



Appendix D

Back-to-Back Storms Analysis



**US Army Corps
of Engineers**
Norfolk District

Chesapeake
VIRGINIA

Department of Public Works

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Table D-1. Back-to-Back Storms Analysis

Back-to-Back 10-Year Storm Analysis													
SWMM Storage Node	Ground Elevation (ft)	Maximum Storage Capacity (ft ³)	Initial Water Surface Elevation (ft)	Dead Storage Vol., Before Storm (ft ³)	Available Net Storage Capacity, Before Storm (ft ³)	Peak Water Surface Elevation (ft)	Peak Storage Vol., During Storm (ft ³)	Peak Storage Vol. Minus Dead Storage, During Storm (ft ³)	Final Water Surface Elevation (ft)	Vol. In Storage, After 48-hrs (ft ³)	Vol. In Storage Minus Dead Storage, After 48-hrs (ft ³)	Available Net Storage Recovered in 48 Hours (%)	Available Net Storage Used (%)
134	8.80	2,562,406	3.80	1,628,207	934,199	5.54	1,939,435	311,228	4.39	1,732,079	103,872	67%	33%
144	8.80	2,205,678	3.80	1,492,307	713,372	5.50	1,726,489	234,182	4.39	1,572,605	80,299	66%	33%
158	9.00	556,936	3.90	287,360	269,575	5.47	362,042	74,682	4.40	310,342	22,982	69%	28%
164	8.80	2,322,583	3.80	1,523,623	798,960	5.47	1,776,575	252,952	4.39	1,611,396	87,774	65%	32%
178	7.50	399,955	2.80	194,001	205,953	4.62	266,784	72,783	3.55	222,927	28,926	60%	35%
340	8.80	974,757	2.80	440,293	534,464	5.09	623,622	183,329	3.55	497,527	57,234	69%	34%
360	7.80	81,833	2.80	25,902	55,931	5.28	49,890	23,988	3.55	32,377	6,475	73%	43%
520	12.00	65,048,478	8.00	56,465,990	8,582,488	10.06	60,856,874	4,390,883	9.29	59,208,389	2,742,398	38%	51%
580	8.90	2,811,431	5.20	1,740,731	1,070,700	5.71	1,881,208	140,477	5.41	1,798,299	57,568	59%	13%
700	9.00	867,726	6.10	628,153	239,573	8.23	800,837	172,684	6.35	647,481	19,329	89%	72%
704	8.60	346,562	6.10	232,992	113,571	7.82	308,719	75,727	6.35	243,339	10,347	86%	67%
740	8.80	10,187,460	3.80	4,831,060	5,356,401	5.55	6,665,014	1,833,954	4.84	5,915,657	1,084,597	41%	34%



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