

Operating Conditions

10 - Year

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# Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (acft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (acft)	Hydrograph Description
1	SCS Runoff	0.007	6	924	0.005	-----	-----	-----	1 - TSF Uphill
2	SCS Runoff	8.671	2	716	0.408	-----	-----	-----	2 - Stockpile Yard
3	SCS Runoff	4.907	1	715	0.206	-----	-----	-----	3 - Tailings Storage Facility
GHM Drainage Basins.gpw					Return Period: 10 Year			Friday, 08 / 26 / 2022	

# Hydrograph Report

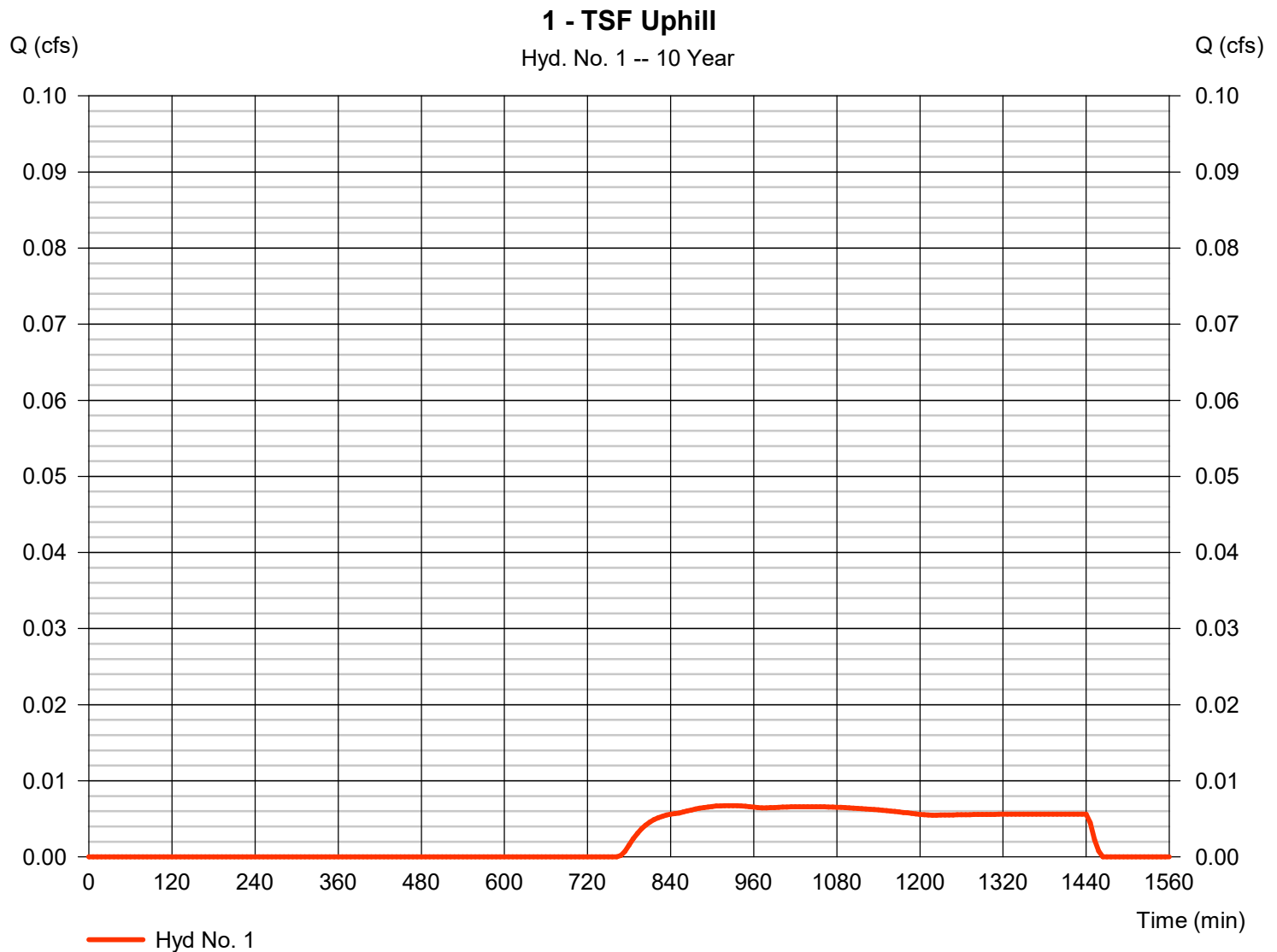
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Friday, 08 / 26 / 2022

## Hyd. No. 1

1 - TSF Uphill

Hydrograph type	= SCS Runoff	Peak discharge	= 0.007 cfs
Storm frequency	= 10 yrs	Time to peak	= 924 min
Time interval	= 6 min	Hyd. volume	= 0.005 acft
Drainage area	= 1.540 ac	Curve number	= 48
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 17.50 min
Total precip.	= 2.89 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



# Hydrograph Report

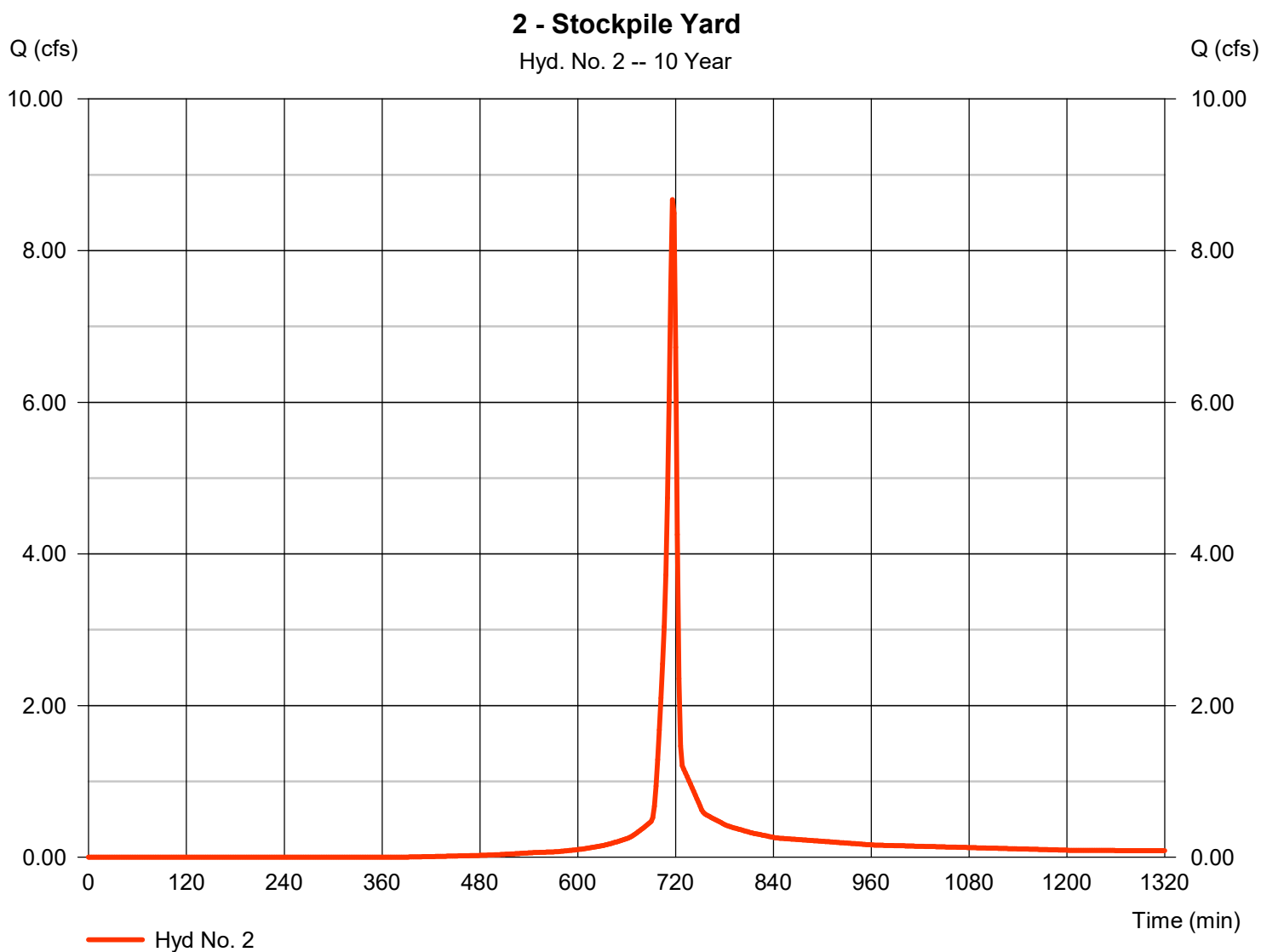
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Friday, 08 / 26 / 2022

## Hyd. No. 2

2 - Stockpile Yard

Hydrograph type	= SCS Runoff	Peak discharge	= 8.671 cfs
Storm frequency	= 10 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 0.408 acft
Drainage area	= 2.900 ac	Curve number	= 89
Basin Slope	= 2.0 %	Hydraulic length	= 270 ft
Tc method	= LAG	Time of conc. (Tc)	= 5.77 min
Total precip.	= 2.89 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

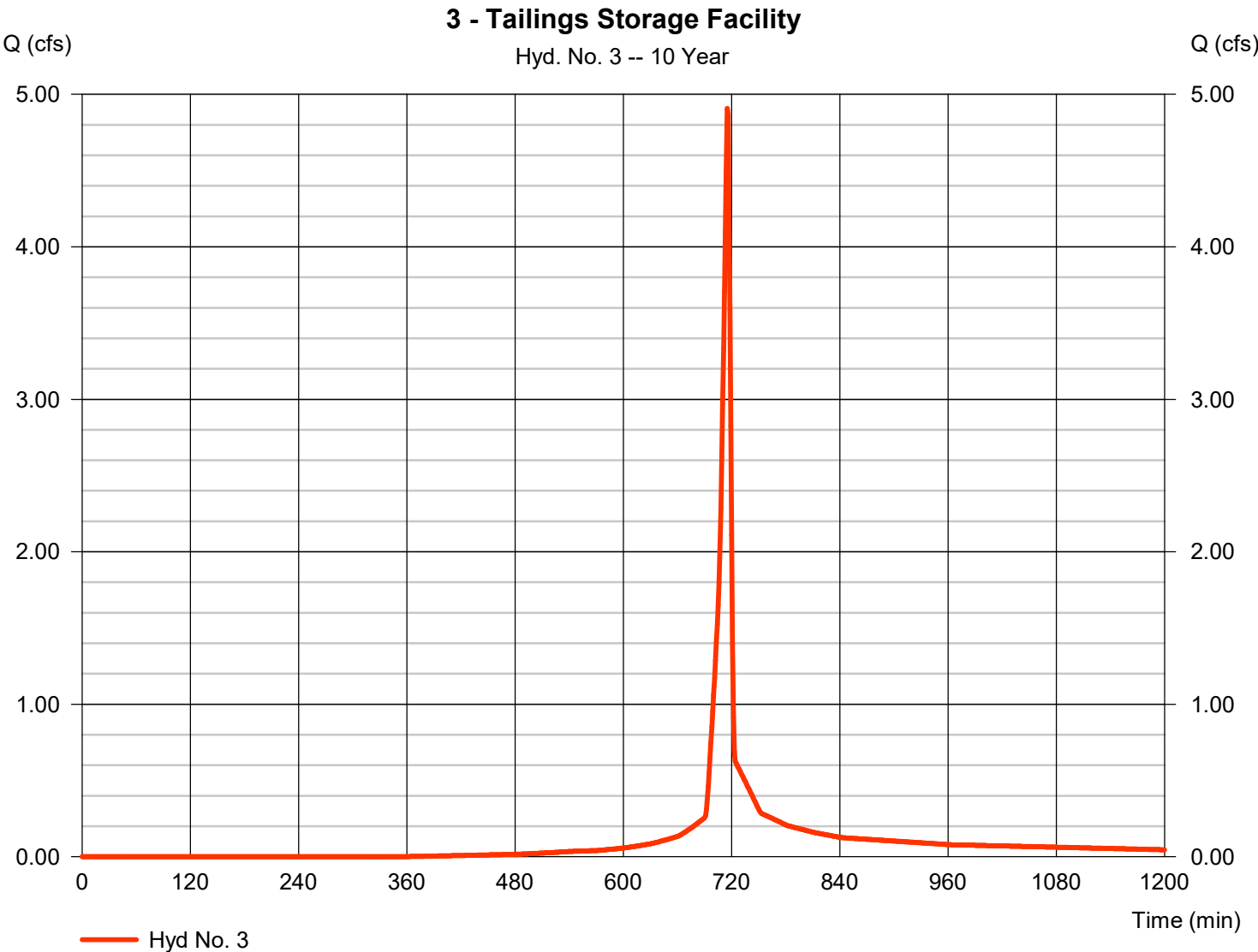


# Hydrograph Report

## Hyd. No. 3

### 3 - Tailings Storage Facility

Hydrograph type	=	SCS Runoff	Peak discharge	=	4.907 cfs
Storm frequency	=	10 yrs	Time to peak	=	715 min
Time interval	=	1 min	Hyd. volume	=	0.206 acft
Drainage area	=	1.400 ac	Curve number	=	90
Basin Slope	=	1.0 %	Hydraulic length	=	50 ft
Tc method	=	LAG	Time of conc. (Tc)	=	2.03 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



# Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (acft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (acft)	Hydrograph Description
1	SCS Runoff	0.610	6	726	0.070	-----	-----	-----	1 - TSF Uphill
2	SCS Runoff	17.45	2	716	0.852	-----	-----	-----	2 - Stockpile Yard
3	SCS Runoff	9.623	1	715	0.423	-----	-----	-----	3 - Tailings Storage Facility
GHM Drainage Basins.gpw					Return Period: 100 Year			Friday, 08 / 26 / 2022	

# Hydrograph Report

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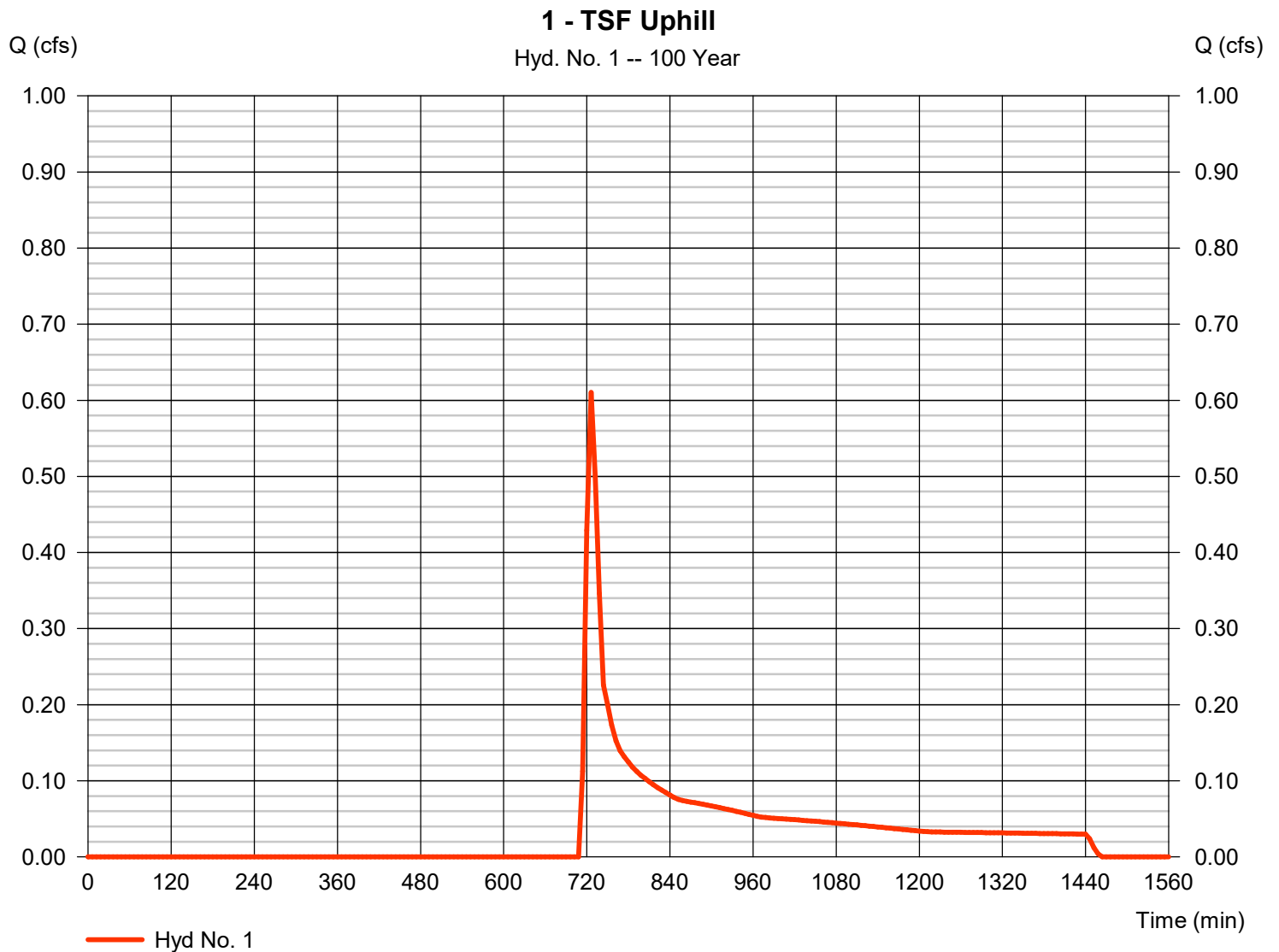
Friday, 08 / 26 / 2022

## Hyd. No. 1

1 - TSF Uphill

Hydrograph type = SCS Runoff  
 Storm frequency = 100 yrs  
 Time interval = 6 min  
 Drainage area = 1.540 ac  
 Basin Slope = 0.0 %  
 Tc method = TR55  
 Total precip. = 4.99 in  
 Storm duration = 24 hrs

Peak discharge = 0.610 cfs  
 Time to peak = 726 min  
 Hyd. volume = 0.070 acft  
 Curve number = 48  
 Hydraulic length = 0 ft  
 Time of conc. (Tc) = 17.50 min  
 Distribution = Type II  
 Shape factor = 484



# Hydrograph Report

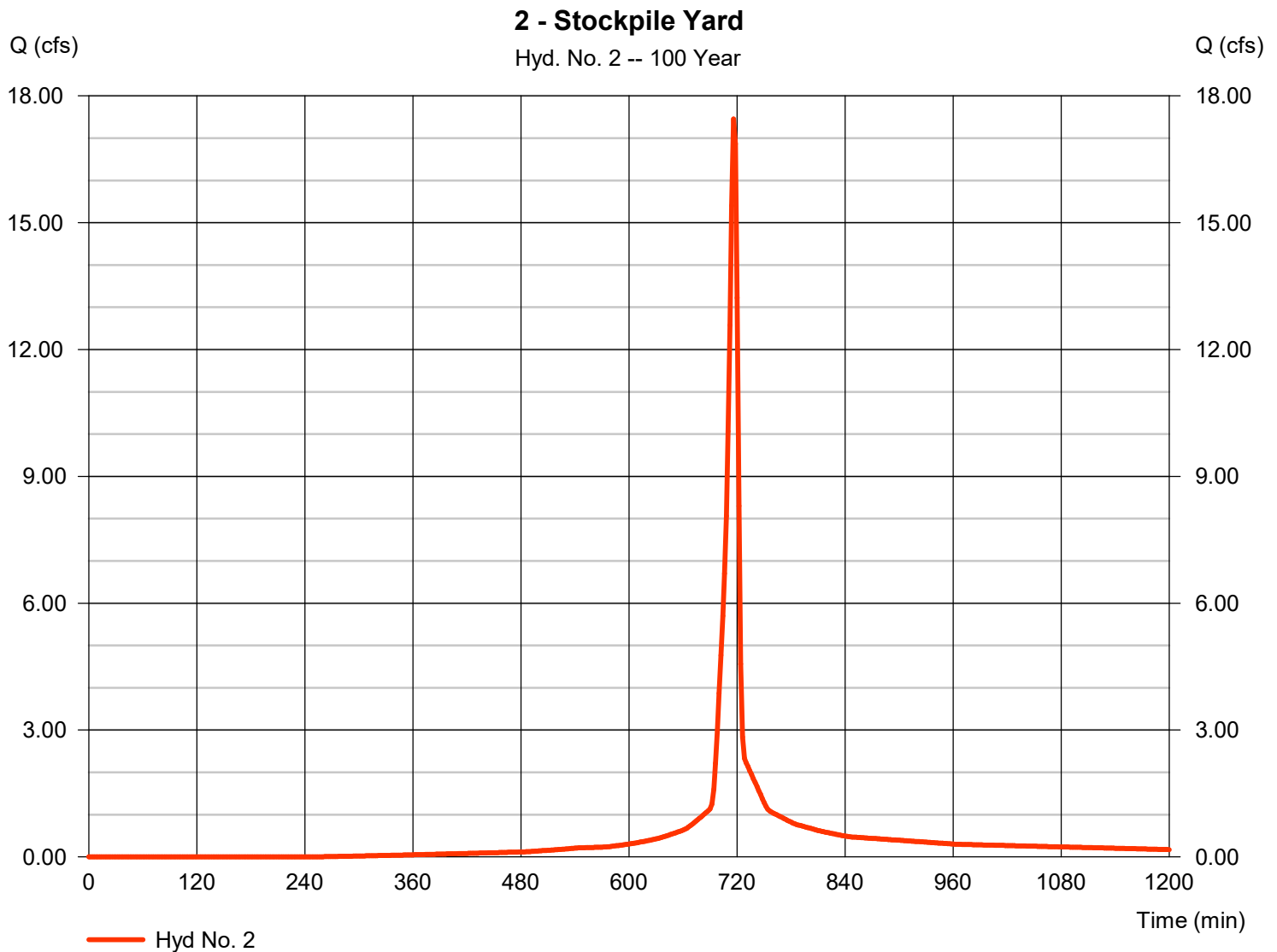
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## Hyd. No. 2

2 - Stockpile Yard

Hydrograph type	= SCS Runoff	Peak discharge	= 17.45 cfs
Storm frequency	= 100 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 0.852 acft
Drainage area	= 2.900 ac	Curve number	= 89
Basin Slope	= 2.0 %	Hydraulic length	= 270 ft
Tc method	= LAG	Time of conc. (Tc)	= 5.77 min
Total precip.	= 4.99 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484





# Hydrograph Report

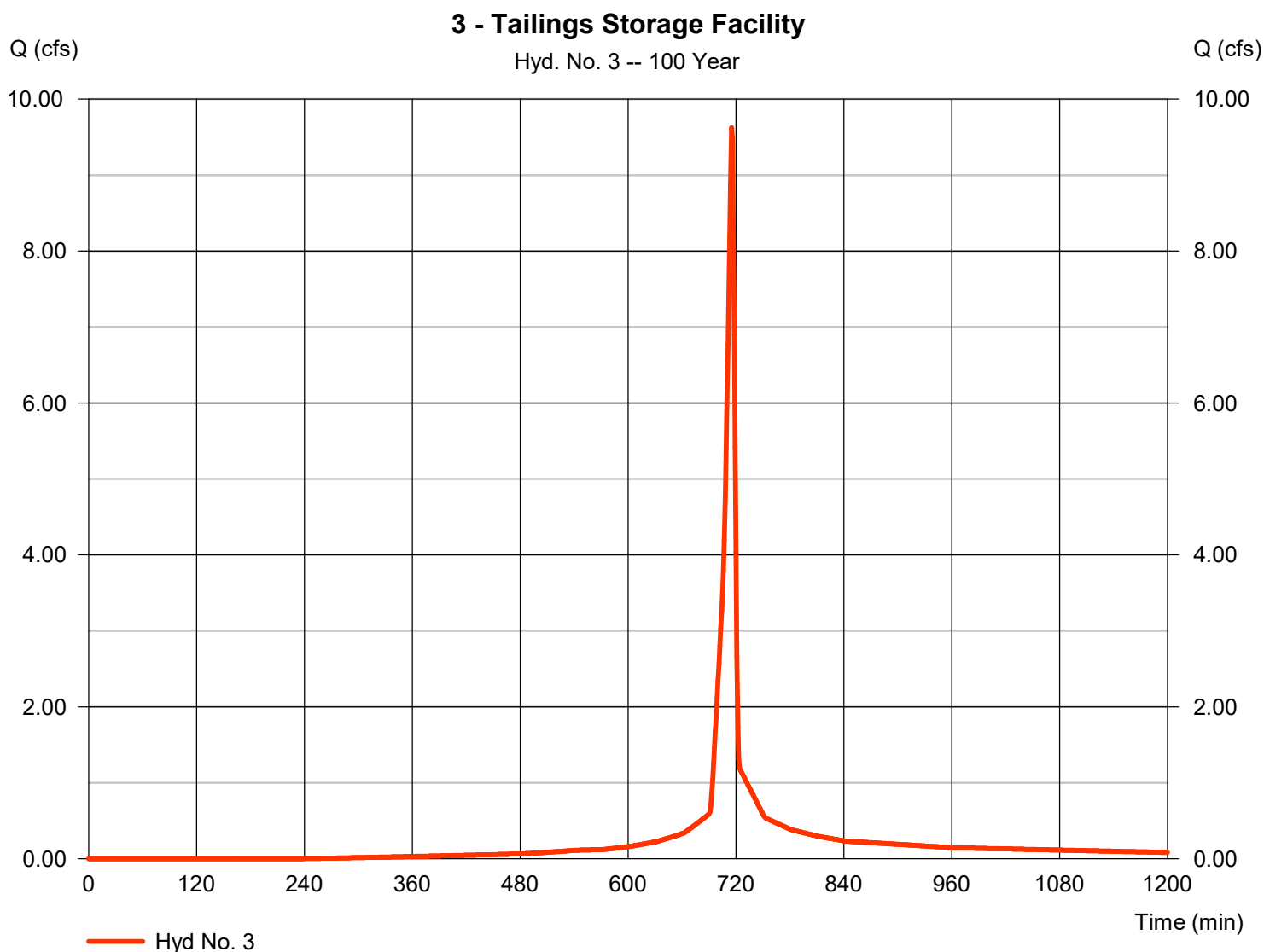
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## Hyd. No. 3

### 3 - Tailings Storage Facility

Hydrograph type	= SCS Runoff	Peak discharge	= 9.623 cfs
Storm frequency	= 100 yrs	Time to peak	= 715 min
Time interval	= 1 min	Hyd. volume	= 0.423 acft
Drainage area	= 1.400 ac	Curve number	= 90
Basin Slope	= 1.0 %	Hydraulic length	= 50 ft
Tc method	= LAG	Time of conc. (Tc)	= 2.03 min
Total precip.	= 4.99 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



	<b>Reclaimed Conditions</b>	
<b>10 - Year</b>		
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# Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (acft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (acft)	Hydrograph Description
1	SCS Runoff	0.007	6	924	0.005	-----	-----	-----	1 - TSF Uphill
2	SCS Runoff	6.885	2	718	0.362	-----	-----	-----	2 - Stockpile Yard
3	SCS Runoff	4.020	1	716	0.164	-----	-----	-----	3 - Tailings Storage Facility
GHM Drainage Basins-Reclaimed.gpw					Return Period: 10 Year			Friday, 08 / 26 / 2022	

# Hydrograph Report

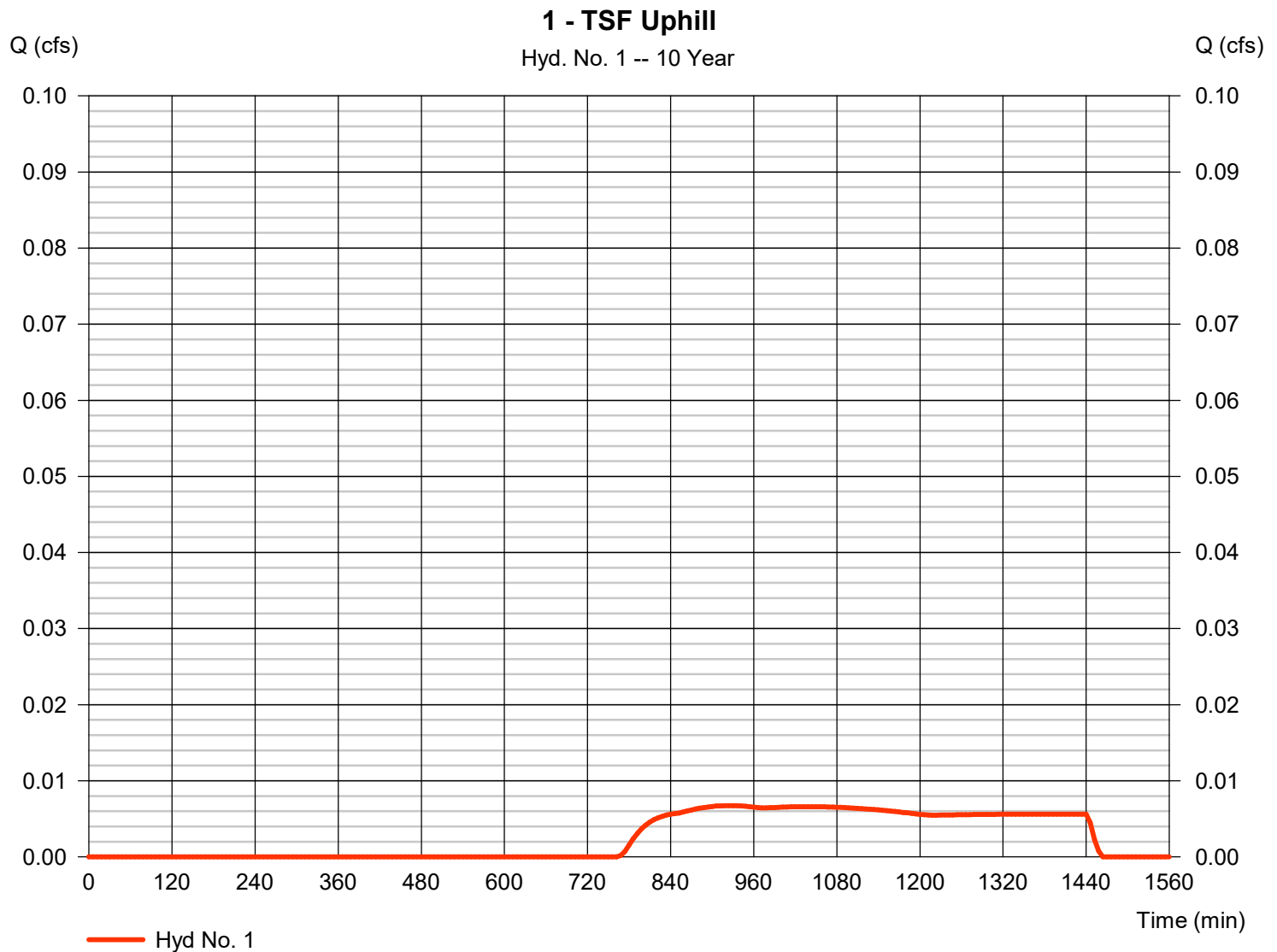
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Friday, 08 / 26 / 2022

## Hyd. No. 1

1 - TSF Uphill

Hydrograph type	= SCS Runoff	Peak discharge	= 0.007 cfs
Storm frequency	= 10 yrs	Time to peak	= 924 min
Time interval	= 6 min	Hyd. volume	= 0.005 acft
Drainage area	= 1.540 ac	Curve number	= 48
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 17.50 min
Total precip.	= 2.89 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



# Hydrograph Report

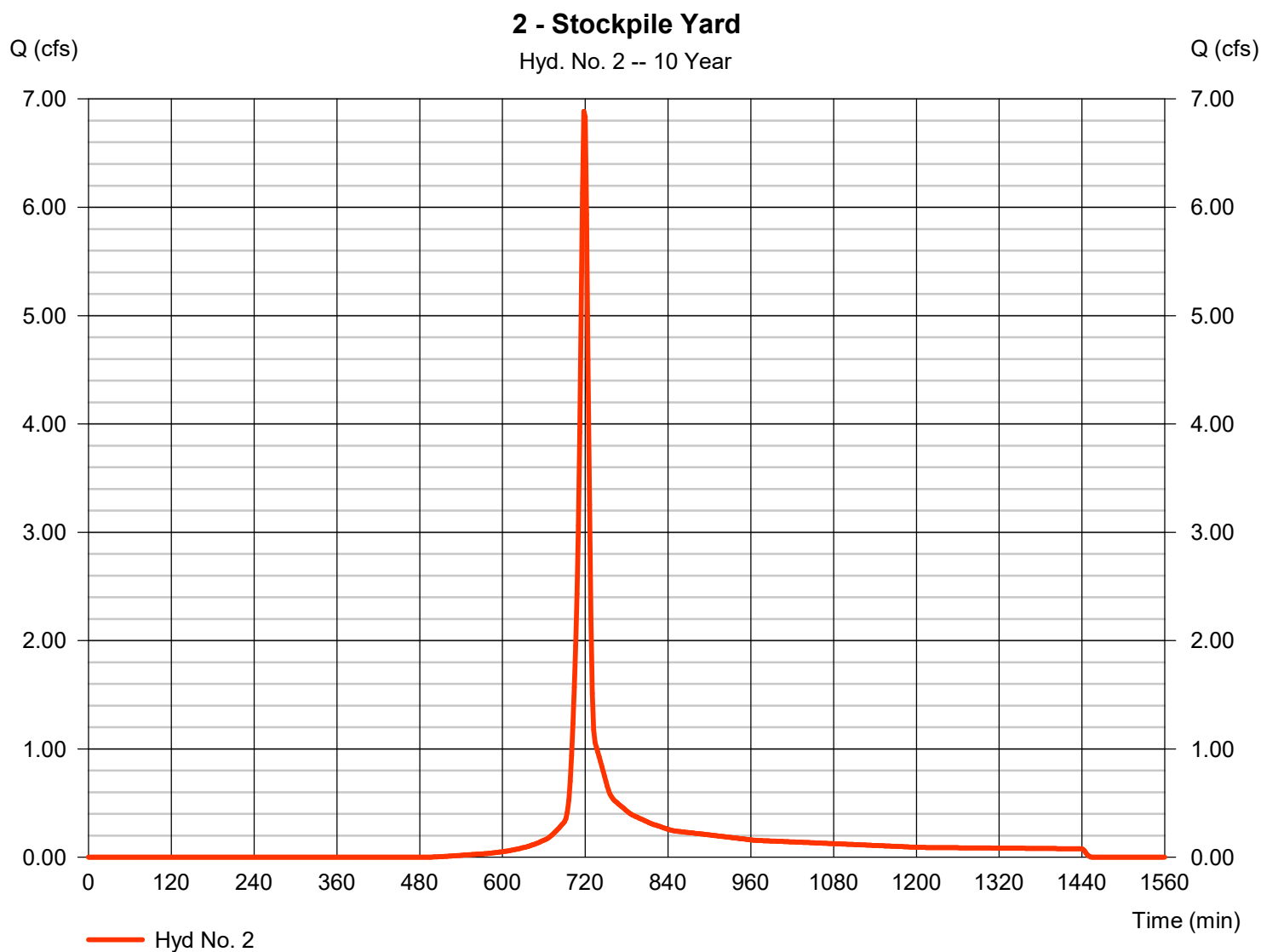
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## Hyd. No. 2

2 - Stockpile Yard

Hydrograph type	= SCS Runoff	Peak discharge	= 6.885 cfs
Storm frequency	= 10 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 0.362 acft
Drainage area	= 2.900 ac	Curve number	= 85
Basin Slope	= 2.0 %	Hydraulic length	= 270 ft
Tc method	= LAG	Time of conc. (Tc)	= 6.70 min
Total precip.	= 2.89 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

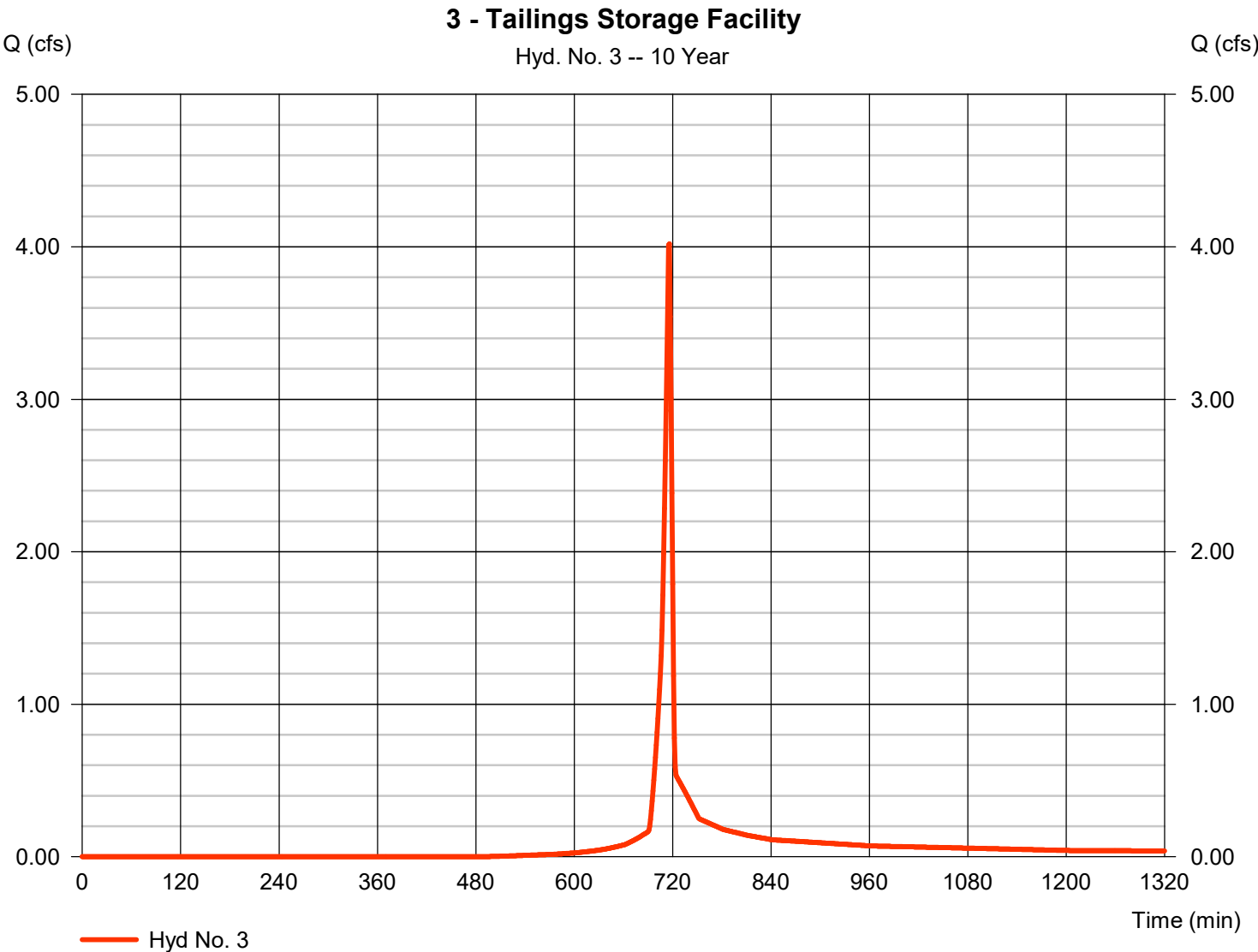


# Hydrograph Report

## Hyd. No. 3

### 3 - Tailings Storage Facility

Hydrograph type	=	SCS Runoff	Peak discharge	=	4.020 cfs
Storm frequency	=	10 yrs	Time to peak	=	716 min
Time interval	=	1 min	Hyd. volume	=	0.164 acft
Drainage area	=	1.400 ac	Curve number	=	85
Basin Slope	=	1.0 %	Hydraulic length	=	50 ft
Tc method	=	LAG	Time of conc. (Tc)	=	2.46 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



# Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (acft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (acft)	Hydrograph Description
1	SCS Runoff	0.610	6	726	0.070	-----	-----	-----	1 - TSF Uphill
2	SCS Runoff	15.16	2	718	0.812	-----	-----	-----	2 - Stockpile Yard
3	SCS Runoff	8.694	1	715	0.367	-----	-----	-----	3 - Tailings Storage Facility
GHM Drainage Basins-Reclaimed.gpw					Return Period: 100 Year			Friday, 08 / 26 / 2022	

# Hydrograph Report

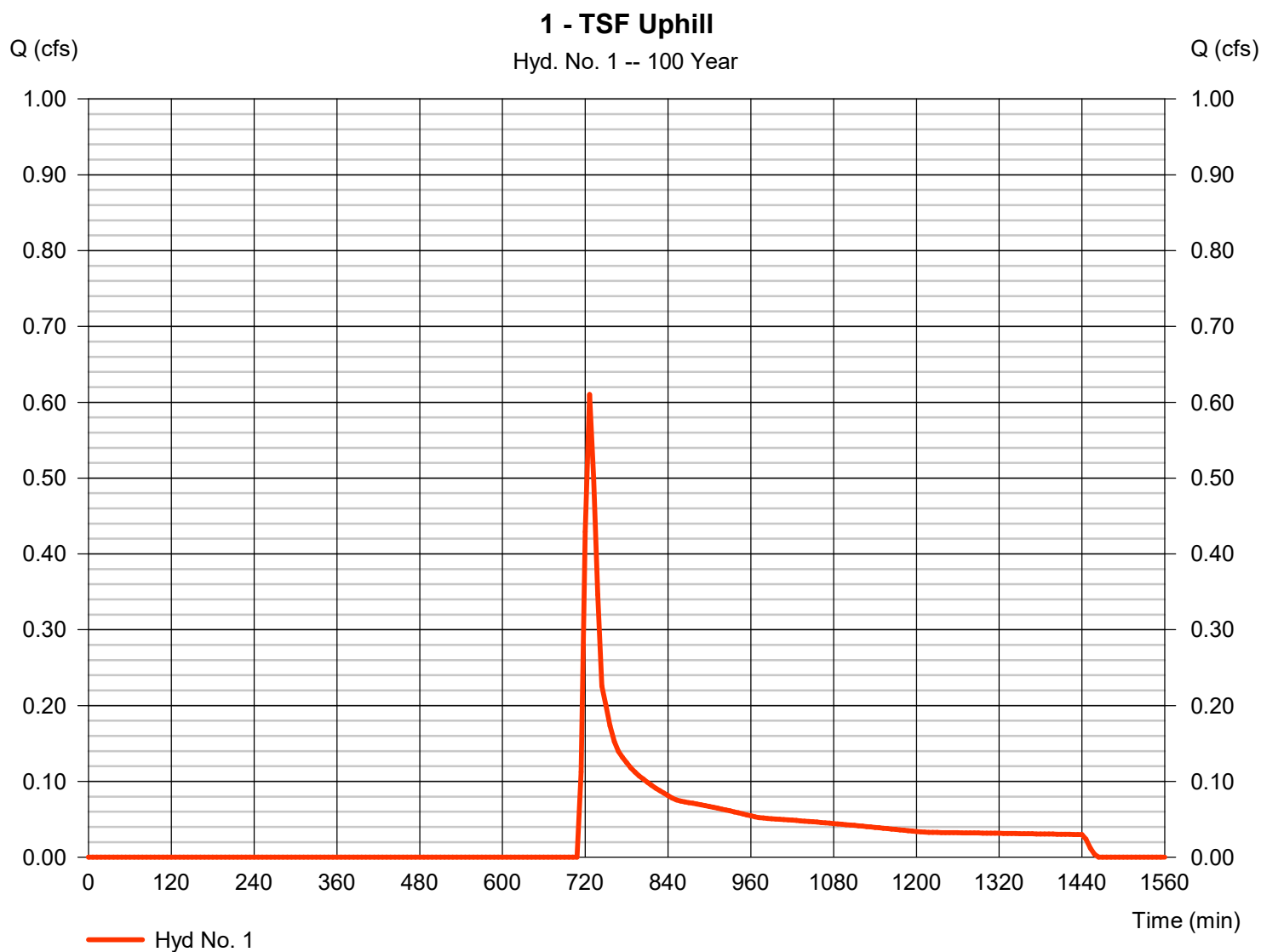
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Friday, 08 / 26 / 2022

## Hyd. No. 1

1 - TSF Uphill

Hydrograph type	= SCS Runoff	Peak discharge	= 0.610 cfs
Storm frequency	= 100 yrs	Time to peak	= 726 min
Time interval	= 6 min	Hyd. volume	= 0.070 acft
Drainage area	= 1.540 ac	Curve number	= 48
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 17.50 min
Total precip.	= 4.99 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484





# Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

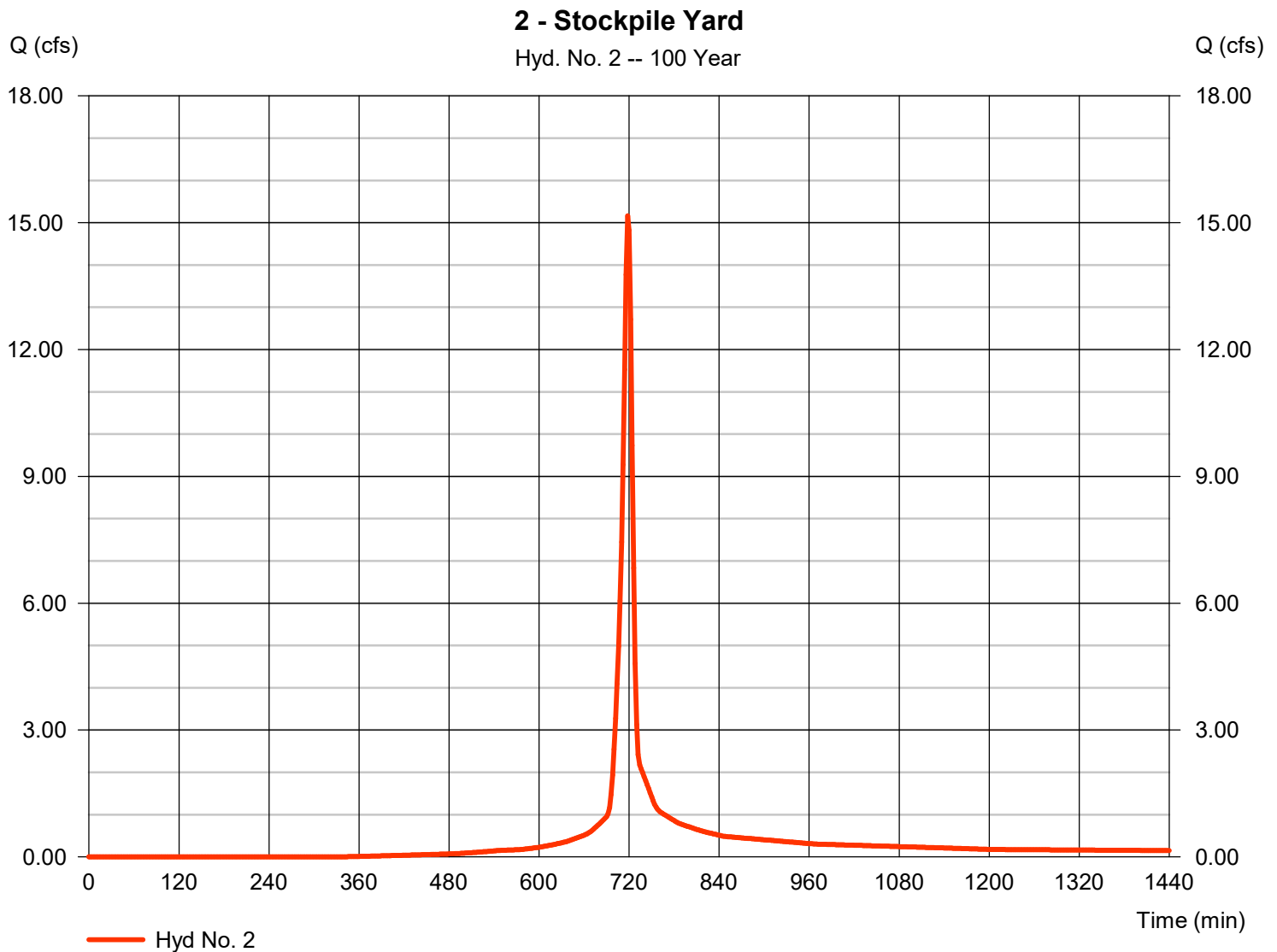
Friday, 08 / 26 / 2022

## Hyd. No. 2

2 - Stockpile Yard

Hydrograph type = SCS Runoff  
 Storm frequency = 100 yrs  
 Time interval = 2 min  
 Drainage area = 2.900 ac  
 Basin Slope = 2.0 %  
 Tc method = LAG  
 Total precip. = 4.99 in  
 Storm duration = 24 hrs

Peak discharge = 15.16 cfs  
 Time to peak = 718 min  
 Hyd. volume = 0.812 acft  
 Curve number = 85  
 Hydraulic length = 270 ft  
 Time of conc. (Tc) = 6.70 min  
 Distribution = Type II  
 Shape factor = 484



# Hydrograph Report

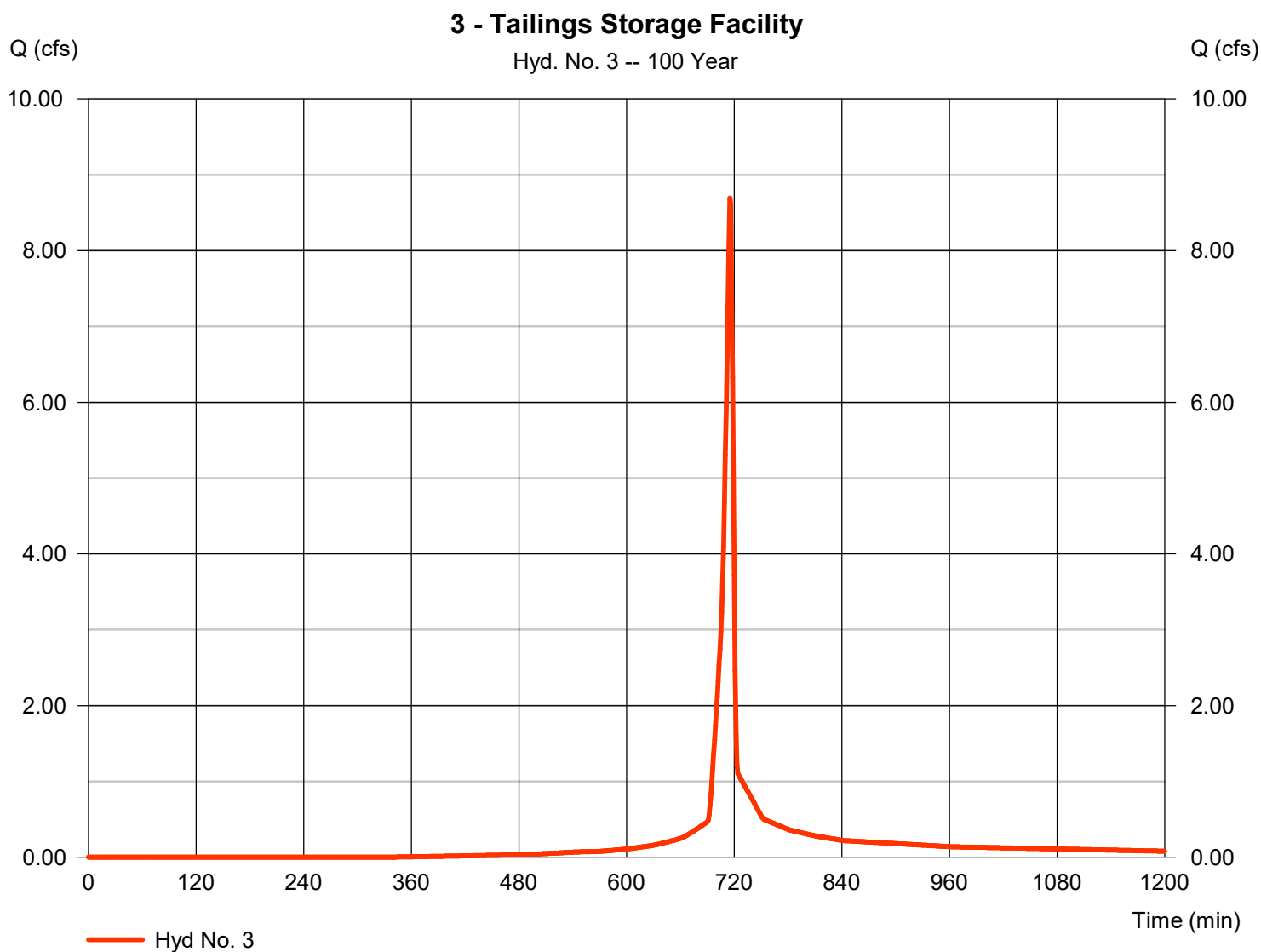
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Friday, 08 / 26 / 2022

## Hyd. No. 3

### 3 - Tailings Storage Facility

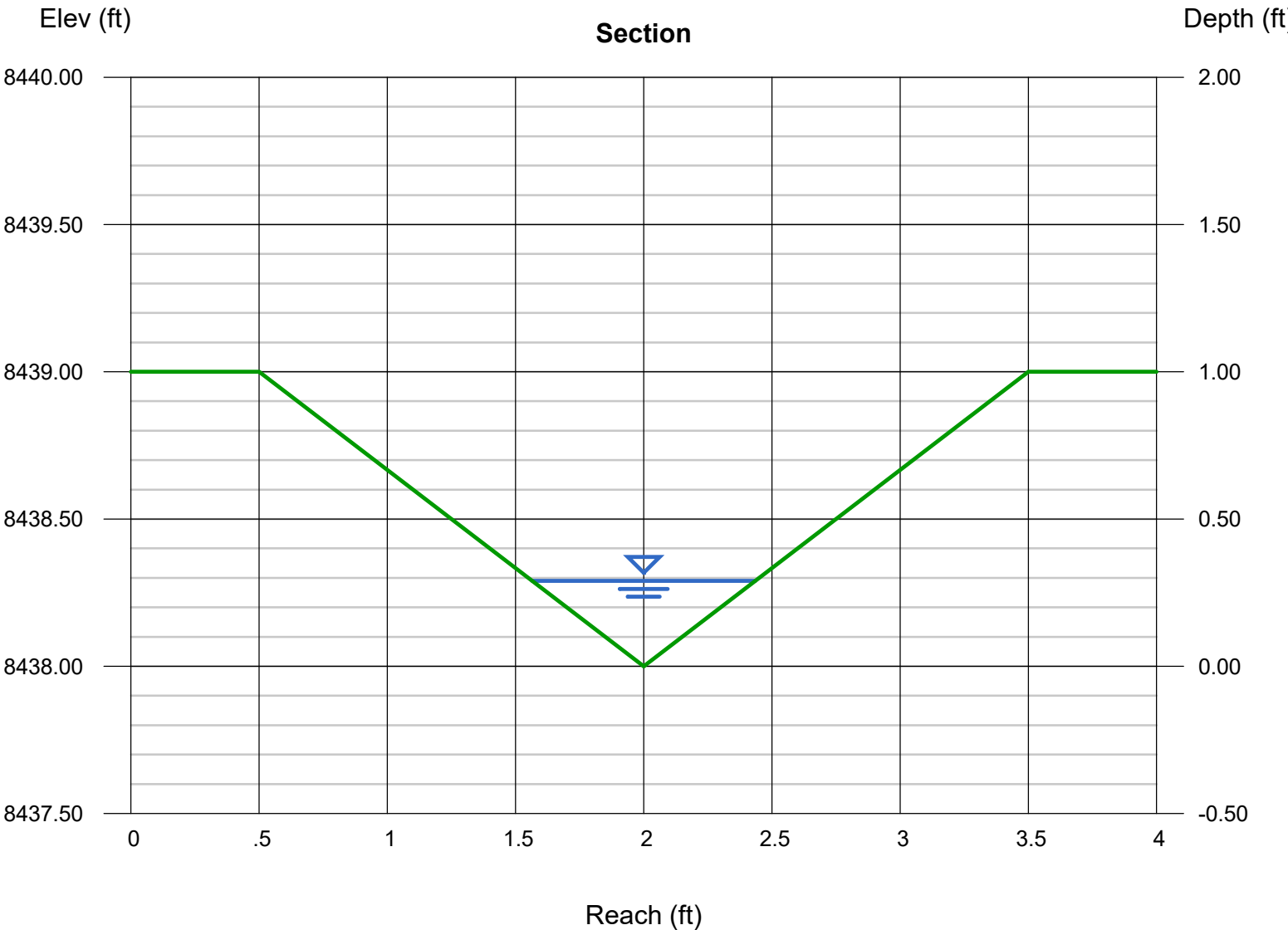
Hydrograph type	= SCS Runoff	Peak discharge	= 8.694 cfs
Storm frequency	= 100 yrs	Time to peak	= 715 min
Time interval	= 1 min	Hyd. volume	= 0.367 acft
Drainage area	= 1.400 ac	Curve number	= 85
Basin Slope	= 1.0 %	Hydraulic length	= 50 ft
Tc method	= LAG	Time of conc. (Tc)	= 2.46 min
Total precip.	= 4.99 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



# Channel Report

## TSF Tailings Diversion Ditch - Steepest Grade (4.0%)

<b>Triangular</b>		<b>Highlighted</b>	
Side Slopes (z:1)	= 1.50, 1.50	Depth (ft)	= 0.29
Total Depth (ft)	= 1.00	Q (cfs)	= 0.610
		Area (sqft)	= 0.13
Invert Elev (ft)	= 8438.00	Velocity (ft/s)	= 4.76
Slope (%)	= 4.00	Wetted Perim (ft)	= 1.05
N-Value	= 0.015	Crit Depth, Yc (ft)	= 0.40
		Top Width (ft)	= 0.87
		EGL (ft)	= 0.64
<b>Calculations</b>		1/2 Vel. Head (ft)	= 0.09
Compute by:	Known Q (TSF Uphill, 100-YR)		
Known Q (cfs)	= 0.61		



# Channel Report

## TSF Tailings Diversion Ditch - Shallowest (1.8%)

### Triangular

Side Slopes (z:1) = 1.50, 1.50  
Total Depth (ft) = 1.00

Invert Elev (ft) = 8438.00  
Slope (%) = 1.80  
N-Value = 0.015

### Calculations

Compute by: Known Q (TSF Uphill, 100-YR)  
Known Q (cfs) = 0.61

### Highlighted

Depth (ft) = 0.34  
Q (cfs) = 0.610  
Area (sqft) = 0.17  
Velocity (ft/s) = 3.46  
Wetted Perim (ft) = 1.23  
Crit Depth, Yc (ft) = 0.40  
Top Width (ft) = 1.02  
EGL (ft) = 0.53  
1/2 Vel. Head (ft) = 0.09

