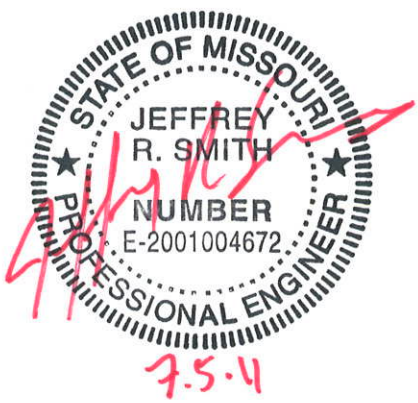
Water Quality & Detention Analysis
S.A.K. CONSTRUCTION
STORAGE YARD
O'FALLON, MISSOURI
(Musler Engineering Project No. 11-1230)

Prepared For:

S.A.K. CONSTRUCTION
864 Hoff Road
O'Fallon, Missouri 63366

Performed by:

Musler Engineering Company
32 Portwest Court
Saint Charles, MO 63303-5985



June 2011

WATER QUALITY & DETENTION ANALYSIS
S.A.K. CONSTRUCTION
STORAGE YARD

INTRODUCTION

At the request of S.A.K. Construction, we have conducted an analysis for detention and water quality for a dry detention basin.

SITE AND PROJECT DESCRIPTION

The S.A.K. Construction Storage Yard is located at 1012 Hoff Road in the City of O'Fallon, Saint Charles County, Missouri. The site is located on the west side of Hoff Road, approximately 0.8 miles north of the intersection with West Terra Lane. The site area for the S.A.K. Construction Storage Yard is approximately 10 acres. The drainage area of the proposed improvement enters an un-named creek to the west of the site and is tributary to Peruque Creek.

METHODOLOGY AND WATER QUALITY ANALYSIS

Soil types were determined to be Hydrologic Soil Group C (consisting of Weller Silt Loam 48B and 48C). This determination was made referencing the U.s. Department of Agriculture, Soil Conservation Service publication "Soil Survey of Saint Charles County, Missouri".

The Hydrologic Soil Group determines the Soil Conservation Service curve number to be used. The curve numbers are based on the land use of a watershed and affect the runoff rate for the design storm frequency. For this analysis the types of land use were determined using the post-developed conditions. The curve numbers and calculations are located in the Appendix at the back of this report.

The time of concentration for the basin was determined using the computer program known as TR-55. For the post-developed conditions sheet flow and shallow concentrated flow were estimated and summed to arrive at the basin's time of concentration.

The peak rate of run-off was determined using the computer program known as "Hydraflow Hydrographs 2002". The program incorporates the above mentioned curve numbers and the time of concentration to produce the hydrograph used in this analysis.

The 1 year – 24 hour storm event was analyzed to determine the required volume to be treated. This is the volume that must be captured and treated per City of O'Fallon Ordinance No. 5271. The volume required to be treated was determined to be 3.23 cfs.

METHODOLOGY AND DETENTION ANALYSIS

The storm run-off for the 2 year, 15 year, 25 year and 100 year – 20 minute storm events was determined using the Rational Method. The detention was analyzed using "Hydraflow Hydrographs 2007" (see Appendix). The time of concentration from the water quality analysis was used for this analysis also.

The project drains to the Peruque Creek watershed through an unnamed tributary

The table below shows the results for the basin.

HYDROLOGIC AND DETENTION SUMMARY TABLE

Storm Event	Pr. Flow to Basin	Max Allow. Outflow	Total Outflow	ELEV
2 yr.-20 min.	14.17 cfs	5.21 cfs	5.08 cfs	558.07
15 yr.-20 min.	22.95 cfs	8.45 cfs	7.47 cfs	558.65
25 yr.-20 min.	28.33 cfs	10.39 cfs	9.70 cfs	558.99
100 yr.-20 min.	36.25 cfs	13.33 cfs	12.83 cfs	559.38

Top of dam = 561.00
100yr. high water = 559.38
Freeboard = 1.62 feet
100yr. high water with low flow blocked = 559.64
Freeboard with low flow blocked = 1.36 feet
100yr. high water with 2-year sediment = 559.41
Freeboard with l2-year sediment = 1.59 feet

The detention basin will act as a sediment storage basin, and using the City's annual sediment storage chart will require 1,200 cu. ft. of storage over 2 years. Hydrograph 4 takes into account the sediment in the basin. The sediment had minimal impact on the basin, and detention for all storm events was achieved.

APPENDIX

CALCULATIONS
S.A.K. CONSTRUCTION
STORAGE YARD

Hydrologic Soil Types:

Soil Type 48B & 48C – Weller – Soil Group C

Proposed Conditions:

To detention basin: 7.48 acres

Grass, good condition:	1.30 acres	CN = 74
Gravel:	6.13 acres	CN = 89
Building:	0.05 acres	CN = 98

CN = [(1.30ac.)(74) + (6.13ac.)(89) + (0.05ac.)(98)/7.48ac.] = 86

NOTE: All Curve Numbers determined from "Urban Hydrology for Small Watersheds – Technical Release No. 55", Table 2-2, Runoff curve numbers for selected agricultural, suburban and urban land use. (Antecedent moisture condition II and $I_a = 0.2S$).

Overall Site:

Q=(PI)A

PI Factors:

Grass/Natural Conditions (5% impervious – including City of O'Fallon run-off factors):

PI = 1.15 (2 year – 20 minute) ✓
= 1.87 (15 year – 20 minute) ✓
= 2.30 (25 year – 20 minute) ✓
= 2.95 (100 year – 20 minute) ✓

Gravel Conditions (65% impervious – including City of O'Fallon run-off factors):

PI = 1.97 (2 year – 20 minute) ✓
= 3.19 (15 year – 20 minute) ✓
= 3.94 (25 year – 20 minute) ✓
= 5.04 (100 year – 20 minute) ✓

Pavement/Roof Conditions (100% impervious – including City of O'Fallon run-off factors):

PI = 2.39 (2 year – 20 minute) ✓
= 3.85 (15 year – 20 minute) ✓
= 4.75 (25 year – 20 minute) ✓
= 6.08 (100 year – 20 minute) ✓

Note: City of O'Fallon Run-off Factors are as follows:

2 year = 1.0
15 year = 1.1
25 year = 1.15
100 year = ~~1.25~~ 1.29

Site Area: 10.00 acres

Existing Conditions:

Northeast to Hoff Road Ditch: 1.03 acres
Grass: 1.03 acres

Q_{2yr} = (1.03ac.)(1.15) = 1.18 cfs ✓
Q_{15yr} = (1.03ac.)(1.87) = 1.93 cfs ✓
Q_{25yr} = (1.03ac.)(2.30) = 2.37 cfs ✓
Q_{100yr} = (1.03ac.)(2.95) = 3.04 cfs ✓

Southeast to Hoff Road Ditch: 0.89 acres
Pavement: 0.03 acres
Grass: 0.86 acres

Q_{2yr} = (0.03ac.)(2.39) + (0.86ac.)(1.15) = 1.06 cfs ✓
Q_{15yr} = (0.03ac.)(3.85) + (0.86ac.)(1.87) = 1.72 cfs ✓
Q_{25yr} = (0.03ac.)(4.75) + (0.86ac.)(2.30) = 2.12 cfs ✓
Q_{100yr} = (0.03ac.)(6.08) + (0.86ac.)(2.95) = 2.72 cfs ✓

South to field Ditch: 2.76 acres
Pavement: 0.02 acres
Grass: 2.74 acres

Q_{2yr} = (0.02ac.)(2.39) + (2.74ac.)(1.15) = 3.20 cfs ✓
Q_{15yr} = (0.02ac.)(3.85) + (2.74ac.)(1.87) = 5.20 cfs ✓
Q_{25yr} = (0.02ac.)(4.75) + (2.74ac.)(2.30) = 6.40 cfs ✓
Q_{100yr} = (0.02ac.)(6.08) + (2.74ac.)(2.95) = 8.20 cfs ✓

West to creek: 4.76 acres

Roof/Pavement:	0.18 acres
Offsite:	0.20 acres
Grass:	4.58 acres

Q_{2yr} = (0.18ac.)(2.39) + (0.20ac.)(2.39) + (4.58ac.)(1.15) = 6.18 cfs
Q_{15yr} = (0.18ac.)(3.85) + (0.20ac.)(3.85) + (4.58ac.)(1.87) = 10.03 cfs
Q_{25yr} = (0.18ac.)(4.75) + (0.20ac.)(~~3.85~~ 4.75) + (4.58ac.)(2.30) = 12.34 cfs
Q_{100yr} = (0.18ac.)(6.08) + (0.20ac.)(6.08) + (4.58ac.)(2.95) = 15.83 cfs

Northwest to Junkyard: 0.56 acres

Grass:	0.56 acres

Q_{2yr} = (0.56ac.)(1.15) = 0.64 cfs
Q_{15yr} = (0.56ac.)(1.87) = 1.05 cfs
Q_{25yr} = (0.56ac.)(2.30) = 1.29 cfs
Q_{100yr} = (0.56ac.)(2.95) = 1.65 cfs

Proposed Conditions:

Northeast to Hoff Road Ditch: 0.45 acres

Pavement:	0.02 acres
Grass:	0.43 acres

Q_{2yr} = (0.02ac.)(2.39) + (0.43ac.)(1.15) = 0.54 cfs
Q_{15yr} = (0.02ac.)(3.85) + (0.43ac.)(1.87) = 0.88 cfs
Q_{25yr} = (0.02ac.)(4.75) + (0.43ac.)(2.30) = 1.08 cfs
Q_{100yr} = (0.02ac.)(6.08) + (0.43ac.)(2.95) = 1.39 cfs

Southeast to Hoff Road Ditch: 0.51 acres

Pavement:	0.11 acres
Gravel:	0.04 acres
Grass:	0.36 acres

Q_{2yr} = (0.11ac.)(2.39) + (0.04ac.)(1.97) + (0.36ac.)(1.15) = 0.76 cfs
Q_{15yr} = (0.11ac.)(3.85) + (0.04ac.)(3.19) + (0.36ac.)(1.87) = 1.22 cfs
Q_{25yr} = (0.11ac.)(4.75) + (0.04ac.)(3.94) + (0.36ac.)(2.30) = 1.51 cfs
Q_{100yr} = (0.11ac.)(6.08) + (0.04ac.)(5.04) + (0.36ac.)(2.95) = 1.93 cfs

South to field Ditch: 0.60 acres

Grass:	0.60 acres

Q_{2yr} = (0.60ac.)(1.15) = 0.69 cfs
Q_{15yr} = (0.60ac.)(1.87) = 1.12 cfs
Q_{25yr} = (0.60ac.)(2.30) = 1.38 cfs
Q_{100yr} = (0.60ac.)(2.95) = 1.77 cfs

West to detention basin: 7.68 acres

Roof/Pavement:	0.05 acres
Offsite:	0.20 acres
Gravel:	6.13 acres
Grass:	1.30 acres

Q_{2yr} = (0.05ac.)(2.39) + (0.20ac.)(2.39) + (6.13ac.)(1.97) + (1.30ac.)(1.15)
= 14.17 cfs

Q_{15yr} = (0.05ac.)(3.85) + (0.20ac.)(3.85) + (6.13ac.)(3.19) + (1.30ac.)(1.87)
= 22.95 cfs

Q_{25yr} = (0.05ac.)(4.75) + (0.20ac.)~~(3.85)~~ 4.75 + (6.13ac.)(3.94) + (1.30ac.)(2.30)
= 28.33 cfs

Q_{100yr} = (0.05ac.)(6.08) + (0.20ac)(6.08) + (6.13ac)(5.04) + (1.30ac.)(2.95)
= 36.25 cfs

By-pass detention basin west to creek: 0.84 acres

Gravel:	0.01 acres
Grass:	0.83 acres

Q_{2yr} = (0.01ac.)(1.97) + (0.83ac.)(1.15) = 0.97 cfs
Q_{15yr} = (0.01ac.)(3.19) + (0.83ac.)(1.87) = 1.58 cfs
Q_{25yr} = (0.01ac.)(3.94) + (0.83ac.)(2.30) = 1.95 cfs
Q_{100yr} = (0.01ac.)(5.04) + (0.83ac.)(2.95) = 2.50 cfs

Northwest to Junkyard: 0.12 acres

Grass:	0.12 acres

Q_{2yr} = (0.12ac.)(1.15) = 0.14 cfs
Q_{15yr} = (0.12ac.)(1.87) = 0.22 cfs
Q_{25yr} = (0.12ac.)(2.30) = 0.28 cfs
Q_{100yr} = (0.12ac.)(2.95) = 0.35 cfs

Differential Run-off:

Q_{2yr} = 17.27 – 12.26 = 5.01 cfs
Q_{15yr} = 27.97 – 19.93 = 8.04 cfs
Q_{25yr} = 34.53 – 24.52 = 10.01 cfs
Q_{100yr} = 44.19 – 31.44 = 12.75 cfs

Allowable discharge from the detention basin

Q_{2yr} = 6.18 – 0.97 = 5.21 cfs
Q_{15yr} = 10.03 – 1.58 = 8.45 cfs
Q_{25yr} = 12.34 – 1.95 = 10.39 cfs
Q_{100yr} = 15.83 – 2.50 = 13.33 cfs

Actual discharge versus allowable discharge for detention basin:

Q_{2yr} = 5.08 cfs < 5.21 cfs
Q_{15yr} = 7.47 cfs < 8.45 cfs
Q_{25yr} = 9.70 cfs < 10.39 cfs
Q_{100yr} = 12.83 cfs < 13.33 cfs

Actual discharge versus allowable discharge for detention basin with Low Flow Blocked:

Q_{2yr} = 0.69 cfs < 5.21 cfs
Q_{15yr} = 3.95 cfs < 8.45 cfs
Q_{25yr} = 6.02 cfs < 10.39 cfs
Q_{100yr} = 13.24 cfs < 13.33 cfs

Actual discharge versus allowable discharge for detention basin with 2 year sediment:

Q_{2yr} = 5.15 cfs < 5.21 cfs
Q_{15yr} = 7.71 cfs < 8.45 cfs
Q_{25yr} = 9.95 cfs < 10.39 cfs
Q_{100yr} = 13.21 cfs < 13.33 cfs

Hydrograph Return Period Recap

Hydraflow Hydrographs by Intelisolve v9.2

Hyd. No.	Hydrograph type (origin)	Inflow Hyd(s)	Peak Outflow (cfs)								Hydrograph description
			1-Yr	2-Yr	3-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr	
1	SCS Runoff	------	3.229	------	------	------	------	------	------	------	Site

Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.2

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	3.229	1	719	7,190	----	------	------	Site

Hydrograph Report

Hyd. No. 1

Site

Hydrograph type	= SCS Runoff	Peak discharge	= 3.229 cfs
Storm frequency	= 1 yrs	Time to peak	= 719 min
Time interval	= 1 min	Hyd. volume	= 7,190 cuft
Drainage area	= 7.480 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 7.3 min
Total precip.	= 1.14 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.300 x 74) + (6.130 x 89) + (0.050 x 98)] / 7.480

Hydrograph Discharge Table

(Printed values >= 10.00% of Qp.)

Time (min)	Outflow cfs)	Time (min	Outflow cfs)
706	0.361	743	0.458
707	0.447	744	0.447
708	0.552	745	0.435
709	0.680	746	0.424
710	0.840	747	0.412
711	1.035	748	0.400
712	1.270	749	0.388
713	1.547	750	0.376
714	1.868	751	0.364
715	2.236	752	0.352
716	2.588	753	0.341
717	2.901	754	0.331
718	3.130		
719	3.229 <<	*...End*	
720	3.150		
721	2.957		
722	2.659		
723	2.296		
724	1.910		
725	1.549		
726	1.239		
727	0.994		
728	0.824		
729	0.703		
730	0.629		
731	0.591		
732	0.574		
733	0.564		
734	0.554		
735	0.544		
736	0.534		
737	0.524		
738	0.513		
739	0.502		
740	0.492		
741	0.481		
742	0.470		

TR55 Tc Worksheet

Hydraflow Hydrographs by Intelisolve v9.2

Hyd. No. 1

Site

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.025		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.50		0.00		0.00		
Land slope (%)	= 2.00		0.00		0.00		
Travel Time (min)	**= 2.23**	**+**	**0.00**	**+**	**0.00**	**=**	**2.23**
Shallow Concentrated Flow							
Flow length (ft)	= 700.00		0.00		0.00		
Watercourse slope (%)	= 2.00		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	= 2.28		0.00		0.00		
Travel Time (min)	**= 5.11**	**+**	**0.00**	**+**	**0.00**	**=**	**5.11**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	= 0.00		0.00		0.00		
Flow length (ft)	= 0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 7.30 min

Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2

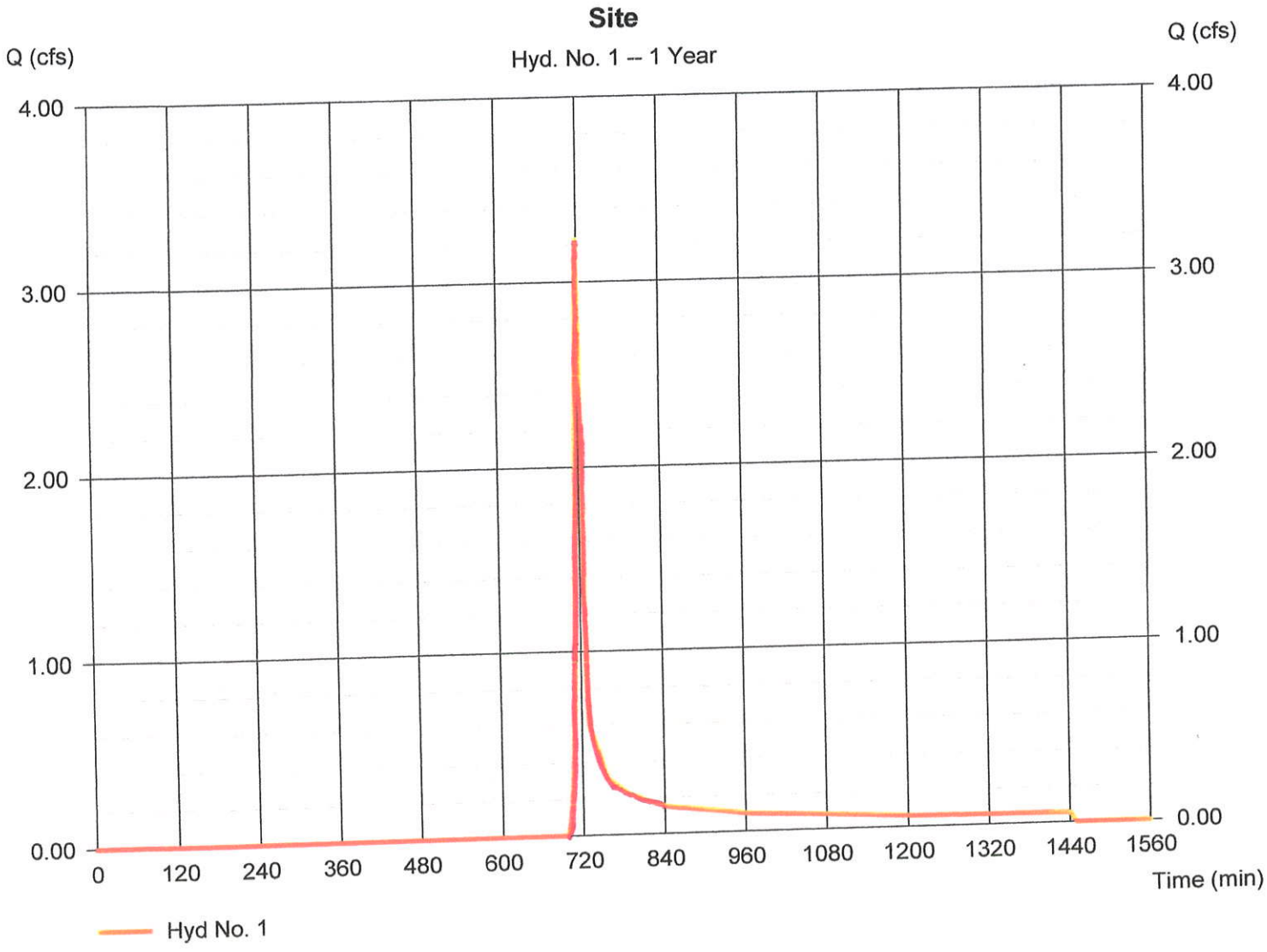
Friday, Jul 1, 2011

Hyd. No. 1

Site

Hydrograph type	= SCS Runoff	Peak discharge	= 3.229 cfs
Storm frequency	= 1 yrs	Time to peak	= 719 min
Time interval	= 1 min	Hyd. volume	= 7,190 cuft
Drainage area	= 7.480 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 7.30 min
Total precip.	= 1.14 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.300 x 74) + (6.130 x 89) + (0.050 x 98)] / 7.480



Hydrograph Return Period Recap

Hydraflow Hydrographs by Intelisolve v9.2

Hyd. No.	Hydrograph type (origin)	Inflow Hyd(s)	Peak Outflow (cfs)								Hydrograph description
			1-Yr	2-Yr	3-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr	
1	Manual	-------	-------	14.17	-------	-------	22.95	28.33	-------	36.25	Proposed to Basin
2	Reservoir	1	-------	5.083	-------	-------	7.470	9.698	-------	12.83	Detention Basin
3	Reservoir	1	-------	0.685	-------	-------	3.951	6.019	-------	13.24	Low Flow Blocked
4	Reservoir	1	-------	5.150	-------	-------	7.708	9.953	-------	13.21	With 2yr sediment

Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.2

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	Manual	14.17	1	7	17,004	---	------	------	Proposed to Basin
2	Reservoir	5.083	1	24	17,002	1	558.07	11,593	Detention Basin
3	Reservoir	0.685	1	27	4,955	1	558.42	16,791	Low Flow Blocked
4	Reservoir	5.150	1	24	17,019	1	558.11	11,003	With 2yr sediment

Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2

Tuesday, Jul 5, 2011

Hyd. No. 1

Proposed to Basin

Hydrograph type	= Manual	Peak discharge	= 14.17 cfs
Storm frequency	= 2 yrs	Time to peak	= 7 min
Time interval	= 1 min	Hyd. volume	= 43,500 cuft

(Printed values >= 30.00% of Qp.)

Hydrograph Discharge Table

Time (min)	Outflow cfs)
3	6.070
4	8.100
5	10.12
6	12.15
7	14.17 <<
8	14.17 <<
9	14.17 <<
10	14.17 <<
11	14.17 <<
12	14.17 <<
13	14.17 <<
14	14.17 <<
15	14.17 <<
16	14.17 <<
17	14.17 <<
18	14.17 <<
19	14.17 <<
20	14.17 <<
21	12.15
22	10.12
23	8.100
24	6.070

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2

Tuesday, Jul 5, 2011

Hyd. No. 2

Detention Basin

Hydrograph type	= Reservoir	Peak discharge	= 5.083 cfs
Storm frequency	= 2 yrs	Time to peak	= 24 min
Time interval	= 1 min	Hyd. volume	= 43,498 cuft
Inflow hyd. No.	= 1 - Proposed to Basin	Reservoir name	= Detention Basin
Max. Elevation	= 558.07 ft	Max. Storage	= 11,593 cuft

Storage Indication method used.

(Printed values >= 30.00% of Qp.)

Hydrograph Discharge Table

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
5	10.12	556.67	1.565	1.560	-----	-----	-----	-----	-----	-----	-----	1.560
6	12.15	556.93	2.627	2.560	-----	-----	-----	-----	-----	-----	-----	2.560
7	14.17 <<	557.06	3.120	3.072	-----	-----	-----	-----	-----	-----	-----	3.072
8	14.17 <<	557.14	3.361	3.346	-----	-----	-----	-----	-----	-----	-----	3.346
9	14.17 <<	557.21	3.555	3.553	-----	-----	-----	-----	-----	-----	-----	3.553
10	14.17 <<	557.29	3.738	3.726	-----	-----	-----	-----	-----	-----	-----	3.726
11	14.17 <<	557.36	3.868	3.863	-----	-----	-----	-----	-----	-----	-----	3.863
12	14.17 <<	557.43	4.010	3.996	-----	-----	-----	-----	-----	-----	-----	3.996
13	14.17 <<	557.50	4.175	4.134	-----	-----	-----	-----	-----	-----	-----	4.135
14	14.17 <<	557.58	4.276	4.265	-----	-----	-----	-----	-----	-----	-----	4.265
15	14.17 <<	557.65	4.384	4.384	-----	-----	-----	-----	-----	-----	-----	4.384
16	14.17 <<	557.71	4.509	4.496	-----	-----	-----	-----	-----	-----	-----	4.496
17	14.17 <<	557.78	4.682	4.610	-----	-----	-----	-----	-----	-----	-----	4.610
18	14.17 <<	557.85	4.797	4.724	-----	-----	-----	-----	-----	-----	-----	4.724
19	14.17 <<	557.92	4.893	4.836	-----	-----	-----	-----	-----	-----	-----	4.836
20	14.17 <<	557.98	4.989	4.943	-----	-----	-----	-----	-----	-----	-----	4.943
21	12.15	558.02	5.046	5.007	-----	-----	-----	-----	-----	-----	-----	5.007
22	10.12	558.05	5.082	5.045	-----	-----	-----	-----	-----	-----	-----	5.045
23	8.100	558.06	5.105	5.070	-----	-----	-----	-----	-----	-----	-----	5.070
24	6.070	558.07 <<	5.117	5.083	-----	-----	-----	-----	-----	-----	-----	5.083 <<
25	4.050	558.07	5.117	5.083	-----	-----	-----	-----	-----	-----	-----	5.083
26	2.020	558.06	5.105	5.070	-----	-----	-----	-----	-----	-----	-----	5.070
27	0.000	558.05	5.081	5.045	-----	-----	-----	-----	-----	-----	-----	5.045
28	0.000	558.03	5.052	5.013	-----	-----	-----	-----	-----	-----	-----	5.013
29	0.000	558.01	5.023	4.982	-----	-----	-----	-----	-----	-----	-----	4.982
30	0.000	557.98	4.981	4.935	-----	-----	-----	-----	-----	-----	-----	4.935
31	0.000	557.94	4.931	4.878	-----	-----	-----	-----	-----	-----	-----	4.878
32	0.000	557.91	4.880	4.821	-----	-----	-----	-----	-----	-----	-----	4.821
33	0.000	557.88	4.832	4.764	-----	-----	-----	-----	-----	-----	-----	4.764
34	0.000	557.84	4.783	4.708	-----	-----	-----	-----	-----	-----	-----	4.708
35	0.000	557.81	4.736	4.651	-----	-----	-----	-----	-----	-----	-----	4.651
36	0.000	557.78	4.662	4.596	-----	-----	-----	-----	-----	-----	-----	4.596
37	0.000	557.74	4.579	4.542	-----	-----	-----	-----	-----	-----	-----	4.542
38	0.000	557.71	4.498	4.489	-----	-----	-----	-----	-----	-----	-----	4.489
39	0.000	557.68	4.437	4.437	-----	-----	-----	-----	-----	-----	-----	4.437
40	0.000	557.65	4.387	4.386	-----	-----	-----	-----	-----	-----	-----	4.386
41	0.000	557.62	4.337	4.336	-----	-----	-----	-----	-----	-----	-----	4.336
42	0.000	557.59	4.290	4.284	-----	-----	-----	-----	-----	-----	-----	4.284
43	0.000	557.56	4.247	4.228	-----	-----	-----	-----	-----	-----	-----	4.228
44	0.000	557.53	4.205	4.173	-----	-----	-----	-----	-----	-----	-----	4.173
45	0.000	557.50	4.159	4.118	-----	-----	-----	-----	-----	-----	-----	4.118

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Detention Basin

Hydrograph Discharge Table

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
46	0.000	557.47	4.091	4.062	-----	-----	-----	-----	-----	-----	-----	4.062
47	0.000	557.44	4.023	4.007	-----	-----	-----	-----	-----	-----	-----	4.007
48	0.000	557.41	3.956	3.952	-----	-----	-----	-----	-----	-----	-----	3.952
49	0.000	557.38	3.904	3.901	-----	-----	-----	-----	-----	-----	-----	3.901
50	0.000	557.35	3.859	3.853	-----	-----	-----	-----	-----	-----	-----	3.853
51	0.000	557.33	3.815	3.805	-----	-----	-----	-----	-----	-----	-----	3.805
52	0.000	557.30	3.772	3.758	-----	-----	-----	-----	-----	-----	-----	3.758
53	0.000	557.27	3.707	3.697	-----	-----	-----	-----	-----	-----	-----	3.697
54	0.000	557.25	3.644	3.637	-----	-----	-----	-----	-----	-----	-----	3.637
55	0.000	557.22	3.581	3.578	-----	-----	-----	-----	-----	-----	-----	3.578
56	0.000	557.20	3.519	3.518	-----	-----	-----	-----	-----	-----	-----	3.518
57	0.000	557.17	3.456	3.449	-----	-----	-----	-----	-----	-----	-----	3.449
58	0.000	557.15	3.393	3.381	-----	-----	-----	-----	-----	-----	-----	3.381
59	0.000	557.12	3.332	3.315	-----	-----	-----	-----	-----	-----	-----	3.315
60	0.000	557.10	3.272	3.250	-----	-----	-----	-----	-----	-----	-----	3.250
61	0.000	557.08	3.192	3.157	-----	-----	-----	-----	-----	-----	-----	3.157
62	0.000	557.06	3.114	3.066	-----	-----	-----	-----	-----	-----	-----	3.066
63	0.000	557.03	3.039	2.978	-----	-----	-----	-----	-----	-----	-----	2.978
64	0.000	557.01	2.965	2.892	-----	-----	-----	-----	-----	-----	-----	2.892
65	0.000	556.97	2.800	2.725	-----	-----	-----	-----	-----	-----	-----	2.725
66	0.000	556.90	2.476	2.416	-----	-----	-----	-----	-----	-----	-----	2.416
67	0.000	556.83	2.213	2.157	-----	-----	-----	-----	-----	-----	-----	2.156
68	0.000	556.77	1.971	1.931	-----	-----	-----	-----	-----	-----	-----	1.931
69	0.000	556.72	1.747	1.736	-----	-----	-----	-----	-----	-----	-----	1.736
70	0.000	556.67	1.571	1.567	-----	-----	-----	-----	-----	-----	-----	1.567

...End

Hydrograph Report

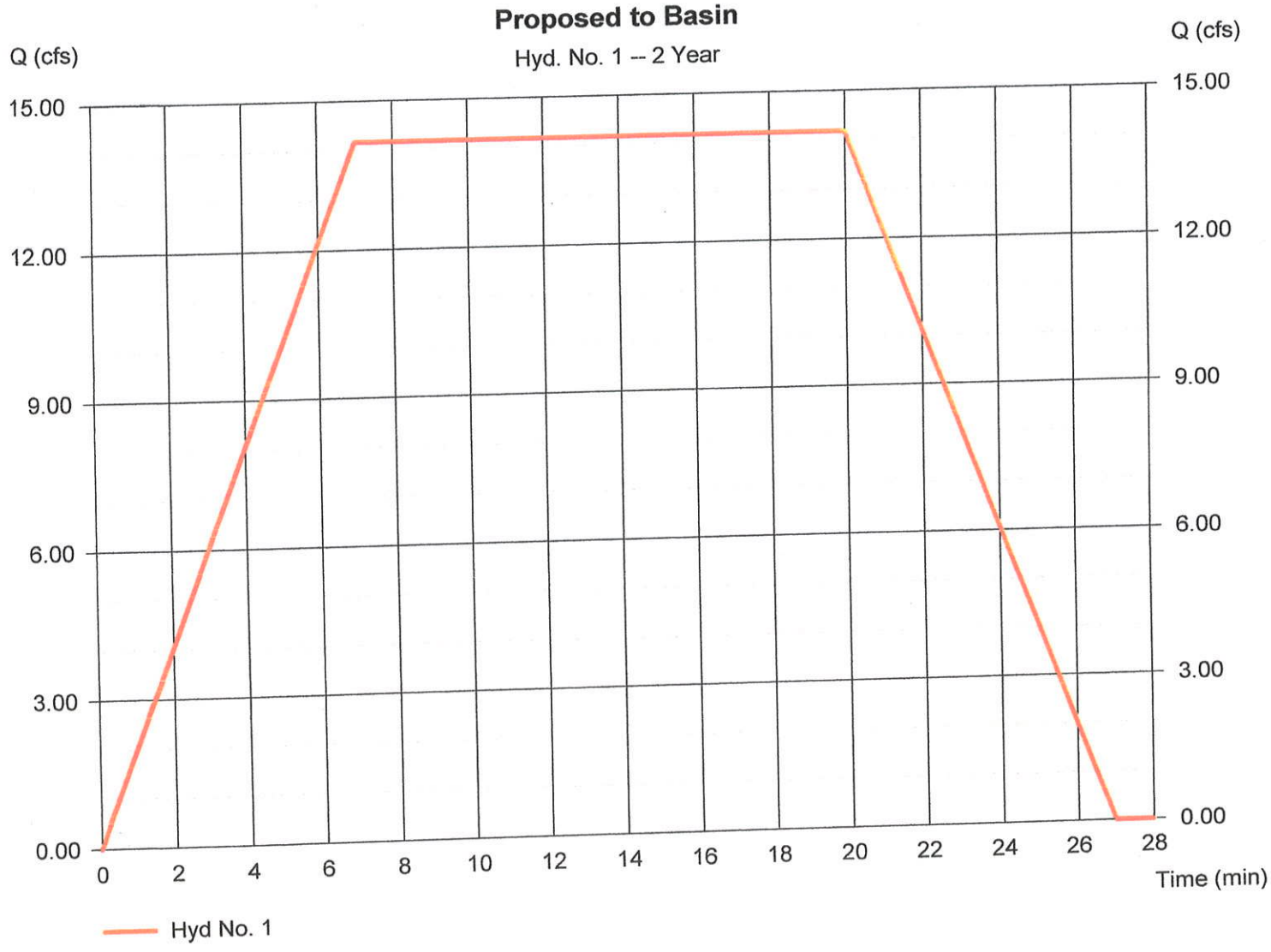
Hydraflow Hydrographs by Intelisolve v9.2

Tuesday, Jul 5, 2011

Hyd. No. 1

Proposed to Basin

Hydrograph type	= Manual	Peak discharge	= 14.17 cfs
Storm frequency	= 2 yrs	Time to peak	= 7 min
Time interval	= 1 min	Hyd. volume	= 17,004 cuft



Pond Report

Hydraflow Hydrographs by Intelisolve v9.2

Tuesday, Jul 5, 2011

Pond No. 1 - Detention Basin

Pond Data

Contours - User-defined contour areas. Average end area method used for volume calculation. Begining Elevation = 556.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	556.00	00	0	0
1.00	557.00	4,147	2,074	2,074
2.00	558.00	12,720	8,434	10,507
3.00	559.00	17,567	15,144	25,651
4.00	560.00	19,362	18,465	44,115
5.00	561.00	21,207	20,285	64,400

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	13.00	Inactive	0.00
Span (in)	= 24.00	10.00	0.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 555.74	556.00	0.00	0.00
Length (ft)	= 30.00	0.00	0.00	0.00
Slope (%)	= 3.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 11.07	1.50	0.00	0.00
Crest El. (ft)	= 559.40	558.15	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Riser	Rect	---	---
Multi-Stage	= Yes	Yes	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	556.00	0.00	0.00	---	---	0.00	0.00	---	---	---	---	0.000
0.10	207	556.10	0.42 ic	0.09 ic	---	---	0.00	0.00	---	---	---	---	0.090
0.20	415	556.20	0.42 ic	0.25 ic	---	---	0.00	0.00	---	---	---	---	0.254
0.30	622	556.30	0.48 ic	0.47 ic	---	---	0.00	0.00	---	---	---	---	0.466
0.40	829	556.40	0.73 ic	0.72 ic	---	---	0.00	0.00	---	---	---	---	0.718
0.50	1,037	556.50	1.00 ic	1.00 ic	---	---	0.00	0.00	---	---	---	---	1.003
0.60	1,244	556.60	1.34 ic	1.32 ic	---	---	0.00	0.00	---	---	---	---	1.318
0.70	1,451	556.70	1.66 ic	1.66 ic	---	---	0.00	0.00	---	---	---	---	1.661
0.80	1,659	556.80	2.08 ic	2.03 ic	---	---	0.00	0.00	---	---	---	---	2.029
0.90	1,866	556.90	2.48 ic	2.42 ic	---	---	0.00	0.00	---	---	---	---	2.422
1.00	2,074	557.00	2.92 ic	2.84 ic	---	---	0.00	0.00	---	---	---	---	2.837
1.10	2,917	557.10	3.27 ic	3.25 ic	---	---	0.00	0.00	---	---	---	---	3.248
1.20	3,760	557.20	3.53 ic	3.53 ic	---	---	0.00	0.00	---	---	---	---	3.527
1.30	4,604	557.30	3.77 ic	3.76 ic	---	---	0.00	0.00	---	---	---	---	3.758
1.40	5,447	557.40	3.93 ic	3.93 ic	---	---	0.00	0.00	---	---	---	---	3.933
1.50	6,290	557.50	4.17 ic	4.13 ic	---	---	0.00	0.00	---	---	---	---	4.125
1.60	7,134	557.60	4.31 ic	4.31 ic	---	---	0.00	0.00	---	---	---	---	4.310
1.70	7,977	557.70	4.47 ic	4.47 ic	---	---	0.00	0.00	---	---	---	---	4.471
1.80	8,820	557.80	4.72 ic	4.64 ic	---	---	0.00	0.00	---	---	---	---	4.637
1.90	9,664	557.90	4.87 ic	4.81 ic	---	---	0.00	0.00	---	---	---	---	4.806
2.00	10,507	558.00	5.01 ic	4.97 ic	---	---	0.00	0.00	---	---	---	---	4.970
2.10	12,021	558.10	5.16 ic	5.13 ic	---	---	0.00	0.00	---	---	---	---	5.127
2.20	13,536	558.20	5.32 ic	5.27 ic	---	---	0.00	0.00	---	---	---	---	5.324
2.30	15,050	558.30	5.76 ic	5.37 ic	---	---	0.00	0.06	---	---	---	---	5.664
2.40	16,564	558.40	6.10 ic	5.47 ic	---	---	0.00	0.29	---	---	---	---	6.097
2.50	18,079	558.50	6.69 ic	5.56 ic	---	---	0.00	0.62	---	---	---	---	6.591
2.60	19,593	558.60	7.16 ic	5.65 ic	---	---	0.00	1.03	---	---	---	---	7.155
2.70	21,107	558.70	7.80 ic	5.71 ic	---	---	0.00	1.51	---	---	---	---	7.748
2.80	22,622	558.80	8.44 ic	5.78 ic	---	---	0.00	2.04	---	---	---	---	8.392
2.90	24,136	558.90	9.08 ic	5.84 ic	---	---	0.00	2.62	---	---	---	---	9.080
3.00	25,651	559.00	9.84 ic	5.89 ic	---	---	0.00	3.24	---	---	---	---	9.801
3.10	27,497	559.10	10.59 ic	5.94 ic	---	---	0.00	3.91	---	---	---	---	10.56
3.20	29,343	559.20	11.43 ic	5.97 ic	---	---	0.00	4.62	---	---	---	---	11.34
3.30	31,190	559.30	12.20 ic	6.01 ic	---	---	0.00	5.37	---	---	---	---	12.17
3.40	33,036	559.40	13.01 ic	6.03 ic	---	---	0.00	6.16	---	---	---	---	13.01
3.50	34,883	559.50	14.84 ic	5.85 ic	---	---	1.16	6.98	---	---	---	---	14.84
								7.83	---	---	---	---	

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Detention Basin

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
3.60	36,729	559.60	17.40 ic	5.39 ic	---	---	3.29	8.72	---	---	---	---	17.40
3.70	38,576	559.70	20.05 ic	4.77 ic	---	---	6.05	9.23 s	---	---	---	---	20.05
3.80	40,422	559.80	22.42 ic	4.03 ic	---	---	9.32	9.07 s	---	---	---	---	22.42
3.90	42,269	559.90	24.50 ic	3.18 ic	---	---	13.02	8.29 s	---	---	---	---	24.50
4.00	44,115	560.00	25.73 ic	2.63 ic	---	---	15.38 s	7.71 s	---	---	---	---	25.73
4.10	46,143	560.10	26.56 ic	2.28 ic	---	---	16.89 s	7.38 s	---	---	---	---	26.56
4.20	48,172	560.20	27.24 ic	2.02 ic	---	---	18.10 s	7.13 s	---	---	---	---	27.24
4.30	50,200	560.30	27.84 ic	1.81 ic	---	---	19.11 s	6.92 s	---	---	---	---	27.83
4.40	52,229	560.40	28.37 ic	1.63 ic	---	---	19.99 s	6.75 s	---	---	---	---	28.37
4.50	54,257	560.50	28.87 ic	1.49 ic	---	---	20.77 s	6.60 s	---	---	---	---	28.86
4.60	56,286	560.60	29.33 ic	1.37 ic	---	---	21.48 s	6.48 s	---	---	---	---	29.33
4.70	58,314	560.70	29.78 ic	1.26 ic	---	---	22.13 s	6.38 s	---	---	---	---	29.76
4.80	60,343	560.80	30.20 ic	1.17 ic	---	---	22.74 s	6.29 s	---	---	---	---	30.20
4.90	62,371	560.90	30.61 ic	1.09 ic	---	---	23.29 s	6.22 s	---	---	---	---	30.60
5.00	64,400	561.00	31.01 ic	1.02 ic	---	---	23.82 s	6.15 s	---	---	---	---	31.00

...End

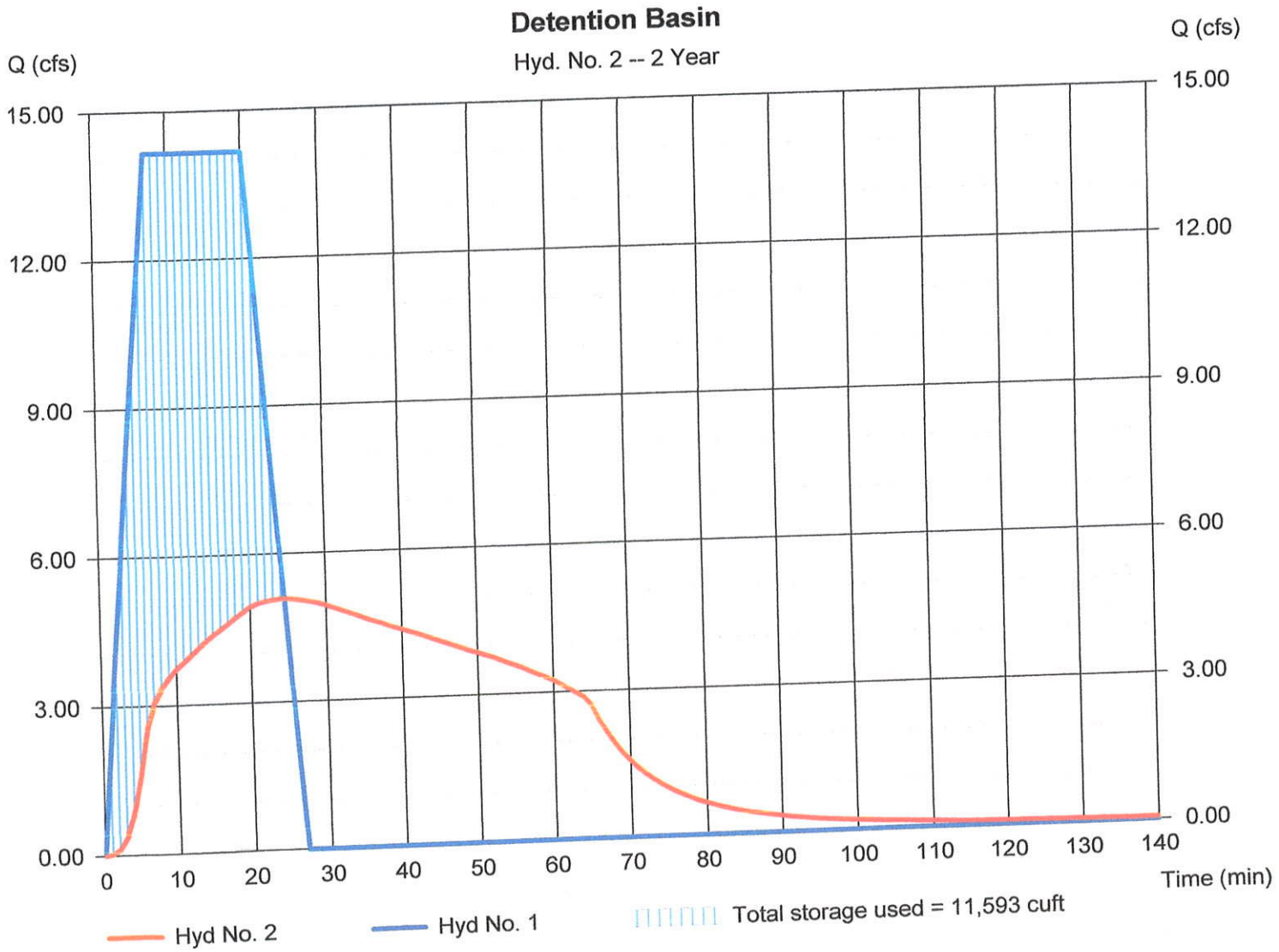
Hydrograph Report

Hyd. No. 2

Detention Basin

Hydrograph type	= Reservoir	Peak discharge	= 5.083 cfs
Storm frequency	= 2 yrs	Time to peak	= 24 min
Time interval	= 1 min	Hyd. volume	= 17,002 cuft
Inflow hyd. No.	= 1 - Proposed to Basin	Max. Elevation	= 558.07 ft
Reservoir name	= Detention Basin	Max. Storage	= 11,593 cuft

Storage Indication method used.



Pond Report

Hydraflow Hydrographs by Intelisolve v9.2

Tuesday, Jul 5, 2011

Pond No. 1 - Detention Basin

Pond Data

Contours - User-defined contour areas. Average end area method used for volume calculation. Begining Elevation = 556.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	556.00	00	0	0
1.00	557.00	4,147	2,074	2,074
2.00	558.00	12,720	8,434	10,507
3.00	559.00	17,567	15,144	25,651
4.00	560.00	19,362	18,465	44,115
5.00	561.00	21,207	20,285	64,400

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	13.00	Inactive	0.00
Span (in)	= 24.00	10.00	0.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 555.74	556.00	0.00	0.00
Length (ft)	= 30.00	0.00	0.00	0.00
Slope (%)	= 3.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

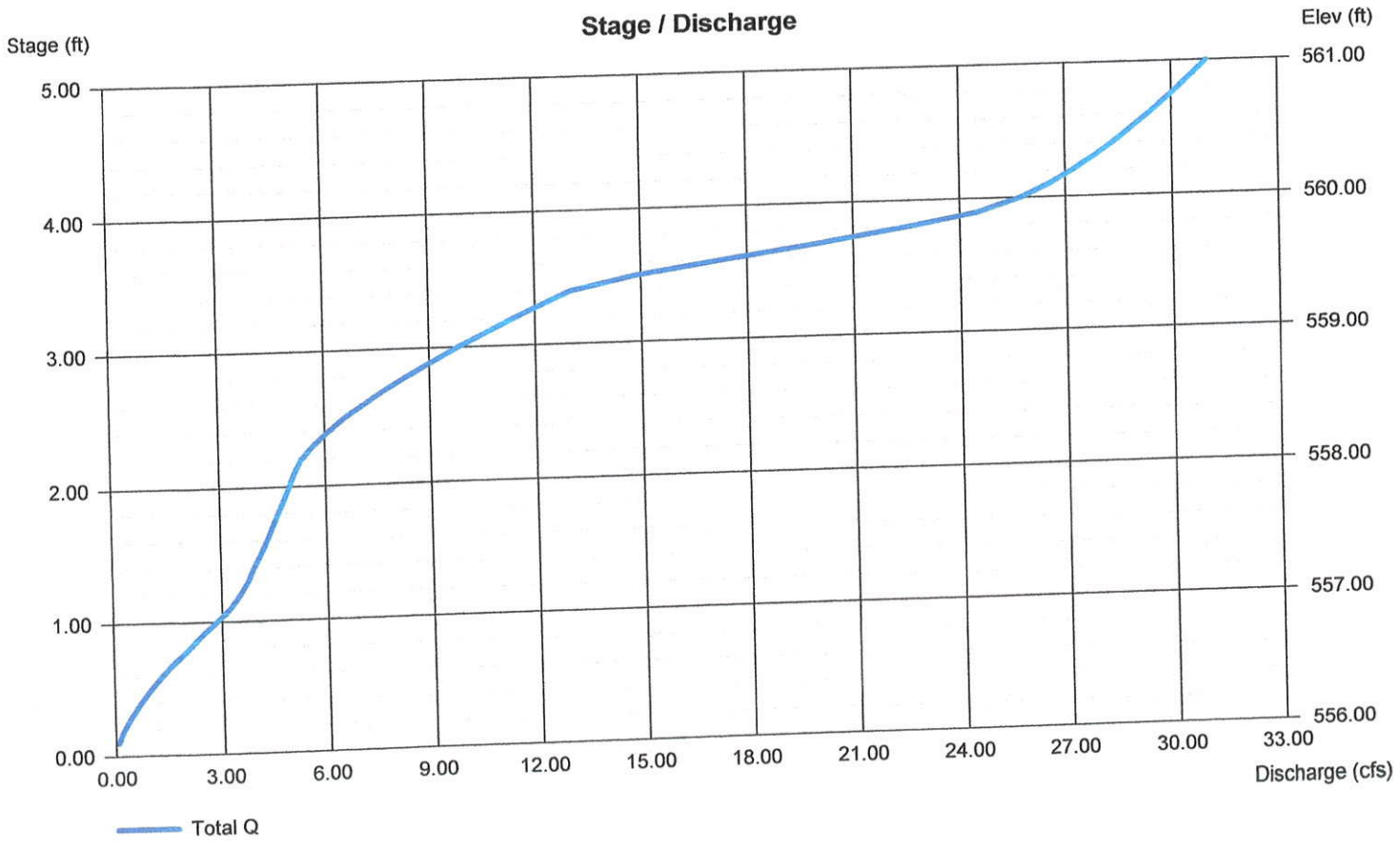
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 11.07 (12.57)	1.50	0.00 (538.10)	0.00
Crest El. (ft)	= 559.40	558.15	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Riser	Rect	---	---
Multi-Stage	= Yes	Yes	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2

Tuesday, Jul 5, 2011

Hyd. No. 3

Low Flow Blocked

Hydrograph type	= Reservoir	Peak discharge	= 0.685 cfs
Storm frequency	= 2 yrs	Time to peak	= 27 min
Time interval	= 1 min	Hyd. volume	= 31,451 cuft
Inflow hyd. No.	= 1 - Proposed to Basin	Reservoir name	= Detention Basin -
Max. Elevation	= 558.42 ft	Max. Storage	= 16,791 cuft

Storage Indication method used.

(Printed values >= 30.00% of Qp.)

Hydrograph Discharge Table

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
21	12.15	558.28	0.418	-----	-----	-----	-----	0.251	-----	-----	-----	0.251
22	10.12	558.33	0.476	-----	-----	-----	-----	0.378	-----	-----	-----	0.378
23	8.100	558.36	0.553	-----	-----	-----	-----	0.493	-----	-----	-----	0.493
24	6.070	558.39	0.610	-----	-----	-----	-----	0.579	-----	-----	-----	0.579
25	4.050	558.40	0.658	-----	-----	-----	-----	0.641	-----	-----	-----	0.641
26	2.020	558.41	0.698	-----	-----	-----	-----	0.680	-----	-----	-----	0.680
27	0.000	558.41 <<	0.704	-----	-----	-----	-----	0.685	-----	-----	-----	0.685 <<
28	0.000	558.41	0.692	-----	-----	-----	-----	0.674	-----	-----	-----	0.674
29	0.000	558.41	0.681	-----	-----	-----	-----	0.663	-----	-----	-----	0.663
30	0.000	558.41	0.670	-----	-----	-----	-----	0.653	-----	-----	-----	0.653
31	0.000	558.40	0.659	-----	-----	-----	-----	0.642	-----	-----	-----	0.642
32	0.000	558.40	0.648	-----	-----	-----	-----	0.632	-----	-----	-----	0.632
33	0.000	558.40	0.639	-----	-----	-----	-----	0.622	-----	-----	-----	0.622
34	0.000	558.40	0.634	-----	-----	-----	-----	0.614	-----	-----	-----	0.614
35	0.000	558.39	0.628	-----	-----	-----	-----	0.606	-----	-----	-----	0.606
36	0.000	558.39	0.623	-----	-----	-----	-----	0.598	-----	-----	-----	0.598
37	0.000	558.39	0.618	-----	-----	-----	-----	0.590	-----	-----	-----	0.590
38	0.000	558.39	0.612	-----	-----	-----	-----	0.582	-----	-----	-----	0.582
39	0.000	558.39	0.607	-----	-----	-----	-----	0.575	-----	-----	-----	0.575
40	0.000	558.38	0.602	-----	-----	-----	-----	0.567	-----	-----	-----	0.567
41	0.000	558.38	0.597	-----	-----	-----	-----	0.559	-----	-----	-----	0.560
42	0.000	558.38	0.592	-----	-----	-----	-----	0.552	-----	-----	-----	0.552
43	0.000	558.38	0.588	-----	-----	-----	-----	0.545	-----	-----	-----	0.545
44	0.000	558.37	0.583	-----	-----	-----	-----	0.538	-----	-----	-----	0.538
45	0.000	558.37	0.578	-----	-----	-----	-----	0.531	-----	-----	-----	0.531
46	0.000	558.37	0.573	-----	-----	-----	-----	0.524	-----	-----	-----	0.524
47	0.000	558.37	0.569	-----	-----	-----	-----	0.517	-----	-----	-----	0.517
48	0.000	558.37	0.564	-----	-----	-----	-----	0.510	-----	-----	-----	0.510
49	0.000	558.36	0.560	-----	-----	-----	-----	0.503	-----	-----	-----	0.503
50	0.000	558.36	0.555	-----	-----	-----	-----	0.497	-----	-----	-----	0.497
51	0.000	558.36	0.551	-----	-----	-----	-----	0.490	-----	-----	-----	0.490
52	0.000	558.36	0.547	-----	-----	-----	-----	0.484	-----	-----	-----	0.484
53	0.000	558.36	0.542	-----	-----	-----	-----	0.477	-----	-----	-----	0.477
54	0.000	558.35	0.538	-----	-----	-----	-----	0.471	-----	-----	-----	0.471
55	0.000	558.35	0.534	-----	-----	-----	-----	0.465	-----	-----	-----	0.465
56	0.000	558.35	0.530	-----	-----	-----	-----	0.459	-----	-----	-----	0.459
57	0.000	558.35	0.526	-----	-----	-----	-----	0.453	-----	-----	-----	0.453
58	0.000	558.35	0.522	-----	-----	-----	-----	0.447	-----	-----	-----	0.447
59	0.000	558.35	0.518	-----	-----	-----	-----	0.441	-----	-----	-----	0.441
60	0.000	558.34	0.514	-----	-----	-----	-----	0.435	-----	-----	-----	0.435
61	0.000	558.34	0.510	-----	-----	-----	-----	0.429	-----	-----	-----	0.429

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Low Flow Blocked

Hydrograph Discharge Table

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
116	0.000	558.27	0.418	-----	-----	-----	-----	0.229	-----	-----	-----	0.229
117	0.000	558.27	0.418	-----	-----	-----	-----	0.227	-----	-----	-----	0.227
118	0.000	558.27	0.418	-----	-----	-----	-----	0.225	-----	-----	-----	0.225
119	0.000	558.27	0.418	-----	-----	-----	-----	0.223	-----	-----	-----	0.223
120	0.000	558.27	0.418	-----	-----	-----	-----	0.221	-----	-----	-----	0.221
121	0.000	558.27	0.418	-----	-----	-----	-----	0.219	-----	-----	-----	0.219
122	0.000	558.27	0.418	-----	-----	-----	-----	0.217	-----	-----	-----	0.217
123	0.000	558.27	0.418	-----	-----	-----	-----	0.215	-----	-----	-----	0.215
124	0.000	558.27	0.418	-----	-----	-----	-----	0.213	-----	-----	-----	0.213
125	0.000	558.27	0.418	-----	-----	-----	-----	0.211	-----	-----	-----	0.211
126	0.000	558.27	0.418	-----	-----	-----	-----	0.209	-----	-----	-----	0.209
127	0.000	558.26	0.418	-----	-----	-----	-----	0.207	-----	-----	-----	0.207

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2

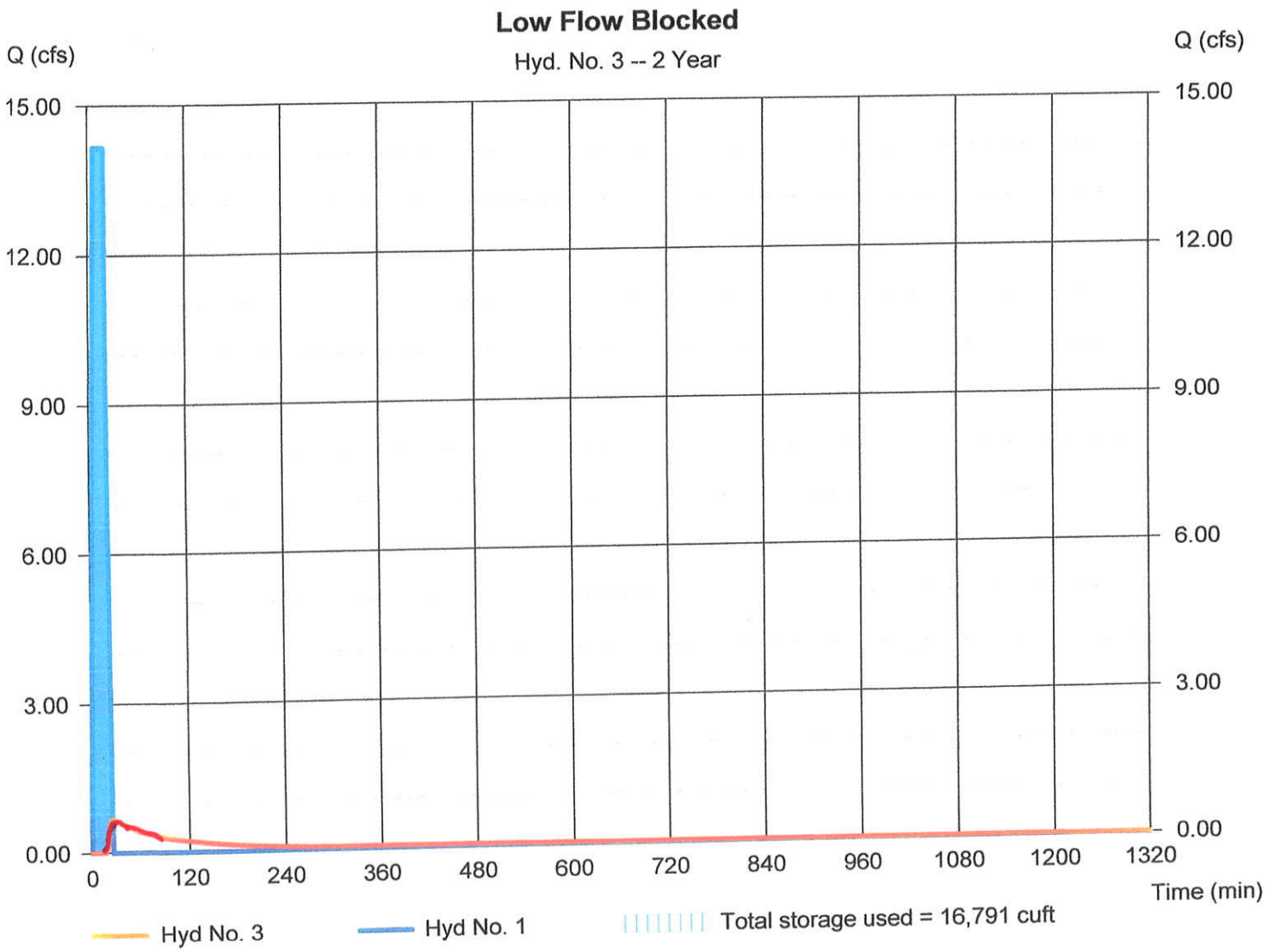
Tuesday, Jul 5, 2011

Hyd. No. 3

Low Flow Blocked

Hydrograph type	= Reservoir	Peak discharge	= 0.685 cfs
Storm frequency	= 2 yrs	Time to peak	= 27 min
Time interval	= 1 min	Hyd. volume	= 4,955 cuft
Inflow hyd. No.	= 1 - Proposed to Basin	Max. Elevation	= 558.42 ft
Reservoir name	= Detention Basin - LFB	Max. Storage	= 16,791 cuft

Storage Indication method used.



Pond Report

Hydraflow Hydrographs by Intelisolve v9.2

Tuesday, Jul 5, 2011

Pond No. 2 - Detention Basin - LFB

Pond Data

Contours - User-defined contour areas. Average end area method used for volume calculation. Begining Elevation = 556.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	556.00	00	0	0
1.00	557.00	4,147	2,074	2,074
2.00	558.00	12,720	8,434	10,507
3.00	559.00	17,567	15,144	25,651
4.00	560.00	19,362	18,465	44,115
5.00	561.00	21,207	20,285	64,400

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	Inactive	Inactive	0.00
Span (in)	= 24.00	10.00	0.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 555.74	556.00	0.00	0.00
Length (ft)	= 30.00	0.00	0.00	0.00
Slope (%)	= 3.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 11.07	1.50	0.00	0.00
Crest El. (ft)	= 559.40	558.15	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Riser	Rect	---	---
Multi-Stage	= Yes	Yes	No	No

558.10

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	556.00	0.00	0.00	---	---	0.00	0.00	---	---	---	---	0.000
0.10	207	556.10	0.42 ic	0.00	---	---	0.00	0.00	---	---	---	---	0.000
0.20	415	556.20	0.42 ic	0.00	---	---	0.00	0.00	---	---	---	---	0.000
0.30	622	556.30	0.42 ic	0.00	---	---	0.00	0.00	---	---	---	---	0.000
0.40	829	556.40	0.42 ic	0.00	---	---	0.00	0.00	---	---	---	---	0.000
0.50	1,037	556.50	0.42 ic	0.00	---	---	0.00	0.00	---	---	---	---	0.000
0.60	1,244	556.60	0.42 ic	0.00	---	---	0.00	0.00	---	---	---	---	0.000
0.70	1,451	556.70	0.42 ic	0.00	---	---	0.00	0.00	---	---	---	---	0.000
0.80	1,659	556.80	0.42 ic	0.00	---	---	0.00	0.00	---	---	---	---	0.000
0.90	1,866	556.90	0.42 ic	0.00	---	---	0.00	0.00	---	---	---	---	0.000
1.00	2,074	557.00	0.42 ic	0.00	---	---	0.00	0.00	---	---	---	---	0.000
1.10	2,917	557.10	0.42 ic	0.00	---	---	0.00	0.00	---	---	---	---	0.000
1.20	3,760	557.20	0.42 ic	0.00	---	---	0.00	0.00	---	---	---	---	0.000
1.30	4,604	557.30	0.42 ic	0.00	---	---	0.00	0.00	---	---	---	---	0.000
1.40	5,447	557.40	0.42 ic	0.00	---	---	0.00	0.00	---	---	---	---	0.000
1.50	6,290	557.50	0.42 ic	0.00	---	---	0.00	0.00	---	---	---	---	0.000
1.60	7,134	557.60	0.42 ic	0.00	---	---	0.00	0.00	---	---	---	---	0.000
1.70	7,977	557.70	0.42 ic	0.00	---	---	0.00	0.00	---	---	---	---	0.000
1.80	8,820	557.80	0.42 ic	0.00	---	---	0.00	0.00	---	---	---	---	0.000
1.90	9,664	557.90	0.42 ic	0.00	---	---	0.00	0.00	---	---	---	---	0.000
2.00	10,507	558.00	0.42 ic	0.00	---	---	0.00	0.00	---	---	---	---	0.000
2.10	12,021	558.10	0.42 ic	0.00	---	---	0.00	0.06	---	---	---	---	0.056
2.20	13,536	558.20	0.42 ic	0.00	---	---	0.00	0.29	---	---	---	---	0.290
2.30	15,050	558.30	0.42 ic	0.00	---	---	0.00	0.62	---	---	---	---	0.624
2.40	16,564	558.40	0.64 ic	0.00	---	---	0.00	1.03	---	---	---	---	1.034
2.50	18,079	558.50	1.07 ic	0.00	---	---	0.00	1.51	---	---	---	---	1.507
2.60	19,593	558.60	1.56 ic	0.00	---	---	0.00	2.04	---	---	---	---	2.036
2.70	21,107	558.70	2.08 ic	0.00	---	---	0.00	2.62	---	---	---	---	2.616
2.80	22,622	558.80	2.70 ic	0.00	---	---	0.00	3.24	---	---	---	---	3.243
2.90	24,136	558.90	3.27 ic	0.00	---	---	0.00	3.91	---	---	---	---	3.914
3.00	25,651	559.00	3.91 ic	0.00	---	---	0.00	4.62	---	---	---	---	4.625
3.10	27,497	559.10	4.72 ic	0.00	---	---	0.00	5.37	---	---	---	---	5.374
3.20	29,343	559.20	5.46 ic	0.00	---	---	0.00	6.16	---	---	---	---	6.159
3.30	31,190	559.30	6.22 ic	0.00	---	---	0.00	6.98	---	---	---	---	6.980
3.40	33,036	559.40	7.00 ic	0.00	---	---	1.16	7.83	---	---	---	---	8.997
3.50	34,883	559.50	9.07 ic	0.00	---	---							

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Detention Basin - LFB

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
3.60	36,729	559.60	12.07 ic	0.00	---	---	3.29	8.72	---	---	---	---	12.01
3.70	38,576	559.70	15.69 ic	0.00	---	---	6.05	9.64	---	---	---	---	15.69
3.80	40,422	559.80	19.62 ic	0.00	---	---	9.32	10.30 s	---	---	---	---	19.62
3.90	42,269	559.90	22.82 ic	0.00	---	---	13.02	9.80 s	---	---	---	---	22.82
4.00	44,115	560.00	25.17 ic	0.00	---	---	16.60 s	8.57 s	---	---	---	---	25.17
4.10	46,143	560.10	26.25 ic	0.00	---	---	18.21 s	8.04 s	---	---	---	---	26.25
4.20	48,172	560.20	27.05 ic	0.00	---	---	19.38 s	7.67 s	---	---	---	---	27.04
4.30	50,200	560.30	27.70 ic	0.00	---	---	20.33 s	7.38 s	---	---	---	---	27.70
4.40	52,229	560.40	28.28 ic	0.00	---	---	21.14 s	7.14 s	---	---	---	---	28.28
4.50	54,257	560.50	28.80 ic	0.00	---	---	21.84 s	6.95 s	---	---	---	---	28.79
4.60	56,286	560.60	29.28 ic	0.00	---	---	22.49 s	6.79 s	---	---	---	---	29.28
4.70	58,314	560.70	29.74 ic	0.00	---	---	23.08 s	6.65 s	---	---	---	---	29.73
4.80	60,343	560.80	30.17 ic	0.00	---	---	23.62 s	6.54 s	---	---	---	---	30.16
4.90	62,371	560.90	30.59 ic	0.00	---	---	24.14 s	6.44 s	---	---	---	---	30.58
5.00	64,400	561.00	30.99 ic	0.00	---	---	24.62 s	6.36 s	---	---	---	---	30.98

...End

Pond Report

B-12A

Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Jul 5, 2011

Pond No. 2 - Detention Basin - LFB

Pond Data

Contours - User-defined contour areas. Average end area method used for volume calculation. Begining Elevation = 556.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	556.00	00	0	0
1.00	557.00	4,147	2,074	2,074
2.00	558.00	12,720	8,434	10,507
3.00	559.00	17,567	15,144	25,651
4.00	560.00	19,362	18,465	44,115
5.00	561.00	21,207	20,285	64,400

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	Inactive	Inactive	0.00
Span (in)	= 24.00	10.00	0.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 555.74	556.00	0.00	0.00
Length (ft)	= 30.00	0.00	0.00	0.00
Slope (%)	= 3.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

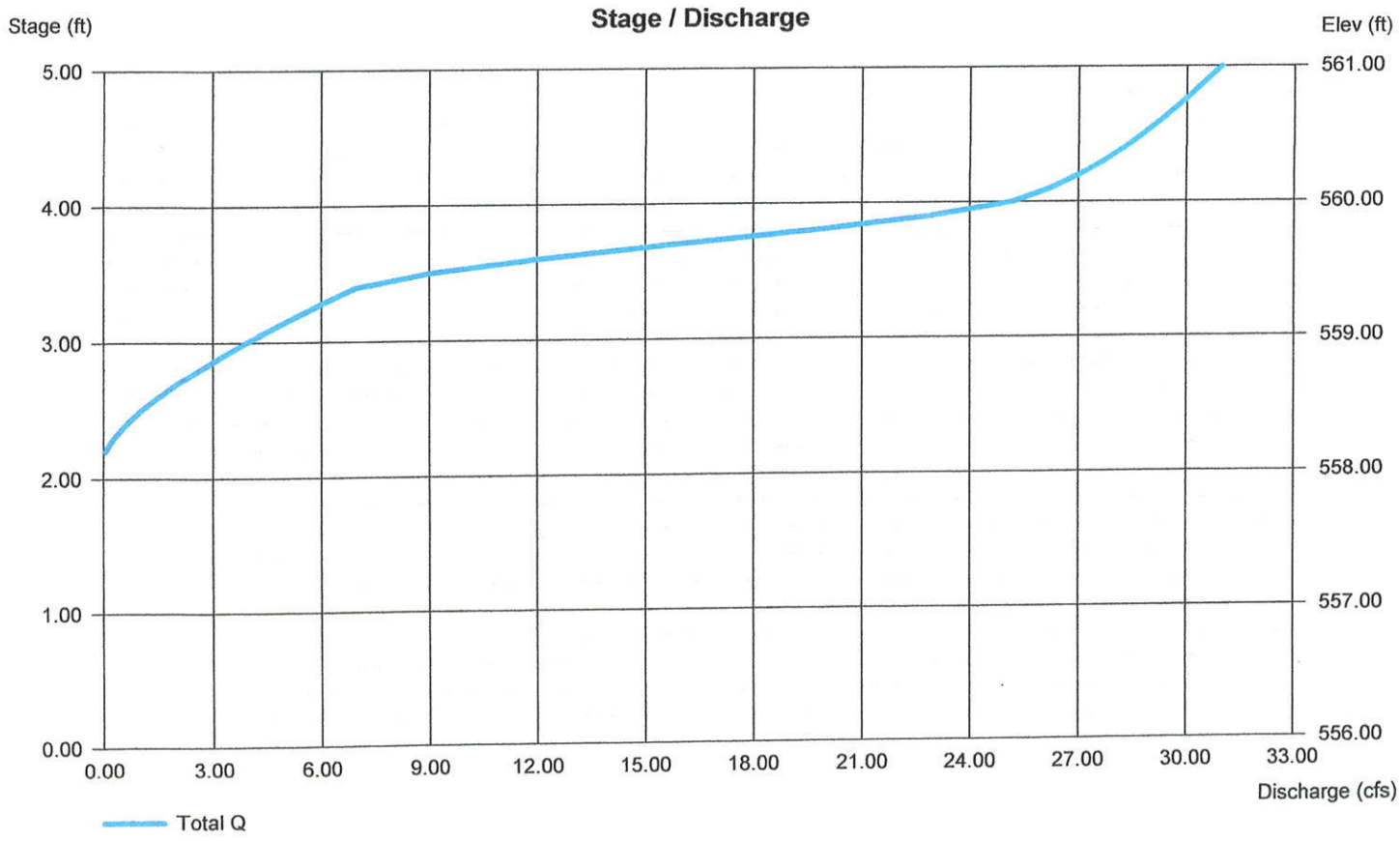
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 11.07 (12.57)	1.50	0.00 (558.10)	0.00
Crest El. (ft)	= 559.40	558.15	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Riser	Rect	---	---
Multi-Stage	= Yes	Yes	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2

Tuesday, Jul 5, 2011

Hyd. No. 4

With 2yr sediment

Hydrograph type	= Reservoir	Peak discharge	= 5.150 cfs
Storm frequency	= 2 yrs	Time to peak	= 24 min
Time interval	= 1 min	Hyd. volume	= 43,511 cuft
Inflow hyd. No.	= 1 - Proposed to Basin	Reservoir name	= Detention Basin -
Max. Elevation	= 558.11 ft	Max. Storage	= 11,003 cuft

Storage Indication method used.

Hydrograph Discharge Table

(Printed values >= 30.00% of Qp.)

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
3	6.070	556.74	1.851	1.792	-----	-----	-----	-----	-----	-----	-----	1.792
4	8.100	556.88	2.396	2.345	-----	-----	-----	-----	-----	-----	-----	2.345
5	10.12	557.02	2.977	2.906	-----	-----	-----	-----	-----	-----	-----	2.906
6	12.15	557.07	3.180	3.143	-----	-----	-----	-----	-----	-----	-----	3.143
7	14.17 <<	557.14	3.386	3.373	-----	-----	-----	-----	-----	-----	-----	3.373
8	14.17 <<	557.22	3.578	3.575	-----	-----	-----	-----	-----	-----	-----	3.575
9	14.17 <<	557.30	3.761	3.748	-----	-----	-----	-----	-----	-----	-----	3.748
10	14.17 <<	557.37	3.883	3.879	-----	-----	-----	-----	-----	-----	-----	3.879
11	14.17 <<	557.44	4.032	4.014	-----	-----	-----	-----	-----	-----	-----	4.014
12	14.17 <<	557.51	4.188	4.151	-----	-----	-----	-----	-----	-----	-----	4.151
13	14.17 <<	557.58	4.288	4.281	-----	-----	-----	-----	-----	-----	-----	4.282
14	14.17 <<	557.65	4.398	4.398	-----	-----	-----	-----	-----	-----	-----	4.398
15	14.17 <<	557.72	4.531	4.511	-----	-----	-----	-----	-----	-----	-----	4.511
16	14.17 <<	557.79	4.704	4.624	-----	-----	-----	-----	-----	-----	-----	4.624
17	14.17 <<	557.86	4.809	4.738	-----	-----	-----	-----	-----	-----	-----	4.738
18	14.17 <<	557.93	4.905	4.849	-----	-----	-----	-----	-----	-----	-----	4.849
19	14.17 <<	557.99	5.001	4.957	-----	-----	-----	-----	-----	-----	-----	4.957
20	14.17 <<	558.03	5.059	5.020	-----	-----	-----	-----	-----	-----	-----	5.020
21	12.15	558.06	5.106	5.071	-----	-----	-----	-----	-----	-----	-----	5.071
22	10.12	558.09	5.141	5.109	-----	-----	-----	-----	-----	-----	-----	5.109
23	8.100	558.10	5.165	5.133	-----	-----	-----	0.002	-----	-----	-----	5.135
24	6.070	558.11 <<	5.178	5.144	-----	-----	-----	0.007	-----	-----	-----	5.150 <<
25	4.050	558.11	5.177	5.143	-----	-----	-----	0.006	-----	-----	-----	5.150
26	2.020	558.10	5.163	5.131	-----	-----	-----	0.002	-----	-----	-----	5.133
27	0.000	558.09	5.139	5.106	-----	-----	-----	-----	-----	-----	-----	5.106
28	0.000	558.07	5.109	5.074	-----	-----	-----	-----	-----	-----	-----	5.074
29	0.000	558.05	5.080	5.043	-----	-----	-----	-----	-----	-----	-----	5.043
30	0.000	558.03	5.051	5.011	-----	-----	-----	-----	-----	-----	-----	5.011
31	0.000	558.01	5.022	4.980	-----	-----	-----	-----	-----	-----	-----	4.980
32	0.000	557.98	4.979	4.932	-----	-----	-----	-----	-----	-----	-----	4.932
33	0.000	557.94	4.928	4.875	-----	-----	-----	-----	-----	-----	-----	4.875
34	0.000	557.91	4.878	4.818	-----	-----	-----	-----	-----	-----	-----	4.818
35	0.000	557.87	4.829	4.761	-----	-----	-----	-----	-----	-----	-----	4.761
36	0.000	557.84	4.781	4.705	-----	-----	-----	-----	-----	-----	-----	4.705
37	0.000	557.81	4.733	4.648	-----	-----	-----	-----	-----	-----	-----	4.648
38	0.000	557.77	4.657	4.594	-----	-----	-----	-----	-----	-----	-----	4.594
39	0.000	557.74	4.575	4.539	-----	-----	-----	-----	-----	-----	-----	4.540
40	0.000	557.71	4.494	4.486	-----	-----	-----	-----	-----	-----	-----	4.486
41	0.000	557.68	4.435	4.434	-----	-----	-----	-----	-----	-----	-----	4.434
42	0.000	557.65	4.384	4.384	-----	-----	-----	-----	-----	-----	-----	4.384
43	0.000	557.61	4.334	4.334	-----	-----	-----	-----	-----	-----	-----	4.334

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With 2yr sediment

Hydrograph Discharge Table

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
44	0.000	557.58	4.288	4.281	-----	-----	-----	-----	-----	-----	-----	4.281
45	0.000	557.55	4.245	4.225	-----	-----	-----	-----	-----	-----	-----	4.225
46	0.000	557.52	4.202	4.170	-----	-----	-----	-----	-----	-----	-----	4.170
47	0.000	557.49	4.156	4.115	-----	-----	-----	-----	-----	-----	-----	4.115
48	0.000	557.47	4.087	4.059	-----	-----	-----	-----	-----	-----	-----	4.059
49	0.000	557.44	4.020	4.004	-----	-----	-----	-----	-----	-----	-----	4.004
50	0.000	557.41	3.953	3.949	-----	-----	-----	-----	-----	-----	-----	3.949
51	0.000	557.38	3.902	3.899	-----	-----	-----	-----	-----	-----	-----	3.899
52	0.000	557.35	3.857	3.850	-----	-----	-----	-----	-----	-----	-----	3.850
53	0.000	557.33	3.813	3.803	-----	-----	-----	-----	-----	-----	-----	3.803
54	0.000	557.30	3.769	3.755	-----	-----	-----	-----	-----	-----	-----	3.755
55	0.000	557.27	3.704	3.694	-----	-----	-----	-----	-----	-----	-----	3.694
56	0.000	557.25	3.640	3.634	-----	-----	-----	-----	-----	-----	-----	3.634
57	0.000	557.22	3.578	3.575	-----	-----	-----	-----	-----	-----	-----	3.575
58	0.000	557.20	3.516	3.515	-----	-----	-----	-----	-----	-----	-----	3.515
59	0.000	557.17	3.452	3.446	-----	-----	-----	-----	-----	-----	-----	3.446
60	0.000	557.15	3.390	3.378	-----	-----	-----	-----	-----	-----	-----	3.378
61	0.000	557.12	3.329	3.311	-----	-----	-----	-----	-----	-----	-----	3.311
62	0.000	557.10	3.269	3.246	-----	-----	-----	-----	-----	-----	-----	3.246
63	0.000	557.08	3.188	3.152	-----	-----	-----	-----	-----	-----	-----	3.152
64	0.000	557.05	3.111	3.061	-----	-----	-----	-----	-----	-----	-----	3.061
65	0.000	557.03	3.035	2.973	-----	-----	-----	-----	-----	-----	-----	2.973
66	0.000	557.01	2.962	2.888	-----	-----	-----	-----	-----	-----	-----	2.888
67	0.000	556.97	2.754	2.706	-----	-----	-----	-----	-----	-----	-----	2.706
68	0.000	556.90	2.434	2.404	-----	-----	-----	-----	-----	-----	-----	2.404
69	0.000	556.83	2.170	2.144	-----	-----	-----	-----	-----	-----	-----	2.144
70	0.000	556.77	1.951	1.922	-----	-----	-----	-----	-----	-----	-----	1.922
71	0.000	556.72	1.778	1.728	-----	-----	-----	-----	-----	-----	-----	1.728
72	0.000	556.67	1.590	1.560	-----	-----	-----	-----	-----	-----	-----	1.560

...End

Hydrograph Report

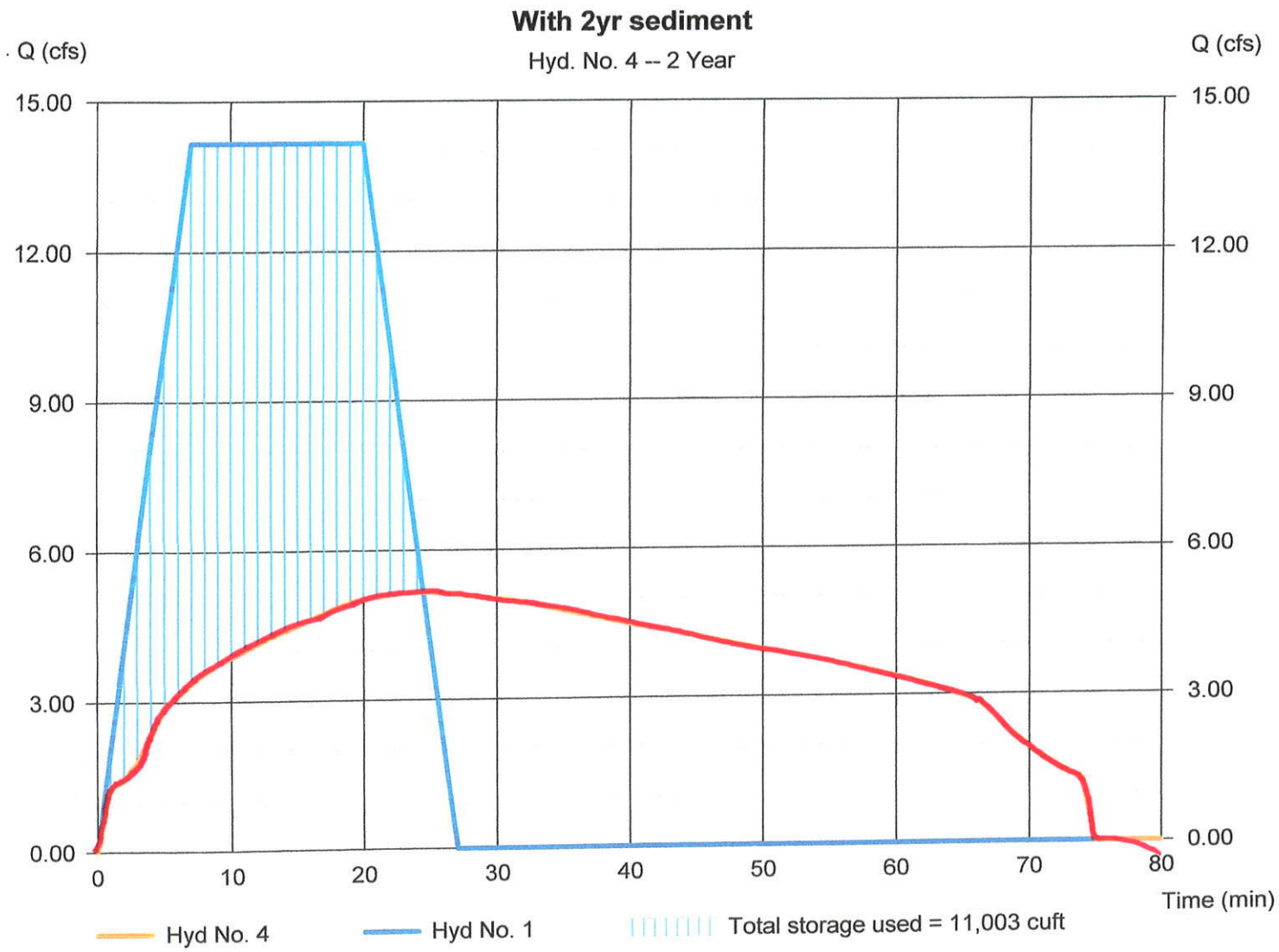
Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Jul 5, 2011

Hyd. No. 4

With 2yr sediment

Hydrograph type	= Reservoir	Peak discharge	= 5.150 cfs
Storm frequency	= 2 yrs	Time to peak	= 24 min
Time interval	= 1 min	Hyd. volume	= 17,019 cuft
Inflow hyd. No.	= 1 - Proposed to Basin	Max. Elevation	= 558.11 ft
Reservoir name	= Detention Basin - Sediment	Max. Storage	= 11,003 cuft

Storage Indication method used.



Pond Report

Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Jul 5, 2011

Pond No. 3 - Detention Basin - Sediment

Pond Data

Contours - User-defined contour areas. Average end area method used for volume calculation. Begining Elevation = 556.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	556.00	00	0	0
0.58	556.58	15	4	4
1.00	557.00	4,147	874	878
2.00	558.00	12,720	8,434	9,312
3.00	559.00	17,567	15,144	24,455
4.00	560.00	19,362	18,465	42,920
5.00	561.00	21,207	20,285	63,204

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	13.00	Inactive	0.00
Span (in)	= 24.00	10.00	0.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 555.74	556.00	0.00	0.00
Length (ft)	= 30.00	0.00	0.00	0.00
Slope (%)	= 3.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 11.07	1.50	0.00	0.00
Crest El. (ft)	= 559.40	558.15	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Riser	Rect	---	---
Multi-Stage	= Yes	Yes	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	556.00	0.00	0.00	---	---	0.00	0.00	---	---	---	---	0.000
0.06	0	556.06	0.42 ic	0.04 ic	---	---	0.00	0.00	---	---	---	---	0.040
0.12	1	556.12	0.42 ic	0.11 ic	---	---	0.00	0.00	---	---	---	---	0.112
0.17	1	556.17	0.42 ic	0.21 ic	---	---	0.00	0.00	---	---	---	---	0.206
0.23	2	556.23	0.42 ic	0.32 ic	---	---	0.00	0.00	---	---	---	---	0.317
0.29	2	556.29	0.44 ic	0.44 ic	---	---	0.00	0.00	---	---	---	---	0.443
0.35	3	556.35	0.60 ic	0.58 ic	---	---	0.00	0.00	---	---	---	---	0.582
0.41	3	556.41	0.73 ic	0.73 ic	---	---	0.00	0.00	---	---	---	---	0.734
0.46	3	556.46	0.90 ic	0.90 ic	---	---	0.00	0.00	---	---	---	---	0.897
0.52	4	556.52	1.07 ic	1.07 ic	---	---	0.00	0.00	---	---	---	---	1.070
0.58	4	556.58	1.26 ic	1.25 ic	---	---	0.00	0.00	---	---	---	---	1.253
0.62	92	556.62	1.41 ic	1.39 ic	---	---	0.00	0.00	---	---	---	---	1.392
0.66	179	556.66	1.56 ic	1.54 ic	---	---	0.00	0.00	---	---	---	---	1.535
0.71	267	556.71	1.73 ic	1.68 ic	---	---	0.00	0.00	---	---	---	---	1.683
0.75	354	556.75	1.90 ic	1.84 ic	---	---	0.00	0.00	---	---	---	---	1.835
0.79	441	556.79	1.99 ic	1.99 ic	---	---	0.00	0.00	---	---	---	---	1.992
0.83	529	556.83	2.18 ic	2.15 ic	---	---	0.00	0.00	---	---	---	---	2.153
0.87	616	556.87	2.38 ic	2.32 ic	---	---	0.00	0.00	---	---	---	---	2.318
0.92	704	556.92	2.49 ic	2.49 ic	---	---	0.00	0.00	---	---	---	---	2.487
0.96	791	556.96	2.70 ic	2.66 ic	---	---	0.00	0.00	---	---	---	---	2.660
1.00	878	557.00	2.92 ic	2.84 ic	---	---	0.00	0.00	---	---	---	---	2.837
1.10	1,722	557.10	3.27 ic	3.25 ic	---	---	0.00	0.00	---	---	---	---	3.248
1.20	2,565	557.20	3.53 ic	3.53 ic	---	---	0.00	0.00	---	---	---	---	3.527
1.30	3,408	557.30	3.77 ic	3.76 ic	---	---	0.00	0.00	---	---	---	---	3.758
1.40	4,252	557.40	3.93 ic	3.93 ic	---	---	0.00	0.00	---	---	---	---	3.932
1.50	5,095	557.50	4.17 ic	4.13 ic	---	---	0.00	0.00	---	---	---	---	4.126
1.60	5,938	557.60	4.31 ic	4.31 ic	---	---	0.00	0.00	---	---	---	---	4.310
1.70	6,782	557.70	4.47 ic	4.47 ic	---	---	0.00	0.00	---	---	---	---	4.471
1.80	7,625	557.80	4.72 ic	4.64 ic	---	---	0.00	0.00	---	---	---	---	4.638
1.90	8,469	557.90	4.87 ic	4.81 ic	---	---	0.00	0.00	---	---	---	---	4.806
2.00	9,312	558.00	5.01 ic	4.97 ic	---	---	0.00	0.00	---	---	---	---	4.970
2.10	10,826	558.10	5.16 ic	5.13 ic	---	---	0.00	0.00	---	---	---	---	5.127
2.20	12,341	558.20	5.32 ic	5.27 ic	---	---	0.00	0.06	---	---	---	---	5.324
2.30	13,855	558.30	5.76 ic	5.37 ic	---	---	0.00	0.29	---	---	---	---	5.664
2.40	15,369	558.40	6.10 ic	5.47 ic	---	---	0.00	0.62	---	---	---	---	6.097

Continues on next page...

Detention Basin - Sediment

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
2.50	16,884	558.50	6.69 ic	5.56 ic	---	---	0.00	1.03	---	---	---	---	6.591
2.60	18,398	558.60	7.16 ic	5.65 ic	---	---	0.00	1.51	---	---	---	---	7.155
2.70	19,912	558.70	7.80 ic	5.71 ic	---	---	0.00	2.04	---	---	---	---	7.748
2.80	21,427	558.80	8.44 ic	5.78 ic	---	---	0.00	2.62	---	---	---	---	8.392
2.90	22,941	558.90	9.08 ic	5.84 ic	---	---	0.00	3.24	---	---	---	---	9.080
3.00	24,455	559.00	9.84 ic	5.89 ic	---	---	0.00	3.91	---	---	---	---	9.801
3.10	26,302	559.10	10.59 ic	5.94 ic	---	---	0.00	4.62	---	---	---	---	10.56
3.20	28,148	559.20	11.43 ic	5.97 ic	---	---	0.00	5.37	---	---	---	---	11.34
3.30	29,995	559.30	12.20 ic	6.01 ic	---	---	0.00	6.16	---	---	---	---	12.17
3.40	31,841	559.40	13.01 ic	6.03 ic	---	---	0.00	6.98	---	---	---	---	13.01
3.50	33,688	559.50	14.84 ic	5.85 ic	---	---	1.16	7.83	---	---	---	---	14.84
3.60	35,534	559.60	17.40 ic	5.39 ic	---	---	3.29	8.72	---	---	---	---	17.40
3.70	37,381	559.70	20.05 ic	4.77 ic	---	---	6.05	9.23 s	---	---	---	---	20.05
3.80	39,227	559.80	22.42 ic	4.03 ic	---	---	9.32	9.07 s	---	---	---	---	22.42
3.90	41,073	559.90	24.50 ic	3.18 ic	---	---	13.02	8.29 s	---	---	---	---	24.50
4.00	42,920	560.00	25.73 ic	2.63 ic	---	---	15.39 s	7.71 s	---	---	---	---	25.73
4.10	44,948	560.10	26.56 ic	2.28 ic	---	---	16.89 s	7.38 s	---	---	---	---	26.56
4.20	46,977	560.20	27.24 ic	2.02 ic	---	---	18.10 s	7.13 s	---	---	---	---	27.24
4.30	49,005	560.30	27.84 ic	1.81 ic	---	---	19.11 s	6.92 s	---	---	---	---	27.83
4.40	51,034	560.40	28.37 ic	1.63 ic	---	---	19.99 s	6.74 s	---	---	---	---	28.36
4.50	53,062	560.50	28.87 ic	1.49 ic	---	---	20.77 s	6.60 s	---	---	---	---	28.86
4.60	55,091	560.60	29.33 ic	1.37 ic	---	---	21.49 s	6.48 s	---	---	---	---	29.33
4.70	57,119	560.70	29.78 ic	1.26 ic	---	---	22.13 s	6.38 s	---	---	---	---	29.77
4.80	59,147	560.80	30.20 ic	1.17 ic	---	---	22.73 s	6.29 s	---	---	---	---	30.20
4.90	61,176	560.90	30.61 ic	1.09 ic	---	---	23.30 s	6.22 s	---	---	---	---	30.61
5.00	63,204	561.00	31.01 ic	1.02 ic	---	---	23.83 s	6.16 s	---	---	---	---	31.01

...End

B-16A

Pond Report

Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Jul 5, 2011

Pond No. 3 - Detention Basin - Sediment

Pond Data

Contours - User-defined contour areas. Average end area method used for volume calculation. Begining Elevation = 556.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	556.00	00	0	0
0.58	556.58	15	4	4
1.00	557.00	4,147	874	878
2.00	558.00	12,720	8,434	9,312
3.00	559.00	17,567	15,144	24,455
4.00	560.00	19,362	18,465	42,920
5.00	561.00	21,207	20,285	63,204

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	13.00	Inactive	0.00
Span (in)	= 24.00	10.00	0.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 555.74	556.00	0.00	0.00
Length (ft)	= 30.00	0.00	0.00	0.00
Slope (%)	= 3.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

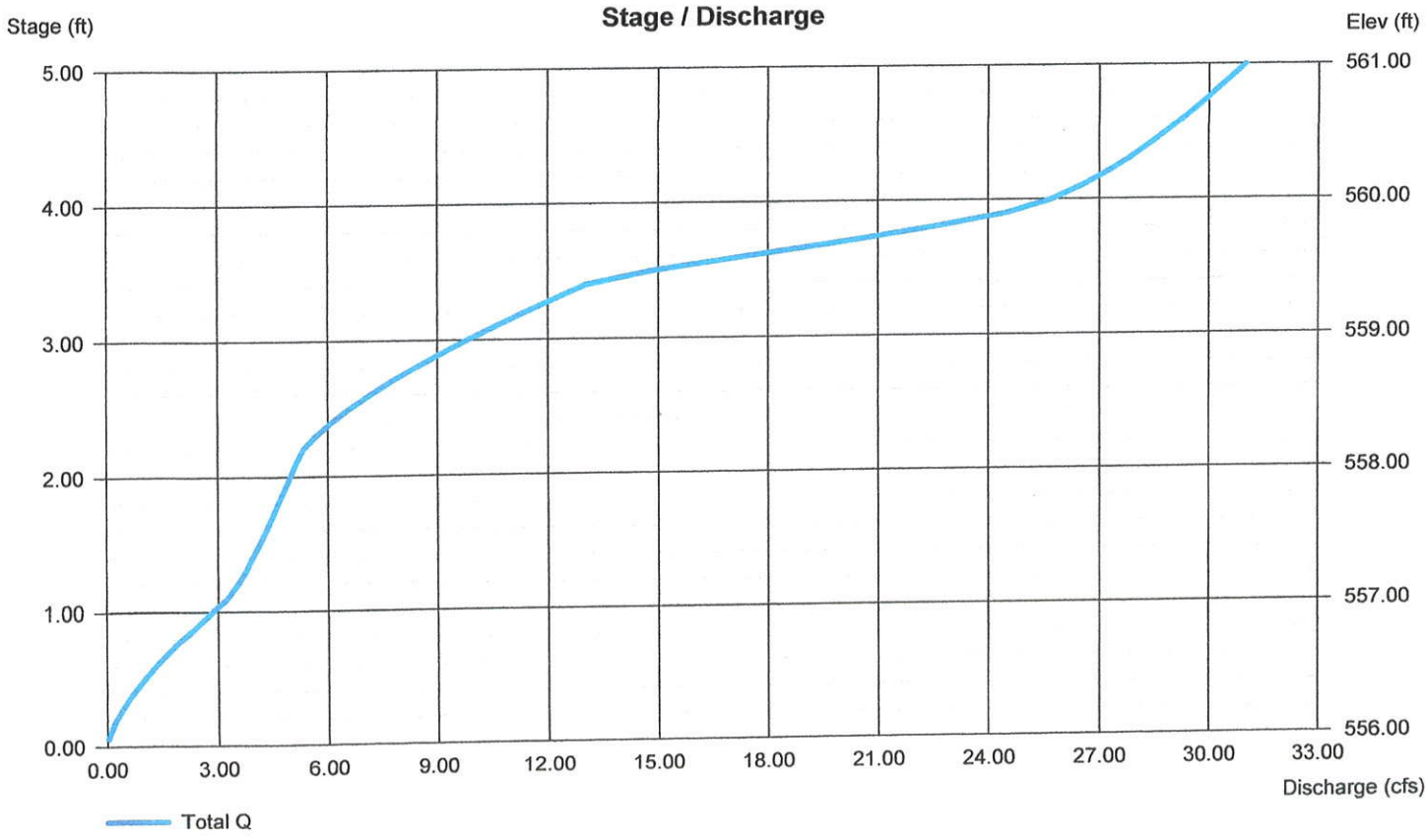
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 11.07 (12.57)	1.50	0.00	0.00
Crest El. (ft)	= 559.40	558.15 (558.10)	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Riser	Rect	---	---
Multi-Stage	= Yes	Yes	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.2

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	Manual	22.95	1	7	27,540	----	------	------	Proposed to Basin
2	Reservoir	7.470	1	25	27,538	1	558.65	20,397	Detention Basin
3	Reservoir	3.951	1	26	15,491	1	559.01	25,746	Low Flow Blocked
4	Reservoir	7.708	1	25	27,551	1	558.70	19,811	With 2yr sediment

Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2

Tuesday, Jul 5, 2011

Hyd. No. 1

Proposed to Basin

Hydrograph type	= Manual	Peak discharge	= 22.95 cfs
Storm frequency	= 10 yrs	Time to peak	= 7 min
Time interval	= 1 min	Hyd. volume	= 43,500 cuft

Hydrograph Discharge Table

(Printed values >= 30.00% of Qp.)

Time (min)	Outflow cfs)
3	9.840
4	13.11
5	16.39
6	19.67
7	22.95 <<
8	22.95 <<
9	22.95 <<
10	22.95 <<
11	22.95 <<
12	22.95 <<
13	22.95 <<
14	22.95 <<
15	22.95 <<
16	22.95 <<
17	22.95 <<
18	22.95 <<
19	22.95 <<
20	22.95 <<
21	19.67
22	16.39
23	13.11
24	9.840

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Jul 5, 2011

Hyd. No. 2

Detention Basin

Hydrograph type	= Reservoir	Peak discharge	= 7.470 cfs
Storm frequency	= 10 yrs	Time to peak	= 25 min
Time interval	= 1 min	Hyd. volume	= 43,498 cuft
Inflow hyd. No.	= 1 - Proposed to Basin	Reservoir name	= Detention Basin
Max. Elevation	= 558.65 ft	Max. Storage	= 20,397 cuft

Storage Indication method used.

(Printed values >= 30.00% of Qp.)

Hydrograph Discharge Table

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
5	16.39	557.02	2.976	2.904	-----	-----	-----	-----	-----	-----	-----	2.904
6	19.67	557.12	3.328	3.310	-----	-----	-----	-----	-----	-----	-----	3.310
7	22.95 <<	557.25	3.647	3.641	-----	-----	-----	-----	-----	-----	-----	3.641
8	22.95 <<	557.39	3.910	3.908	-----	-----	-----	-----	-----	-----	-----	3.908
9	22.95 <<	557.52	4.197	4.163	-----	-----	-----	-----	-----	-----	-----	4.163
10	22.95 <<	557.65	4.396	4.395	-----	-----	-----	-----	-----	-----	-----	4.395
11	22.95 <<	557.78	4.684	4.611	-----	-----	-----	-----	-----	-----	-----	4.611
12	22.95 <<	557.91	4.887	4.829	-----	-----	-----	-----	-----	-----	-----	4.829
13	22.95 <<	558.02	5.046	5.007	-----	-----	-----	-----	-----	-----	-----	5.007
14	22.95 <<	558.09	5.150	5.119	-----	-----	-----	-----	-----	-----	-----	5.119
15	22.95 <<	558.16	5.266	5.219	-----	-----	-----	0.036	-----	-----	-----	5.255
16	22.95 <<	558.23	5.474	5.305	-----	-----	-----	0.137	-----	-----	-----	5.442
17	22.95 <<	558.30	5.769	5.377	-----	-----	-----	0.302	-----	-----	-----	5.679
18	22.95 <<	558.37	6.000	5.445	-----	-----	-----	0.528	-----	-----	-----	5.973
19	22.95 <<	558.44	6.321	5.505	-----	-----	-----	0.779	-----	-----	-----	6.285
20	22.95 <<	558.50	6.704	5.560	-----	-----	-----	1.050	-----	-----	-----	6.610
21	19.67	558.56	6.977	5.612	-----	-----	-----	1.322	-----	-----	-----	6.935
22	16.39	558.60	7.191	5.650	-----	-----	-----	1.531	-----	-----	-----	7.181
23	13.11	558.63	7.380	5.669	-----	-----	-----	1.687	-----	-----	-----	7.357
24	9.840	558.65	7.483	5.680	-----	-----	-----	1.773	-----	-----	-----	7.452
25	6.560	558.65 <<	7.502	5.681	-----	-----	-----	1.788	-----	-----	-----	7.470 <<
26	3.280	558.64	7.438	5.675	-----	-----	-----	1.735	-----	-----	-----	7.410
27	0.000	558.62	7.294	5.661	-----	-----	-----	1.616	-----	-----	-----	7.277
28	0.000	558.59	7.125	5.640	-----	-----	-----	1.469	-----	-----	-----	7.110
29	0.000	558.56	6.993	5.615	-----	-----	-----	1.338	-----	-----	-----	6.953
30	0.000	558.54	6.863	5.591	-----	-----	-----	1.208	-----	-----	-----	6.799
31	0.000	558.51	6.737	5.567	-----	-----	-----	1.082	-----	-----	-----	6.649
32	0.000	558.48	6.594	5.544	-----	-----	-----	0.969	-----	-----	-----	6.513
33	0.000	558.46	6.444	5.523	-----	-----	-----	0.864	-----	-----	-----	6.387
34	0.000	558.43	6.295	5.501	-----	-----	-----	0.761	-----	-----	-----	6.263
35	0.000	558.41	6.151	5.481	-----	-----	-----	0.661	-----	-----	-----	6.142
36	0.000	558.38	6.046	5.458	-----	-----	-----	0.574	-----	-----	-----	6.032
37	0.000	558.36	5.965	5.435	-----	-----	-----	0.494	-----	-----	-----	5.929
38	0.000	558.34	5.886	5.412	-----	-----	-----	0.417	-----	-----	-----	5.828
39	0.000	558.31	5.808	5.389	-----	-----	-----	0.340	-----	-----	-----	5.729
40	0.000	558.29	5.725	5.366	-----	-----	-----	0.272	-----	-----	-----	5.638
41	0.000	558.27	5.629	5.343	-----	-----	-----	0.220	-----	-----	-----	5.563
42	0.000	558.25	5.534	5.320	-----	-----	-----	0.169	-----	-----	-----	5.489
43	0.000	558.23	5.440	5.297	-----	-----	-----	0.119	-----	-----	-----	5.415
44	0.000	558.21	5.348	5.274	-----	-----	-----	0.069	-----	-----	-----	5.343
45	0.000	558.18	5.298	5.246	-----	-----	-----	0.047	-----	-----	-----	5.293

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Detention Basin

Hydrograph Discharge Table

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
46	0.000	558.16	5.264	5.217	-----	-----	-----	0.035	-----	-----	-----	5.252
47	0.000	558.14	5.229	5.188	-----	-----	-----	0.024	-----	-----	-----	5.212
48	0.000	558.12	5.195	5.159	-----	-----	-----	0.012	-----	-----	-----	5.171
49	0.000	558.10	5.161	5.130	-----	-----	-----	0.001	-----	-----	-----	5.131
50	0.000	558.08	5.131	5.098	-----	-----	-----	-----	-----	-----	-----	5.098
51	0.000	558.06	5.102	5.067	-----	-----	-----	-----	-----	-----	-----	5.067
52	0.000	558.04	5.073	5.035	-----	-----	-----	-----	-----	-----	-----	5.035
53	0.000	558.02	5.043	5.004	-----	-----	-----	-----	-----	-----	-----	5.004
54	0.000	558.00	5.015	4.972	-----	-----	-----	-----	-----	-----	-----	4.972
55	0.000	557.97	4.966	4.917	-----	-----	-----	-----	-----	-----	-----	4.917
56	0.000	557.93	4.915	4.861	-----	-----	-----	-----	-----	-----	-----	4.861
57	0.000	557.90	4.865	4.804	-----	-----	-----	-----	-----	-----	-----	4.804
58	0.000	557.86	4.817	4.747	-----	-----	-----	-----	-----	-----	-----	4.747
59	0.000	557.83	4.769	4.690	-----	-----	-----	-----	-----	-----	-----	4.690
60	0.000	557.80	4.719	4.634	-----	-----	-----	-----	-----	-----	-----	4.634
61	0.000	557.77	4.636	4.580	-----	-----	-----	-----	-----	-----	-----	4.580
62	0.000	557.73	4.555	4.526	-----	-----	-----	-----	-----	-----	-----	4.526
63	0.000	557.70	4.474	4.473	-----	-----	-----	-----	-----	-----	-----	4.473
64	0.000	557.67	4.422	4.421	-----	-----	-----	-----	-----	-----	-----	4.421
65	0.000	557.64	4.371	4.371	-----	-----	-----	-----	-----	-----	-----	4.371
66	0.000	557.61	4.321	4.321	-----	-----	-----	-----	-----	-----	-----	4.321
67	0.000	557.58	4.277	4.266	-----	-----	-----	-----	-----	-----	-----	4.266
68	0.000	557.55	4.234	4.211	-----	-----	-----	-----	-----	-----	-----	4.211
69	0.000	557.52	4.192	4.156	-----	-----	-----	-----	-----	-----	-----	4.156
70	0.000	557.49	4.138	4.101	-----	-----	-----	-----	-----	-----	-----	4.101
71	0.000	557.46	4.070	4.045	-----	-----	-----	-----	-----	-----	-----	4.045
72	0.000	557.43	4.003	3.990	-----	-----	-----	-----	-----	-----	-----	3.990
73	0.000	557.40	3.936	3.936	-----	-----	-----	-----	-----	-----	-----	3.935
74	0.000	557.37	3.890	3.887	-----	-----	-----	-----	-----	-----	-----	3.887
75	0.000	557.35	3.846	3.838	-----	-----	-----	-----	-----	-----	-----	3.838
76	0.000	557.32	3.802	3.791	-----	-----	-----	-----	-----	-----	-----	3.791
77	0.000	557.29	3.752	3.740	-----	-----	-----	-----	-----	-----	-----	3.740
78	0.000	557.27	3.688	3.679	-----	-----	-----	-----	-----	-----	-----	3.679
79	0.000	557.24	3.625	3.619	-----	-----	-----	-----	-----	-----	-----	3.619
80	0.000	557.21	3.562	3.560	-----	-----	-----	-----	-----	-----	-----	3.560
81	0.000	557.19	3.500	3.497	-----	-----	-----	-----	-----	-----	-----	3.497
82	0.000	557.16	3.436	3.428	-----	-----	-----	-----	-----	-----	-----	3.428
83	0.000	557.14	3.374	3.361	-----	-----	-----	-----	-----	-----	-----	3.361
84	0.000	557.12	3.314	3.295	-----	-----	-----	-----	-----	-----	-----	3.295
85	0.000	557.09	3.248	3.222	-----	-----	-----	-----	-----	-----	-----	3.222
86	0.000	557.07	3.169	3.129	-----	-----	-----	-----	-----	-----	-----	3.129
87	0.000	557.05	3.091	3.039	-----	-----	-----	-----	-----	-----	-----	3.039
88	0.000	557.03	3.016	2.951	-----	-----	-----	-----	-----	-----	-----	2.951
89	0.000	557.01	2.943	2.866	-----	-----	-----	-----	-----	-----	-----	2.866
90	0.000	556.95	2.697	2.627	-----	-----	-----	-----	-----	-----	-----	2.627
91	0.000	556.88	2.393	2.334	-----	-----	-----	-----	-----	-----	-----	2.334

...End

B-20A

Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2

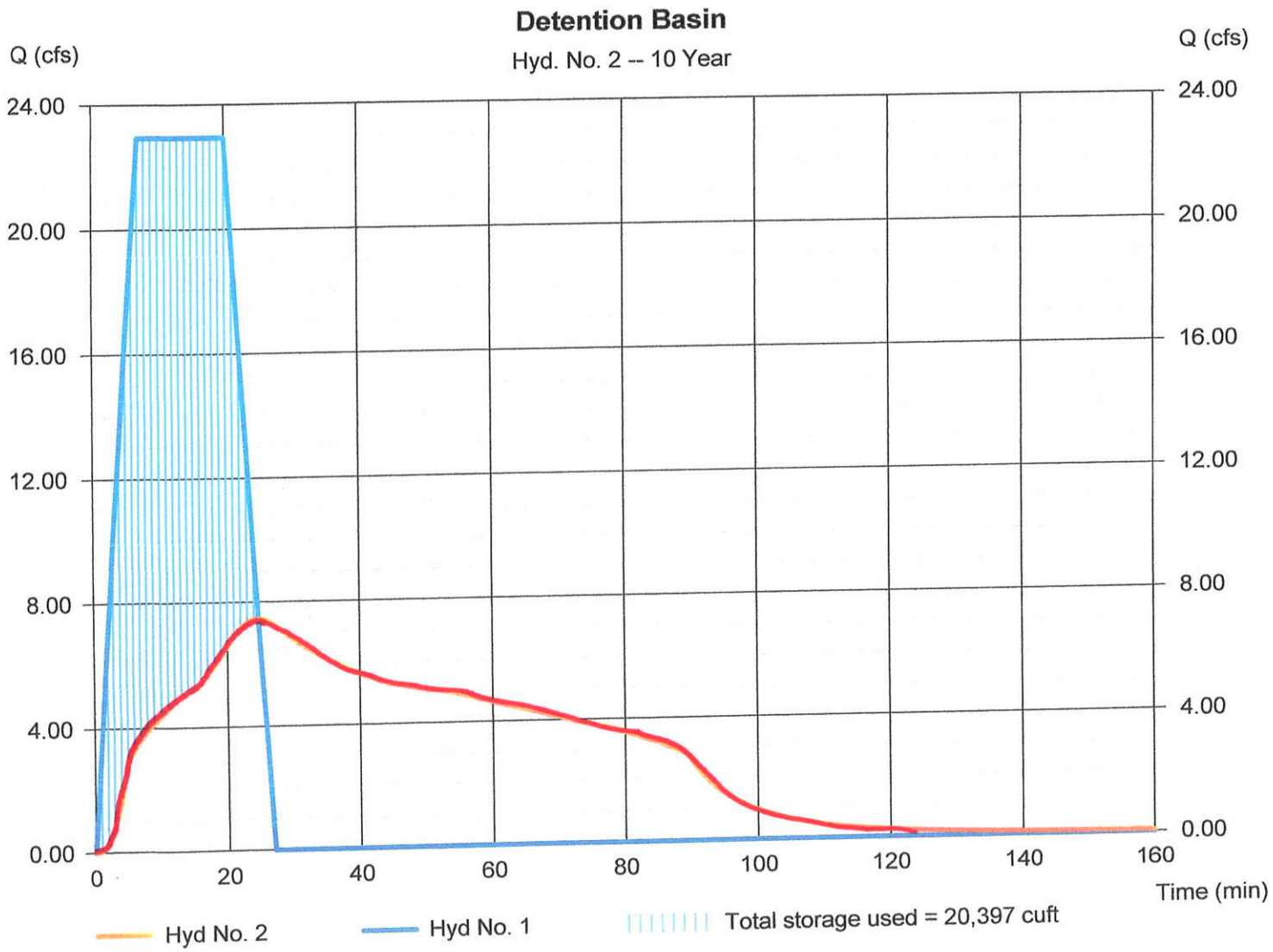
Tuesday, Jul 5, 2011

Hyd. No. 2

Detention Basin

Hydrograph type	= Reservoir	Peak discharge	= 7.470 cfs
Storm frequency	= 10 yrs	Time to peak	= 25 min
Time interval	= 1 min	Hyd. volume	= 27,538 cuft
Inflow hyd. No.	= 1 - Proposed to Basin	Max. Elevation	= 558.65 ft
Reservoir name	= Detention Basin	Max. Storage	= 20,397 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2

Tuesday, Jul 5, 2011

Hyd. No. 3

Low Flow Blocked

Hydrograph type	= Reservoir	Peak discharge	= 3.951 cfs
Storm frequency	= 10 yrs	Time to peak	= 26 min
Time interval	= 1 min	Hyd. volume	= 31,451 cuft
Inflow hyd. No.	= 1 - Proposed to Basin	Reservoir name	= Detention Basin -
Max. Elevation	= 559.01 ft	Max. Storage	= 25,746 cuft

Storage Indication method used.

(Printed values >= 30.00% of Qp.)

Hydrograph Discharge Table

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
18	22.95 <<	558.61	1.620	-----	-----	-----	-----	1.566	-----	-----	-----	1.566
19	22.95 <<	558.69	2.058	-----	-----	-----	-----	2.010	-----	-----	-----	2.010
20	22.95 <<	558.78	2.555	-----	-----	-----	-----	2.483	-----	-----	-----	2.483
21	19.67	558.85	2.987	-----	-----	-----	-----	2.934	-----	-----	-----	2.934
22	16.39	558.91	3.334	-----	-----	-----	-----	3.309	-----	-----	-----	3.308
23	13.11	558.95	3.621	-----	-----	-----	-----	3.609	-----	-----	-----	3.609
24	9.840	558.99	3.819	-----	-----	-----	-----	3.815	-----	-----	-----	3.815
25	6.560	559.00	3.931	-----	-----	-----	-----	3.929	-----	-----	-----	3.928
26	3.280	559.01 <<	3.956	-----	-----	-----	-----	3.951	-----	-----	-----	3.951 <<
27	0.000	559.00	3.897	-----	-----	-----	-----	3.896	-----	-----	-----	3.896
28	0.000	558.98	3.799	-----	-----	-----	-----	3.794	-----	-----	-----	3.794
29	0.000	558.97	3.703	-----	-----	-----	-----	3.694	-----	-----	-----	3.694
30	0.000	558.95	3.610	-----	-----	-----	-----	3.597	-----	-----	-----	3.597
31	0.000	558.94	3.519	-----	-----	-----	-----	3.502	-----	-----	-----	3.503
32	0.000	558.92	3.431	-----	-----	-----	-----	3.410	-----	-----	-----	3.411
33	0.000	558.91	3.345	-----	-----	-----	-----	3.321	-----	-----	-----	3.321
34	0.000	558.90	3.263	-----	-----	-----	-----	3.234	-----	-----	-----	3.234
35	0.000	558.89	3.190	-----	-----	-----	-----	3.155	-----	-----	-----	3.155
36	0.000	558.87	3.119	-----	-----	-----	-----	3.078	-----	-----	-----	3.078
37	0.000	558.86	3.050	-----	-----	-----	-----	3.002	-----	-----	-----	3.002
38	0.000	558.85	2.982	-----	-----	-----	-----	2.929	-----	-----	-----	2.929
39	0.000	558.84	2.916	-----	-----	-----	-----	2.857	-----	-----	-----	2.857
40	0.000	558.83	2.852	-----	-----	-----	-----	2.787	-----	-----	-----	2.787
41	0.000	558.82	2.789	-----	-----	-----	-----	2.718	-----	-----	-----	2.719
42	0.000	558.81	2.728	-----	-----	-----	-----	2.652	-----	-----	-----	2.652
43	0.000	558.80	2.667	-----	-----	-----	-----	2.589	-----	-----	-----	2.589
44	0.000	558.79	2.605	-----	-----	-----	-----	2.530	-----	-----	-----	2.530
45	0.000	558.78	2.544	-----	-----	-----	-----	2.473	-----	-----	-----	2.473
46	0.000	558.77	2.485	-----	-----	-----	-----	2.417	-----	-----	-----	2.417
47	0.000	558.76	2.427	-----	-----	-----	-----	2.362	-----	-----	-----	2.362
48	0.000	558.75	2.370	-----	-----	-----	-----	2.308	-----	-----	-----	2.308
49	0.000	558.74	2.315	-----	-----	-----	-----	2.255	-----	-----	-----	2.256
50	0.000	558.73	2.261	-----	-----	-----	-----	2.205	-----	-----	-----	2.204
51	0.000	558.72	2.208	-----	-----	-----	-----	2.154	-----	-----	-----	2.154
52	0.000	558.71	2.157	-----	-----	-----	-----	2.105	-----	-----	-----	2.105
53	0.000	558.70	2.106	-----	-----	-----	-----	2.058	-----	-----	-----	2.057
54	0.000	558.70	2.061	-----	-----	-----	-----	2.013	-----	-----	-----	2.013
55	0.000	558.69	2.020	-----	-----	-----	-----	1.971	-----	-----	-----	1.971
56	0.000	558.68	1.980	-----	-----	-----	-----	1.930	-----	-----	-----	1.930
57	0.000	558.67	1.940	-----	-----	-----	-----	1.890	-----	-----	-----	1.890
58	0.000	558.66	1.901	-----	-----	-----	-----	1.851	-----	-----	-----	1.851

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Low Flow Blocked

Hydrograph Discharge Table

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
59	0.000	558.66	1.864	-----	-----	-----	-----	1.813	-----	-----	-----	1.813
60	0.000	558.65	1.827	-----	-----	-----	-----	1.775	-----	-----	-----	1.775
61	0.000	558.64	1.790	-----	-----	-----	-----	1.738	-----	-----	-----	1.738
62	0.000	558.64	1.755	-----	-----	-----	-----	1.702	-----	-----	-----	1.702
63	0.000	558.63	1.720	-----	-----	-----	-----	1.667	-----	-----	-----	1.667
64	0.000	558.62	1.686	-----	-----	-----	-----	1.632	-----	-----	-----	1.632
65	0.000	558.62	1.652	-----	-----	-----	-----	1.598	-----	-----	-----	1.598
66	0.000	558.61	1.619	-----	-----	-----	-----	1.565	-----	-----	-----	1.565
67	0.000	558.60	1.587	-----	-----	-----	-----	1.533	-----	-----	-----	1.533
68	0.000	558.60	1.557	-----	-----	-----	-----	1.502	-----	-----	-----	1.502
69	0.000	558.59	1.527	-----	-----	-----	-----	1.474	-----	-----	-----	1.474
70	0.000	558.59	1.498	-----	-----	-----	-----	1.446	-----	-----	-----	1.446
71	0.000	558.58	1.470	-----	-----	-----	-----	1.419	-----	-----	-----	1.419
72	0.000	558.58	1.443	-----	-----	-----	-----	1.393	-----	-----	-----	1.393
73	0.000	558.57	1.416	-----	-----	-----	-----	1.367	-----	-----	-----	1.367
74	0.000	558.56	1.389	-----	-----	-----	-----	1.342	-----	-----	-----	1.342
75	0.000	558.56	1.363	-----	-----	-----	-----	1.317	-----	-----	-----	1.317
76	0.000	558.55	1.337	-----	-----	-----	-----	1.292	-----	-----	-----	1.292
77	0.000	558.55	1.312	-----	-----	-----	-----	1.268	-----	-----	-----	1.268
78	0.000	558.54	1.287	-----	-----	-----	-----	1.245	-----	-----	-----	1.245
79	0.000	558.54	1.263	-----	-----	-----	-----	1.221	-----	-----	-----	1.222
80	0.000	558.53	1.239	-----	-----	-----	-----	1.199	-----	-----	-----	1.199

...End

B-22A

Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2

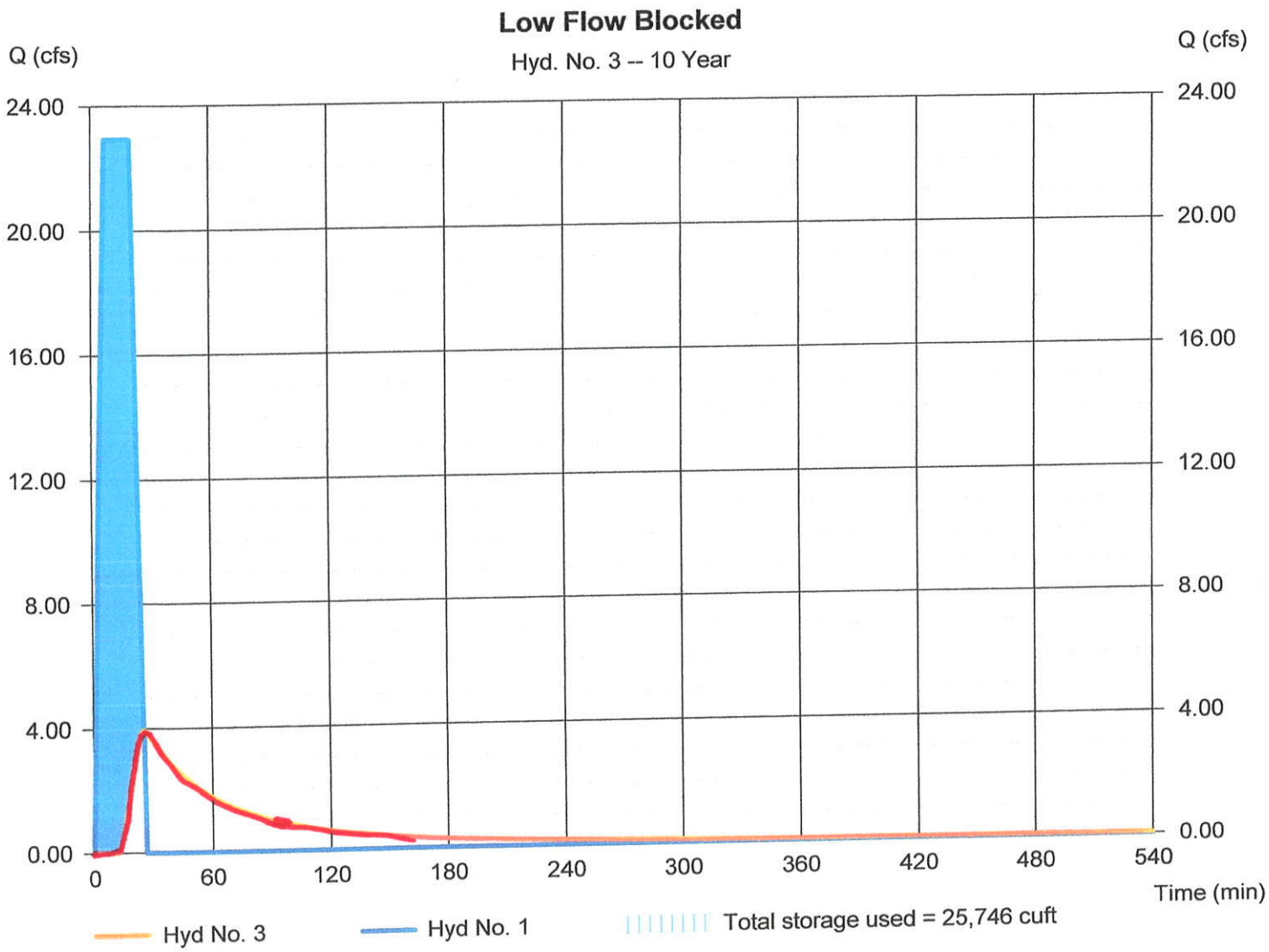
Tuesday, Jul 5, 2011

Hyd. No. 3

Low Flow Blocked

Hydrograph type	= Reservoir	Peak discharge	= 3.951 cfs
Storm frequency	= 10 yrs	Time to peak	= 26 min
Time interval	= 1 min	Hyd. volume	= 15,491 cuft
Inflow hyd. No.	= 1 - Proposed to Basin	Max. Elevation	= 559.01 ft
Reservoir name	= Detention Basin - LFB	Max. Storage	= 25,746 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2

Tuesday, Jul 5, 2011

Hyd. No. 4

With 2yr sediment

Hydrograph type	= Reservoir	Peak discharge	= 7.708 cfs
Storm frequency	= 10 yrs	Time to peak	= 25 min
Time interval	= 1 min	Hyd. volume	= 43,511 cuft
Inflow hyd. No.	= 1 - Proposed to Basin	Reservoir name	= Detention Basin -
Max. Elevation	= 558.70 ft	Max. Storage	= 19,811 cuft

Storage Indication method used.

(Printed values >= 30.00% of Qp.)

Hydrograph Discharge Table

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
3	9.840	556.88	2.401	2.353	-----	-----	-----	-----	-----	-----	-----	2.353
4	13.11	557.03	3.037	2.976	-----	-----	-----	-----	-----	-----	-----	2.976
5	16.39	557.12	3.312	3.294	-----	-----	-----	-----	-----	-----	-----	3.294
6	19.67	557.22	3.576	3.574	-----	-----	-----	-----	-----	-----	-----	3.574
7	22.95 <<	557.35	3.845	3.837	-----	-----	-----	-----	-----	-----	-----	3.837
8	22.95 <<	557.48	4.122	4.088	-----	-----	-----	-----	-----	-----	-----	4.088
9	22.95 <<	557.61	4.332	4.332	-----	-----	-----	-----	-----	-----	-----	4.332
10	22.95 <<	557.75	4.586	4.547	-----	-----	-----	-----	-----	-----	-----	4.547
11	22.95 <<	557.88	4.832	4.765	-----	-----	-----	-----	-----	-----	-----	4.765
12	22.95 <<	558.00	5.016	4.973	-----	-----	-----	-----	-----	-----	-----	4.973
13	22.95 <<	558.07	5.120	5.085	-----	-----	-----	-----	-----	-----	-----	5.085
14	22.95 <<	558.14	5.231	5.189	-----	-----	-----	0.025	-----	-----	-----	5.214
15	22.95 <<	558.21	5.385	5.283	-----	-----	-----	0.088	-----	-----	-----	5.371
16	22.95 <<	558.28	5.684	5.356	-----	-----	-----	0.250	-----	-----	-----	5.606
17	22.95 <<	558.35	5.932	5.425	-----	-----	-----	0.461	-----	-----	-----	5.886
18	22.95 <<	558.42	6.205	5.488	-----	-----	-----	0.699	-----	-----	-----	6.187
19	22.95 <<	558.48	6.594	5.544	-----	-----	-----	0.968	-----	-----	-----	6.512
20	22.95 <<	558.55	6.918	5.601	-----	-----	-----	1.263	-----	-----	-----	6.864
21	19.67	558.61	7.195	5.651	-----	-----	-----	1.534	-----	-----	-----	7.185
22	16.39	558.65	7.466	5.678	-----	-----	-----	1.759	-----	-----	-----	7.437
23	13.11	558.68	7.649	5.696	-----	-----	-----	1.910	-----	-----	-----	7.606
24	9.840	558.69	7.746	5.706	-----	-----	-----	1.990	-----	-----	-----	7.696
25	6.560	558.69 <<	7.758	5.707	-----	-----	-----	2.001	-----	-----	-----	7.708 <<
26	3.280	558.68	7.689	5.700	-----	-----	-----	1.943	-----	-----	-----	7.643
27	0.000	558.66	7.539	5.685	-----	-----	-----	1.819	-----	-----	-----	7.504
28	0.000	558.63	7.351	5.666	-----	-----	-----	1.663	-----	-----	-----	7.330
29	0.000	558.60	7.168	5.648	-----	-----	-----	1.511	-----	-----	-----	7.159
30	0.000	558.57	7.033	5.623	-----	-----	-----	1.378	-----	-----	-----	7.001
31	0.000	558.55	6.903	5.598	-----	-----	-----	1.248	-----	-----	-----	6.846
32	0.000	558.52	6.776	5.574	-----	-----	-----	1.121	-----	-----	-----	6.695
33	0.000	558.49	6.642	5.551	-----	-----	-----	1.002	-----	-----	-----	6.553
34	0.000	558.47	6.490	5.529	-----	-----	-----	0.897	-----	-----	-----	6.426
35	0.000	558.44	6.341	5.508	-----	-----	-----	0.793	-----	-----	-----	6.301
36	0.000	558.42	6.195	5.487	-----	-----	-----	0.692	-----	-----	-----	6.179
37	0.000	558.39	6.071	5.465	-----	-----	-----	0.598	-----	-----	-----	6.064
38	0.000	558.37	5.990	5.442	-----	-----	-----	0.519	-----	-----	-----	5.961
39	0.000	558.35	5.911	5.419	-----	-----	-----	0.441	-----	-----	-----	5.859
40	0.000	558.32	5.832	5.396	-----	-----	-----	0.364	-----	-----	-----	5.760
41	0.000	558.30	5.755	5.373	-----	-----	-----	0.289	-----	-----	-----	5.662
42	0.000	558.28	5.658	5.350	-----	-----	-----	0.236	-----	-----	-----	5.586
43	0.000	558.26	5.563	5.327	-----	-----	-----	0.185	-----	-----	-----	5.512

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With 2yr sediment

Hydrograph Discharge Table

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
44	0.000	558.23	5.469	5.304	-----	-----	-----	0.134	-----	-----	-----	5.438
45	0.000	558.21	5.377	5.281	-----	-----	-----	0.084	-----	-----	-----	5.365
46	0.000	558.19	5.309	5.256	-----	-----	-----	0.051	-----	-----	-----	5.306
47	0.000	558.17	5.275	5.226	-----	-----	-----	0.039	-----	-----	-----	5.265
48	0.000	558.15	5.240	5.197	-----	-----	-----	0.027	-----	-----	-----	5.224
49	0.000	558.13	5.206	5.168	-----	-----	-----	0.016	-----	-----	-----	5.184
50	0.000	558.11	5.172	5.139	-----	-----	-----	0.005	-----	-----	-----	5.143
51	0.000	558.09	5.141	5.108	-----	-----	-----	-----	-----	-----	-----	5.108
52	0.000	558.07	5.111	5.076	-----	-----	-----	-----	-----	-----	-----	5.076
53	0.000	558.05	5.082	5.045	-----	-----	-----	-----	-----	-----	-----	5.045
54	0.000	558.03	5.053	5.013	-----	-----	-----	-----	-----	-----	-----	5.013
55	0.000	558.01	5.024	4.982	-----	-----	-----	-----	-----	-----	-----	4.982
56	0.000	557.98	4.982	4.935	-----	-----	-----	-----	-----	-----	-----	4.935
57	0.000	557.94	4.931	4.878	-----	-----	-----	-----	-----	-----	-----	4.878
58	0.000	557.91	4.881	4.822	-----	-----	-----	-----	-----	-----	-----	4.822
59	0.000	557.88	4.832	4.765	-----	-----	-----	-----	-----	-----	-----	4.765
60	0.000	557.84	4.784	4.708	-----	-----	-----	-----	-----	-----	-----	4.708
61	0.000	557.81	4.736	4.652	-----	-----	-----	-----	-----	-----	-----	4.652
62	0.000	557.78	4.662	4.597	-----	-----	-----	-----	-----	-----	-----	4.597
63	0.000	557.74	4.580	4.543	-----	-----	-----	-----	-----	-----	-----	4.543
64	0.000	557.71	4.499	4.489	-----	-----	-----	-----	-----	-----	-----	4.489
65	0.000	557.68	4.438	4.437	-----	-----	-----	-----	-----	-----	-----	4.437
66	0.000	557.65	4.387	4.387	-----	-----	-----	-----	-----	-----	-----	4.387
67	0.000	557.62	4.337	4.337	-----	-----	-----	-----	-----	-----	-----	4.337
68	0.000	557.59	4.290	4.284	-----	-----	-----	-----	-----	-----	-----	4.284
69	0.000	557.56	4.247	4.228	-----	-----	-----	-----	-----	-----	-----	4.228
70	0.000	557.53	4.205	4.173	-----	-----	-----	-----	-----	-----	-----	4.173
71	0.000	557.50	4.160	4.118	-----	-----	-----	-----	-----	-----	-----	4.118
72	0.000	557.47	4.091	4.062	-----	-----	-----	-----	-----	-----	-----	4.062
73	0.000	557.44	4.023	4.007	-----	-----	-----	-----	-----	-----	-----	4.007
74	0.000	557.41	3.957	3.952	-----	-----	-----	-----	-----	-----	-----	3.952
75	0.000	557.38	3.904	3.901	-----	-----	-----	-----	-----	-----	-----	3.901
76	0.000	557.35	3.860	3.853	-----	-----	-----	-----	-----	-----	-----	3.853
77	0.000	557.33	3.816	3.806	-----	-----	-----	-----	-----	-----	-----	3.806
78	0.000	557.30	3.772	3.758	-----	-----	-----	-----	-----	-----	-----	3.758
79	0.000	557.27	3.708	3.698	-----	-----	-----	-----	-----	-----	-----	3.698
80	0.000	557.25	3.644	3.638	-----	-----	-----	-----	-----	-----	-----	3.637
81	0.000	557.22	3.581	3.578	-----	-----	-----	-----	-----	-----	-----	3.578
82	0.000	557.20	3.519	3.519	-----	-----	-----	-----	-----	-----	-----	3.519
83	0.000	557.17	3.456	3.450	-----	-----	-----	-----	-----	-----	-----	3.450
84	0.000	557.15	3.394	3.382	-----	-----	-----	-----	-----	-----	-----	3.382
85	0.000	557.12	3.332	3.315	-----	-----	-----	-----	-----	-----	-----	3.315
86	0.000	557.10	3.273	3.250	-----	-----	-----	-----	-----	-----	-----	3.250
87	0.000	557.08	3.193	3.157	-----	-----	-----	-----	-----	-----	-----	3.157
88	0.000	557.06	3.115	3.066	-----	-----	-----	-----	-----	-----	-----	3.067
89	0.000	557.03	3.039	2.978	-----	-----	-----	-----	-----	-----	-----	2.978
90	0.000	557.01	2.966	2.892	-----	-----	-----	-----	-----	-----	-----	2.892
91	0.000	556.97	2.777	2.725	-----	-----	-----	-----	-----	-----	-----	2.725
92	0.000	556.90	2.444	2.420	-----	-----	-----	-----	-----	-----	-----	2.420

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Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2

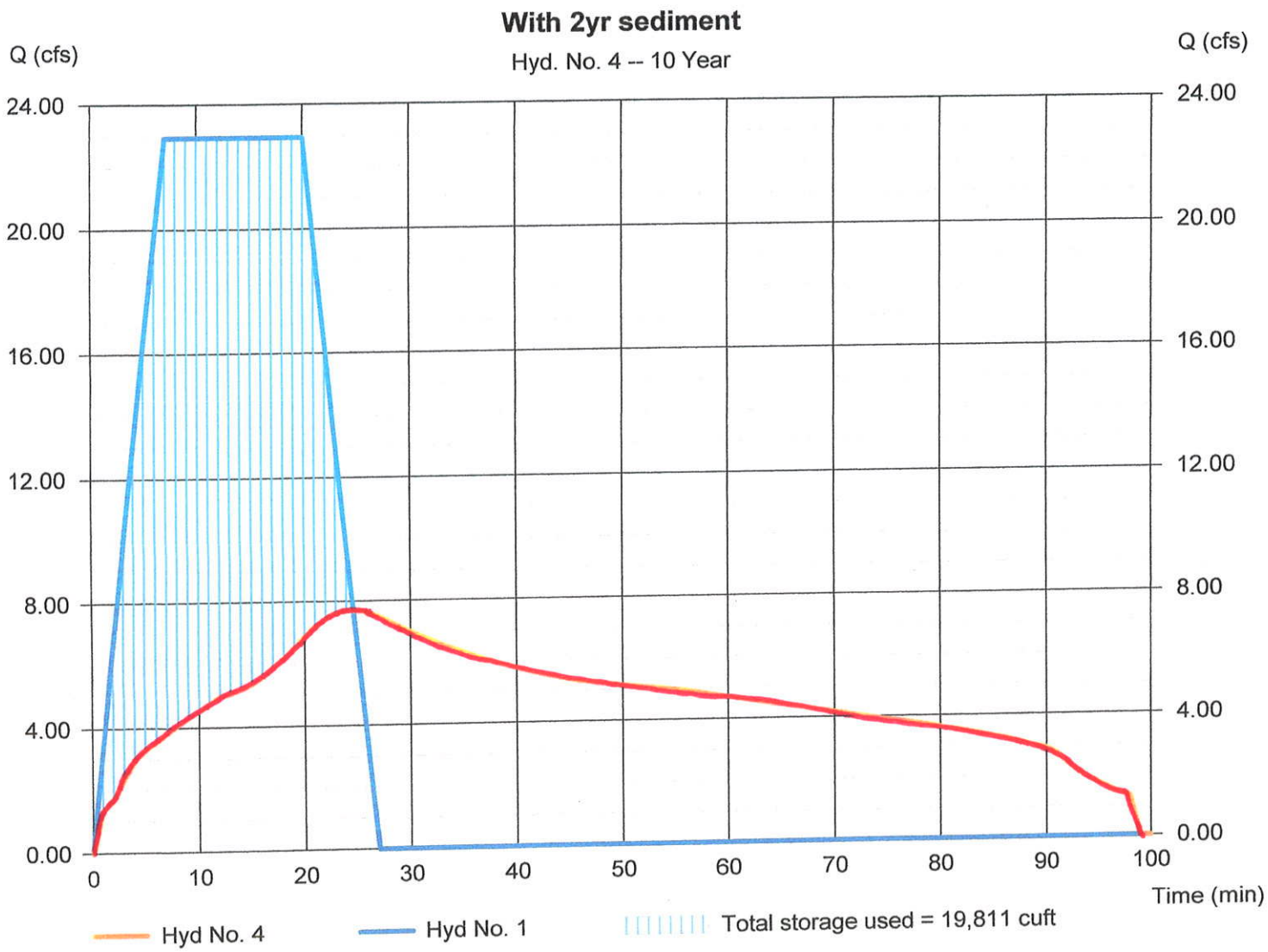
Tuesday, Jul 5, 2011

Hyd. No. 4

With 2yr sediment

Hydrograph type	= Reservoir	Peak discharge	= 7.708 cfs
Storm frequency	= 10 yrs	Time to peak	= 25 min
Time interval	= 1 min	Hyd. volume	= 27,551 cuft
Inflow hyd. No.	= 1 - Proposed to Basin	Max. Elevation	= 558.70 ft
Reservoir name	= Detention Basin - Sediment	Max. Storage	= 19,811 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.2

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	Manual	28.33	1	7	33,996	----	------	------	Proposed to Basin
2	Reservoir	9.698	1	25	33,994	1	558.99	25,434	Detention Basin
3	Reservoir	6.019	1	26	21,948	1	559.29	30,859	Low Flow Blocked
4	Reservoir	9.953	1	25	34,017	1	559.02	24,826	With 2yr sediment

Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2

Tuesday, Jul 5, 2011

Hyd. No. 1

Proposed to Basin

Hydrograph type	= Manual	Peak discharge	= 28.33 cfs
Storm frequency	= 25 yrs	Time to peak	= 7 min
Time interval	= 1 min	Hyd. volume	= 43,500 cuft

Hydrograph Discharge Table

(Printed values >= 30.00% of Qp.)

Time (min)	Outflow (cfs)
3	12.14
4	16.19
5	20.24
6	24.28
7	28.33 <<
8	28.33 <<
9	28.33 <<
10	28.33 <<
11	28.33 <<
12	28.33 <<
13	28.33 <<
14	28.33 <<
15	28.33 <<
16	28.33 <<
17	28.33 <<
18	28.33 <<
19	28.33 <<
20	28.33 <<
21	24.28
22	20.24
23	16.19
24	12.14

...End

B-2cA

Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Jul 5, 2011

Hyd. No. 1

Proposed to Basin

Hydrograph type	= Manual	Peak discharge	= 28.33 cfs
Storm frequency	= 25 yrs	Time to peak	= 7 min
Time interval	= 1 min	Hyd. volume	= 33,996 cuft

Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2

Tuesday, Jul 5, 2011

Hyd. No. 2

Detention Basin

Hydrograph type	= Reservoir	Peak discharge	= 9.698 cfs
Storm frequency	= 25 yrs	Time to peak	= 25 min
Time interval	= 1 min	Hyd. volume	= 43,498 cuft
Inflow hyd. No.	= 1 - Proposed to Basin	Reservoir name	= Detention Basin
Max. Elevation	= 558.99 ft	Max. Storage	= 25,434 cuft

Storage Indication method used.

(Printed values >= 30.00% of Qp.)

Hydrograph Discharge Table

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
5	20.24	557.08	3.189	3.153	-----	-----	-----	-----	-----	-----	-----	3.153
6	24.28	557.21	3.555	3.553	-----	-----	-----	-----	-----	-----	-----	3.553
7	28.33 <<	557.37	3.887	3.884	-----	-----	-----	-----	-----	-----	-----	3.884
8	28.33 <<	557.54	4.232	4.208	-----	-----	-----	-----	-----	-----	-----	4.208
9	28.33 <<	557.72	4.510	4.497	-----	-----	-----	-----	-----	-----	-----	4.497
10	28.33 <<	557.88	4.844	4.779	-----	-----	-----	-----	-----	-----	-----	4.779
11	28.33 <<	558.03	5.053	5.014	-----	-----	-----	-----	-----	-----	-----	5.014
12	28.33 <<	558.12	5.192	5.156	-----	-----	-----	0.011	-----	-----	-----	5.167
13	28.33 <<	558.21	5.375	5.281	-----	-----	-----	0.083	-----	-----	-----	5.364
14	28.33 <<	558.30	5.764	5.376	-----	-----	-----	0.297	-----	-----	-----	5.673
15	28.33 <<	558.39	6.067	5.464	-----	-----	-----	0.594	-----	-----	-----	6.058
16	28.33 <<	558.48	6.561	5.539	-----	-----	-----	0.945	-----	-----	-----	6.485
17	28.33 <<	558.56	6.992	5.615	-----	-----	-----	1.337	-----	-----	-----	6.952
18	28.33 <<	558.65	7.468	5.678	-----	-----	-----	1.760	-----	-----	-----	7.438
19	28.33 <<	558.73	7.990	5.731	-----	-----	-----	2.208	-----	-----	-----	7.939
20	28.33 <<	558.81	8.499	5.782	-----	-----	-----	2.675	-----	-----	-----	8.457
21	24.28	558.88	8.946	5.825	-----	-----	-----	3.112	-----	-----	-----	8.937
22	20.24	558.93	9.319	5.853	-----	-----	-----	3.452	-----	-----	-----	9.305
23	16.19	558.97	9.585	5.870	-----	-----	-----	3.686	-----	-----	-----	9.556
24	12.14	558.98	9.722	5.879	-----	-----	-----	3.807	-----	-----	-----	9.686
25	8.090	558.99 <<	9.735	5.880	-----	-----	-----	3.818	-----	-----	-----	9.698 <<
26	4.050	558.97	9.627	5.873	-----	-----	-----	3.723	-----	-----	-----	9.596
27	0.000	558.94	9.401	5.858	-----	-----	-----	3.525	-----	-----	-----	9.383
28	0.000	558.91	9.121	5.840	-----	-----	-----	3.278	-----	-----	-----	9.118
29	0.000	558.87	8.886	5.819	-----	-----	-----	3.053	-----	-----	-----	8.872
30	0.000	558.83	8.663	5.798	-----	-----	-----	2.835	-----	-----	-----	8.633
31	0.000	558.80	8.447	5.777	-----	-----	-----	2.624	-----	-----	-----	8.401
32	0.000	558.77	8.237	5.756	-----	-----	-----	2.433	-----	-----	-----	8.188
33	0.000	558.74	8.033	5.735	-----	-----	-----	2.247	-----	-----	-----	7.982
34	0.000	558.71	7.834	5.715	-----	-----	-----	2.066	-----	-----	-----	7.781
35	0.000	558.67	7.639	5.695	-----	-----	-----	1.902	-----	-----	-----	7.597
36	0.000	558.64	7.449	5.676	-----	-----	-----	1.745	-----	-----	-----	7.421
37	0.000	558.62	7.264	5.658	-----	-----	-----	1.591	-----	-----	-----	7.249
38	0.000	558.59	7.103	5.636	-----	-----	-----	1.448	-----	-----	-----	7.084
39	0.000	558.56	6.971	5.611	-----	-----	-----	1.316	-----	-----	-----	6.927
40	0.000	558.53	6.842	5.587	-----	-----	-----	1.188	-----	-----	-----	6.774
41	0.000	558.51	6.716	5.563	-----	-----	-----	1.062	-----	-----	-----	6.625
42	0.000	558.48	6.570	5.541	-----	-----	-----	0.952	-----	-----	-----	6.492
43	0.000	558.45	6.419	5.519	-----	-----	-----	0.847	-----	-----	-----	6.366
44	0.000	558.43	6.272	5.498	-----	-----	-----	0.745	-----	-----	-----	6.243
45	0.000	558.41	6.127	5.477	-----	-----	-----	0.645	-----	-----	-----	6.122

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Detention Basin

Hydrograph Discharge Table

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
46	0.000	558.38	6.033	5.454	-----	-----	-----	0.560	-----	-----	-----	6.015
47	0.000	558.36	5.952	5.431	-----	-----	-----	0.482	-----	-----	-----	5.912
48	0.000	558.33	5.873	5.408	-----	-----	-----	0.404	-----	-----	-----	5.812
49	0.000	558.31	5.796	5.385	-----	-----	-----	0.328	-----	-----	-----	5.713
50	0.000	558.29	5.709	5.362	-----	-----	-----	0.264	-----	-----	-----	5.626
51	0.000	558.27	5.613	5.339	-----	-----	-----	0.212	-----	-----	-----	5.551
52	0.000	558.24	5.519	5.316	-----	-----	-----	0.161	-----	-----	-----	5.477
53	0.000	558.22	5.425	5.293	-----	-----	-----	0.110	-----	-----	-----	5.403
54	0.000	558.20	5.333	5.270	-----	-----	-----	0.061	-----	-----	-----	5.331
55	0.000	558.18	5.293	5.242	-----	-----	-----	0.045	-----	-----	-----	5.287
56	0.000	558.16	5.258	5.212	-----	-----	-----	0.034	-----	-----	-----	5.246
57	0.000	558.14	5.224	5.183	-----	-----	-----	0.022	-----	-----	-----	5.205
58	0.000	558.12	5.190	5.154	-----	-----	-----	0.011	-----	-----	-----	5.165
59	0.000	558.10	5.156	5.125	-----	-----	-----	-----	-----	-----	-----	5.125
60	0.000	558.08	5.126	5.093	-----	-----	-----	-----	-----	-----	-----	5.093
61	0.000	558.06	5.097	5.061	-----	-----	-----	-----	-----	-----	-----	5.061
62	0.000	558.04	5.068	5.030	-----	-----	-----	-----	-----	-----	-----	5.030
63	0.000	558.02	5.039	4.999	-----	-----	-----	-----	-----	-----	-----	4.999
64	0.000	558.00	5.008	4.965	-----	-----	-----	-----	-----	-----	-----	4.965
65	0.000	557.96	4.957	4.908	-----	-----	-----	-----	-----	-----	-----	4.908
66	0.000	557.93	4.907	4.851	-----	-----	-----	-----	-----	-----	-----	4.851
67	0.000	557.89	4.857	4.795	-----	-----	-----	-----	-----	-----	-----	4.795
68	0.000	557.86	4.809	4.738	-----	-----	-----	-----	-----	-----	-----	4.738
69	0.000	557.83	4.761	4.681	-----	-----	-----	-----	-----	-----	-----	4.681
70	0.000	557.79	4.706	4.625	-----	-----	-----	-----	-----	-----	-----	4.625
71	0.000	557.76	4.623	4.571	-----	-----	-----	-----	-----	-----	-----	4.571
72	0.000	557.73	4.541	4.517	-----	-----	-----	-----	-----	-----	-----	4.517
73	0.000	557.70	4.465	4.464	-----	-----	-----	-----	-----	-----	-----	4.464
74	0.000	557.66	4.414	4.413	-----	-----	-----	-----	-----	-----	-----	4.413
75	0.000	557.63	4.363	4.363	-----	-----	-----	-----	-----	-----	-----	4.363
76	0.000	557.60	4.313	4.313	-----	-----	-----	-----	-----	-----	-----	4.313
77	0.000	557.57	4.270	4.257	-----	-----	-----	-----	-----	-----	-----	4.257
78	0.000	557.54	4.227	4.202	-----	-----	-----	-----	-----	-----	-----	4.202
79	0.000	557.51	4.185	4.147	-----	-----	-----	-----	-----	-----	-----	4.147
80	0.000	557.48	4.127	4.092	-----	-----	-----	-----	-----	-----	-----	4.092
81	0.000	557.45	4.059	4.036	-----	-----	-----	-----	-----	-----	-----	4.036
82	0.000	557.43	3.992	3.981	-----	-----	-----	-----	-----	-----	-----	3.981
83	0.000	557.40	3.928	3.927	-----	-----	-----	-----	-----	-----	-----	3.927
84	0.000	557.37	3.883	3.879	-----	-----	-----	-----	-----	-----	-----	3.879
85	0.000	557.34	3.839	3.831	-----	-----	-----	-----	-----	-----	-----	3.831
86	0.000	557.31	3.795	3.783	-----	-----	-----	-----	-----	-----	-----	3.783
87	0.000	557.29	3.742	3.730	-----	-----	-----	-----	-----	-----	-----	3.730
88	0.000	557.26	3.677	3.669	-----	-----	-----	-----	-----	-----	-----	3.669
89	0.000	557.24	3.614	3.609	-----	-----	-----	-----	-----	-----	-----	3.609
90	0.000	557.21	3.552	3.551	-----	-----	-----	-----	-----	-----	-----	3.551
91	0.000	557.19	3.489	3.486	-----	-----	-----	-----	-----	-----	-----	3.486
92	0.000	557.16	3.426	3.417	-----	-----	-----	-----	-----	-----	-----	3.417
93	0.000	557.14	3.364	3.350	-----	-----	-----	-----	-----	-----	-----	3.350
94	0.000	557.11	3.304	3.284	-----	-----	-----	-----	-----	-----	-----	3.284
95	0.000	557.09	3.235	3.207	-----	-----	-----	-----	-----	-----	-----	3.207
96	0.000	557.07	3.156	3.114	-----	-----	-----	-----	-----	-----	-----	3.114
97	0.000	557.05	3.079	3.025	-----	-----	-----	-----	-----	-----	-----	3.025
98	0.000	557.02	3.004	2.937	-----	-----	-----	-----	-----	-----	-----	2.937

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2

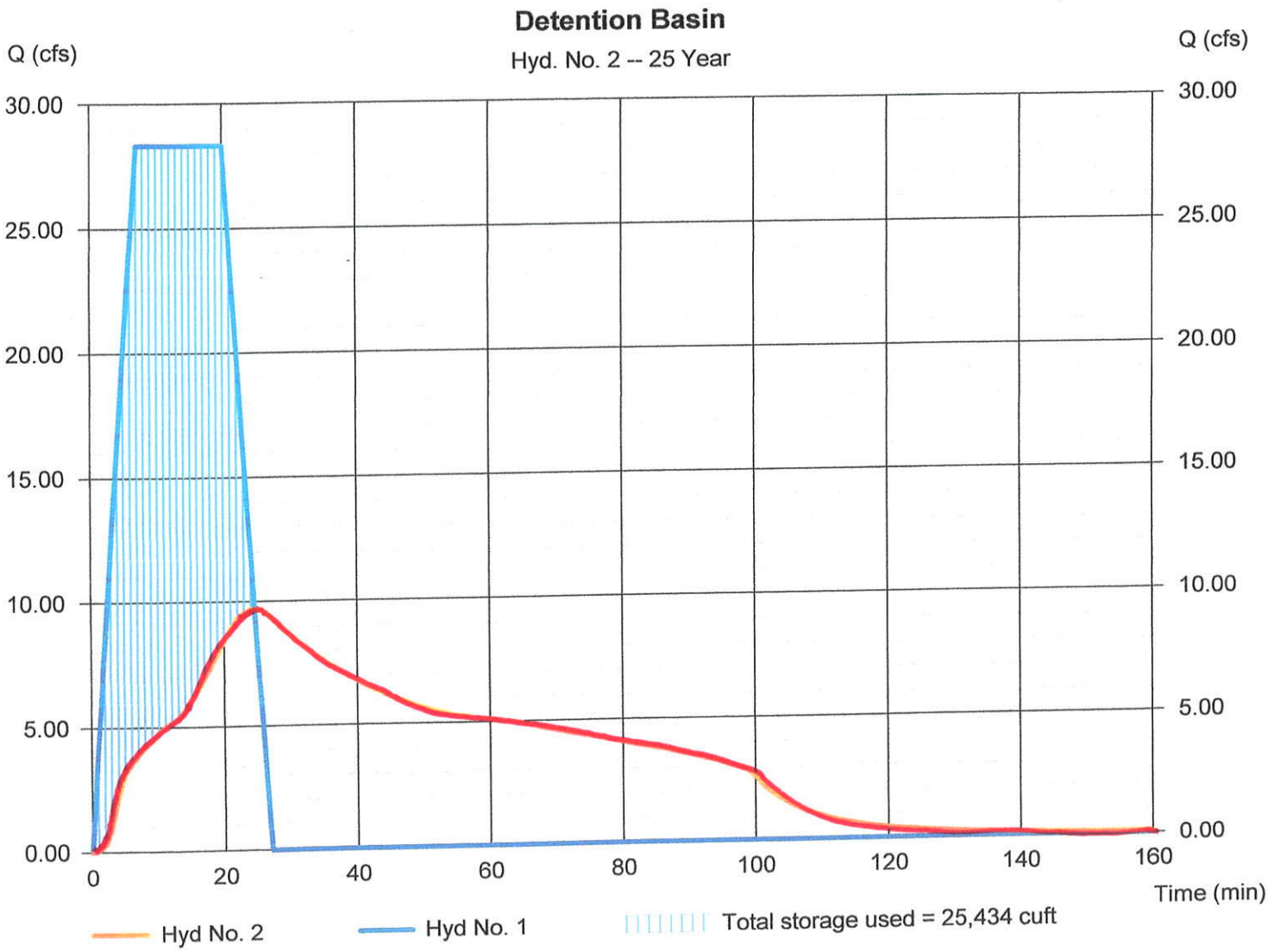
Tuesday, Jul 5, 2011

Hyd. No. 2

Detention Basin

Hydrograph type	= Reservoir	Peak discharge	= 9.698 cfs
Storm frequency	= 25 yrs	Time to peak	= 25 min
Time interval	= 1 min	Hyd. volume	= 33,994 cuft
Inflow hyd. No.	= 1 - Proposed to Basin	Max. Elevation	= 558.99 ft
Reservoir name	= Detention Basin	Max. Storage	= 25,434 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2

Tuesday, Jul 5, 2011

Hyd. No. 3

Low Flow Blocked

Hydrograph type	= Reservoir	Peak discharge	= 6.019 cfs
Storm frequency	= 25 yrs	Time to peak	= 26 min
Time interval	= 1 min	Hyd. volume	= 31,451 cuft
Inflow hyd. No.	= 1 - Proposed to Basin	Reservoir name	= Detention Basin -
Max. Elevation	= 559.29 ft	Max. Storage	= 30,859 cuft

Storage Indication method used.

(Printed values >= 30.00% of Qp.)

Hydrograph Discharge Table

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
16	28.33 <<	558.69	2.046	-----	-----	-----	-----	1.998	-----	-----	-----	1.998
17	28.33 <<	558.80	2.671	-----	-----	-----	-----	2.593	-----	-----	-----	2.593
18	28.33 <<	558.90	3.252	-----	-----	-----	-----	3.222	-----	-----	-----	3.222
19	28.33 <<	558.99	3.881	-----	-----	-----	-----	3.880	-----	-----	-----	3.880
20	28.33 <<	559.07	4.516	-----	-----	-----	-----	4.443	-----	-----	-----	4.442
21	24.28	559.14	5.050	-----	-----	-----	-----	4.959	-----	-----	-----	4.959
22	20.24	559.20	5.456	-----	-----	-----	-----	5.375	-----	-----	-----	5.375
23	16.19	559.24	5.770	-----	-----	-----	-----	5.698	-----	-----	-----	5.698
24	12.14	559.27	5.977	-----	-----	-----	-----	5.911	-----	-----	-----	5.912
25	8.090	559.28	6.080	-----	-----	-----	-----	6.017	-----	-----	-----	6.017
26	4.050	559.28 <<	6.082	-----	-----	-----	-----	6.019	-----	-----	-----	6.019 <<
27	0.000	559.27	5.984	-----	-----	-----	-----	5.918	-----	-----	-----	5.918
28	0.000	559.25	5.839	-----	-----	-----	-----	5.769	-----	-----	-----	5.769
29	0.000	559.23	5.698	-----	-----	-----	-----	5.624	-----	-----	-----	5.624
30	0.000	559.21	5.560	-----	-----	-----	-----	5.482	-----	-----	-----	5.482
31	0.000	559.20	5.427	-----	-----	-----	-----	5.345	-----	-----	-----	5.345
32	0.000	559.18	5.302	-----	-----	-----	-----	5.217	-----	-----	-----	5.217
33	0.000	559.16	5.179	-----	-----	-----	-----	5.091	-----	-----	-----	5.091
34	0.000	559.15	5.059	-----	-----	-----	-----	4.969	-----	-----	-----	4.969
35	0.000	559.13	4.943	-----	-----	-----	-----	4.849	-----	-----	-----	4.849
36	0.000	559.11	4.829	-----	-----	-----	-----	4.733	-----	-----	-----	4.733
37	0.000	559.10	4.718	-----	-----	-----	-----	4.619	-----	-----	-----	4.619
38	0.000	559.08	4.597	-----	-----	-----	-----	4.514	-----	-----	-----	4.514
39	0.000	559.07	4.480	-----	-----	-----	-----	4.410	-----	-----	-----	4.411
40	0.000	559.06	4.365	-----	-----	-----	-----	4.310	-----	-----	-----	4.310
41	0.000	559.04	4.253	-----	-----	-----	-----	4.211	-----	-----	-----	4.211
42	0.000	559.03	4.144	-----	-----	-----	-----	4.115	-----	-----	-----	4.115
43	0.000	559.02	4.036	-----	-----	-----	-----	4.021	-----	-----	-----	4.021
44	0.000	559.00	3.932	-----	-----	-----	-----	3.930	-----	-----	-----	3.930
45	0.000	558.99	3.832	-----	-----	-----	-----	3.829	-----	-----	-----	3.829
46	0.000	558.97	3.736	-----	-----	-----	-----	3.728	-----	-----	-----	3.728
47	0.000	558.96	3.642	-----	-----	-----	-----	3.630	-----	-----	-----	3.630
48	0.000	558.94	3.551	-----	-----	-----	-----	3.535	-----	-----	-----	3.535
49	0.000	558.93	3.462	-----	-----	-----	-----	3.442	-----	-----	-----	3.442
50	0.000	558.92	3.375	-----	-----	-----	-----	3.352	-----	-----	-----	3.352
51	0.000	558.90	3.291	-----	-----	-----	-----	3.264	-----	-----	-----	3.264
52	0.000	558.89	3.215	-----	-----	-----	-----	3.182	-----	-----	-----	3.182
53	0.000	558.88	3.143	-----	-----	-----	-----	3.104	-----	-----	-----	3.104
54	0.000	558.87	3.074	-----	-----	-----	-----	3.028	-----	-----	-----	3.028
55	0.000	558.85	3.005	-----	-----	-----	-----	2.954	-----	-----	-----	2.954
56	0.000	558.84	2.939	-----	-----	-----	-----	2.882	-----	-----	-----	2.882

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Low Flow Blocked

Hydrograph Discharge Table

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
57	0.000	558.83	2.874	-----	-----	-----	-----	2.811	-----	-----	-----	2.811
58	0.000	558.82	2.811	-----	-----	-----	-----	2.742	-----	-----	-----	2.742
59	0.000	558.81	2.749	-----	-----	-----	-----	2.675	-----	-----	-----	2.675
60	0.000	558.80	2.689	-----	-----	-----	-----	2.610	-----	-----	-----	2.610
61	0.000	558.79	2.626	-----	-----	-----	-----	2.550	-----	-----	-----	2.550
62	0.000	558.78	2.565	-----	-----	-----	-----	2.493	-----	-----	-----	2.493
63	0.000	558.77	2.505	-----	-----	-----	-----	2.436	-----	-----	-----	2.436
64	0.000	558.76	2.447	-----	-----	-----	-----	2.380	-----	-----	-----	2.381
65	0.000	558.75	2.390	-----	-----	-----	-----	2.327	-----	-----	-----	2.327
66	0.000	558.74	2.334	-----	-----	-----	-----	2.274	-----	-----	-----	2.274
67	0.000	558.73	2.280	-----	-----	-----	-----	2.222	-----	-----	-----	2.222
68	0.000	558.72	2.227	-----	-----	-----	-----	2.172	-----	-----	-----	2.172
69	0.000	558.71	2.175	-----	-----	-----	-----	2.122	-----	-----	-----	2.122
70	0.000	558.71	2.124	-----	-----	-----	-----	2.074	-----	-----	-----	2.074
71	0.000	558.70	2.075	-----	-----	-----	-----	2.028	-----	-----	-----	2.028
72	0.000	558.69	2.034	-----	-----	-----	-----	1.986	-----	-----	-----	1.986
73	0.000	558.68	1.994	-----	-----	-----	-----	1.945	-----	-----	-----	1.944
74	0.000	558.67	1.954	-----	-----	-----	-----	1.904	-----	-----	-----	1.904
75	0.000	558.67	1.915	-----	-----	-----	-----	1.865	-----	-----	-----	1.865
76	0.000	558.66	1.877	-----	-----	-----	-----	1.826	-----	-----	-----	1.826

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2

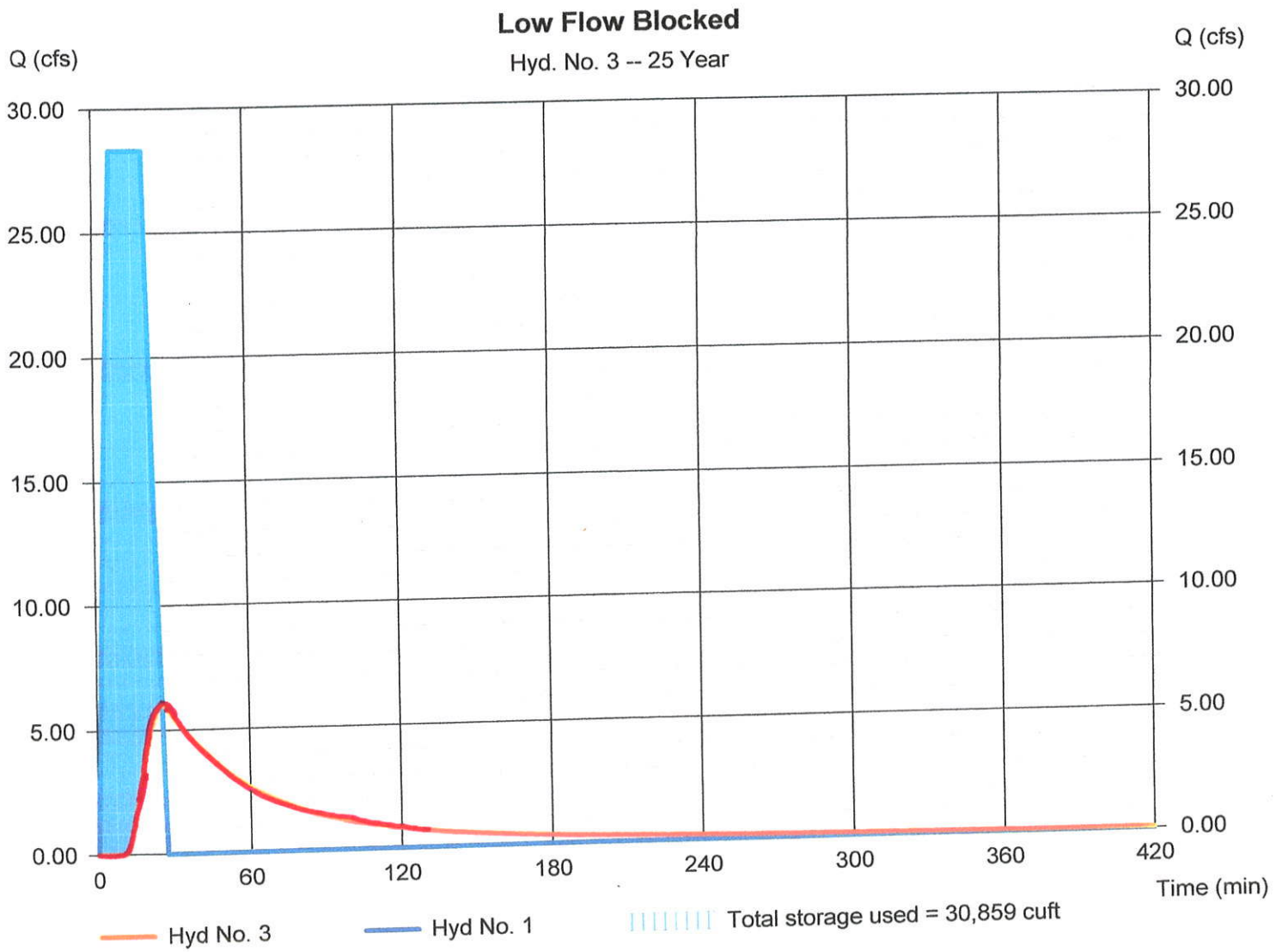
Tuesday, Jul 5, 2011

Hyd. No. 3

Low Flow Blocked

Hydrograph type	= Reservoir	Peak discharge	= 6.019 cfs
Storm frequency	= 25 yrs	Time to peak	= 26 min
Time interval	= 1 min	Hyd. volume	= 21,948 cuft
Inflow hyd. No.	= 1 - Proposed to Basin	Max. Elevation	= 559.29 ft
Reservoir name	= Detention Basin - LFB	Max. Storage	= 30,859 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2

Tuesday, Jul 5, 2011

Hyd. No. 4

With 2yr sediment

Hydrograph type	= Reservoir	Peak discharge	= 9.953 cfs
Storm frequency	= 25 yrs	Time to peak	= 25 min
Time interval	= 1 min	Hyd. volume	= 43,511 cuft
Inflow hyd. No.	= 1 - Proposed to Basin	Reservoir name	= Detention Basin -
Max. Elevation	= 559.02 ft	Max. Storage	= 24,826 cuft

Storage Indication method used.

(Printed values >= 30.00% of Qp.)

Hydrograph Discharge Table

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
4	16.19	557.07	3.175	3.137	-----	-----	-----	-----	-----	-----	-----	3.137
5	20.24	557.18	3.473	3.468	-----	-----	-----	-----	-----	-----	-----	3.468
6	24.28	557.31	3.790	3.778	-----	-----	-----	-----	-----	-----	-----	3.778
7	28.33 <<	557.47	4.099	4.069	-----	-----	-----	-----	-----	-----	-----	4.069
8	28.33 <<	557.64	4.378	4.378	-----	-----	-----	-----	-----	-----	-----	4.378
9	28.33 <<	557.81	4.741	4.657	-----	-----	-----	-----	-----	-----	-----	4.657
10	28.33 <<	557.98	4.982	4.936	-----	-----	-----	-----	-----	-----	-----	4.936
11	28.33 <<	558.08	5.130	5.097	-----	-----	-----	-----	-----	-----	-----	5.097
12	28.33 <<	558.17	5.279	5.230	-----	-----	-----	0.040	-----	-----	-----	5.270
13	28.33 <<	558.26	5.599	5.335	-----	-----	-----	0.204	-----	-----	-----	5.539
14	28.33 <<	558.35	5.937	5.426	-----	-----	-----	0.467	-----	-----	-----	5.893
15	28.33 <<	558.44	6.340	5.508	-----	-----	-----	0.792	-----	-----	-----	6.300
16	28.33 <<	558.53	6.818	5.582	-----	-----	-----	1.163	-----	-----	-----	6.746
17	28.33 <<	558.61	7.239	5.655	-----	-----	-----	1.571	-----	-----	-----	7.226
18	28.33 <<	558.69	7.767	5.708	-----	-----	-----	2.008	-----	-----	-----	7.716
19	28.33 <<	558.78	8.281	5.760	-----	-----	-----	2.473	-----	-----	-----	8.233
20	28.33 <<	558.85	8.784	5.809	-----	-----	-----	2.954	-----	-----	-----	8.763
21	24.28	558.92	9.252	5.849	-----	-----	-----	3.393	-----	-----	-----	9.242
22	20.24	558.97	9.640	5.874	-----	-----	-----	3.735	-----	-----	-----	9.608
23	16.19	559.01	9.886	5.890	-----	-----	-----	3.955	-----	-----	-----	9.844
24	12.14	559.02	9.990	5.896	-----	-----	-----	4.053	-----	-----	-----	9.949
25	8.090	559.02 <<	9.994	5.897	-----	-----	-----	4.057	-----	-----	-----	9.953 <<
26	4.050	559.01	9.901	5.891	-----	-----	-----	3.968	-----	-----	-----	9.859
27	0.000	558.98	9.681	5.876	-----	-----	-----	3.771	-----	-----	-----	9.647
28	0.000	558.94	9.393	5.858	-----	-----	-----	3.518	-----	-----	-----	9.376
29	0.000	558.90	9.114	5.840	-----	-----	-----	3.272	-----	-----	-----	9.111
30	0.000	558.87	8.880	5.818	-----	-----	-----	3.047	-----	-----	-----	8.865
31	0.000	558.83	8.658	5.797	-----	-----	-----	2.830	-----	-----	-----	8.627
32	0.000	558.80	8.441	5.776	-----	-----	-----	2.619	-----	-----	-----	8.395
33	0.000	558.77	8.232	5.755	-----	-----	-----	2.428	-----	-----	-----	8.183
34	0.000	558.74	8.027	5.734	-----	-----	-----	2.242	-----	-----	-----	7.977
35	0.000	558.70	7.828	5.714	-----	-----	-----	2.061	-----	-----	-----	7.775
36	0.000	558.67	7.634	5.695	-----	-----	-----	1.898	-----	-----	-----	7.593
37	0.000	558.64	7.444	5.676	-----	-----	-----	1.741	-----	-----	-----	7.416
38	0.000	558.62	7.259	5.657	-----	-----	-----	1.587	-----	-----	-----	7.244
39	0.000	558.59	7.100	5.636	-----	-----	-----	1.444	-----	-----	-----	7.080
40	0.000	558.56	6.968	5.610	-----	-----	-----	1.313	-----	-----	-----	6.923
41	0.000	558.53	6.839	5.586	-----	-----	-----	1.184	-----	-----	-----	6.770
42	0.000	558.51	6.713	5.562	-----	-----	-----	1.059	-----	-----	-----	6.621
43	0.000	558.48	6.566	5.540	-----	-----	-----	0.949	-----	-----	-----	6.489
44	0.000	558.45	6.415	5.518	-----	-----	-----	0.845	-----	-----	-----	6.363

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With 2yr sediment

Hydrograph Discharge Table

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
45	0.000	558.43	6.268	5.497	-----	-----	-----	0.742	-----	-----	-----	6.240
46	0.000	558.40	6.123	5.477	-----	-----	-----	0.642	-----	-----	-----	6.119
47	0.000	558.38	6.031	5.454	-----	-----	-----	0.558	-----	-----	-----	6.012
48	0.000	558.36	5.950	5.430	-----	-----	-----	0.480	-----	-----	-----	5.910
49	0.000	558.33	5.871	5.407	-----	-----	-----	0.402	-----	-----	-----	5.809
50	0.000	558.31	5.794	5.385	-----	-----	-----	0.326	-----	-----	-----	5.710
51	0.000	558.29	5.706	5.362	-----	-----	-----	0.262	-----	-----	-----	5.624
52	0.000	558.27	5.611	5.338	-----	-----	-----	0.211	-----	-----	-----	5.549
53	0.000	558.24	5.516	5.315	-----	-----	-----	0.159	-----	-----	-----	5.475
54	0.000	558.22	5.423	5.292	-----	-----	-----	0.109	-----	-----	-----	5.401
55	0.000	558.20	5.331	5.270	-----	-----	-----	0.059	-----	-----	-----	5.329
56	0.000	558.18	5.292	5.241	-----	-----	-----	0.045	-----	-----	-----	5.286
57	0.000	558.16	5.257	5.211	-----	-----	-----	0.033	-----	-----	-----	5.245
58	0.000	558.14	5.223	5.182	-----	-----	-----	0.022	-----	-----	-----	5.204
59	0.000	558.12	5.189	5.153	-----	-----	-----	0.010	-----	-----	-----	5.163
60	0.000	558.10	5.155	5.124	-----	-----	-----	-----	-----	-----	-----	5.124
61	0.000	558.08	5.126	5.092	-----	-----	-----	-----	-----	-----	-----	5.092
62	0.000	558.06	5.096	5.060	-----	-----	-----	-----	-----	-----	-----	5.060
63	0.000	558.04	5.067	5.029	-----	-----	-----	-----	-----	-----	-----	5.029
64	0.000	558.02	5.038	4.998	-----	-----	-----	-----	-----	-----	-----	4.998
65	0.000	558.00	5.007	4.964	-----	-----	-----	-----	-----	-----	-----	4.964
66	0.000	557.96	4.956	4.906	-----	-----	-----	-----	-----	-----	-----	4.906
67	0.000	557.93	4.906	4.850	-----	-----	-----	-----	-----	-----	-----	4.850
68	0.000	557.89	4.856	4.793	-----	-----	-----	-----	-----	-----	-----	4.793
69	0.000	557.86	4.808	4.736	-----	-----	-----	-----	-----	-----	-----	4.736
70	0.000	557.82	4.760	4.680	-----	-----	-----	-----	-----	-----	-----	4.680
71	0.000	557.79	4.703	4.624	-----	-----	-----	-----	-----	-----	-----	4.624
72	0.000	557.76	4.621	4.570	-----	-----	-----	-----	-----	-----	-----	4.570
73	0.000	557.73	4.539	4.516	-----	-----	-----	-----	-----	-----	-----	4.516
74	0.000	557.69	4.463	4.463	-----	-----	-----	-----	-----	-----	-----	4.463
75	0.000	557.66	4.412	4.412	-----	-----	-----	-----	-----	-----	-----	4.412
76	0.000	557.63	4.362	4.362	-----	-----	-----	-----	-----	-----	-----	4.362
77	0.000	557.60	4.312	4.312	-----	-----	-----	-----	-----	-----	-----	4.312
78	0.000	557.57	4.269	4.256	-----	-----	-----	-----	-----	-----	-----	4.256
79	0.000	557.54	4.226	4.201	-----	-----	-----	-----	-----	-----	-----	4.201
80	0.000	557.51	4.184	4.146	-----	-----	-----	-----	-----	-----	-----	4.146
81	0.000	557.48	4.125	4.090	-----	-----	-----	-----	-----	-----	-----	4.090
82	0.000	557.45	4.057	4.034	-----	-----	-----	-----	-----	-----	-----	4.034
83	0.000	557.42	3.990	3.979	-----	-----	-----	-----	-----	-----	-----	3.979
84	0.000	557.40	3.927	3.926	-----	-----	-----	-----	-----	-----	-----	3.926
85	0.000	557.37	3.882	3.877	-----	-----	-----	-----	-----	-----	-----	3.877
86	0.000	557.34	3.837	3.829	-----	-----	-----	-----	-----	-----	-----	3.829
87	0.000	557.31	3.794	3.782	-----	-----	-----	-----	-----	-----	-----	3.782
88	0.000	557.29	3.740	3.728	-----	-----	-----	-----	-----	-----	-----	3.728
89	0.000	557.26	3.676	3.668	-----	-----	-----	-----	-----	-----	-----	3.667
90	0.000	557.24	3.613	3.608	-----	-----	-----	-----	-----	-----	-----	3.608
91	0.000	557.21	3.550	3.549	-----	-----	-----	-----	-----	-----	-----	3.549
92	0.000	557.18	3.488	3.484	-----	-----	-----	-----	-----	-----	-----	3.484
93	0.000	557.16	3.425	3.415	-----	-----	-----	-----	-----	-----	-----	3.416
94	0.000	557.14	3.363	3.348	-----	-----	-----	-----	-----	-----	-----	3.348
95	0.000	557.11	3.302	3.283	-----	-----	-----	-----	-----	-----	-----	3.283
96	0.000	557.09	3.233	3.204	-----	-----	-----	-----	-----	-----	-----	3.204
97	0.000	557.07	3.154	3.112	-----	-----	-----	-----	-----	-----	-----	3.112
98	0.000	557.05	3.077	3.022	-----	-----	-----	-----	-----	-----	-----	3.022

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2

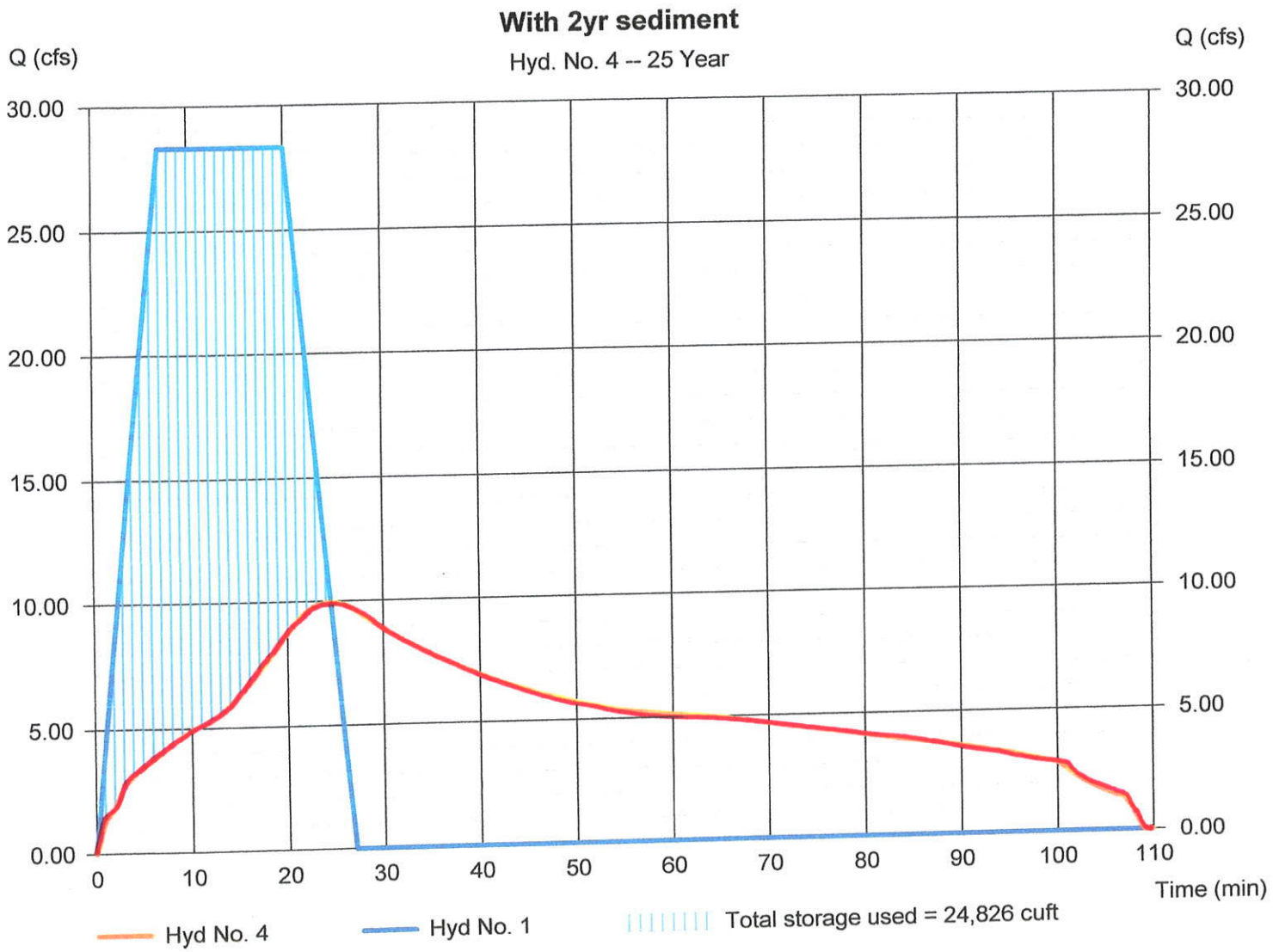
Tuesday, Jul 5, 2011

Hyd. No. 4

With 2yr sediment

Hydrograph type	= Reservoir	Peak discharge	= 9.953 cfs
Storm frequency	= 25 yrs	Time to peak	= 25 min
Time interval	= 1 min	Hyd. volume	= 34,017 cuft
Inflow hyd. No.	= 1 - Proposed to Basin	Max. Elevation	= 559.02 ft
Reservoir name	= Detention Basin - Sediment	Max. Storage	= 24,826 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.2

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	Manual	36.25	1	7	43,500	----	------	------	Proposed to Basin
2	Reservoir	12.83	1	25	43,498	1	559.38	32,645	Detention Basin
3	Reservoir	13.24	1	24	31,451	1	559.64	37,345	Low Flow Blocked
4	Reservoir	13.21	1	24	43,511	1	559.41	32,045	With 2yr sediment

Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2

Tuesday, Jul 5, 2011

Hyd. No. 1

Proposed to Basin

Hydrograph type	= Manual	Peak discharge	= 36.25 cfs
Storm frequency	= 100 yrs	Time to peak	= 7 min
Time interval	= 1 min	Hyd. volume	= 43,500 cuft

(Printed values >= 30.00% of Qp.)

Hydrograph Discharge Table

Time (min)	Outflow cfs)
3	15.54
4	20.71
5	25.89
6	31.07
7	36.25 <<
8	36.25 <<
9	36.25 <<
10	36.25 <<
11	36.25 <<
12	36.25 <<
13	36.25 <<
14	36.25 <<
15	36.25 <<
16	36.25 <<
17	36.25 <<
18	36.25 <<
19	36.25 <<
20	36.25 <<
21	31.07
22	25.89
23	20.71
24	15.54

...End

Hydrograph Report

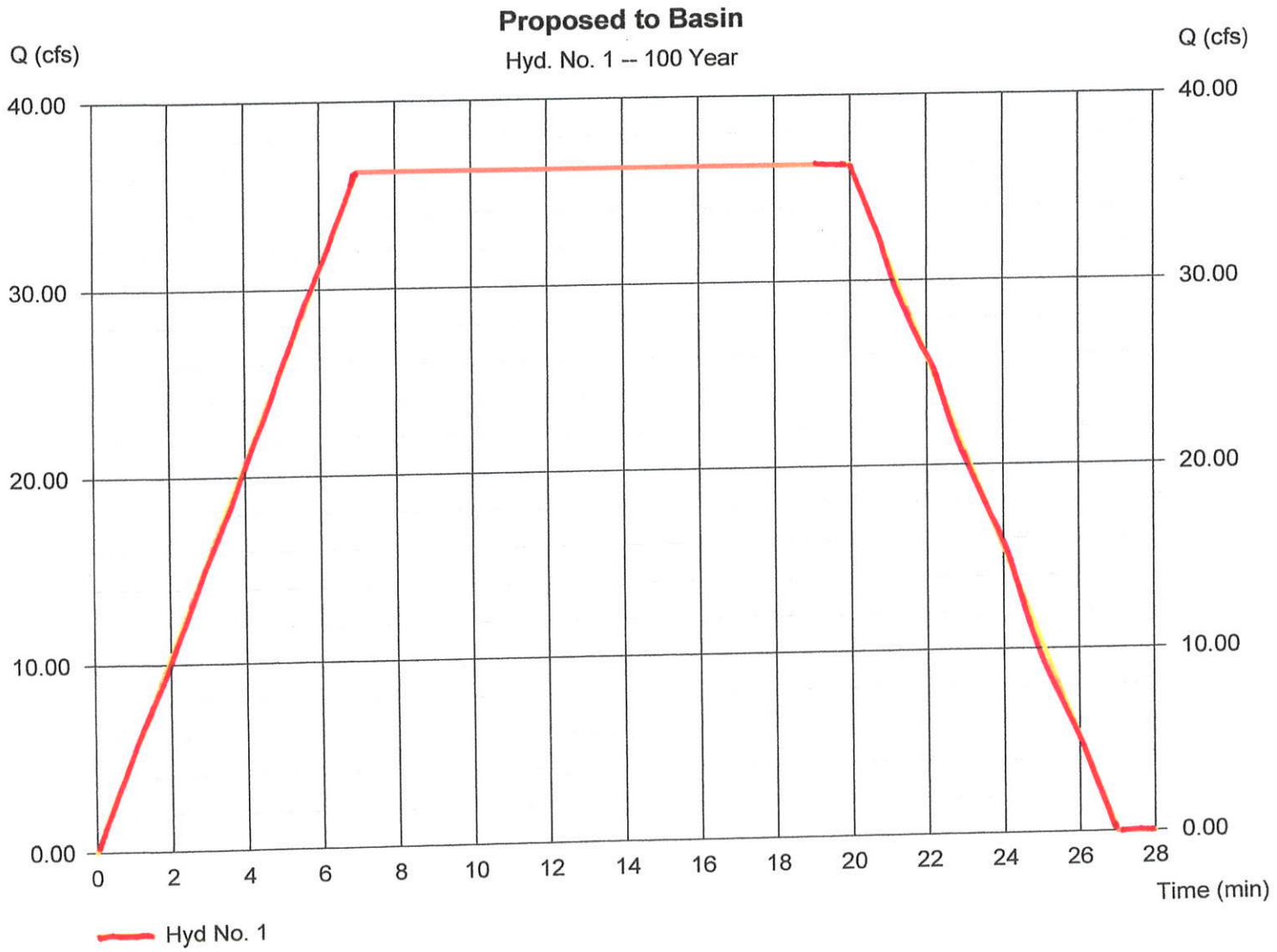
Hydraflow Hydrographs by Intelisolve v9.2

Tuesday, Jul 5, 2011

Hyd. No. 1

Proposed to Basin

Hydrograph type	= Manual	Peak discharge	= 36.25 cfs
Storm frequency	= 100 yrs	Time to peak	= 7 min
Time interval	= 1 min	Hyd. volume	= 43,500 cuft



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2

Tuesday, Jul 5, 2011

Hyd. No. 2

Detention Basin

Hydrograph type	= Reservoir	Peak discharge	= 12.83 cfs
Storm frequency	= 100 yrs	Time to peak	= 25 min
Time interval	= 1 min	Hyd. volume	= 43,498 cuft
Inflow hyd. No.	= 1 - Proposed to Basin	Reservoir name	= Detention Basin
Max. Elevation	= 559.38 ft	Max. Storage	= 32,645 cuft

Storage Indication method used.

(Printed values >= 30.00% of Qp.)

Hydrograph Discharge Table

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
7	36.25 <<	557.56	4.246	4.227	-----	-----	-----	-----	-----	-----	-----	4.227
8	36.25 <<	557.78	4.678	4.607	-----	-----	-----	-----	-----	-----	-----	4.607
9	36.25 <<	558.00	5.016	4.974	-----	-----	-----	-----	-----	-----	-----	4.974
10	36.25 <<	558.13	5.202	5.165	-----	-----	-----	0.015	-----	-----	-----	5.180
11	36.25 <<	558.25	5.536	5.320	-----	-----	-----	0.171	-----	-----	-----	5.491
12	36.25 <<	558.37	5.995	5.443	-----	-----	-----	0.524	-----	-----	-----	5.967
13	36.25 <<	558.49	6.622	5.548	-----	-----	-----	0.988	-----	-----	-----	6.536
14	36.25 <<	558.61	7.196	5.651	-----	-----	-----	1.535	-----	-----	-----	7.186
15	36.25 <<	558.72	7.923	5.724	-----	-----	-----	2.147	-----	-----	-----	7.870
16	36.25 <<	558.83	8.632	5.795	-----	-----	-----	2.804	-----	-----	-----	8.599
17	36.25 <<	558.94	9.372	5.856	-----	-----	-----	3.499	-----	-----	-----	9.355
18	36.25 <<	559.04	10.11	5.904	-----	-----	-----	4.166	-----	-----	-----	10.07
19	36.25 <<	559.12	10.75	5.942	-----	-----	-----	4.771	-----	-----	-----	10.71
20	36.25 <<	559.20	11.44	5.969	-----	-----	-----	5.386	-----	-----	-----	11.35
21	31.07	559.27	11.99	5.997	-----	-----	-----	5.947	-----	-----	-----	11.94
22	25.89	559.33	12.41	6.014	-----	-----	-----	6.372	-----	-----	-----	12.39
23	20.71	559.36	12.69	6.022	-----	-----	-----	6.660	-----	-----	-----	12.68
24	15.54	559.38	12.84	6.026	-----	-----	-----	6.802	-----	-----	-----	12.83
25	10.36	559.38 <<	12.84	6.026	-----	-----	-----	6.806	-----	-----	-----	12.83 <<
26	5.180	559.36	12.71	6.022	-----	-----	-----	6.673	-----	-----	-----	12.69
27	0.000	559.33	12.44	6.015	-----	-----	-----	6.407	-----	-----	-----	12.42
28	0.000	559.29	12.12	6.004	-----	-----	-----	6.083	-----	-----	-----	12.09
29	0.000	559.25	11.83	5.989	-----	-----	-----	5.779	-----	-----	-----	11.77
30	0.000	559.21	11.54	5.973	-----	-----	-----	5.483	-----	-----	-----	11.46
31	0.000	559.18	11.24	5.961	-----	-----	-----	5.203	-----	-----	-----	11.16
32	0.000	559.14	10.94	5.949	-----	-----	-----	4.934	-----	-----	-----	10.88
33	0.000	559.11	10.64	5.938	-----	-----	-----	4.672	-----	-----	-----	10.61
34	0.000	559.07	10.38	5.922	-----	-----	-----	4.428	-----	-----	-----	10.35
35	0.000	559.04	10.13	5.906	-----	-----	-----	4.192	-----	-----	-----	10.10
36	0.000	559.01	9.894	5.890	-----	-----	-----	3.962	-----	-----	-----	9.852
37	0.000	558.97	9.613	5.872	-----	-----	-----	3.711	-----	-----	-----	9.582
38	0.000	558.93	9.326	5.853	-----	-----	-----	3.459	-----	-----	-----	9.313
39	0.000	558.90	9.054	5.835	-----	-----	-----	3.217	-----	-----	-----	9.052
40	0.000	558.86	8.827	5.813	-----	-----	-----	2.995	-----	-----	-----	8.808
41	0.000	558.83	8.606	5.792	-----	-----	-----	2.779	-----	-----	-----	8.571
42	0.000	558.79	8.391	5.771	-----	-----	-----	2.573	-----	-----	-----	8.344
43	0.000	558.76	8.183	5.750	-----	-----	-----	2.384	-----	-----	-----	8.134
44	0.000	558.73	7.980	5.729	-----	-----	-----	2.199	-----	-----	-----	7.929
45	0.000	558.70	7.782	5.709	-----	-----	-----	2.020	-----	-----	-----	7.730
46	0.000	558.67	7.589	5.690	-----	-----	-----	1.861	-----	-----	-----	7.551
47	0.000	558.64	7.400	5.671	-----	-----	-----	1.704	-----	-----	-----	7.375

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Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2

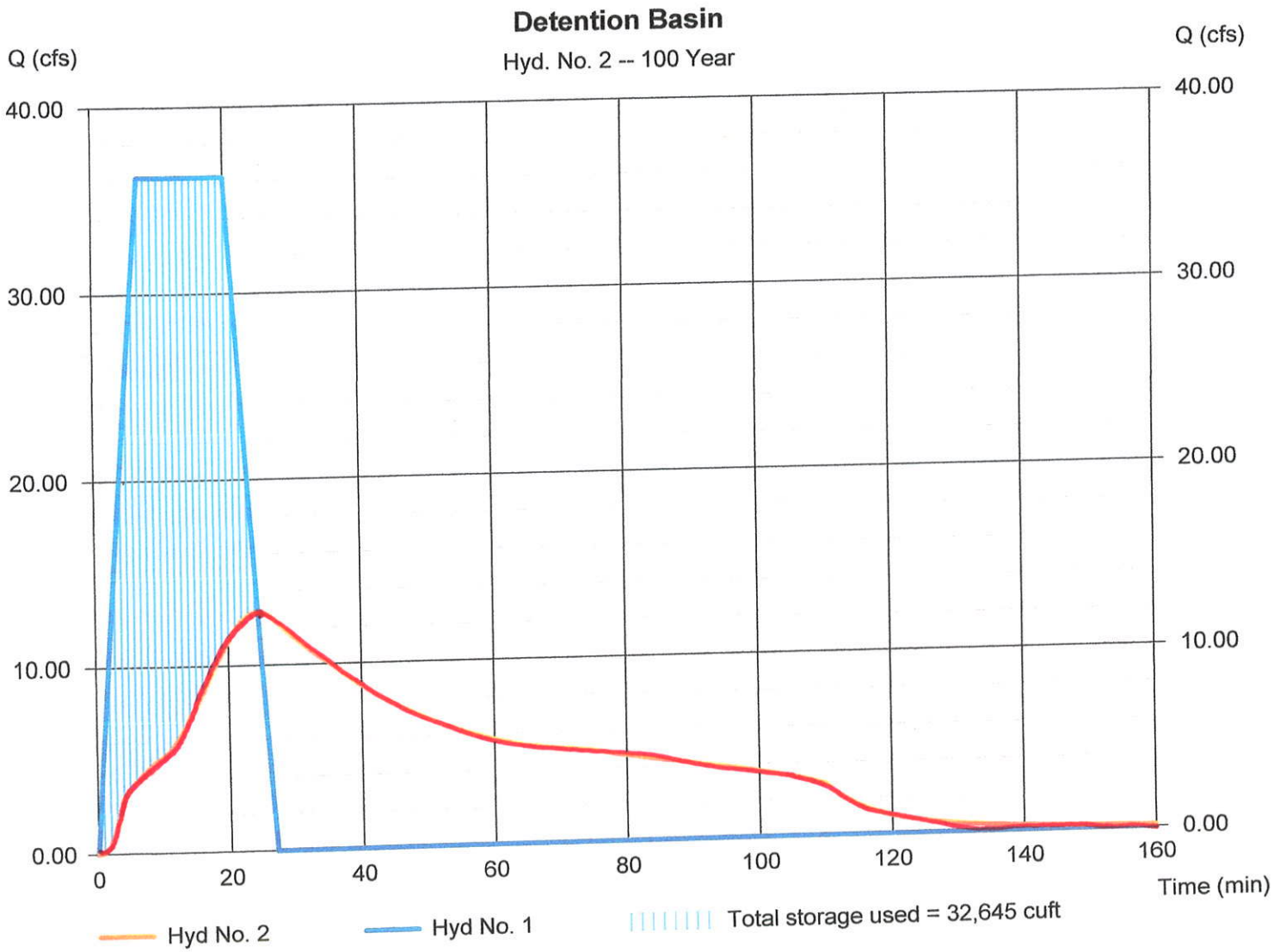
Tuesday, Jul 5, 2011

Hyd. No. 2

Detention Basin

Hydrograph type	= Reservoir	Peak discharge	= 12.83 cfs
Storm frequency	= 100 yrs	Time to peak	= 25 min
Time interval	= 1 min	Hyd. volume	= 43,498 cuft
Inflow hyd. No.	= 1 - Proposed to Basin	Max. Elevation	= 559.38 ft
Reservoir name	= Detention Basin	Max. Storage	= 32,645 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2

Tuesday, Jul 5, 2011

Hyd. No. 3

Low Flow Blocked

Hydrograph type	= Reservoir	Peak discharge	= 13.24 cfs
Storm frequency	= 100 yrs	Time to peak	= 24 min
Time interval	= 1 min	Hyd. volume	= 31,451 cuft
Inflow hyd. No.	= 1 - Proposed to Basin	Reservoir name	= Detention Basin -
Max. Elevation	= 559.64 ft	Max. Storage	= 37,345 cuft

Storage Indication method used.

(Printed values >= 30.00% of Qp.)

Hydrograph Discharge Table

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
16	36.25 <<	559.04	4.278	-----	-----	-----	-----	4.233	-----	-----	-----	4.233
17	36.25 <<	559.15	5.073	-----	-----	-----	-----	4.982	-----	-----	-----	4.983
18	36.25 <<	559.25	5.822	-----	-----	-----	-----	5.752	-----	-----	-----	5.752
19	36.25 <<	559.35	6.579	-----	-----	-----	-----	6.536	-----	-----	-----	6.536
20	36.25 <<	559.44	7.839	-----	-----	-----	0.470	7.325	-----	-----	-----	7.795
21	31.07	559.52	9.716	-----	-----	-----	1.621	8.024	-----	-----	-----	9.645
22	25.89	559.58	11.47	-----	-----	-----	2.864	8.541	-----	-----	-----	11.41
23	20.71	559.62	12.67	-----	-----	-----	3.749	8.872	-----	-----	-----	12.62
24	15.54	559.63 <<	13.28	-----	-----	-----	4.214	9.026	-----	-----	-----	13.24 <<
25	10.36	559.63	13.25	-----	-----	-----	4.190	9.018	-----	-----	-----	13.21
26	5.180	559.62	12.65	-----	-----	-----	3.731	8.865	-----	-----	-----	12.60
27	0.000	559.58	11.62	-----	-----	-----	2.975	8.587	-----	-----	-----	11.56
28	0.000	559.55	10.55	-----	-----	-----	2.211	8.270	-----	-----	-----	10.48
29	0.000	559.52	9.573	-----	-----	-----	1.519	7.982	-----	-----	-----	9.501
30	0.000	559.49	8.804	-----	-----	-----	1.013	7.723	-----	-----	-----	8.736
31	0.000	559.46	8.236	-----	-----	-----	0.693	7.489	-----	-----	-----	8.182
32	0.000	559.43	7.703	-----	-----	-----	0.393	7.269	-----	-----	-----	7.662
33	0.000	559.41	7.205	-----	-----	-----	0.113	7.063	-----	-----	-----	7.176
34	0.000	559.39	6.901	-----	-----	-----	-----	6.873	-----	-----	-----	6.872
35	0.000	559.36	6.728	-----	-----	-----	-----	6.692	-----	-----	-----	6.691
36	0.000	559.34	6.560	-----	-----	-----	-----	6.515	-----	-----	-----	6.515
37	0.000	559.32	6.396	-----	-----	-----	-----	6.344	-----	-----	-----	6.344
38	0.000	559.30	6.236	-----	-----	-----	-----	6.177	-----	-----	-----	6.177
39	0.000	559.28	6.084	-----	-----	-----	-----	6.021	-----	-----	-----	6.021
40	0.000	559.26	5.936	-----	-----	-----	-----	5.869	-----	-----	-----	5.869
41	0.000	559.24	5.793	-----	-----	-----	-----	5.721	-----	-----	-----	5.721
42	0.000	559.23	5.652	-----	-----	-----	-----	5.577	-----	-----	-----	5.577
43	0.000	559.21	5.516	-----	-----	-----	-----	5.437	-----	-----	-----	5.437
44	0.000	559.19	5.385	-----	-----	-----	-----	5.303	-----	-----	-----	5.303
45	0.000	559.17	5.261	-----	-----	-----	-----	5.175	-----	-----	-----	5.175
46	0.000	559.16	5.140	-----	-----	-----	-----	5.051	-----	-----	-----	5.051
47	0.000	559.14	5.021	-----	-----	-----	-----	4.929	-----	-----	-----	4.929
48	0.000	559.12	4.906	-----	-----	-----	-----	4.811	-----	-----	-----	4.811
49	0.000	559.11	4.793	-----	-----	-----	-----	4.695	-----	-----	-----	4.695
50	0.000	559.09	4.678	-----	-----	-----	-----	4.584	-----	-----	-----	4.584
51	0.000	559.08	4.558	-----	-----	-----	-----	4.479	-----	-----	-----	4.480
52	0.000	559.07	4.442	-----	-----	-----	-----	4.377	-----	-----	-----	4.377
53	0.000	559.05	4.328	-----	-----	-----	-----	4.277	-----	-----	-----	4.277
54	0.000	559.04	4.217	-----	-----	-----	-----	4.180	-----	-----	-----	4.180
55	0.000	559.02	4.108	-----	-----	-----	-----	4.084	-----	-----	-----	4.084
56	0.000	559.01	4.002	-----	-----	-----	-----	3.991	-----	-----	-----	3.991

...End

With 2yr sediment

Hydrograph Discharge Table

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
47	0.000	558.66	7.537	5.685	-----	-----	-----	1.817	-----	-----	-----	7.502
48	0.000	558.63	7.349	5.666	-----	-----	-----	1.662	-----	-----	-----	7.328
49	0.000	558.60	7.166	5.648	-----	-----	-----	1.510	-----	-----	-----	7.158
50	0.000	558.57	7.032	5.623	-----	-----	-----	1.377	-----	-----	-----	6.999
51	0.000	558.54	6.902	5.598	-----	-----	-----	1.247	-----	-----	-----	6.845
52	0.000	558.52	6.774	5.574	-----	-----	-----	1.120	-----	-----	-----	6.694
53	0.000	558.49	6.640	5.551	-----	-----	-----	1.001	-----	-----	-----	6.551
54	0.000	558.47	6.489	5.529	-----	-----	-----	0.895	-----	-----	-----	6.424
55	0.000	558.44	6.340	5.508	-----	-----	-----	0.792	-----	-----	-----	6.300
56	0.000	558.42	6.194	5.487	-----	-----	-----	0.691	-----	-----	-----	6.178
57	0.000	558.39	6.070	5.465	-----	-----	-----	0.597	-----	-----	-----	6.063
58	0.000	558.37	5.989	5.442	-----	-----	-----	0.518	-----	-----	-----	5.960
59	0.000	558.34	5.910	5.418	-----	-----	-----	0.440	-----	-----	-----	5.858
60	0.000	558.32	5.832	5.396	-----	-----	-----	0.363	-----	-----	-----	5.759
61	0.000	558.30	5.754	5.373	-----	-----	-----	0.288	-----	-----	-----	5.661
62	0.000	558.28	5.657	5.350	-----	-----	-----	0.236	-----	-----	-----	5.586
63	0.000	558.25	5.562	5.326	-----	-----	-----	0.185	-----	-----	-----	5.511
64	0.000	558.23	5.468	5.304	-----	-----	-----	0.134	-----	-----	-----	5.437
65	0.000	558.21	5.376	5.281	-----	-----	-----	0.084	-----	-----	-----	5.364
66	0.000	558.19	5.309	5.255	-----	-----	-----	0.051	-----	-----	-----	5.306
67	0.000	558.17	5.274	5.226	-----	-----	-----	0.039	-----	-----	-----	5.265
68	0.000	558.15	5.240	5.196	-----	-----	-----	0.027	-----	-----	-----	5.224
69	0.000	558.13	5.205	5.167	-----	-----	-----	0.016	-----	-----	-----	5.183
70	0.000	558.11	5.172	5.138	-----	-----	-----	0.004	-----	-----	-----	5.143
71	0.000	558.09	5.140	5.108	-----	-----	-----	-----	-----	-----	-----	5.108
72	0.000	558.07	5.111	5.076	-----	-----	-----	-----	-----	-----	-----	5.076
73	0.000	558.05	5.081	5.044	-----	-----	-----	-----	-----	-----	-----	5.044
74	0.000	558.03	5.052	5.013	-----	-----	-----	-----	-----	-----	-----	5.013
75	0.000	558.01	5.023	4.982	-----	-----	-----	-----	-----	-----	-----	4.982
76	0.000	557.98	4.981	4.934	-----	-----	-----	-----	-----	-----	-----	4.934
77	0.000	557.94	4.930	4.877	-----	-----	-----	-----	-----	-----	-----	4.877
78	0.000	557.91	4.881	4.821	-----	-----	-----	-----	-----	-----	-----	4.821
79	0.000	557.87	4.831	4.764	-----	-----	-----	-----	-----	-----	-----	4.764
80	0.000	557.84	4.783	4.707	-----	-----	-----	-----	-----	-----	-----	4.707
81	0.000	557.81	4.735	4.651	-----	-----	-----	-----	-----	-----	-----	4.651
82	0.000	557.78	4.661	4.596	-----	-----	-----	-----	-----	-----	-----	4.596
83	0.000	557.74	4.579	4.542	-----	-----	-----	-----	-----	-----	-----	4.542
84	0.000	557.71	4.498	4.489	-----	-----	-----	-----	-----	-----	-----	4.489
85	0.000	557.68	4.437	4.437	-----	-----	-----	-----	-----	-----	-----	4.437
86	0.000	557.65	4.386	4.386	-----	-----	-----	-----	-----	-----	-----	4.386
87	0.000	557.62	4.336	4.336	-----	-----	-----	-----	-----	-----	-----	4.336
88	0.000	557.59	4.290	4.283	-----	-----	-----	-----	-----	-----	-----	4.283
89	0.000	557.56	4.247	4.228	-----	-----	-----	-----	-----	-----	-----	4.228
90	0.000	557.53	4.204	4.172	-----	-----	-----	-----	-----	-----	-----	4.173
91	0.000	557.50	4.159	4.118	-----	-----	-----	-----	-----	-----	-----	4.118
92	0.000	557.47	4.090	4.062	-----	-----	-----	-----	-----	-----	-----	4.062
93	0.000	557.44	4.023	4.006	-----	-----	-----	-----	-----	-----	-----	4.006

...End