023												
September 2023												
October 2023												
November 2023												
December 2023												
					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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April 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)	1,363.636	area draining into pit	
S (pit)	0	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-Apr	0.00	0.00	0.00	0.26	Runoff formula
2-Apr	0.51	0.51	0.00	0.28	Pe = (P-0.2S)*2/(P+0.8S)
3-Apr	0.00	0.00	0.00	0.36	S = (1000/CN)-10
4-Apr	0.00	0.00	0.00	0.18	
5-Apr	0.00	0.00	0.00	0.3	Blue cells contain formulas
6-Apr	0.00	0.00	0.00	0.23	
7-Apr	0.00	0.00	0.00	0.22	
8-Apr	0.00	0.00	0.00	0.22	
9-Apr	0.00	0.00	0.00	0.16	
10-Apr	0.00	0.00	0.00	0.2	
11-Apr	0.00	0.00	0.00	0.21	
12-Apr	0.00	0.00	0.00	0.23	
13-Apr	0.00	0.00	0.00	0.28	
14-Apr	0.00	0.00	0.00	0.28	
15-Apr	0.00	0.00	0.00	0.19	
16-Apr	0.00	0.00	0.00	0.22	
17-Apr	0.00	0.00	0.00	0.29	
18-Apr	0.00	0.00	0.00	0.26	
19-Apr	0.00	0.00	0.00	0.29	
20-Apr	0.00	0.00	0.00	0.21	
21-Apr	0.00	0.00	0.00	0.24	
22-Apr	0.06	0.06	0.00	0.18	
23-Apr	0.10	0.10	0.00	0.13	
24-Apr	0.00	0.00	0.00	0.16	
25-Apr	0.12	0.12	0.00	0.12	
26-Apr	0.94	0.94	0.00	0.06	
27-Apr	0.08	0.08	0.00	0.06	
28-Apr	0.01	0.01	0.00	0.08	
29-Apr	0.00	0.00	0.00	0.25	
30-Apr	0.00	0.00	0.00	0.23	
sum	1.82	1.82	0.00	6.38	6.38
Volume, ac-ft		16.84	0.00		
Total Vol, ac-ft		16.84			Pan Evaporation from Sulphur Mesonet

May 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)	1,363.636	area draining into pit	
S (pit)	0	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-May	0.00	0.00	0.00	0.19	Runoff formula
2-May	0.00	0.00	0.00	0.21	Pe = (P-0.2S)*2/(P+0.8S)
3-May	0.09	0.09	0.00	0.1	S = (1000/CN)-10
4-May	0.18	0.18	0.00	0.09	
5-May	0.00	0.00	0.00	0.29	Blue cells contain formulas
6-May	0.27	0.27	0.00	0.28	
7-May	0.00	0.00	0.00	0.18	
8-May	0.00	0.00	0.00	0.27	
9-May	0.00	0.00	0.00	0.24	
10-May	0.20	0.20	0.00	0.16	
11-May	0.13	0.13	0.00	0.15	
12-May	0.00	0.00	0.00	0.2	
13-May	0.17	0.17	0.00	0.23	
14-May	0.00	0.00	0.00	0.11	
15-May	0.01	0.01	0.00	0.19	
16-May	0.00	0.00	0.00	0.13	
17-May	0.00	0.00	0.00	0.18	
18-May	0.23	0.23	0.00	0.13	
19-May	0.11	0.11	0.00	0.21	
20-May	0.00	0.00	0.00	0.24	
21-May	0.00	0.00	0.00	0.13	
22-May	0.00	0.00	0.00	0.2	
23-May	0.00	0.00	0.00	0.21	
24-May	0.00	0.00	0.00	0.23	
25-May	0.00	0.00	0.00	0.16	
26-May	0.00	0.00	0.00	0.16	
27-May	0.00	0.00	0.00	0.24	
28-May	0.06	0.06	0.00	0.23	
29-May	0.97	0.97	0.00	0.24	
30-May	0.26	0.26	0.00	0.21	
31-May	0.00	0.00	0.00	0.24	
sum	2.68	2.68	0.00	6.03	6.03
Volume, ac-ft		24.79	0.00		
Total Vol, ac-ft		24.79			Pan Evaporation from Sulphur Mesonet

June 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)	1,363.636	area draining into pit	
S (pit)	0	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-Jun	0.00	0.00	0.00	0.24	Runoff formula
2-Jun	0.04	0.04	0.00	0.28	Pe = (P-0.2S)*2/(P+0.8S)
3-Jun	1.09	1.09	0.00	0.15	S = (1000/CN)-10
4-Jun	0.01	0.01	0.00	0.12	
5-Jun	0.00	0.00	0.00	0.24	Blue cells contain formulas
6-Jun	0.09	0.09	0.00	0.25	
7-Jun	0.01	0.01	0.00	0.22	Rainfall Data for 6/1-6/9 taken from
8-Jun	0.01	0.01	0.00	0.26	Mill Creek stream gage due to
9-Jun	0.00	0.00	0.00	0.27	weather station malfunction.
10-Jun	0.02	0.02	0.00	0.24	
11-Jun	0.00	0.00	0.00	0.3	
12-Jun	1.61	1.61	0.00	0.1	
13-Jun	0.24	0.24	0.00	0.17	
14-Jun	0.00	0.00	0.00	0.24	
15-Jun	0.74	0.74	0.00	0.24	
16-Jun	0.00	0.00	0.00	0.19	
17-Jun	0.24	0.24	0.00	0.24	
18-Jun	0.31	0.31	0.00	0.26	
19-Jun	0.01	0.01	0.00	0.29	
20-Jun	0.00	0.00	0.00	0.35	
21-Jun	0.00	0.00	0.00	0.28	
22-Jun	0.00	0.00	0.00	0.26	
23-Jun	0.59	0.59	0.00	0.19	
24-Jun	0.00	0.00	0.00	0.34	
25-Jun	0.00	0.00	0.00	0.3	
26-Jun	0.00	0.00	0.00	0.31	
27-Jun	0.00	0.00	0.00	0.27	
28-Jun	0.00	0.00	0.00	0.38	
29-Jun	0.00	0.00	0.00	0.39	
30-Jun	0.00	0.00	0.00	0.35	
sum	5.01	5.01	0.00	7.72	7.72
Volume, ac-ft		46.34	4.25		
Total Vol, ac-ft		50.59			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-23	499.50	12.03	0.00	6.50	493.00	0.00	0.43	4.32	3.26	0.00	0.00	0.00	0.00
February-23	525.00	27.20	0.00	9.00	516.00	0.00	0.54	3.35	1.23	0.00	0.00	0.00	0.00
March-23	582.00	39.31	0.00	23.00	559.00	0.00	0.75	4.00	3.26	0.00	0.00	0.00	0.00
April-23	611.00	16.84	0.00	24.00	587.00	0.00	1.43	4.26	3.20	0.00	0.00	0.00	0.00
May-23	501.00	24.79	0.00	75.00	426.00	0.00	1.35	3.46	4.01	0.00	0.00	0.00	0.00
June-23	642.00	50.59	0.00	70.00	572.00	0.00	1.73	3.38	3.17	0.00	0.00	0.00	0.00
July-23	0.00	0.00				0.00	0.00	0.00		0.00	0.00		0.00
August-23		0.00				0.00	0.00	0.00		0.00	0.00		0.00
September-23		0.00				0.00	0.00	0.00		0.00	0.00		0.00
October-23		0.00				0.00	0.00	0.00		0.00	0.00		0.00
November-23		0.00				0.00	0.00	0.00		0.00	0.00		0.00
December-23		0.00				0.00	0.00	0.00		0.00	0.00		0.00

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Settling Cell Evaporation and Infiltration

	FO2 East						FO2 West						FO3/FO4 South Settling Cell						Total	Total
	Width, Ft	Length, Ft	Evaporation, ac-ft	Number of Production Days	Infiltration Rate, Ac-ft/day	Total Infiltration, Ac-ft	Width, Ft	Length, Ft	Evaporation, ac-ft	Number of Production Days	Infiltration Rate, Ac-ft/day	Total Infiltration, Ac-ft	Width, Ft	Length, Ft	Evaporation, ac-ft	Number of Production Days	Infiltration Rate, Ac-ft/day	Total Infiltration, Ac-ft	Evaporation, ac-ft	Infiltration, ac-ft
January-23	50	330	0.00	0.00	0.08	0.00	50	350	0.10	19.00	0.22	4.23	200	435	0.51	19.00	0.03	0.51	0.61	4.74
February-23	50	330	0.12	22.00	0.08	1.80	50	350	0.00		0.22	0.00	200	435	0.61	22.00	0.03	0.59	0.75	2.39
March-23	50	330	0.00	0.00	0.08	0.00	50	350	0.10	25.00	0.22	5.57	200	435	0.80	25.00	0.03	0.67	1.05	6.24
April-23	50	330	0.20	20.00	0.08	1.64	50	350	0.00		0.22	0.00	200	435	1.00	20.00	0.03	0.53	1.26	2.17
May-23	50	330	0.00		0.08	0.00	50	350	0.20	23.00	0.22	5.13	200	435	1.00	23.00	0.03	0.61	1.21	5.74
June-23	50	330	0.24	25.00	0.08	2.05	50	350	0.00		0.22	0.00	200	435	1.20	25.00	0.03	0.67	1.53	2.71
July-23	50	330	0.00		0.08	0.00	50	350	0.00		0.22	0.00	200	435	0.00		0.03	0.00	0.00	0.00
August-23	50	330	0.00		0.08	0.00	50	350	0.00		0.22	0.00	200	435	0.00		0.03	0.00	0.00	0.00
September-23	50	330	0.00		0.08	0.00	50	350	0.00		0.22	0.00	200	435	0.00		0.03	0.00	0.00	0.00
October-23	50	330	0.00		0.08	0.00	50	350	0.00		0.22	0.00	200	435	0.00		0.03	0.00	0.00	0.00
November-23	50	330	0.00		0.08	0.00	50	350	0.00		0.22	0.00	200	435	0.00		0.03	0.00	0.00	0.00
December-23	50	330	0.00		0.08	0.00	50	350	0.00		0.22	0.00	200	435	0.00		0.03	0.00	0.00	0.00

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April Shipments			May Shipments			June Shipments		
	Tons Shipped	Ac-ft of water shipped		Tons Shipped	Ac-ft of water shipped		Tons Shipped	Ac-ft of water shipped
Base Products	2,805	0.069	Base Products	1,299	0.032	Base Products	2,339	0.057
Coarse			Coarse			Coarse		
Aggregates	333,040	4.003	Aggregates	238,657	2.868	Aggregates	247,639	2.976
Fine			Fine			Fine		
Aggregates	5,789	0.184	Aggregates	17,760	0.564	Aggregates	10,863	0.345
	341,534	4.255		257,716	3.464		260,841	3.379

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