2024 3rd Quarter Report

Report 2024
North Troy Quarry
Mill Creek, OK
Vulcan Materials Company

VMC North Troy 2024 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-24	**528.00**	22.04	505.96	34.70	208.58	287.00	6.63	0.00	0.00	219.50
February-24	**514.60**	12.79	501.81	32.50	281.34	207.00	9.22	0.00	0.00	219.50
March-24	**594.30**	21.39	572.91	37.30	394.90	164.60	11.93	0.00	0.00	219.50
1st QTR Totals	**1636.90**	56.22	1580.68	104.50	884.81	658.60	27.78	0.00	0.00	N/A
April-24	**602.00**	131.68	470.32	41.80	566.69	0.00	12.17	0.00	0.00	219.50
May-24	**621.00**	69.23	551.77	44.20	579.19	0.00	9.33	0.00	0.00	219.50
June-24	**587.00**	50.81	536.19	43.10	548.89	0.00	13.12	0.00	0.00	219.50
2nd QTR Totals	**1810.00**	251.71	1558.29	129.10	1694.76	0.00	34.62	0.00	0.00	N/A
July-24	**579.56**	33.39	546.17	40.77	541.18	0.00	18.03	0.00	0.00	219.50
August-24	**593.28**	43.94	549.34	38.40	560.12	0.00	18.64	0.00	0.00	219.50
September-24	**631.85**	1.29	630.56	38.31	595.71	0.00	17.16	0.00	0.00	219.50
3rd QTR Totals	**1804.69**	78.61	1726.08	117.48	1697.01	0.00	53.83	0.00	0.00	N/A
October-24	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	219.50
November-24	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	219.50
December-24	**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
2024 Totals	**5251.59**	386.55	4865.04	351.08	4276.58	658.60	116.24	0.00	0.00	219.50
2024 Total (adj)	**5251.59**	386.55	4865.04	351.08	4276.58	658.60	116.24	0.00	0.00	219.50

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

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.

MILL CREEK 2024 AUGMENTATION and GAUGE DATA

Start Date	Stop Date		Augmentation Ac - Ft pumped	Stormwater Pumped AF	Mill Creek Stream gauge Reading	
1/1/2024			105.60			
1/11/2024			47.40			
1/16/2024			1.20			
1/17/2024			12.10			
1/19/2024			14.10			
1/21/2024			21.70			
1/24/2024			15.00			
1/25/2024			10.00			
1/30/2024			59.90			
2/26/2024			46.30			
2/17/2024			41.00			
2/21/2024			59.00			
2/27/2024			60.9			
3/6/2024			53.9			
3/12/2024			39.80			
3/16/2024			25.80			
3/20/2024			45.10			
7/1/2024			No pump to creek			
8/1/2024			No pump to creek			
9/1/2024			No pump to creek			
		Total	658.80			

658.80 Pumped to Mill Creek
658.80 Augmented to Mill Creek
Stormwater collected entering pit
0 Stormwater pumped to Mill Creek

July 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)	129.00	subject to refinement **
Pit fringe (area drains to pit)	77.00	subject to refinement **
Drainage to Pit (total area)	206.00	subject to refinement

Date	Precip, in.	Quarry area Runoff, in.	Fringe area Runoff, in.	Daily Evaporation, in.	
1-Jul	0.00	0.00	0.00	0.37	Runoff formula
2-Jul	0.00	0.00	0.00	0.44	Pe = (P-0.2S)^2/(P+0.8S)
3-Jul	0.00	0.00	0.00	0.39	S = (1000/CN)-10
4-Jul	0.31	0.31	0.00	0.33	
5-Jul	0.04	0.04	0.00	0.1	Blue cells contain formulas
6-Jul	0.00	0.00	0.00	0.27	
7-Jul	1.52	1.52	0.60	0.25	
8-Jul	0.67	0.67	0.00	0.2	
9-Jul	0.00	0.00	0.00	0.24	
10-Jul	0.01	0.01	0.00	0.25	
11-Jul	0.00	0.00	0.00	0.31	
12-Jul	0.00	0.00	0.00	0.34	
13-Jul	0.00	0.00	0.00	0.33	
14-Jul	0.00	0.00	0.00	0.32	
15-Jul	0.00	0.00	0.00	0.35	
16-Jul	0.00	0.00	0.00	0.27	
17-Jul	0.03	0.03	0.00	0.14	
18-Jul	0.01	0.01	0.00	0.29	
19-Jul	0.00	0.00	0.00	0.23	
20-Jul	0.00	0.00	0.00	0.18	
21-Jul	0.16	0.16	0.00	0.19	
22-Jul	0.00	0.00	0.00	0.16	
23-Jul	0.00	0.00	0.00	0.23	
24-Jul	0.00	0.00	0.00	0.22	
25-Jul	0.00	0.00	0.00	0.25	
26-Jul	0.00	0.00	0.00	0.22	
27-Jul	0.00	0.00	0.00	0.22	
28-Jul	0.00	0.00	0.00	0.34	
29-Jul	0.00	0.00	0.00	0.36	
30-Jul	0.00	0.00	0.00	0.4	
31-Jul	0.00	0.00	0.00	0.39	
sum	2.75	2.75	0.60	8.58	8.58
Volume, ac-ft		**29.56**	**3.82**		
Total Vol, ac-ft		**33.39**		**Pan Evaporation from Sulphur Mesonet**	

August 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)	129.00	subject to refinement **
Pit fringe (area drains to pit)	77.00	subject to refinement **
Drainage to Pit (total area)	206.00	subject to refinement

Date	Precip, in.	Quarry area Runoff, in.	Fringe area Runoff, in.	Daily Evaporation, in.	
1-Aug	0.00	0.00	0.00	0.37	Runoff formula
2-Aug	0.00	0.00	0.00	0.44	Pe = (P-0.2S)^2/(P+0.8S)
3-Aug	0.00	0.00	0.00	0.39	S = (1000/CN)-10
4-Aug	0.00	0.00	0.00	0.33	
5-Aug	0.00	0.00	0.00	0.1	Blue cells contain formulas
6-Aug	0.00	0.00	0.00	0.27	
7-Aug	0.00	0.00	0.00	0.25	
8-Aug	0.00	0.00	0.00	0.2	
9-Aug	0.23	0.23	0.00	0.24	
10-Aug	0.14	0.14	0.00	0.25	
11-Aug	2.68	2.68	1.54	0.31	
12-Aug	0.00	0.00	0.00	0.34	
13-Aug	0.00	0.00	0.00	0.33	
14-Aug	0.00	0.00	0.00	0.32	
15-Aug	0.00	0.00	0.00	0.35	
16-Aug	0.00	0.00	0.00	0.27	
17-Aug	0.01	0.01	0.00	0.14	
18-Aug	0.00	0.00	0.00	0.29	
19-Aug	0.00	0.00	0.00	0.23	
20-Aug	0.00	0.00	0.00	0.18	
21-Aug	0.00	0.00	0.00	0.19	
22-Aug	0.00	0.00	0.00	0.16	
23-Aug	0.00	0.00	0.00	0.23	
24-Aug	0.00	0.00	0.00	0.22	
25-Aug	0.00	0.00	0.00	0.25	
26-Aug	0.00	0.00	0.00	0.22	
27-Aug	0.00	0.00	0.00	0.22	
28-Aug	0.00	0.00	0.00	0.34	
29-Aug	0.00	0.00	0.00	0.36	
30-Aug	0.11	0.11	0.00	0.4	
31-Aug	0.00	0.00	0.00	0.39	
sum	3.17	3.17	1.54	8.58	8.58
Volume, ac-ft		**34.08**	**9.86**		
Total Vol, ac-ft		**43.94**		**Pan Evaporation from Sulphur Mesonet**	
				Rainfall data	

September 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)	129.00	subject to refinement
Pit fringe (area drains to pit)	77.00	subject to refinement
Drainage to Pit (total area)	206.00	subject to refinement

Date	Precip, in.	Quarry area Runoff, in.	Fringe area Runoff, in.	Daily Evaporation, in.	
1-Sep	0.01	0.01	0.00	0.4	Runoff formula
2-Sep	0.01	0.01	0.00	0.27	Pe = (P-0.2S)^2/(P+0.8S)
3-Sep	0.01	0.01	0.00	0.3	S = (1000/CN)-10
4-Sep	0.00	0.00	0.00	0.25	
5-Sep	0.00	0.00	0.00	0.29	Blue cells contain form
6-Sep	0.01	0.01	0.00	0.28	
7-Sep	0.00	0.00	0.00	0.28	
8-Sep	0.00	0.00	0.00	0.33	
9-Sep	0.00	0.00	0.00	0.28	Evap data from Sulphur Mesonet
10-Sep	0.00	0.00	0.00	0.22	
11-Sep	0.00	0.00	0.00	0.15	
12-Sep	0.00	0.00	0.00	0.25	
13-Sep	0.00	0.00	0.00	0.35	
14-Sep	0.00	0.00	0.00	0.37	
15-Sep	0.00	0.00	0.00	0.35	
16-Sep	0.00	0.00	0.00	0.35	
17-Sep	0.00	0.00	0.00	0.31	
18-Sep	0.00	0.00	0.00	0.3	
19-Sep	0.00	0.00	0.00	0.3	
20-Sep	0.00	0.00	0.00	0.3	
21-Sep	0.00	0.00	0.00	0.32	
22-Sep	0.03	0.03	0.00	0.37	
23-Sep	0.03	0.03	0.00	0.47	
24-Sep	0.01	0.01	0.00	0.38	
25-Sep	0.00	0.00	0.00	0.31	
26-Sep	0.00	0.00	0.00	0.23	
27-Sep	0.01	0.01	0.00	0.21	
28-Sep	0.00	0.00	0.00	0.26	
29-Sep	0.00	0.00	0.00	0.27	
30-Sep	0.00	0.00	0.00	0.17	
		0.00	0.00	0.2	
sum	0.12	0.12	0.00	9.12	
Volume, ac-ft		**1.29**	**0.00**		
Total Vol, ac-ft		**1.29**		**Pan Evaporation from Sulphur Mesonet**	
				Rainfall data	

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-24	528.00	22.04	0.00	34.70	206.30	287.00	0.29	3.30	3.04	0.00	0.00	0.00	0.00
February-24	514.60	12.79	0.00	32.50	275.10	207.00	0.58	3.12	5.52	0.00	0.00	0.00	0.00
March-24	594.30	21.39	0.00	37.30	392.40	164.60	0.74	3.18	8.01	0.00	0.00	0.00	0.00
April-24	602.00	131.68	0.00	41.80	560.20	0.00	1.33	3.52	7.32	0.00	0.00	0.00	0.00
May-24	621.00	69.23	0.00	44.20	576.80	0.00	1.47	2.84	5.02	0.00	0.00	0.00	0.00
June-24	587.00	50.81	0.00	43.10	543.90	0.00	1.93	2.67	8.52	0.00	0.00	0.00	0.00
July-24	579.56	33.39	0.00	40.77	538.79	0.00	1.92	3.08	13.03	0.00	0.00	0.00	0.00
August-24	593.28	43.94	0.00	38.40	554.88	0.00	1.92	2.49	14.22	0.00	0.00	0.00	0.00
September-24	631.85	1.29	0.00	38.31	593.54	0.00	2.04	3.38	11.74	0.00	0.00	0.00	0.00
October-24		0.00			0.00	0.00	0.00	0.00		0.00	0.00		0.00
November-24		0.00			0.00	0.00	0.00	0.00		0.00	0.00		0.00
December-24		0.00			0.00	0.00	0.00	0.00		0.00	0.00		0.00

Settling Cell Evaporation and Infiltration

	FO2 East						FO2 West						FO3/FO4 South Settling Cell							
	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	Total Evaporation, ac-ft	Total Infiltration, ac-ft
January-24	50	330	0.06	21.00	0.08	1.72	50	350	0.00	0.00	0.22	0.00	200	435	0.34	21.00	0.03	0.56	0.40	2.28
February-24	50	330	0.00	0.00	0.08	0.00	50	350	0.14	25.00	0.22	5.57	200	435	0.68	25.00	0.03	0.67	0.82	6.24
March-24	50	330	0.17	23.00	0.08	1.88	50	350	0.00	0.00	0.22	0.00	200	435	0.87	23.00	0.03	0.61	1.04	2.50
April-24	50	330	0.00	0.00	0.08	0.00	50	350	0.20	26.00	0.22	5.79	200	435	0.99	26.00	0.03	0.69	1.19	6.49
May-24	50	330	0.21	22.00	0.08	1.80	50	350	0.00	0.00	0.22	0.00	200	435	1.09	22.00	0.03	0.59	1.30	2.39
June-24	50	330	0.00	0.00	0.08	0.00	50	350	0.29	20.00	0.22	4.46	200	435	1.43	20.00	0.03	0.53	1.72	4.99
July-24	50	330	0.27	22.00	0.08	1.80	50	350	0.00	0.00	0.22	0.00	200	435	1.43	22.00	0.03	0.59	1.70	2.39
August-24	50	330	0.00	0.00	0.08	0.00	50	350	0.29	21.00	0.22	4.68	200	435	1.43	21.00	0.03	0.56	1.72	5.24
September-24	50	330	0.29	20.00	0.08	1.64	50	350	0.00	0.00	0.22	0.00	200	435	1.52	20.00	0.03	0.53	1.81	2.17
October-24	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-24	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-24	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 Shipments			August Shipments			September Shipments		
	Tons Shipped	Ac-ft of water shipped		Tons Shipped	Ac-ft of water shipped		Tons Shipped	Ac-ft of water shipped
Base Products	-	-	Base Products	423	0.010	Base Products	3,987	0.098
Coarse Aggregates	241,126	2.898	Coarse Aggregates	191,244	2.299	Coarse Aggregates	248,516	2.987
Fine Aggregates	5,657	0.180	Fine Aggregates	5,845	0.186	Fine Aggregates	9,341	0.297
	246,783	3.078		197,512	2.495		261,844	3.381