

Heritage Mine

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General Information

Storm Information:

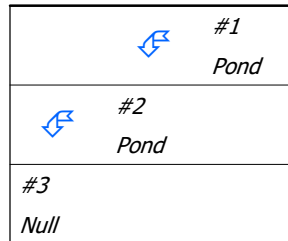
Storm Type:	NRCS Type III
Design Storm:	25 yr - 24 hr
Rainfall Depth:	7.800 inches

Particle Size Distribution:

Size (mm)	Ocilla Loamy Fine Sand
1.4000	100.000%
1.0000	91.300%
0.0630	71.300%
0.0440	15.800%
0.0380	15.600%
0.0040	2.200%
0.0030	1.400%
0.0010	0.000%

Structure Networking:

Type	Stru #	(flows into)	Stru #	Musk. K (hrs)	Musk. X	Description
Pond	#1	==>	#2	0.004	0.313	Mine Area
Pond	#2	==>	#3	0.004	0.313	Sediment Pond
Null	#3	==>	End	0.000	0.000	Outfall



Structure Routing Details:

Stru #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#1	7. Paved area and small upland gullies	2.00	1.00	50.00	2.84	0.004
#1	Muskingum K:					0.004
#2	7. Paved area and small upland gullies	2.00	1.00	50.00	2.84	0.004
#2	Muskingum K:					0.004

Structure Summary:

		Immediate Contributing Area (ac)	Total Contributing Area (ac)	Peak Discharge (cfs)	Total Runoff Volume (ac-ft)	Sediment (tons)	Peak Sediment Conc. (mg/l)	Peak Settleable Conc. (ml/l)	24VW (ml/l)
#1	In	60.700	60.700	262.63	33.88	368.1	15,103	10.80	5.69
	Out			3.40	10.73	0.5	374	0.00	0.00
#2	In	3.100	63.800	20.98	12.47	2.1	1,741	0.67	0.10
	Out			3.83	11.24	0.1	6	0.00	0.00
#3		0.000	63.800	3.83	11.24	0.1	6	0.00	0.00

Particle Size Distribution(s) at Each Structure

Structure #1 (Mine Area):

Size (mm)	In	Out
1.4000	100.000%	100.000%
1.0000	100.000%	100.000%
0.0630	88.579%	100.000%
0.0440	19.629%	100.000%
0.0380	19.380%	100.000%
0.0040	2.733%	100.000%
0.0030	1.739%	100.000%
0.0010	0.000%	0.000%

Structure #2 (Sediment Pond):

Size (mm)	In	Out
1.4000	100.000%	100.000%
1.0000	100.000%	100.000%
0.0630	100.000%	100.000%
0.0440	100.000%	100.000%
0.0380	100.000%	100.000%
0.0040	19.997%	100.000%
0.0030	13.782%	100.000%
0.0010	0.000%	0.000%

Structure #3:

Size (mm)	In/Out
1.4000	100.000%
1.0000	100.000%
0.0630	100.000%
0.0440	100.000%
0.0380	100.000%
0.0040	100.000%
0.0030	100.000%
0.0010	0.000%

Structure Detail:***Structure #1 (Pond)******Mine Area*****Pond Inputs:**

Initial Pool Elev:	0.01 ft
Initial Pool:	0.49 ac-ft
*Sediment Storage:	0.00 ac-ft
Dead Space:	20.00 %

No sediment capacity defined*Pond Results:**

Peak Elevation:	0.63 ft
H'graph Detention Time:	17.56 hrs
Pond Model:	CSTRS
Dewater Time:	3.65 days
Trap Efficiency:	99.88 %

*Dewatering time is calculated from peak stage to lowest spillway***Elevation-Capacity-Discharge Table**

Elevation	Area (ac)	Capacity (ac-ft)	Discharge (cfs)	Dewater Time (hrs)
0.00	48.560	0.000	0.000	Top of Sed. Storage
0.01	48.566	0.486	0.000	
0.50	48.847	24.352	3.400	84.94*
0.63	48.923	30.764	3.400	2.70 Peak Stage
1.00	49.135	48.847	3.400	
1.50	49.424	73.487	3.400	
2.00	49.713	98.271	3.400	
2.50	50.004	123.200	3.400	
3.00	50.295	148.275	3.400	
3.50	50.587	173.495	3.400	
4.00	50.880	198.862	3.400	
4.50	51.174	224.375	3.400	
5.00	51.468	250.035	3.400	
5.50	51.764	275.843	3.400	
6.00	52.060	301.799	3.400	
6.50	52.357	327.903	3.400	
7.00	52.655	354.156	3.400	

Elevation	Area (ac)	Capacity (ac-ft)	Discharge (cfs)	Dewater Time (hrs)
7.50	52.954	380.559	3.400	
8.00	53.254	407.110	3.400	
8.50	53.554	433.812	3.400	
9.00	53.856	460.665	3.400	
9.50	54.158	487.668	3.400	
10.00	54.461	514.823	3.400	
10.50	54.765	542.129	3.400	
11.00	55.070	569.588	3.400	
11.50	55.375	597.199	3.400	
12.00	55.682	624.963	3.400	
12.50	55.989	652.881	3.400	
13.00	56.297	680.952	3.400	
13.50	56.606	709.178	3.400	
14.00	56.916	737.558	3.400	
14.50	57.227	766.094	3.400	
15.00	57.538	794.785	3.400	
15.50	57.851	823.632	3.400	
16.00	58.164	852.636	3.400	
16.50	58.478	881.796	3.400	
17.00	58.793	911.114	3.400	
17.50	59.109	940.589	3.400	
18.00	59.425	970.223	3.400	
18.50	59.743	1,000.015	3.400	
19.00	60.061	1,029.965	3.400	
19.50	60.380	1,060.076	3.400	
20.00	60.700	1,090.346	3.400	

Detailed Discharge Table

Elevation (ft)	User- input discharge (cfs)	Combined Total Discharge (cfs)
0.00	0.000	0.000
0.01	0.000	0.000
0.50	3.400	3.400
1.00	3.400	3.400
1.50	3.400	3.400
2.00	3.400	3.400
2.50	3.400	3.400
3.00	3.400	3.400
3.50	3.400	3.400
4.00	3.400	3.400

Elevation (ft)	User- input discharge (cfs)	Combined Total Discharge (cfs)
4.50	3.400	3.400
5.00	3.400	3.400
5.50	3.400	3.400
6.00	3.400	3.400
6.50	3.400	3.400
7.00	3.400	3.400
7.50	3.400	3.400
8.00	3.400	3.400
8.50	3.400	3.400
9.00	3.400	3.400
9.50	3.400	3.400
10.00	3.400	3.400
10.50	3.400	3.400
11.00	3.400	3.400
11.50	3.400	3.400
12.00	3.400	3.400
12.50	3.400	3.400
13.00	3.400	3.400
13.50	3.400	3.400
14.00	3.400	3.400
14.50	3.400	3.400
15.00	3.400	3.400
15.50	3.400	3.400
16.00	3.400	3.400
16.50	3.400	3.400
17.00	3.400	3.400
17.50	3.400	3.400
18.00	3.400	3.400
18.50	3.400	3.400
19.00	3.400	3.400
19.50	3.400	3.400
20.00	0.000	3.400

Structure #2 (Pond)

Sediment Pond

Pond Inputs:

Initial Pool Elev:	18.00 ft
Initial Pool:	49.55 ac-ft
*Sediment Storage:	0.00 ac-ft
Dead Space:	20.00 %

**No sediment capacity defined*

Emergency Spillway

Spillway Elev	Crest Length (ft)	Left Sideslope	Right Sideslope	Bottom Width (ft)
18.00	10.00	4.00:1	4.00:1	20.00

Pond Results:

Peak Elevation:	18.46 ft
H'graph Detention Time:	2.04 hrs
Pond Model:	CSTRS
Dewater Time:	1.54 days
Trap Efficiency:	96.27 %

Dewatering time is calculated from peak stage to lowest spillway

Elevation-Capacity-Discharge Table

Elevation	Area (ac)	Capacity (ac-ft)	Discharge (cfs)	Dewater Time (hrs)
0.00	2.480	0.000	0.000	Top of Sed. Storage
0.50	2.495	1.244	0.000	
1.00	2.509	2.495	0.000	
1.50	2.524	3.753	0.000	
2.00	2.539	5.019	0.000	
2.50	2.554	6.292	0.000	
3.00	2.569	7.573	0.000	
3.50	2.584	8.861	0.000	
4.00	2.598	10.156	0.000	
4.50	2.613	11.459	0.000	
5.00	2.629	12.770	0.000	
5.50	2.644	14.088	0.000	
6.00	2.659	15.413	0.000	
6.50	2.674	16.746	0.000	
7.00	2.689	18.087	0.000	
7.50	2.704	19.435	0.000	
8.00	2.720	20.791	0.000	
8.50	2.735	22.155	0.000	
9.00	2.750	23.527	0.000	
9.50	2.766	24.906	0.000	
10.00	2.781	26.292	0.000	
10.50	2.797	27.687	0.000	
11.00	2.812	29.089	0.000	
11.50	2.828	30.499	0.000	
12.00	2.844	31.917	0.000	
12.50	2.859	33.343	0.000	

Elevation	Area (ac)	Capacity (ac-ft)	Discharge (cfs)	Dewater Time (hrs)
13.00	2.875	34.777	0.000	
13.50	2.891	36.218	0.000	
14.00	2.907	37.668	0.000	
14.50	2.923	39.125	0.000	
15.00	2.939	40.590	0.000	
15.50	2.954	42.064	0.000	
16.00	2.970	43.545	0.000	
16.50	2.987	45.034	0.000	
17.00	3.003	46.531	0.000	
17.50	3.019	48.037	0.000	
18.00	3.035	49.550	0.000	Spillway #1
18.46	3.050	50.948	3.827	32.55 Peak Stage
18.50	3.051	51.072	4.167	
19.00	3.067	52.601	57.082	
19.50	3.084	54.139	121.909	
20.00	3.100	55.685	204.063	

**Designates time(s) to dewater have been extrapolated beyond the 50 hour hydrograph limit.*

Detailed Discharge Table

Elevation (ft)	Emergency Spillway (cfs)	Combined Total Discharge (cfs)
0.00	0.000	0.000
0.50	0.000	0.000
1.00	0.000	0.000
1.50	0.000	0.000
2.00	0.000	0.000
2.50	0.000	0.000
3.00	0.000	0.000
3.50	0.000	0.000
4.00	0.000	0.000
4.50	0.000	0.000
5.00	0.000	0.000
5.50	0.000	0.000
6.00	0.000	0.000
6.50	0.000	0.000
7.00	0.000	0.000
7.50	0.000	0.000
8.00	0.000	0.000
8.50	0.000	0.000

Elevation (ft)	Emergency Spillway (cfs)	Combined Total Discharge (cfs)
9.00	0.000	0.000
9.50	0.000	0.000
10.00	0.000	0.000
10.50	0.000	0.000
11.00	0.000	0.000
11.50	0.000	0.000
12.00	0.000	0.000
12.50	0.000	0.000
13.00	0.000	0.000
13.50	0.000	0.000
14.00	0.000	0.000
14.50	0.000	0.000
15.00	0.000	0.000
15.50	0.000	0.000
16.00	0.000	0.000
16.50	0.000	0.000
17.00	0.000	0.000
17.50	0.000	0.000
18.00	0.000	0.000
18.50	4.167	4.167
19.00	57.082	57.082
19.50	121.909	121.909
20.00	204.063	204.063

Structure #3 (Null)

Outfall

Subwatershed Hydrology Detail:

Stru #	SWS #	SWS Area (ac)	Time of Conc (hrs)	Musk K (hrs)	Musk X	Curve Number	UHS	Peak Discharge (cfs)	Runoff Volume (ac-ft)
#1	1	60.700	0.492	0.004	0.313	91.000	TR55	262.63	33.878
	Σ	60.700						262.63	33.878
#2	1	3.100	0.100	0.004	0.313	91.000	TR55	19.73	1.737
	Σ	63.800						20.98	12.470
#3	Σ	63.800						3.83	11.237

Subwatershed Sedimentology Detail:

Stru #	SWS #	Soil K	L (ft)	S (%)	C	P	PS #	Sediment (tons)	Peak Sediment Conc. (mg/l)	Peak Settleable Conc (ml/l)	24VW (ml/l)
#1	1	0.170	100.00	1.00	1.0000	1.0000	1	368.4	15,117	10.81	5.69
	Σ							368.1	15,103	10.80	5.69
#2	1	0.170	100.00	1.00	1.0000	1.0000	1	16.3	14,725	10.76	5.03
	Σ							2.1	1,741	0.67	0.10
#3	Σ							0.1	6	0.00	0.00

Subwatershed Time of Concentration Details:

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#1	1	5. Nearly bare and untilled, and alluvial valley fans	2.00	50.00	2,500.00	1.410	0.492
#1	1	Time of Concentration:					0.492

Subwatershed Muskingum Routing Details:

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#1	1	7. Paved area and small upland gullies	2.00	1.00	50.00	2.840	0.004
#1	1	Muskingum K:					0.004
#2	1	7. Paved area and small upland gullies	2.00	1.00	50.00	2.840	0.004
#2	1	Muskingum K:					0.004