

2023 1st 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	219.50
May-23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	219.50
June-23	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-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	1606.50	78.53	1527.97	38.50	1581.36	0.00	21.14	0.00	0.00	219.50
2023 Total (adj)	1606.50	78.53	1527.97	38.50	1581.36	0.00	21.14	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												
May 2023												
June 2023												
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)	1.363636	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

	Quarry area	Fringe area	Daily	
Date	Precip, in.	Runoff, in.	Runoff, in.	Evaporation, in.
1-Apr	0.00	0.00	0.00	Runoff formula
2-Apr	0.00	0.00	0.00	$Pe = (P-0.2S)^2/(P+0.8S)$
3-Apr	0.00	0.00	0.00	$S = (1000/CN)-10$
4-Apr	0.00	0.00	0.00	Blue cells contain formulas
5-Apr	0.00	0.00	0.00	
6-Apr	0.00	0.00	0.00	
7-Apr	0.00	0.00	0.00	
8-Apr	0.00	0.00	0.00	
9-Apr	0.00	0.00	0.00	
10-Apr	0.00	0.00	0.00	
11-Apr	0.00	0.00	0.00	
12-Apr	0.00	0.00	0.00	
13-Apr	0.00	0.00	0.00	
14-Apr	0.00	0.00	0.00	
15-Apr	0.00	0.00	0.00	
16-Apr	0.00	0.00	0.00	
17-Apr	0.00	0.00	0.00	
18-Apr	0.00	0.00	0.00	
19-Apr	0.00	0.00	0.00	
20-Apr	0.00	0.00	0.00	
21-Apr	0.00	0.00	0.00	
22-Apr	0.00	0.00	0.00	
23-Apr	0.00	0.00	0.00	
24-Apr	0.00	0.00	0.00	
25-Apr	0.00	0.00	0.00	
26-Apr	0.00	0.00	0.00	
27-Apr	0.00	0.00	0.00	
28-Apr	0.00	0.00	0.00	
29-Apr	0.00	0.00	0.00	
30-Apr	0.00	0.00	0.00	
sum	0.00	0.00	0.00	0
Volume, ac-ft		0.00	0.00	
Total Vol, ac-ft		0.00	0.00	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)	1.363636	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

	Quarry area	Fringe area	Daily	
Date	Precip, in.	Runoff, in.	Runoff, in.	Evaporation, in.
1-May	0.00	0.00	0.00	Runoff formula
2-May	0.00	0.00	0.00	$Pe = (P-0.2S)^2/(P+0.8S)$
3-May	0.00	0.00	0.00	$S = (1000/CN)-10$
4-May	0.00	0.00	0.00	Blue cells contain formulas
5-May	0.00	0.00	0.00	
6-May	0.00	0.00	0.00	
7-May	0.00	0.00	0.00	
8-May	0.00	0.00	0.00	
9-May	0.00	0.00	0.00	
10-May	0.00	0.00	0.00	
11-May	0.00	0.00	0.00	
12-May	0.00	0.00	0.00	
13-May	0.00	0.00	0.00	
14-May	0.00	0.00	0.00	
15-May	0.00	0.00	0.00	
16-May	0.00	0.00	0.00	
17-May	0.00	0.00	0.00	
18-May	0.00	0.00	0.00	
19-May	0.00	0.00	0.00	
20-May	0.00	0.00	0.00	
21-May	0.00	0.00	0.00	
22-May	0.00	0.00	0.00	
23-May	0.00	0.00	0.00	
24-May	0.00	0.00	0.00	
25-May	0.00	0.00	0.00	
26-May	0.00	0.00	0.00	
27-May	0.00	0.00	0.00	
28-May	0.00	0.00	0.00	
29-May	0.00	0.00	0.00	
30-May	0.00	0.00	0.00	
31-May	0.00	0.00	0.00	
sum	0.00	0.00	0.00	0
Volume, ac-ft		0.00	0.00	
Total Vol, ac-ft		0.00	0.00	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)	1.363636	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

	Quarry area	Fringe area	Daily	
Date	Precip, in.	Runoff, in.	Runoff, in.	Evaporation, in.
1-Jun	0.00	0.00	0.00	Runoff formula
2-Jun	0.00	0.00	0.00	$Pe = (P-0.2S)^2/(P+0.8S)$
3-Jun	0.00	0.00	0.00	$S = (1000/CN)-10$
4-Jun	0.00	0.00	0.00	Blue cells contain formulas
5-Jun	0.00	0.00	0.00	
6-Jun	0.00	0.00	0.00	
7-Jun	0.00	0.00	0.00	Rainfall Data for 6/1-6/9 taken from
8-Jun	0.00	0.00	0.00	Mill Creek stream gage due to
9-Jun	0.00	0.00	0.00	weather station malfunction.
10-Jun	0.00	0.00	0.00	
11-Jun	0.00	0.00	0.00	
12-Jun	0.00	0.00	0.00	
13-Jun	0.00	0.00	0.00	
14-Jun	0.00	0.00	0.00	
15-Jun	0.00	0.00	0.00	
16-Jun	0.00	0.00	0.00	
17-Jun	0.00	0.00	0.00	
18-Jun	0.00	0.00	0.00	
19-Jun	0.00	0.00	0.00	
20-Jun	0.00	0.00	0.00	
21-Jun	0.00	0.00	0.00	
22-Jun	0.00	0.00	0.00	
23-Jun	0.00	0.00	0.00	
24-Jun	0.00	0.00	0.00	
25-Jun	0.00	0.00	0.00	
26-Jun	0.00	0.00	0.00	
27-Jun	0.00	0.00	0.00	
28-Jun	0.00	0.00	0.00	
29-Jun	0.00	0.00	0.00	
30-Jun	0.00	0.00	0.00	
sum	0.00	0.00	0.00	0
Volume, ac-ft		0.00	0.00	
Total Vol, ac-ft		0.00	0.00	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		0.00				0.00	0.00	0.00		0.00	0.00		0.00
May-23		0.00				0.00	0.00	0.00		0.00	0.00		0.00
June-23		0.00				0.00	0.00	0.00		0.00	0.00		0.00
July-23		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 Evaporation, ac-ft	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	Width, Ft	Length, Ft	Evaporation, ac-ft	Number of Production Days	Infiltration Rate, Ac-ft/day	Total 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	0.53	22.00	0.03	0.55	0.75	2.39
March-23	50	330	0.00		0.08	0.00	50	350	0.18	25.00	0.22	5.57	200	435	0.88	25.00	0.03	0.67	1.05	6.24
April-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
May-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
June-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
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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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	1,826	0.045	Base Products	1,695	0.042	Base Products	2,699	0.066
Coarse Aggregates	323,126	3.884	Coarse Aggregates	232,489	2.794	Coarse Aggregates	289,310	3.477
Fine Aggregates	12,349	0.392	Fine Aggregates	16,188	0.514	Fine Aggregates	14,501	0.461
	337,301	4.321		250,372	3.350		306,510	4.004

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