MS4 WQV Retention Calculations

WQV Required

Total WQV	29,751	CF
50% WQV Required	14875.5	CF

SSDS #1

Volume within Isolator Row Chambers (8 chambers)	367.5	CF	*SC-740*
Number of Rows Provided	1		
Volume within Base Stone of Entire System	363	CF	
Total WQV Storage	**730.5**	**CF**	

SSDS #2

Volume within Isolator Rows Chambers (28 chambers each in 2 rows-56 total chambers)	6216.9	CF	*MC-3500*
Number of Rows Provided	2		
Volume within Base Stone of Entire System	4999.5	CF	
Volume within Chambers below lowest orifice (9 rows)	2919	CF	
Total WQV Storage	**14135.4**	**CF**	

Infiltration Pipe

Volume within Isolator Rows Chambers (28 chambers each in 2 rows-56 total chambers)	641.2	CF
Total WQV Storage	**641.2**	**CF**
TOTAL ON SITE	**15507.1**	**CF**

SSDS #1

Volume within Isolator Row   367.5 CF

The isolator row is 1 row of 8 chambers (SC-740)
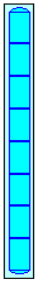
The chamber storage volume is used and is provided below:

Base Stone   363 CF

The base stone is located between elevations 69.30' and 69.80' (6")

The stone storage under 6 rows (5+1 isolator row) are provided below:

SSDS #2

Volume within Isolator Row   6,216.9 CF

The isolator row is 2 rows of 28 chambers (MC-3500)

The chamber storage volume is used and is provided below:

Base Stone   4999.5 CF

The base stone is located between elevations 64.25' and 65.00' (9")

The stone storage under 11 rows (9+2 isolator row) are provided below:

Elevation (feet)	Storage (cubic-feet)
64.25	0
64.27	132
64.29	265
64.31	397
64.33	529
64.35	661
64.37	794
64.39	926
64.41	1,058
64.43	1,190
64.45	1,323
64.47	1,455
64.49	1,587
64.51	1,720
64.53	1,852
64.55	1,984
64.57	2,116
64.59	2,249
64.61	2,381
64.63	2,513
64.65	2,645
64.67	2,778
64.69	2,910
64.71	3,042
64.73	3,175
64.75	3,307
64.77	3,439
64.79	3,571
64.81	3,704
64.83	3,836
64.85	3,968
64.87	4,100
64.89	4,233
64.91	4,365
64.93	4,497
64.95	4,630
64.97	4,762
64.99	4,894
65.01	5,105

65.00' is interpolated as 4,999.5CF

Chamber below lowest Orifice   2919.0 CF

Chamber Bottom is at 65.00' and the lowest orifice is at 65.25'

Does not include isolator row

Elevation	Storage
64.99	4,018
65.01	4,191
65.03	4,428
65.05	4,665
65.07	4,901
65.09	5,138
65.11	5,374
65.13	5,610
65.15	5,846
65.17	6,082
65.19	6,318
65.21	6,553
65.23	6,788
65.25	7,023
65.27	7,258
65.29	7,493

65.00' is interpolated as 4,104.5CF

Storage Provided is the Difference between =2,919CF

Infiltration Pipe

Volume within Pipe and Stone   641.2 CF

The pipe and stone void storage volume is used and is provided below:

Model: ADS N-12   Web Help   View   Size: 24"

ADS N-12® Pipe
Inside= 23.8"W x 23.8"H => 3.10 sf x 20.00'L = 62.0 cf
Outside= 28.0"W x 28.0"H => 3.92 sf x 20.00'L = 78.4 cf

☑ Use typical spacing

Row Spacing: (inches) 13.4
Side Stone: (inches) 10.0
End Stone: (inches) 10.0
Stone Cover: (inches) 4.0
Stone Base: (inches) 4.0
Side-Z: (run/rise) 0.0
Stone Voids: (%) 40.0
Stone Invert: (feet) 0.00

☐ Allow Exfiltration

Number of Rows: 1
Chambers per Row: 5
Row Adjustment: (feet) 0.00
Headers: 0

Chamber Cost: ($/ea) 0.00
Excavation: ($/cy) 0.00
Stone: ($/cy) 0.00

☐ Show Costs

Additional Materials:

#	Qty	Description	$ Price
1			
2			
3			

5 Chambers/Row x 20.00' Long = 100.00' Row Length
+10.0" End Stone x 2 = 101.67' Base Length

1 Rows x 28.0" Wide + 10.0" Side Stone x 2 = 4.00' Base Width

4.0" Base + 28.0" Chamber Height + 4.0" Cover = 3.00' Field Height

5 Chambers x 62.0 cf = 310.0 cf Chamber Storage

5 Chambers x 78.4 cf = 392.1 cf Displacement

1,220.0 cf Field - 392.1 cf Chambers = 827.9 cf Stone x 40.0% Voids = 331.2 cf Stone Storage

Chamber Storage + Stone Storage = 641.2 cf = 0.015 af
Overall Storage Efficiency = 52.6%
Overall System Size = 101.67' x 4.00' x 3.00'

5 Chambers
45.2 cy Field
30.7 cy Stone

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