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TRI-STATE

December 6, 2023

Mr. Zach Trujillo
Environmental Protection Specialist
Colorado Division of Reclamation, Mining & Safety
Department of Natural Resources
1313 Sherman Street, Room 215
Denver, CO 80203

RE: Colowyo Coal Company L.P.
Permit No. C-1981-019
Technical Revision 161 (TR-161)
Adequacy Response

Dear Mr. Trujillo,

Tri-State Generation and Transmission Association Inc. (Tri-State), is the parent company to Axial Basin Coal Company, which is the general partner to Colowyo Coal Company L.P. (Colowyo). Therefore, Tri-State on behalf of Colowyo is submitting this adequacy response for technical revision 161 (TR-161) to Permit No. C-1981-019.

Tri-State received the Division's adequacy letter dated December 4, 2023, and has the following responses to the Division's concerns:

1. *It was observed that Figure Exhibits 7-25E-6 and 7-25E-7 were uploaded as part of the TR-161 application submission. When reviewing these figures, there does not appear to be any changes from when they were proposed under Colowyo Mine TR-160. Additionally, there is no discussion regarding these figures within the TR-161 Change Sheet summary. It is unclear to the Division to whether any changes has occurred with these figures or if they were potentially accidentally uploaded with the TR-161 application. Please provide the Division with additional information regarding Figure Exhibits 7-25E-6 and 7-25E-7.*

   Response: Tri-State files do not show that Figures 7-25E-6 and 7 were uploaded with TR-191, but if they were, it was an inadvertent error. Both figures should not be part of the TR-161 application.

2. *When reviewing proposed Figure 7-23J-3, it appears that there are two submitted figures with this same designation. The first figure is Section 26 Pond "Watershed Areas Post Mining" while the other is Section 26 Pond "Post Mining Channels". Please provide the Division with an updated figure reference to one of the proposed Figure 7-23J-3.*

   Response: The typographically error that Figure 7-23J-3 that should have been titled Figure 7-23J-4 has been corrected as noted.

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3. *Under proposed Exhibit 7, Item 20, Part B, pg. 3, there is a reference to the number of total Tributary Ditches as six. With the proposed TR-161, there is now a total of seven total Tributary Ditches. Please provide an updated reference to the total number of Tributary Ditches as proposed with TR-161.*

   Response: The reference to the total number of post-mine tributary ditches has been corrected as noted.

4. *When reviewing Exhibit 7, Item 20, Part B, a portion of proposed Tributary Ditch 1 flows over the permanent fill, the West Taylor Fill. As noted in the referenced exhibit, Rule 4.09.2(7), "makes the appropriate storm event for this small portion of channel the 100-year, 24-hour storm event". However, this channel was modeled to the 10-year, 24-hour storm event based on only a portion of the tributary lying over the West Taylor Fill.*

   When reviewing Tributary Ditch 1 in relation to the West Taylor Fill, approximately 1,500 feet of the proposed 2,852 feet lies over the West Taylor Fill. Per Rule 4.09.2(7), "[s]urface water runoff from the area above the fill shall be diverted away from the fill and into stabilized diversion channels designed to pass safely the runoff from a 100-year, 24-hour precipitation event or larger event specified by the Division. Surface runoff from the fill surface shall be diverted to stabilized channels off the fill which will safely pass the runoff from a 100-year, 24-hour precipitation event. Diversion design shall comply with the requirements of 4.05.4. 120(2)(v)(III)." Rule 4.09.2(7) requires surface water runoff from permanent fills to be directed to stable diversion which will safely pass the runoff from a 100-year, 24-hour storm event. As a result, the portion of proposed Tributary Ditch 1 that receives runoff from the permanent West Taylor Fill will need to be designed for the 100-year, 24-hour storm event. Please provide an updated design and associated models for proposed Tributary Ditch 1 to ensure Rule 4.09.2(7) is satisfied.

   Response: The design for Trib 1 has been revised to the 100-year, 24-hour storm event as required by Rule 4.09.2(7).

5. *When reviewing Exhibit 7, Item 20, Part B, the Network Structuring associated with the post-mining effluent demonstration has 'Trib 4' (Structure #33) reporting to 'WFSP-2 to Station 85+00' (Structure #6). However, associated Maps and Figures show Tributary Ditch 4 reporting to Tributary Ditch 3. Please provide an updated post-mining effluent demonstration with a corrected Network Structuring or updated associated Maps and Figures showing the corrected Tributary Ditch 4 confluence as necessary.*

   Response: The Division is technically correct that Trib 4 should be routed to Trib 3. Trib 4 will contribute flows to the lower most section of Trib 3, approximately the lower 75 feet of the channel. However, Colowyo did not route Trib 4 to Trib 3 due to the routing limitation in SEDCAD™. If Trib 4 is routed to Trib 3 the design flows for Trib 3 would be artificially

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inflated as SEDCAD™ will route the entire flow from Trib 4 to Trib 3. After further review Colowyo made the change to route Trib 4 to Trib 3, as it does not impact the overall design of the channel for the 10-Year 24-Hour storm event.

6. *It appears that WFSP-2 on Proposed Map 12 is errantly positioned as it shown lying outside of the all proposed ditches. Please provide an updated Map 12 with a corrected position of WFSP-2.*

   Response: The location of WFSP-2 on Map 12 has been corrected as noted.

7. *When reviewing proposed Figure 7-26I-4, it is unclear to what both shades of green represent on the Figure. Please provide an updated Figure 7-26I-4 with updated references on the legend identifying the what both shades of green represent.*

   Response: The green shades and what they represent have been added to the legend for clarification.

8. *The Division has performed a cost estimate to determine the reclamation liability associated with TR-161. This includes the construction of the newly proposed post-mining channels Tributary 1 located at the South Taylor Pit and Dusky Draw located at the Collom Pit. The total amount of this estimate is **$114,512.00** (see attached cost estimate). The Division's cost estimate is consistent with previous cost estimates approved by both the Division and Colowyo. The Division respectfully requests a response from Colowyo with any questions regarding the cost estimate or an acceptance of the Division's estimate.*

   Response: Tri-State has reviewed the Division's reclamation cost estimate which will increase Colowyo's reclamation liability by $114,512.00, and hereby provides concurrence with the Division's estimate.

Included in this technical revision is a change of index sheet to ease incorporation of this revision into the permit document. If you should have any additional questions or concerns, please feel free to contact Tony Tennyson at (970) 824-1232 or at ttennyson@tristategt.org.

Sincerely,

DocuSigned by:
Chris Gilbreath
D250C711D0BF450...

Chris Gilbreath
Senior Manager
Remediation and Reclamation

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CG:TT:der

Enclosure

cc: Tony Tennyson (via email)
File: C. F. 1.1.2.144 - G471-11.3(21)d

CHANGE SHEET FOR PERMIT REVISIONS, TECHNICAL REVISION, AND MINOR REVISIONS

Mine Company Name: **Colowyo Coal Company L.P.** Permit Number: **C-1981-019**

Date: **December 6, 2023** Revision Description: **TR-161 Mine Plan and PMT Revision**

Volume Number	Page, Map or other Permit Entry to be REMOVED		Page, Map or other Permit Entry to be ADDED		Description of Change
1					No Change
2A					No Change
2B					No Change
2C					No Change
2D					No Change
2E					No Change
3					No Change
4					No Change
5A					No Change
5B					No Change
6					No Change
7	Map 12		Map 12		Map 12 has been updated.
8					No Change
9					No Change
10					No Change
12					No Change
13	Exhibit 7 Item 20 Part B, pages Exh. 7-20B-3 and 4 (2 pages)		Exhibit 7 Item 20 Part B, pages Exh. 7-20B-3 and 4 (2 pages)		Exhibit 7 Item 20 Part B has been updated.
13	West Taylor Pond 10 Yr-24 Hr SEDCAD Outputs (41 pages)		West Taylor Pond 10 Yr-24 Hr SEDCAD Outputs (41 pages)		West Taylor Pond 10 Yr 24 Hr SEDCAD has been updated.
13	West Taylor Pond 25 Yr-24 Hr SEDCAD Outputs (32 pages)		West Taylor Pond 25 Yr-24 Hr SEDCAD Outputs (32 pages)		West Taylor Pond 25 Yr 24 Hr SEDCAD has been updated.
13	West Taylor Pond 100 Yr-24 Hr SEDCAD Outputs (32 pages)		West Taylor Pond 100 Yr-24 Hr SEDCAD Outputs (32 pages)		West Taylor Pond 100 Yr 24 Hr SEDCAD has been updated.
14					No Change
15					No Change
16					No Change
17					No Change

CHANGE SHEET FOR PERMIT REVISIONS, TECHNICAL REVISION, AND MINOR REVISIONS

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Volume Number	Page, Map or other Permit Entry to be REMOVED		Page, Map or other Permit Entry to be ADDED		Description of Change
18A					No Change
18B	Figure 7-23I-4		Figure 7-23I-4		Figure 7-13I-4 has been updated.
18C	Figure 7-23J-4		Figure 7-23J-4		Figure 7-23J-4 has been updated.
18D					No Change
19					No Change
20					No Change
21					No Change

West Fork Taylor Ditch

Station	Peak Flow (CFS)	Average Slope (%)	Channel Type	Side Slopes	Minimum Depth (Feet)	Erosion Protection
Station 0+00 to WFSP-1	46.17	26	Trapezoidal 12' bottom	3H:1V	4.0	Riprap, D50 = 15"
WFSP-1 to WFSP-2	71.02	1.3	Trapezoidal 12' bottom	3H:1V	4.0	Vegetation
WFSP-2 to Station 85+00	68.97	10.2	Trapezoidal 12' bottom	3H:1V	4.0	Vegetation

Tributary Ditches

The seven post mine tributaries channels (Trib's 1 through 7) will be constructed to break up long continuous slopes and minimize erosion in the South Taylor reclamation areas. They will also convey flow to the two primary channels. These seven tributaries were modeled in accordance with Rule 4.05.3(3) for the 10-year 24-hour event except for Trib 1.

A small portion of Trib 1 flows over a permanent fill, which in accordance with Rule 4.09.2(7) makes the appropriate storm event for this channel the 100-year, 24 hour storm event.

A summary of the configurations for each tributary channel is provided on the table below.

Post Mine Tributary Channels

Tribuary Name	Peak Flow (CFS)	Average Slope (%)	Channel Type	Side Slopes	Minimum Depth (Feet)	Erosion Protection
Trib 1	30.87	5.0	Trapezoidal 6' bottom	3H:1V	3.0	Vegetation
Trib 2	5.57	11.0	Trapezoidal 6' bottom	3H:1V	3.0	Vegetation
Trib 3	5.51	11.0	Trapezoidal 6' bottom	3H:1V	3.0	Vegetation
Trib 4	0.11	16.0	Trapezoidal 6' bottom	3H:1V	3.0	Vegetation
Trib 5	0.11	4.0	Trapezoidal 6' bottom	3H:1V	3.0	Vegetation
Trib 6	0.05	6.0	Trapezoidal 6' bottom	3H:1V	3.0	Vegetation
Trib 7	0.12	7.0	Trapezoidal 6' bottom	3H:1V	3.0	Vegetation

Terrace Ditches

A series of terrace ditches will be constructed across the face of the West Taylor Fill which reports surface water runoff to the West Taylor Pond. The locations of terrace ditches are shown on Map 12. The terrace ditches on the West Taylor Fill will originate near the even 100-foot post mining contours of 7600', 7700', and 7800' elevations on the fill face. Actual on the ground topography will dictate the final placement and profile of the terrace ditches to ensure proper water flow.

The function of the terrace ditches is collect surface flows and direct the flow to the permanent post mine channels (East and West Fork Taylor Ditches) on the outer edges of the West Taylor Fill. The design basis for these terrace ditches is the 100-year, 24-hours event as they will be permanent in the post mine topography, and the 100-year 24-hour storm provides a conservative design.

A summary of the configurations for each terrace ditch is provided on the table below.

Terrace Ditch

Terrance Ditch Name	Peak Flow (CFS)	Average Slope (%)	Channel Type	Side Slopes	Minimum Depth (Feet)	Erosion Protection
7600'	1.41	1.5	Triangular	Left - 1.5H:1V Right - 3.0H:1V	3.0	Vegetation
7700'	2.58	1.5	Triangular	Left - 1.5H:1V Right - 3.0H:1V	3.0	Vegetation
West 7800'	7.49	1.5	Triangular	Left - 1.5H:1V Right - 3.0H:1V	3.0	Vegetation
East 7800'	12.51	1.5	Triangular	Left - 1.5H:1V Right - 3.0H:1V	3.0	Vegetation

West Taylor Pond
10 Yr - 24 Hr Strom Event

Effluent Demonstration

Post Mining

Tony Tennyson

General Information

Storm Information:

Storm Type:	NRCS Type II
Design Storm:	10 yr - 24 hr
Rainfall Depth:	1.800 inches

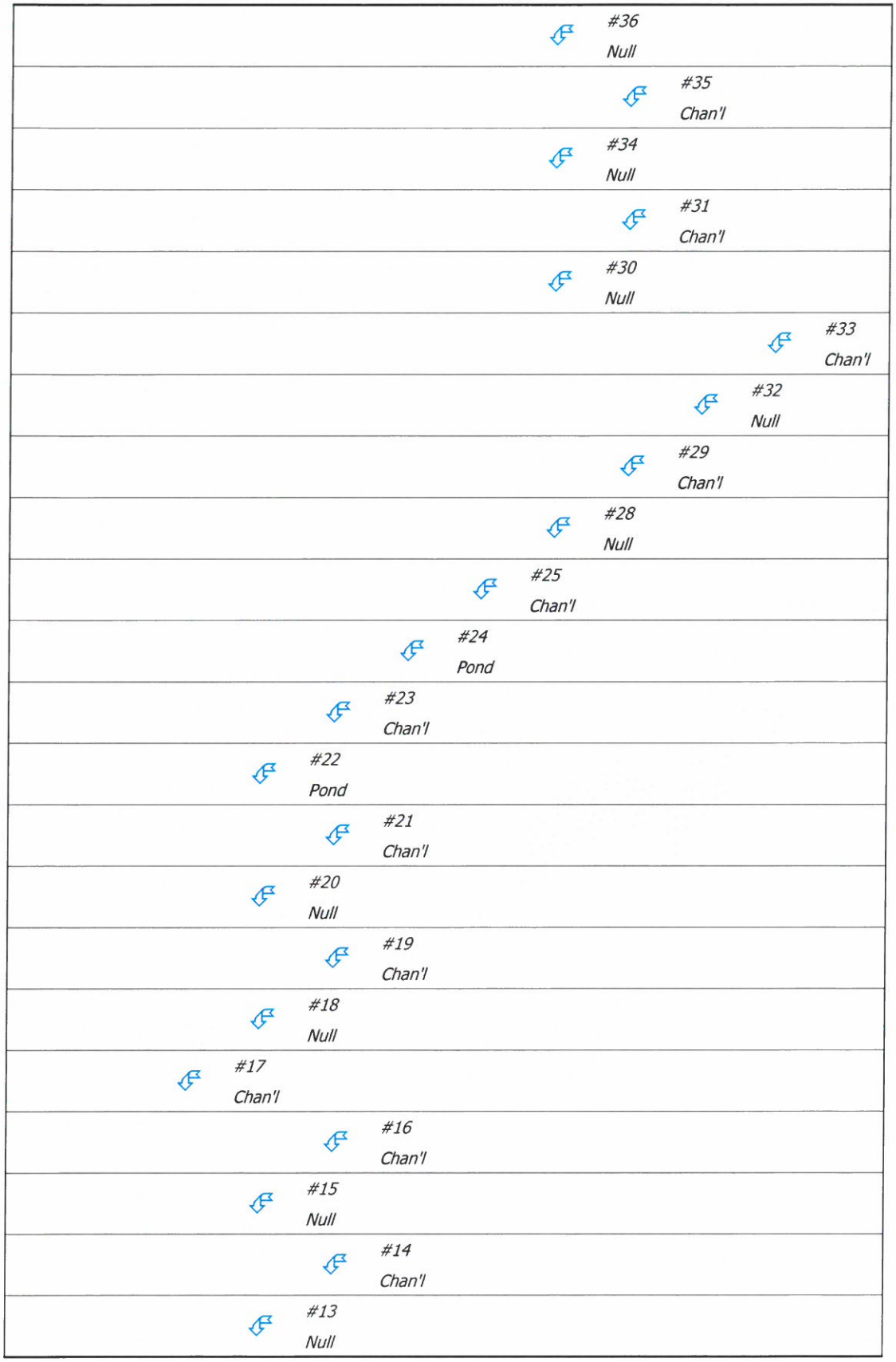
Particle Size Distribution:

Size (mm)	Colowyo Particle Size
4.7500	100.000%
0.0750	73.000%
0.0400	33.000%
0.0010	20.000%

Structure Networking:

Type	Stru #	(flows into)	Stru #	Musk. K (hrs)	Musk. X	Description
Null	#1	==>	End	0.000	0.000	Null Below West Taylor Pond
Pond	#2	==>	#1	0.000	0.000	West Taylor Pond
Null	#3	==>	#2	0.000	0.000	Null Above West Taylor Pond
Channel	#4	==>	#3	0.000	0.000	0+00 to WFSP-1 West Fork Taylor Ditch
Pond	#5	==>	#4	0.000	0.000	WFSP-1 Stock Pond
Channel	#6	==>	#5	0.000	0.000	Channel WFSP-1 to WFSP-2
Pond	#7	==>	#6	0.000	0.000	WFSP-2 Stockpond
Channel	#8	==>	#7	0.000	0.000	WFSP-2 to Station 85+00
Null	#9	==>	#6	0.000	0.000	Null Confluence Trib 1
Channel	#10	==>	#9	0.000	0.000	Trib 1
Null	#13	==>	#4	0.000	0.000	Null Confluence West 7800' Terrace Ditch
Channel	#14	==>	#13	0.000	0.000	West 7800' Terrace Ditch
Null	#15	==>	#4	0.000	0.000	Null 7700' Terrace Ditch
Channel	#16	==>	#15	0.000	0.000	7700' Terrace Ditch
Channel	#17	==>	#3	0.000	0.000	East Fork Taylor Ditch 0+00 to EFSP-1
Null	#18	==>	#17	0.000	0.000	Null 7600' Terrace Ditch
Channel	#19	==>	#18	0.000	0.000	7600' Terrace Ditch
Null	#20	==>	#17	0.000	0.000	Null 7800' Terrace Ditch
Channel	#21	==>	#20	0.000	0.000	East 7800' Terrace Ditch
Pond	#22	==>	#17	0.000	0.000	EFSP-1 Stock Pond
Channel	#23	==>	#22	0.000	0.000	EFSP-1 to EFSP-2 Veg Channel
Pond	#24	==>	#23	0.000	0.000	EFSP-2 Stockpond
Channel	#25	==>	#24	0.000	0.000	EFSP-2 to Station 116+97
Null	#26	==>	#8	0.000	0.000	Null Confluence Trib 2
Channel	#27	==>	#26	0.000	0.000	Trib 2
Null	#28	==>	#25	0.000	0.000	Null Confluence Trib 3
Channel	#29	==>	#28	0.000	0.000	Trib 3
Null	#30	==>	#25	0.000	0.000	Null Confluence Trib 5
Channel	#31	==>	#30	0.000	0.000	Trib 5
Null	#32	==>	#29	0.000	0.000	Null Confluence Trib 4
Channel	#33	==>	#32	0.000	0.000	Trib 4
Null	#34	==>	#25	0.000	0.000	Null Confluence Trib 6
Channel	#35	==>	#34	0.000	0.000	Trib 6
Null	#36	==>	#25	0.000	0.000	Null Confluence Trib 7
Channel	#37	==>	#36	0.000	0.000	Trib 7

#37
Chan'l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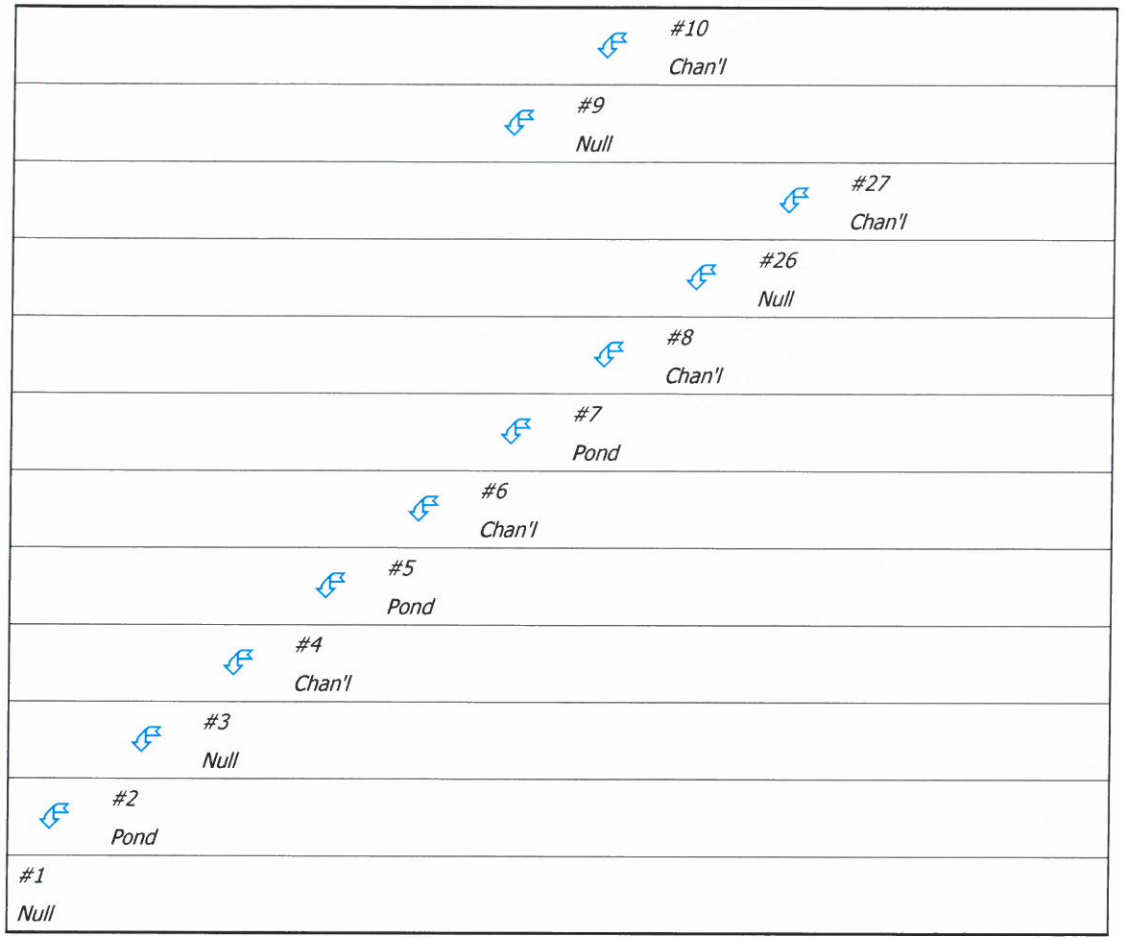
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#5
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#4
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#3
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#2
Pond
#1
Null

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)
#37		25.600	25.600	0.12	0.08	0.0	266	0.13	0.11
#36		0.000	25.600	0.12	0.08	0.0	266	0.13	0.11
#35		6.600	6.600	0.05	0.03	0.0	397	0.23	0.17
#34		0.000	6.600	0.05	0.03	0.0	397	0.23	0.17
#31		23.800	23.800	0.11	0.08	0.0	142	0.07	0.06
#30		0.000	23.800	0.11	0.08	0.0	142	0.07	0.06
#33		14.000	14.000	0.11	0.06	0.0	388	0.22	0.17
#32		0.000	14.000	0.11	0.06	0.0	388	0.22	0.17
#29		25.600	39.600	5.51	0.51	37.0	140,348	79.99	29.09
#28		0.000	39.600	5.51	0.51	37.0	140,348	79.99	29.09
#25		144.700	240.300	5.51	1.18	37.1	140,348	79.97	12.77
#24	In	0.000	240.300	5.51	1.18	37.1	140,348	79.97	12.77
	Out			0.00	0.00	37.1	0	0.00	0.00
#23		79.900	320.200	21.53	2.49	158.8	68,139	38.40	19.86
#22	In	0.000	320.200	21.53	2.49	158.8	68,139	38.40	19.86
	Out			1.74	1.31	0.0	4	0.00	0.00
#21		12.400	12.400	4.84	0.36	67.9	276,566	157.63	73.55
#20		0.000	12.400	4.84	0.36	67.9	276,566	157.63	73.55
#19		4.000	4.000	0.03	0.02	0.0	484	0.28	0.21
#18		0.000	4.000	0.03	0.02	0.0	484	0.28	0.21
#17		24.700	361.300	5.41	1.72	71.8	263,295	150.07	17.86
#16		7.300	7.300	0.06	0.03	0.0	519	0.30	0.22
#15		0.000	7.300	0.06	0.03	0.0	519	0.30	0.22
#14		7.500	7.500	2.89	0.21	33.0	230,293	131.26	62.18
#13		0.000	7.500	2.89	0.21	33.0	230,293	131.26	62.18
#10		133.700	133.700	12.49	1.26	57.0	64,553	33.20	16.82
#9		0.000	133.700	12.49	1.26	57.0	64,553	33.20	16.82
#27		90.300	90.300	5.57	0.75	38.3	111,513	59.66	19.62
#26		0.000	90.300	5.57	0.75	38.3	111,513	59.66	19.62
#8		110.600	200.900	24.31	2.72	145.7	89,360	46.77	20.10
#7	In	0.000	200.900	24.31	2.72	145.7	89,360	46.77	20.10
	Out			1.83	1.46	0.0	4	0.00	0.00
#6		86.100	420.700	28.46	4.14	126.7	68,754	36.15	12.00
#5	In	0.000	420.700	28.46	4.14	126.7	68,754	36.15	12.00
	Out			3.14	2.87	0.0	7	0.00	0.00
#4		29.000	464.500	3.40	3.15	38.6	228,372	130.16	5.83
#3		0.000	825.800	8.81	4.87	110.4	249,944	142.46	10.35
#2	In	27.600	853.400	8.81	4.87	110.4	249,944	142.46	10.35
	Out			4.87	4.68	24.5	5,372	0.14	0.11

	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	0.000	853.400	4.87	4.68	24.5	5,370	0.14	0.11

Particle Size Distribution(s) at Each Structure

Structure #37 (Trib 7):

Size (mm)	In/Out
4.7500	100.000%
0.0750	94.402%
0.0400	42.675%
0.0010	25.864%

Structure #36 (Null Confluence Trib 7):

Size (mm)	In/Out
4.7500	100.000%
0.0750	94.402%
0.0400	42.675%
0.0010	25.864%

Structure #35 (Trib 6):

Size (mm)	In/Out
4.7500	100.000%
0.0750	73.000%
0.0400	33.000%
0.0010	20.000%

Structure #34 (Null Confluence Trib 6):

Size (mm)	In/Out
4.7500	100.000%
0.0750	73.000%
0.0400	33.000%
0.0010	20.000%

Structure #31 (Trib 5):

Size (mm)	In/Out
4.7500	100.000%
0.0750	94.729%
0.0400	42.823%
0.0010	25.953%

Structure #30 (Null Confluence Trib 5):

Size (mm)	In/Out
4.7500	100.000%
0.0750	94.729%
0.0400	42.823%
0.0010	25.953%

Structure #33 (Trib 4):

Size (mm)	In/Out
4.7500	100.000%
0.0750	73.000%
0.0400	33.000%
0.0010	20.000%

Structure #32 (Null Confluence Trib 4):

Size (mm)	In/Out
4.7500	100.000%
0.0750	73.000%
0.0400	33.000%
0.0010	20.000%

Structure #29 (Trib 3):

Size (mm)	In/Out
4.7500	100.000%
0.0750	73.000%
0.0400	33.000%
0.0010	20.000%

Structure #28 (Null Confluence Trib 3):

Size (mm)	In/Out
4.7500	100.000%

Size (mm)	In/Out
0.0750	73.000%
0.0400	33.000%
0.0010	20.000%

Structure #25 (EFSP-2 to Station 116+97):

Size (mm)	In/Out
4.7500	100.000%
0.0750	73.060%
0.0400	33.028%
0.0010	20.017%

Structure #24 (EFSP-2 Stockpond):

Size (mm)	In	Out
4.7500	100.000%	0.000%
0.0750	73.060%	0.000%
0.0400	33.028%	0.000%
0.0010	20.017%	0.000%

Structure #23 (EFSP-1 to EFSP-2 Veg Channel):

Size (mm)	In/Out
4.7500	76.629%
0.0750	75.036%
0.0400	33.920%
0.0010	20.558%

Structure #22 (EFSP-1 Stock Pond):

Size (mm)	In	Out
4.7500	76.629%	100.000%
0.0750	75.036%	100.000%
0.0400	33.920%	100.000%
0.0010	20.558%	100.000%

Structure #21 (East 7800' Terrace Ditch):

Size (mm)	In/Out
4.7500	100.000%
0.0750	73.000%

Size (mm)	In/Out
0.0400	33.000%
0.0010	20.000%

Structure #20 (Null 7800' Terrace Ditch):

Size (mm)	In/Out
4.7500	100.000%
0.0750	73.000%
0.0400	33.000%
0.0010	20.000%

Structure #19 (7600' Terrace Ditch):

Size (mm)	In/Out
4.7500	100.000%
0.0750	73.000%
0.0400	33.000%
0.0010	20.000%

Structure #18 (Null 7600' Terrace Ditch):

Size (mm)	In/Out
4.7500	100.000%
0.0750	73.000%
0.0400	33.000%
0.0010	20.000%

Structure #17 (East Fork Taylor Ditch 0+00 to EFSP-1):

Size (mm)	In/Out
4.7500	100.000%
0.0750	73.000%
0.0400	33.000%
0.0010	20.000%

Structure #16 (7700' Terrace Ditch):

Size (mm)	In/Out
4.7500	100.000%
0.0750	73.000%
0.0400	33.000%

Size (mm)	In/Out
0.0010	20.000%

Structure #15 (Null 7700' Terrace Ditch):

Size (mm)	In/Out
4.7500	100.000%
0.0750	73.000%
0.0400	33.000%
0.0010	20.000%

Structure #14 (West 7800' Terrace Ditch):

Size (mm)	In/Out
4.7500	100.000%
0.0750	73.000%
0.0400	33.000%
0.0010	20.000%

Structure #13 (Null Confluence West 7800' Terrace Ditch):

Size (mm)	In/Out
4.7500	100.000%
0.0750	73.000%
0.0400	33.000%
0.0010	20.000%

Structure #10 (Trib 1):

Size (mm)	In/Out
4.7500	100.000%
0.0750	90.689%
0.0400	40.996%
0.0010	24.846%

Structure #9 (Null Confluence Trib 1):

Size (mm)	In/Out
4.7500	100.000%
0.0750	90.689%
0.0400	40.996%
0.0010	24.846%

Structure #27 (Trib 2):

Size (mm)	In/Out
4.7500	100.000%
0.0750	84.101%
0.0400	38.018%
0.0010	23.041%

Structure #26 (Null Confluence Trib 2):

Size (mm)	In/Out
4.7500	100.000%
0.0750	84.101%
0.0400	38.018%
0.0010	23.041%

Structure #8 (WFSP-2 to Station 85+00):

Size (mm)	In/Out
4.7500	100.000%
0.0750	87.813%
0.0400	39.696%
0.0010	24.058%

Structure #7 (WFSP-2 Stockpond):

Size (mm)	In	Out
4.7500	100.000%	100.000%
0.0750	87.813%	100.000%
0.0400	39.696%	100.000%
0.0010	24.058%	100.000%

Structure #6 (Channel WFSP-1 to WFSP-2):

Size (mm)	In/Out
4.7500	100.000%
0.0750	87.049%
0.0400	39.351%
0.0010	23.849%

Structure #5 (WFSP-1 Stock Pond):

Size (mm)	In	Out
4.7500	100.000%	100.000%
0.0750	87.049%	100.000%
0.0400	39.351%	100.000%
0.0010	23.849%	100.000%

Structure #4 (0+00 to WFSP-1 West Fork Taylor Ditch):

Size (mm)	In/Out
4.7500	100.000%
0.0750	73.001%
0.0400	33.002%
0.0010	20.002%

Structure #3 (Null Above West Taylor Pond):

Size (mm)	In/Out
4.7500	100.000%
0.0750	73.000%
0.0400	33.001%
0.0010	20.001%

Structure #2 (West Taylor Pond):

Size (mm)	In	Out
4.7500	100.000%	100.000%
0.0750	73.000%	100.000%
0.0400	33.001%	100.000%
0.0010	20.001%	89.962%

Structure #1:

Size (mm)	In/Out
4.7500	100.000%
0.0750	100.000%
0.0400	100.000%
0.0010	89.962%

Structure Detail:

Structure #37 (Vegetated Channel)

Trib 7

Trapezoidal Vegetated Channel Inputs:

Material: Smooth brome

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
6.00	3.0:1	3.0:1	7.0	D, B	2.81			6.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	0.12 cfs		0.12 cfs	
Depth:	0.06 ft	2.87 ft	0.19 ft	3.00 ft
Top Width:	6.38 ft	23.24 ft	7.16 ft	24.02 ft
Velocity:	0.31 fps		0.10 fps	
X-Section Area:	0.40 sq ft		1.28 sq ft	
Hydraulic Radius:	0.062 ft		0.177 ft	
Froude Number:	0.22		0.04	
Roughness Coefficient:	0.1953		1.2929	

Structure #36 (Null)

Null Confluence Trib 7

Structure #35 (Vegetated Channel)

Trib 6

Trapezoidal Vegetated Channel Inputs:

Material: Smooth brome

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
6.00	3.0:1	3.0:1	6.0	D, B	1.84			6.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	0.05 cfs		0.05 cfs	
Depth:	0.05 ft	1.89 ft	0.16 ft	2.00 ft
Top Width:	6.28 ft	17.32 ft	6.94 ft	17.98 ft
Velocity:	0.18 fps		0.05 fps	
X-Section Area:	0.28 sq ft		1.02 sq ft	
Hydraulic Radius:	0.045 ft		0.145 ft	
Froude Number:	0.15		0.02	
Roughness Coefficient:	0.2554		2.0366	

Structure #34 (Null)

Null Confluence Trib 6

Structure #31 (Vegetated Channel)

Trib 5

Trapezoidal Vegetated Channel Inputs:

Material: Smooth brome

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
6.00	3.0:1	3.0:1	4.0	D, B	2.77			7.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	0.11 cfs		0.11 cfs	
Depth:	0.07 ft	2.84 ft	0.23 ft	3.00 ft
Top Width:	6.44 ft	23.06 ft	7.36 ft	23.98 ft
Velocity:	0.25 fps		0.07 fps	
X-Section Area:	0.45 sq ft		1.51 sq ft	
Hydraulic Radius:	0.070 ft		0.203 ft	
Froude Number:	0.17		0.03	
Roughness Coefficient:	0.2006		1.3676	

Structure #30 (Null)

Null Confluence Trib 5

Structure #33 (Vegetated Channel)

Trib 4

Trapezoidal Vegetated Channel Inputs:

Material: Smooth brome

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
6.00	3.0:1	3.0:1	16.0	D, B	2.86			5.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	0.11 cfs		0.11 cfs	
Depth:	0.05 ft	2.91 ft	0.14 ft	3.00 ft
Top Width:	6.28 ft	23.44 ft	6.86 ft	24.02 ft
Velocity:	0.37 fps		0.11 fps	
X-Section Area:	0.29 sq ft		0.93 sq ft	
Hydraulic Radius:	0.046 ft		0.134 ft	
Froude Number:	0.30		0.05	
Roughness Coefficient:	0.2030		1.3625	

Structure #32 (Null)

Null Confluence Trib 4

Structure #29 (Vegetated Channel)

Trib 3

Trapezoidal Vegetated Channel Inputs:

Material: Smooth brome

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
6.00	3.0:1	3.0:1	11.0	D, B	2.48			5.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	5.51 cfs		5.51 cfs	
Depth:	0.27 ft	2.75 ft	0.52 ft	3.00 ft
Top Width:	7.64 ft	22.52 ft	9.13 ft	24.01 ft

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Velocity:	2.95 fps		1.40 fps	
X-Section Area:	1.87 sq ft		3.94 sq ft	
Hydraulic Radius:	0.242 ft		0.424 ft	
Froude Number:	1.05		0.38	
Roughness Coefficient:	0.0647		0.1990	

Structure #28 (Null)

Null Confluence Trib 3

Structure #25 (Vegetated Channel)

EFSP-2 to Station 116+97

Trapezoidal Vegetated Channel Inputs:

Material: Bermuda grass

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
12.00	3.0:1	3.0:1	5.4	D, B	3.49			7.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	5.51 cfs		5.51 cfs	
Depth:	0.25 ft	3.74 ft	0.51 ft	4.00 ft
Top Width:	13.51 ft	34.45 ft	15.08 ft	36.02 ft
Velocity:	1.72 fps		0.79 fps	
X-Section Area:	3.21 sq ft		6.95 sq ft	
Hydraulic Radius:	0.236 ft		0.456 ft	
Froude Number:	0.62		0.21	
Roughness Coefficient:	0.0768		0.2582	

Structure #24 (Pond)

EFSP-2 Stockpond

Pond Inputs:

Initial Pool Elev:	92.00 ft
Initial Pool:	0.15 ac-ft

*Sediment Storage:	0.00 ac-ft
Dead Space:	0.00 %

**No sediment capacity defined*

Straight Pipe

Barrel Diameter (in)	Barrel Length (ft)	Barrel Slope (%)	Manning's n	Spillway Elev (ft)	Entrance Loss Coefficient	Tailwater Depth (ft)
12.00	100.00	1.50	0.0150	98.00	0.50	0.00

Emergency Spillway

Spillway Elev	Crest Length (ft)	Left Sideslope	Right Sideslope	Bottom Width (ft)
100.00	20.00	2.00:1	2.00:1	10.00

Pond Results:

Peak Elevation:	97.97 ft
H'graph Detention Time:	0.00 hrs
Pond Model:	CSTRS
Dewater Time:	0.00 days
Trap Efficiency:	0.00 %

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)	
90.00	0.050	0.000	0.000		Top of Sed. Storage
91.00	0.072	0.061	0.000		
92.00	0.098	0.145	0.000		
93.00	0.128	0.258	0.000		
94.00	0.162	0.403	0.000		
95.00	0.200	0.583	0.000		
96.00	0.231	0.799	0.000		
97.00	0.265	1.046	0.000		
97.97	0.300	1.321	0.000	0.00	Peak Stage
98.00	0.301	1.329	0.000		Spillway #1
99.00	0.339	1.649	2.094		
100.00	0.380	2.008	4.263		Spillway #2
101.00	0.554	2.473	30.516		
102.00	0.761	3.127	98.736		
103.00	1.000	4.005	207.246		

Detailed Discharge Table

Elevation (ft)	Straight Pipe (cfs)	Emergency Spillway (cfs)	Combined Total Discharge (cfs)
90.00	0.000	0.000	0.000
91.00	0.000	0.000	0.000
92.00	0.000	0.000	0.000
93.00	0.000	0.000	0.000
94.00	0.000	0.000	0.000
95.00	0.000	0.000	0.000
96.00	0.000	0.000	0.000
97.00	0.000	0.000	0.000
98.00	0.000	0.000	0.000
99.00	(3)>2.094	0.000	2.094
100.00	(5)>4.263	0.000	4.263
101.00	(6)>5.033	25.483	30.516
102.00	(6)>5.701	93.036	98.736
103.00	(6)>6.275	200.972	207.246

Structure #23 (Vegetated Channel)

EFSP-1 to EFSP-2 Veg Channel

Trapezoidal Vegetated Channel Inputs:

Material: Smooth brome

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
12.00	3.0:1	3.0:1	2.1	D, B	2.97			7.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	21.53 cfs		21.53 cfs	
Depth:	0.59 ft	3.56 ft	1.03 ft	4.00 ft
Top Width:	15.56 ft	33.38 ft	18.21 ft	36.03 ft
Velocity:	2.63 fps		1.38 fps	
X-Section Area:	8.19 sq ft		15.63 sq ft	
Hydraulic Radius:	0.520 ft		0.843 ft	
Froude Number:	0.64		0.26	
Roughness Coefficient:	0.0530		0.1398	

Structure #22 (Pond)

EFSP-1 Stock Pond

Pond Inputs:

Initial Pool Elev:	92.00 ft
Initial Pool:	0.15 ac-ft
*Sediment Storage:	0.00 ac-ft
Dead Space:	0.00 %

**No sediment capacity defined*

Straight Pipe

Barrel Diameter (in)	Barrel Length (ft)	Barrel Slope (%)	Manning's n	Spillway Elev (ft)	Entrance Loss Coefficient	Tailwater Depth (ft)
12.00	100.00	1.50	0.0150	98.00	0.50	0.00

Emergency Spillway

Spillway Elev	Crest Length (ft)	Left Sideslope	Right Sideslope	Bottom Width (ft)
100.00	20.00	2.00:1	2.00:1	10.00

Pond Results:

Peak Elevation:	98.83 ft
H'graph Detention Time:	4.17 hrs
Pond Model:	CSTRS
Dewater Time:	0.76 days
Trap Efficiency:	100.00 %

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)	
90.00	0.050	0.000	0.000		Top of Sed. Storage
91.00	0.072	0.061	0.000		
92.00	0.098	0.145	0.000		
93.00	0.128	0.258	0.000		
94.00	0.162	0.403	0.000		
95.00	0.200	0.583	0.000		
96.00	0.231	0.799	0.000		
97.00	0.265	1.046	0.000		
98.00	0.301	1.329	0.000		Spillway #1

Elevation	Area (ac)	Capacity (ac-ft)	Discharge (cfs)	Dewater Time (hrs)	
98.83	0.333	1.595	1.743	18.25	Peak Stage
99.00	0.339	1.649	2.094		
100.00	0.380	2.008	4.263		Spillway #2
101.00	0.554	2.473	30.516		
102.00	0.761	3.127	98.736		
103.00	1.000	4.005	207.246		

Detailed Discharge Table

Elevation (ft)	Straight Pipe (cfs)	Emergency Spillway (cfs)	Combined Total Discharge (cfs)
90.00	0.000	0.000	0.000
91.00	0.000	0.000	0.000
92.00	0.000	0.000	0.000
93.00	0.000	0.000	0.000
94.00	0.000	0.000	0.000
95.00	0.000	0.000	0.000
96.00	0.000	0.000	0.000
97.00	0.000	0.000	0.000
98.00	0.000	0.000	0.000
99.00	(3)>2.094	0.000	2.094
100.00	(5)>4.263	0.000	4.263
101.00	(6)>5.033	25.483	30.516
102.00	(6)>5.701	93.036	98.736
103.00	(6)>6.275	200.972	207.246

Structure #21 (Vegetated Channel)

East 7800' Terrace Ditch

Triangular Vegetated Channel Inputs:

Material: Smooth brome

Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
1.5:1	3.0:1	1.5	D, B				7.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	4.84 cfs		4.84 cfs	
Depth:	1.07 ft		1.68 ft	
Top Width:	4.80 ft		7.56 ft	
Velocity:	1.89 fps		0.76 fps	
X-Section Area:	2.56 sq ft		6.35 sq ft	
Hydraulic Radius:	0.488 ft		0.768 ft	
Froude Number:	0.46		0.15	
Roughness Coefficient:	0.0598		0.2004	

Structure #20 (Null)

Null 7800' Terrace Ditch

Structure #19 (Vegetated Channel)

7600' Terrace Ditch

Triangular Vegetated Channel Inputs:

Material: Smooth brome

Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
1.5:1	3.0:1	1.5	D, B	2.45			7.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	0.03 cfs		0.03 cfs	
Depth:	0.24 ft	2.69 ft	0.55 ft	3.00 ft
Top Width:	1.08 ft	12.11 ft	2.46 ft	13.49 ft
Velocity:	0.23 fps		0.04 fps	
X-Section Area:	0.13 sq ft		0.67 sq ft	
Hydraulic Radius:	0.110 ft		0.250 ft	
Froude Number:	0.12		0.02	
Roughness Coefficient:	0.1786		1.6044	

Structure #18 (Null)

Null 7600' Terrace Ditch

Structure #17 (Riprap Channel)

East Fork Taylor Ditch 0+00 to EFSP-1

Trapezoidal Riprap Channel Inputs:

Material: Riprap

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)
12.00	3.0:1	3.0:1	25.0	3.97		

Riprap Channel Results:

Simons/OSM Method - Steep Slope Design

	w/o Freeboard	w/ Freeboard
Design Discharge:	5.41 cfs	
Depth:	0.03 ft	4.00 ft
Top Width:	12.20 ft	36.02 ft
Velocity*:		
X-Section Area:	0.40 sq ft	
Hydraulic Radius:	0.033 ft	
Froude Number*:		
Manning's n*:		
Dmin:	2.00 in	
D50:	6.00 in	
Dmax:	7.50 in	

Velocity and Manning's n calculations may not apply for this method.

Structure #16 (Vegetated Channel)

7700' Terrace Ditch

Triangular Vegetated Channel Inputs:

Material: Smooth brome

Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
1.5:1	3.0:1	1.5	D, B	2.38			7.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	0.06 cfs		0.06 cfs	
Depth:	0.29 ft	2.67 ft	0.62 ft	3.00 ft
Top Width:	1.29 ft	12.00 ft	2.81 ft	13.52 ft

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Velocity:	0.30 fps		0.06 fps	
X-Section Area:	0.19 sq ft		0.88 sq ft	
Hydraulic Radius:	0.131 ft		0.285 ft	
Froude Number:	0.14		0.02	
Roughness Coefficient:	0.1569		1.2529	

Structure #15 (Null)

Null 7700' Terrace Ditch

Structure #14 (Vegetated Channel)

West 7800' Terrace Ditch

Triangular Vegetated Channel Inputs:

Material: Smooth brome

Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
1.5:1	3.0:1	1.5	D, B	2.54			7.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	2.89 cfs		2.89 cfs	
Depth:	0.92 ft	3.46 ft	1.50 ft	4.04 ft
Top Width:	4.13 ft	15.56 ft	6.74 ft	18.17 ft
Velocity:	1.53 fps		0.57 fps	
X-Section Area:	1.89 sq ft		5.05 sq ft	
Hydraulic Radius:	0.419 ft		0.684 ft	
Froude Number:	0.40		0.12	
Roughness Coefficient:	0.0669		0.2477	

Structure #13 (Null)

Null Confluence West 7800' Terrace Ditch

Structure #10 (Vegetated Channel)

Trib 1

Trapezoidal Vegetated Channel Inputs:

Material: Smooth brome

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
6.00	3.0:1	3.0:1	5.0	D, B	2.15			7.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	12.49 cfs		12.49 cfs	
Depth:	0.49 ft	2.64 ft	0.85 ft	3.00 ft
Top Width:	8.93 ft	21.83 ft	11.11 ft	24.01 ft
Velocity:	3.42 fps		1.72 fps	
X-Section Area:	3.65 sq ft		7.28 sq ft	
Hydraulic Radius:	0.402 ft		0.639 ft	
Froude Number:	0.94		0.37	
Roughness Coefficient:	0.0529		0.1440	

Structure #9 (Null)

Null Confluence Trib 1

Structure #27 (Vegetated Channel)

Trib 2

Trapezoidal Vegetated Channel Inputs:

Material: Smooth brome

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
6.00	3.0:1	3.0:1	11.0	D, B	2.48			5.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	5.57 cfs		5.57 cfs	
Depth:	0.28 ft	2.76 ft	0.52 ft	3.00 ft
Top Width:	7.65 ft	22.53 ft	9.13 ft	24.01 ft
Velocity:	2.97 fps		1.41 fps	
X-Section Area:	1.88 sq ft		3.95 sq ft	

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Hydraulic Radius:	0.243 ft		0.425 ft	
Froude Number:	1.06		0.38	
Roughness Coefficient:	0.0645		0.1981	

Structure #26 (Null)

Null Confluence Trib 2

Structure #8 (Vegetated Channel)

WFSP-2 to Station 85+00

Trapezoidal Vegetated Channel Inputs:

Material: Bermuda grass

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
12.00	3.0:1	3.0:1	10.2	D, B	3.35			6.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	24.31 cfs		24.31 cfs	
Depth:	0.39 ft	3.74 ft	0.65 ft	4.00 ft
Top Width:	14.32 ft	34.42 ft	15.92 ft	36.02 ft
Velocity:	4.77 fps		2.67 fps	
X-Section Area:	5.09 sq ft		9.12 sq ft	
Hydraulic Radius:	0.353 ft		0.565 ft	
Froude Number:	1.41		0.62	
Roughness Coefficient:	0.0497		0.1218	

Structure #7 (Pond)

WFSP-2 Stockpond

Pond Inputs:

Initial Pool Elev:	91.00 ft
Initial Pool:	0.06 ac-ft
*Sediment Storage:	0.00 ac-ft
Dead Space:	0.00 %

**No sediment capacity defined*

Emergency Spillway

Spillway Elev	Crest Length (ft)	Left Sideslope	Right Sideslope	Bottom Width (ft)
100.00	20.00	2.00:1	2.00:1	5.00

Straight Pipe

Barrel Diameter (in)	Barrel Length (ft)	Barrel Slope (%)	Manning's n	Spillway Elev (ft)	Entrance Loss Coefficient	Tailwater Depth (ft)
12.00	100.00	1.00	0.0150	98.00	0.90	0.00

Pond Results:

Peak Elevation:	98.87 ft
H'graph Detention Time:	4.34 hrs
Pond Model:	CSTRS
Dewater Time:	0.73 days
Trap Efficiency:	100.00 %

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)	
90.00	0.050	0.000	0.000		Top of Sed. Storage
91.00	0.072	0.061	0.000		
92.00	0.098	0.145	0.000		
93.00	0.128	0.258	0.000		
94.00	0.162	0.403	0.000		
95.00	0.200	0.583	0.000		
96.00	0.231	0.799	0.000		
97.00	0.265	1.046	0.000		
98.00	0.301	1.329	0.000		Spillway #2
98.87	0.334	1.609	1.831	17.55	Peak Stage
99.00	0.339	1.649	2.094		
100.00	0.380	2.008	3.745		Spillway #1
101.00	0.554	2.473	18.584		
102.00	0.761	3.127	61.251		
103.00	1.000	4.005	135.506		

Detailed Discharge Table

Elevation (ft)	Emergency Spillway (cfs)	Straight Pipe (cfs)	Combined Total Discharge (cfs)
90.00	0.000	0.000	0.000
91.00	0.000	0.000	0.000
92.00	0.000	0.000	0.000
93.00	0.000	0.000	0.000
94.00	0.000	0.000	0.000
95.00	0.000	0.000	0.000
96.00	0.000	0.000	0.000
97.00	0.000	0.000	0.000
98.00	0.000	0.000	0.000
99.00	0.000	(3)>2.094	2.094
100.00	0.000	(6)>3.745	3.745
101.00	14.046	(6)>4.538	18.584
102.00	56.062	(6)>5.189	61.251
103.00	129.713	(6)>5.793	135.506

Structure #6 (Vegetated Channel)

Channel WFSP-1 to WFSP-2

Trapezoidal Vegetated Channel Inputs:

Material: Smooth brome

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
12.00	3.0:1	3.0:1	1.3	D, B	2.69			7.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	28.46 cfs		28.46 cfs	
Depth:	0.77 ft	3.46 ft	1.31 ft	4.00 ft
Top Width:	16.63 ft	32.77 ft	19.85 ft	35.99 ft
Velocity:	2.58 fps		1.37 fps	
X-Section Area:	11.05 sq ft		20.83 sq ft	
Hydraulic Radius:	0.655 ft		1.027 ft	
Froude Number:	0.56		0.24	
Roughness Coefficient:	0.0497		0.1265	

Structure #5 (Pond)

WFSP-1 Stock Pond

Pond Inputs:

Initial Pool Elev:	91.00 ft
Initial Pool:	0.06 ac-ft
*Sediment Storage:	0.00 ac-ft
Dead Space:	0.00 %

**No sediment capacity defined*

Straight Pipe

Barrel Diameter (in)	Barrel Length (ft)	Barrel Slope (%)	Manning's n	Spillway Elev (ft)	Entrance Loss Coefficient	Tailwater Depth (ft)
12.00	100.00	1.50	0.0150	98.00	0.90	0.00

Emergency Spillway

Spillway Elev	Crest Length (ft)	Left Sideslope	Right Sideslope	Bottom Width (ft)
100.00	20.00	2.00:1	2.00:1	10.00

Pond Results:

Peak Elevation:	99.51 ft
H'graph Detention Time:	3.76 hrs
Pond Model:	CSTRS
Dewater Time:	0.87 days
Trap Efficiency:	100.00 %

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)	
90.00	0.050	0.000	0.000		Top of Sed. Storage
91.00	0.072	0.061	0.000		
92.00	0.098	0.145	0.000		
93.00	0.128	0.258	0.000		
94.00	0.162	0.403	0.000		
95.00	0.200	0.583	0.000		
96.00	0.231	0.799	0.000		
97.00	0.265	1.046	0.000		
98.00	0.301	1.329	0.000		Spillway #1
99.00	0.339	1.649	2.094	14.10	

Elevation	Area (ac)	Capacity (ac-ft)	Discharge (cfs)	Dewater Time (hrs)	
99.51	0.361	1.831	3.143	6.70	Peak Stage
100.00	0.380	2.008	4.162		Spillway #2
101.00	0.554	2.473	30.351		
102.00	0.761	3.127	98.545		
103.00	1.000	4.005	207.032		

Detailed Discharge Table

Elevation (ft)	Straight Pipe (cfs)	Emergency Spillway (cfs)	Combined Total Discharge (cfs)
90.00	0.000	0.000	0.000
91.00	0.000	0.000	0.000
92.00	0.000	0.000	0.000
93.00	0.000	0.000	0.000
94.00	0.000	0.000	0.000
95.00	0.000	0.000	0.000
96.00	0.000	0.000	0.000
97.00	0.000	0.000	0.000
98.00	0.000	0.000	0.000
99.00	(3)>2.094	0.000	2.094
100.00	(6)>4.162	0.000	4.162
101.00	(6)>4.868	25.483	30.351
102.00	(6)>5.509	93.036	98.545
103.00	(6)>6.061	200.972	207.032

Structure #4 (Riprap Channel)

0+00 to WFSP-1 West Fork Taylor Ditch

Trapezoidal Riprap Channel Inputs:

Material: Riprap

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)
12.00	3.0:1	3.0:1	26.0	3.98		

Riprap Channel Results:

Simons/OSM Method - Steep Slope Design

	w/o Freeboard	w/ Freeboard
Design Discharge:	3.40 cfs	

	w/o Freeboard	w/ Freeboard
Depth:	0.02 ft	4.00 ft
Top Width:	12.11 ft	35.99 ft
Velocity*:		
X-Section Area:	0.22 sq ft	
Hydraulic Radius:	0.018 ft	
Froude Number*:		
Manning's n*:		
Dmin:	2.00 in	
D50:	6.00 in	
Dmax:	7.50 in	

Velocity and Manning's n calculations may not apply for this method.

Structure #3 (Null)

Null Above West Taylor Pond

Structure #2 (Pond)

West Taylor Pond

Pond Inputs:

Initial Pool Elev:	7,468.00 ft
Initial Pool:	1.77 ac-ft
*Sediment Storage:	0.00 ac-ft
Dead Space:	0.00 %

**No sediment capacity defined*

Perforated Riser

Riser Diameter (in)	Riser Height (ft)	Barrel Diameter (in)	Barrel Length (ft)	Barrel Slope (%)	Manning's n	Spillway Elev (ft)	Number of Holes per Elev
18.00	10.50	18.00	150.00	2.00	0.0150	7,471.00	2

Emergency Spillway

Spillway Elev	Crest Length (ft)	Left Sideslope	Right Sideslope	Bottom Width (ft)
7,475.00	30.00	2.00:1	2.00:1	30.00

Pond Results:

Peak Elevation:	7,471.53 ft
H'graph Detention Time:	5.46 hrs
Pond Model:	CSTRS
Dewater Time:	1.46 days
Trap Efficiency:	77.77 %

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)	
7,455.00	0.022	0.000	0.000		Top of Sed. Storage
7,456.00	0.032	0.027	0.000		
7,457.00	0.043	0.064	0.000		
7,458.00	0.054	0.113	0.000		
7,459.00	0.066	0.173	0.000		
7,460.00	0.079	0.245	0.000		
7,461.00	0.103	0.336	0.000		
7,462.00	0.139	0.456	0.000		
7,463.00	0.162	0.607	0.000		
7,464.00	0.188	0.781	0.000		
7,465.00	0.213	0.981	0.000		
7,466.00	0.244	1.209	0.000		
7,467.00	0.279	1.470	0.000		
7,468.00	0.312	1.766	0.000		Low hole SPW #1
7,469.00	0.360	2.102	0.473	8.60*	
7,470.00	0.389	2.476	0.669	8.10	
7,471.00	0.430	2.886	0.819	8.25	Spillway #1
7,471.53	0.445	3.121	4.868	10.15	Peak Stage
7,472.00	0.463	3.332	8.509		
7,473.00	0.503	3.814	12.033		
7,474.00	0.541	4.336	14.738		
7,475.00	0.580	4.897	17.018		Spillway #2
7,476.00	0.581	5.477	83.791		
7,477.00	0.582	6.058	246.034		
7,478.00	0.583	6.641	483.806		
7,479.00	0.584	7.224	794.453		
7,480.00	0.585	7.809	1,172.300		

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

Detailed Discharge Table

Elevation (ft)	Perf. Riser (cfs)	Emergency Spillway (cfs)	Combined Total Discharge (cfs)
7,455.00	0.000	0.000	0.000
7,456.00	0.000	0.000	0.000
7,457.00	0.000	0.000	0.000
7,458.00	0.000	0.000	0.000
7,459.00	0.000	0.000	0.000
7,460.00	0.000	0.000	0.000
7,461.00	0.000	0.000	0.000
7,462.00	0.000	0.000	0.000
7,463.00	0.000	0.000	0.000
7,464.00	0.000	0.000	0.000
7,465.00	0.000	0.000	0.000
7,466.00	0.000	0.000	0.000
7,467.00	0.000	0.000	0.000
7,468.00	3.00>0.000	0.000	0.000
7,469.00	0.473	0.000	0.473
7,470.00	0.669	0.000	0.669
7,471.00	0.819	0.000	0.819
7,472.00	8.509	0.000	8.509
7,473.00	12.033	0.000	12.033
7,474.00	14.738	0.000	14.738
7,475.00	17.018	0.000	17.018
7,476.00	19.026	64.765	83.791
7,477.00	20.842	225.191	246.034
7,478.00	22.512	461.294	483.806
7,479.00	24.066	770.387	794.453
7,480.00	25.526	1,146.774	1,172.300

Structure #1 (Null)

Null Below West Taylor Pond

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)
#37	1	25.600	0.224	0.000	0.000	62.000	M	0.12	0.084
	Σ	**25.600**						**0.12**	**0.084**
#36	Σ	**25.600**						**0.12**	**0.084**
#35	1	6.600	0.042	0.000	0.000	62.000	M	0.05	0.027
	Σ	**6.600**						**0.05**	**0.027**
#34	Σ	**6.600**						**0.05**	**0.027**
#31	1	23.800	0.253	0.000	0.000	62.000	M	0.11	0.078
	Σ	**23.800**						**0.11**	**0.078**
#30	Σ	**23.800**						**0.11**	**0.078**
#33	1	14.000	0.059	0.000	0.000	62.000	M	0.11	0.057
	Σ	**14.000**						**0.11**	**0.057**
#32	Σ	**14.000**						**0.11**	**0.057**
#29	1	10.700	0.050	0.000	0.000	80.000	F	5.51	0.396
	2	14.900	0.094	0.000	0.000	62.000	M	0.11	0.061
	Σ	**39.600**						**5.51**	**0.514**
#28	Σ	**39.600**						**5.51**	**0.514**
#25	1	144.700	0.644	0.000	0.000	62.000	M	0.62	0.473
	Σ	**240.300**						**5.51**	**1.176**
#24	Σ	**240.300**						**5.51**	**1.176**
#23	1	70.600	0.365	0.000	0.000	80.000	F	21.53	2.464
	2	2.500	0.021	0.000	0.000	47.000	S	0.00	0.000
	3	6.800	0.053	0.000	0.000	62.000	M	0.05	0.028
	Σ	**320.200**						**21.53**	**2.491**
#22	Σ	**320.200**						**21.53**	**2.491**
#21	1	3.000	0.006	0.000	0.000	62.000	M	0.02	0.011
	2	9.400	0.036	0.000	0.000	80.000	F	4.84	0.348
	Σ	**12.400**						**4.84**	**0.358**
#20	Σ	**12.400**						**4.84**	**0.358**
#19	1	4.000	0.016	0.000	0.000	62.000	M	0.03	0.016
	Σ	**4.000**						**0.03**	**0.016**

Stru #	SWS #	SWS Area (ac)	Time of Conc (hrs)	Musk K (hrs)	Musk X	Curve Number	UHS	Peak Discharge (cfs)	Runoff Volume (ac-ft)
#18	**Σ**	**4.000**						**0.03**	**0.016**
#17	1	1.100	0.011	0.000	0.000	80.000	M	0.57	0.041
	2	21.500	0.090	0.000	0.000	47.000	S	0.00	0.000
	3	0.600	0.012	0.000	0.000	62.000	M	0.00	0.000
	4	0.600	0.010	0.000	0.000	62.000	M	0.00	0.000
	5	0.900	0.013	0.000	0.000	62.000	M	0.00	0.000
	Σ	**361.300**						**5.41**	**1.722**
#16	1	7.300	0.015	0.000	0.000	62.000	M	0.06	0.030
	Σ	**7.300**						**0.06**	**0.030**
#15	**Σ**	**7.300**						**0.06**	**0.030**
#14	1	1.900	0.008	0.000	0.000	62.000	M	0.01	0.002
	2	5.600	0.043	0.000	0.000	80.000	F	2.89	0.207
	Σ	**7.500**						**2.89**	**0.209**
#13	**Σ**	**7.500**						**2.89**	**0.209**
#10	1	35.700	0.252	0.000	0.000	80.000	F	12.49	1.260
	2	98.000	0.045	0.000	0.000	47.000	S	0.00	0.000
	Σ	**133.700**						**12.49**	**1.260**
#9	**Σ**	**133.700**						**12.49**	**1.260**
#27	1	76.400	0.290	0.000	0.000	62.000	M	0.36	0.250
	2	13.900	0.136	0.000	0.000	80.000	F	5.57	0.496
	Σ	**90.300**						**5.57**	**0.746**
#26	**Σ**	**90.300**						**5.57**	**0.746**
#8	1	52.200	0.229	0.000	0.000	80.000	F	18.79	1.839
	2	30.900	0.122	0.000	0.000	62.000	M	0.23	0.126
	3	23.500	0.089	0.000	0.000	47.000	S	0.00	0.000
	4	4.000	0.218	0.000	0.000	62.000	M	0.02	0.013
	Σ	**200.900**						**24.31**	**2.725**
#7	**Σ**	**200.900**						**24.31**	**2.725**
#6	1	43.000	0.095	0.000	0.000	47.000	S	0.00	0.000
	2	39.900	0.161	0.000	0.000	80.000	F	15.98	1.425
	3	0.400	0.015	0.000	0.000	47.000	S	0.00	0.000
	4	1.600	0.020	0.000	0.000	47.000	S	0.00	0.000
	5	1.200	0.021	0.000	0.000	47.000	S	0.00	0.000
	Σ	**420.700**						**28.46**	**4.140**
#5	**Σ**	**420.700**						**28.46**	**4.140**
#4	1	1.000	0.007	0.000	0.000	80.000	M	0.52	0.037

Stru #	SWS #	SWS Area (ac)	Time of Conc (hrs)	Musk K (hrs)	Musk X	Curve Number	UHS	Peak Discharge (cfs)	Runoff Volume (ac-ft)
	2	2.800	0.019	0.000	0.000	47.000	S	0.00	0.000
	3	0.900	0.010	0.000	0.000	62.000	M	0.00	0.000
	4	23.300	0.094	0.000	0.000	47.000	S	0.00	0.000
	5	1.000	0.020	0.000	0.000	62.000	M	0.00	0.000
	Σ	**464.500**						**3.40**	**3.146**
#3	**Σ**	**825.800**						**8.81**	**4.869**
#2	1	10.500	0.051	0.000	0.000	47.000	S	0.00	0.000
	2	17.100	0.058	0.000	0.000	47.000	S	0.00	0.000
	Σ	**853.400**						**8.81**	**4.869**
#1	**Σ**	**853.400**						**4.87**	**4.684**

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)
#37	1	0.300	400.00	10.00	0.0100	0.3800	1	0.0	266	0.13	0.11
	Σ							**0.0**	**266**	**0.13**	**0.11**
#36	**Σ**							**0.0**	**266**	**0.13**	**0.11**
#35	1	0.300	150.00	19.00	0.0100	0.3800	1	0.0	397	0.23	0.17
	Σ							**0.0**	**397**	**0.23**	**0.17**
#34	**Σ**							**0.0**	**397**	**0.23**	**0.17**
#31	1	0.300	400.00	6.00	0.0100	0.3800	1	0.0	142	0.07	0.06
	Σ							**0.0**	**142**	**0.07**	**0.06**
#30	**Σ**							**0.0**	**142**	**0.07**	**0.06**
#33	1	0.300	200.00	15.00	0.0100	0.3800	1	0.0	388	0.22	0.17
	Σ							**0.0**	**388**	**0.22**	**0.17**
#32	**Σ**							**0.0**	**388**	**0.22**	**0.17**
#29	1	0.300	200.00	12.00	0.8000	0.3800	1	37.0	140,348	79.99	37.67
	2	0.300	200.00	11.00	0.0100	0.3800	1	0.0	260	0.15	0.11
	Σ							**37.0**	**140,348**	**79.99**	**29.09**
#28	**Σ**							**37.0**	**140,348**	**79.99**	**29.09**
#25	1	0.300	400.00	4.00	0.0100	0.3800	1	0.1	93	0.04	0.04
	Σ							**37.1**	**140,348**	**79.97**	**12.77**

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)
#24	Σ							**37.1**	**140,348**	**79.97**	**12.77**
#23	1	0.300	400.00	6.00	0.8000	0.3800	1	121.7	68,139	33.50	17.52
	2	0.300	75.00	19.00	0.0800	0.9000	1	0.0	1	0.00	0.00
	3	0.300	100.00	19.00	0.0100	0.3800	1	0.0	312	0.18	0.13
	Σ							**158.8**	**68,139**	**38.40**	**19.86**
#22	Σ							**158.8**	**68,139**	**38.40**	**19.86**
#21	1	0.300	50.00	26.00	0.0100	0.3800	1	0.0	300	0.17	0.14
	2	0.300	300.00	18.00	0.8000	0.3800	1	67.9	276,566	157.63	75.75
	Σ							**67.9**	**276,566**	**157.63**	**73.55**
#20	Σ							**67.9**	**276,566**	**157.63**	**73.55**
#19	1	0.300	100.00	30.00	0.0100	0.3800	1	0.0	484	0.28	0.21
	Σ							**0.0**	**484**	**0.28**	**0.21**
#18	Σ							**0.0**	**484**	**0.28**	**0.21**
#17	1	0.300	75.00	25.00	0.8000	0.3800	1	3.9	143,079	81.55	38.42
	2	0.300	400.00	22.00	0.0310	0.9000	1	0.0	1	0.00	0.00
	3	0.300	50.00	27.00	0.0100	0.3800	1	0.0	1	0.00	0.00
	4	0.300	50.00	30.00	0.0100	0.3800	1	0.0	1	0.00	0.00
	5	0.300	75.00	33.00	0.0100	0.3800	1	0.0	1	0.00	0.00
	Σ							**71.8**	**263,295**	**150.07**	**17.86**
#16	1	0.300	100.00	30.00	0.0100	0.3800	1	0.0	519	0.30	0.22
	Σ							**0.0**	**519**	**0.30**	**0.22**
#15	Σ							**0.0**	**519**	**0.30**	**0.22**
#14	1	0.300	75.00	30.00	0.0100	0.3800	1	0.0	1,577	0.90	0.84
	2	0.300	300.00	16.00	0.8000	0.3800	1	33.0	230,293	131.26	62.64
	Σ							**33.0**	**230,293**	**131.26**	**62.18**
#13	Σ							**33.0**	**230,293**	**131.26**	**62.18**
#10	1	0.300	200.00	8.00	0.8000	0.3800	1	57.0	64,553	33.20	16.82
	2	0.300	200.00	36.00	0.0800	0.9000	1	0.0	1	0.00	0.00
	Σ							**57.0**	**64,553**	**33.20**	**16.82**
#9	Σ							**57.0**	**64,553**	**33.20**	**16.82**
#27	1	0.300	200.00	14.00	0.0100	0.3800	1	0.1	372	0.19	0.16
	2	0.300	200.00	11.00	0.8000	0.3800	1	38.2	111,513	59.67	29.38
	Σ							**38.3**	**111,513**	**59.66**	**19.62**
#26	Σ							**38.3**	**111,513**	**59.66**	**19.62**

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)
#8	1	0.300	200.00	9.00	0.8000	0.3800	1	106.7	82,797	42.96	21.64
	2	0.300	200.00	18.00	0.1000	0.3800	1	0.7	5,309	3.03	2.29
	3	0.300	200.00	24.00	0.0800	0.9000	1	0.0	1	0.00	0.00
	4	0.300	200.00	1.00	0.0100	0.3800	1	0.0	14	0.01	0.01
	Σ							**145.7**	**89,360**	**46.77**	**20.10**
#7	Σ							**145.7**	**89,360**	**46.77**	**20.10**
#6	1	0.300	200.00	20.00	0.0310	0.9000	1	0.0	1	0.00	0.00
	2	0.300	200.00	8.00	0.8000	0.3800	1	69.7	72,027	38.54	18.87
	3	0.300	50.00	15.00	0.0800	0.9000	1	0.0	1	0.00	0.00
	4	0.300	50.00	12.00	0.0800	0.9000	1	0.0	1	0.00	0.00
	5	0.300	50.00	12.00	0.0800	0.9000	1	0.0	1	0.00	0.00
	Σ							**126.7**	**68,754**	**36.15**	**12.00**
#5	Σ							**126.7**	**68,754**	**36.15**	**12.00**
#4	1	0.300	100.00	33.00	0.8000	0.3800	1	5.5	217,554	124.00	59.06
	2	0.300	100.00	20.00	0.0310	0.9000	1	0.0	1	0.00	0.00
	3	0.300	100.00	20.00	0.0100	0.3800	1	0.0	1	0.00	0.00
	4	0.300	400.00	37.00	0.0310	0.9000	1	0.0	1	0.00	0.00
	5	0.300	100.00	31.00	0.0100	0.3800	1	0.0	1	0.00	0.00
	Σ							**38.6**	**228,372**	**130.16**	**5.83**
#3	Σ							**110.4**	**249,944**	**142.46**	**10.35**
#2	1	0.300	400.00	45.00	0.0310	0.9000	1	0.0	1	0.00	0.00
	2	0.300	400.00	40.00	0.0310	0.9000	1	0.0	1	0.00	0.00
	Σ							**110.4**	**249,944**	**142.46**	**10.35**
#1	Σ							**24.5**	**5,370**	**0.14**	**0.11**

Subwatershed Time of Concentration Details:

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#2	1	3. Short grass pasture	45.00	443.25	985.00	5.360	0.051
#2	**1**	**Time of Concentration:**					**0.051**
#2	2	3. Short grass pasture	40.00	425.60	1,064.00	5.050	0.058
#2	**2**	**Time of Concentration:**					**0.058**
#4	1	5. Nearly bare and untilled, and alluvial valley fans	16.00	100.80	630.00	4.000	0.043
#4	**1**	**Time of Concentration:**					**0.007**
#4	2	5. Nearly bare and untilled, and alluvial valley fans	33.00	50.16	152.00	5.740	0.007
#4	**2**	**Time of Concentration:**					**0.019**

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#4	3	3. Short grass pasture	20.00	50.00	250.00	3.570	0.019
#4	**3**	**Time of Concentration:**					**0.010**
#4	4	3. Short grass pasture	19.00	24.70	130.00	3.480	0.010
#4	**4**	**Time of Concentration:**					**0.094**
#4	5	3. Short grass pasture	31.00	101.37	327.00	4.450	0.020
#4	**5**	**Time of Concentration:**					**0.020**
#6	1	3. Short grass pasture	14.60	75.01	513.76	3.050	0.046
		8. Large gullies, diversions, and low flowing streams	1.50	5.67	378.00	3.670	0.028
#6	**1**	**Time of Concentration:**					**0.095**
#6	2	5. Nearly bare and untilled, and alluvial valley fans	8.00	131.03	1,638.00	2.820	0.161
#6	**2**	**Time of Concentration:**					**0.161**
#6	3	3. Short grass pasture	15.00	25.35	169.00	3.090	0.015
#6	**3**	**Time of Concentration:**					**0.015**
#6	4	3. Short grass pasture	12.00	24.24	202.00	2.770	0.020
#6	**4**	**Time of Concentration:**					**0.020**
#6	5	3. Short grass pasture	12.00	25.20	210.00	2.770	0.021
#6	**5**	**Time of Concentration:**					**0.021**
#8	1	5. Nearly bare and untilled, and alluvial valley fans	9.00	222.84	2,476.00	3.000	0.229
#8	**1**	**Time of Concentration:**					**0.229**
#8	2	3. Short grass pasture	18.00	269.82	1,499.00	3.390	0.122
#8	**2**	**Time of Concentration:**					**0.122**
#8	3	3. Short grass pasture	24.00	303.35	1,264.00	3.910	0.089
#8	**3**	**Time of Concentration:**					**0.089**
#8	4	3. Short grass pasture	1.00	6.30	630.00	0.800	0.218
#8	**4**	**Time of Concentration:**					**0.218**
#10	1	5. Nearly bare and untilled, and alluvial valley fans	8.00	204.96	2,562.00	2.820	0.252
#10	**1**	**Time of Concentration:**					**0.252**
#10	2	3. Short grass pasture	35.00	272.29	778.00	4.730	0.045
#10	**2**	**Time of Concentration:**					**0.045**
#14	1	3. Short grass pasture	30.00	40.80	135.99	4.380	0.008
#14	**1**	**Time of Concentration:**					**0.008**
#14	2	5. Nearly bare and untilled, and alluvial valley fans	16.00	100.80	630.00	4.000	0.043
#14	**2**	**Time of Concentration:**					**0.043**
#16	1	3. Short grass pasture	30.00	73.50	244.99	4.380	0.015
#16	**1**	**Time of Concentration:**					**0.015**
#17	1	5. Nearly bare and untilled, and alluvial valley fans	25.00	50.25	201.00	5.000	0.011
#17	**1**	**Time of Concentration:**					**0.011**
#17	2	5. Nearly bare and untilled, and alluvial valley fans	24.80	49.60	200.00	4.970	0.011
#17	**2**	**Time of Concentration:**					**0.090**

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#17	3	3. Short grass pasture	27.00	49.41	183.00	4.150	0.012
#17	**3**	**Time of Concentration:**					**0.012**
#17	4	3. Short grass pasture	30.00	50.40	168.00	4.380	0.010
#17	**4**	**Time of Concentration:**					**0.010**
#17	5	3. Short grass pasture	33.00	74.25	225.00	4.590	0.013
#17	**5**	**Time of Concentration:**					**0.013**
#19	1	3. Short grass pasture	30.00	78.00	260.00	4.380	0.016
#19	**1**	**Time of Concentration:**					**0.016**
#21	1	3. Short grass pasture	26.00	24.70	95.00	4.070	0.006
#21	**1**	**Time of Concentration:**					**0.006**
#21	2	5. Nearly bare and untilled, and alluvial valley fans	18.00	101.34	563.00	4.240	0.036
#21	**2**	**Time of Concentration:**					**0.036**
#23	1	5. Nearly bare and untilled, and alluvial valley fans	6.00	192.78	3,213.00	2.440	0.365
#23	**1**	**Time of Concentration:**					**0.365**
#23	2	3. Short grass pasture	19.00	50.35	265.00	3.480	0.021
#23	**2**	**Time of Concentration:**					**0.021**
#23	3	3. Short grass pasture	19.00	127.68	672.00	3.480	0.053
#23	**3**	**Time of Concentration:**					**0.053**
#25	1	3. Short grass pasture	4.00	148.44	3,711.00	1.600	0.644
#25	**1**	**Time of Concentration:**					**0.644**
#27	1	3. Short grass pasture	14.00	438.34	3,131.00	2.990	0.290
#27	**1**	**Time of Concentration:**					**0.290**
#27	2	5. Nearly bare and untilled, and alluvial valley fans	11.00	179.52	1,632.00	3.310	0.136
#27	**2**	**Time of Concentration:**					**0.136**
#29	1	5. Nearly bare and untilled, and alluvial valley fans	12.00	74.87	624.00	3.460	0.050
#29	**1**	**Time of Concentration:**					**0.050**
#29	2	3. Short grass pasture	11.00	98.78	898.00	2.650	0.094
#29	**2**	**Time of Concentration:**					**0.094**
#31	1	3. Short grass pasture	6.00	106.98	1,783.00	1.950	0.253
#31	**1**	**Time of Concentration:**					**0.253**
#33	1	3. Short grass pasture	15.00	98.85	659.00	3.090	0.059
#33	**1**	**Time of Concentration:**					**0.059**
#35	1	3. Short grass pasture	19.00	100.32	528.00	3.480	0.042
#35	**1**	**Time of Concentration:**					**0.042**
#37	1	3. Short grass pasture	10.00	203.40	2,034.00	2.520	0.224
#37	**1**	**Time of Concentration:**					**0.224**

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West Taylor Pond
25 Yr - 24 Hr Strom Event

Emergency Spillway Demonstration

Post Mining

Tony Tennyson

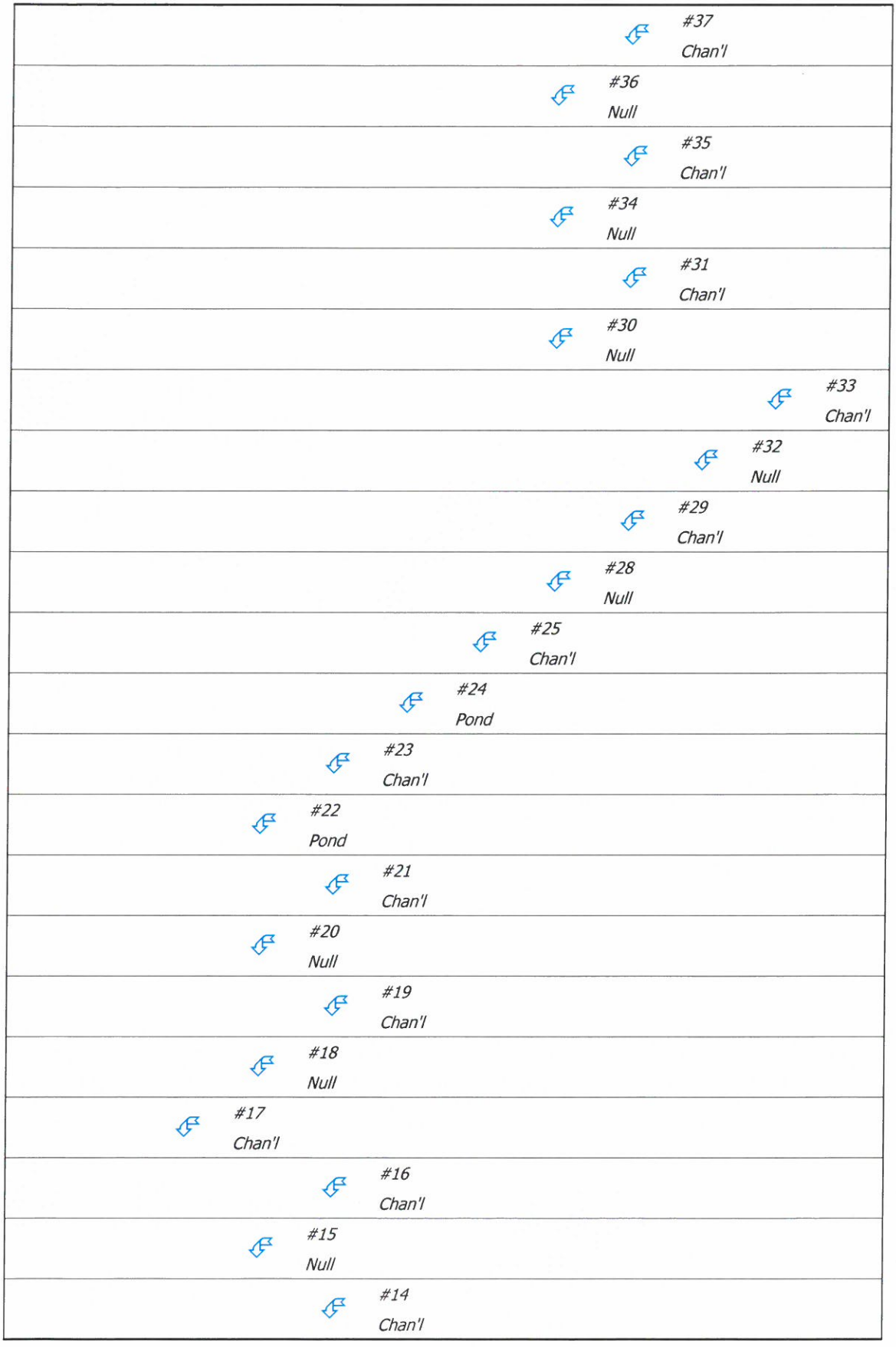
General Information

Storm Information:

Storm Type:	NRCS Type II
Design Storm:	25 yr - 24 hr
Rainfall Depth:	2.300 inches

Structure Networking:

Type	Stru #	(flows into)	Stru #	Musk. K (hrs)	Musk. X	Description
Null	#1	==>	End	0.000	0.000	Null Below West Taylor Pond
Pond	#2	==>	#1	0.000	0.000	West Taylor Pond
Null	#3	==>	#2	0.000	0.000	Null Above West Taylor Pond
Channel	#4	==>	#3	0.000	0.000	0+00 to WFSP-1 West Fork Taylor Ditch
Pond	#5	==>	#4	0.000	0.000	WFSP-1 Stock Pond
Channel	#6	==>	#5	0.000	0.000	Channel WFSP-1 to WFSP-2
Pond	#7	==>	#6	0.000	0.000	WFSP-2 Stockpond
Channel	#8	==>	#7	0.000	0.000	WFSP-2 to Station 85+00
Null	#9	==>	#6	0.000	0.000	Null Confluence Trib 1
Channel	#10	==>	#9	0.000	0.000	Trib 1
Null	#13	==>	#4	0.000	0.000	Null Confluence West 7800' Terrace Ditch
Channel	#14	==>	#13	0.000	0.000	West 7800' Terrace Ditch
Null	#15	==>	#4	0.000	0.000	Null 7700' Terrace Ditch
Channel	#16	==>	#15	0.000	0.000	7700' Terrace Ditch
Channel	#17	==>	#3	0.000	0.000	East Fork Taylor Ditch 0+00 to EFSP-1
Null	#18	==>	#17	0.000	0.000	Null 7600' Terrace Ditch
Channel	#19	==>	#18	0.000	0.000	7600' Terrace Ditch
Null	#20	==>	#17	0.000	0.000	Null 7800' Terrace Ditch
Channel	#21	==>	#20	0.000	0.000	East 7800' Terrace Ditch
Pond	#22	==>	#17	0.000	0.000	EFSP-1 Stock Pond
Channel	#23	==>	#22	0.000	0.000	EFSP-1 to EFSP-2 Veg Channel
Pond	#24	==>	#23	0.000	0.000	EFSP-2 Stockpond
Channel	#25	==>	#24	0.000	0.000	EFSP-2 to Station 116+97
Null	#26	==>	#8	0.000	0.000	Null Confluence Trib 2
Channel	#27	==>	#26	0.000	0.000	Trib 2
Null	#28	==>	#25	0.000	0.000	Null Confluence Trib 3
Channel	#29	==>	#28	0.000	0.000	Trib 3
Null	#30	==>	#25	0.000	0.000	Null Confluence Trib 5
Channel	#31	==>	#30	0.000	0.000	Trib 5
Null	#32	==>	#29	0.000	0.000	Null Confluence Trib 4
Channel	#33	==>	#32	0.000	0.000	Trib 4
Null	#34	==>	#25	0.000	0.000	Null Confluence Trib 6
Channel	#35	==>	#34	0.000	0.000	Trib 6
Null	#36	==>	#25	0.000	0.000	Null Confluence Trib 7
Channel	#37	==>	#36	0.000	0.000	Trib 7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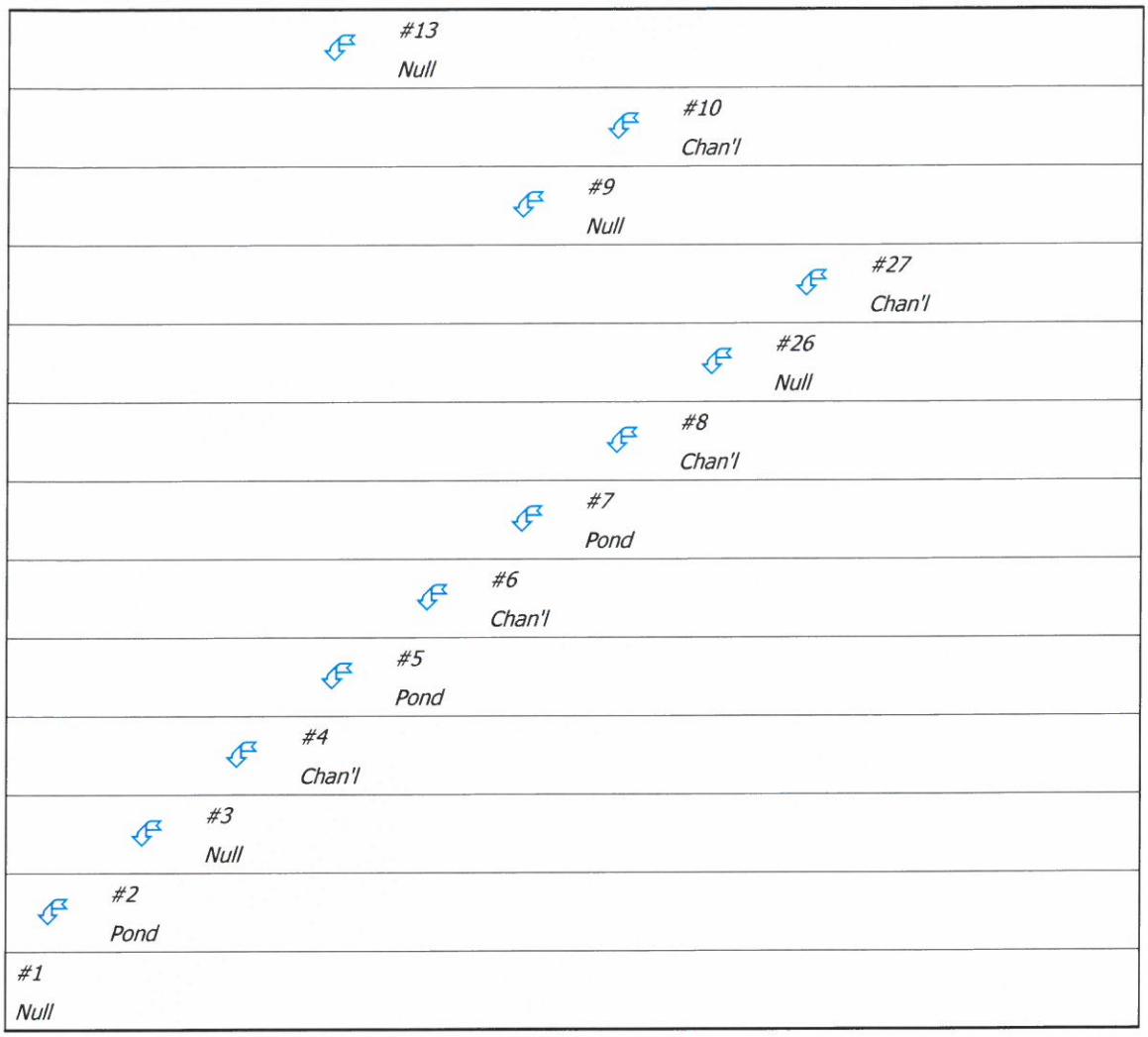
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Structure Summary:

		Immediate Contributing Area (ac)	Total Contributing Area (ac)	Peak Discharge (cfs)	Total Runoff Volume (ac-ft)
#37		25.600	25.600	1.16	0.27
#36		0.000	25.600	1.16	0.27
#35		6.600	6.600	0.91	0.09
#34		0.000	6.600	0.91	0.09
#31		23.800	23.800	1.01	0.25
#30		0.000	23.800	1.01	0.25
#33		14.000	14.000	1.93	0.19
#32		0.000	14.000	1.93	0.19
#29		25.600	25.600	11.18	0.87
#28		0.000	25.600	11.18	0.87
#25		144.700	240.300	14.36	3.21
#24	In	0.000	240.300	14.36	3.21
	Out			2.53	0.00
#23		79.900	320.200	38.90	6.29
#22	In	0.000	320.200	38.90	6.29
	Out			8.16	0.00
#21		12.400	12.400	8.43	0.63
#20		0.000	12.400	8.43	0.63
#19		4.000	4.000	0.55	0.05
#18		0.000	4.000	0.55	0.05
#17		24.700	361.300	10.21	5.87
#16		7.300	7.300	1.01	0.10
#15		0.000	7.300	1.01	0.10
#14		7.500	7.500	5.04	0.38
#13		0.000	7.500	5.04	0.38
#10		133.700	133.700	22.27	2.14
#9		0.000	133.700	22.27	2.14
#27		90.300	90.300	11.57	1.66
#26		0.000	90.300	11.57	1.66
#8		110.600	200.900	46.06	5.23
#7	In	0.000	200.900	46.06	5.23
	Out			8.50	0.00
#6		86.100	420.700	49.87	8.51
#5	In	0.000	420.700	49.87	8.51
	Out			15.43	0.00
#4		29.000	464.500	16.31	7.79
#3		0.000	825.800	25.66	13.66

		Immediate Contributing Area (ac)	Total Contributing Area (ac)	Peak Discharge (cfs)	Total Runoff Volume (ac-ft)
#2	In	27.600	853.400	25.66	13.66
	Out			14.13	0.00
#1		0.000	853.400	14.13	13.42

Structure Detail:

Structure #37 (Vegetated Channel)

Trib 7

Trapezoidal Vegetated Channel Inputs:

Material: Smooth brome

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
6.00	3.0:1	3.0:1	7.0	D, B	2.81			6.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	1.16 cfs		1.16 cfs	
Depth:	0.16 ft	2.97 ft	0.38 ft	3.19 ft
Top Width:	6.98 ft	23.84 ft	8.26 ft	25.12 ft
Velocity:	1.09 fps		0.43 fps	
X-Section Area:	1.06 sq ft		2.69 sq ft	
Hydraulic Radius:	0.150 ft		0.321 ft	
Froude Number:	0.50		0.13	
Roughness Coefficient:	0.1012		0.4285	

Structure #36 (Null)

Null Confluence Trib 7

Structure #35 (Vegetated Channel)

Trib 6

Trapezoidal Vegetated Channel Inputs:

Material: Smooth brome

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
6.00	3.0:1	3.0:1	6.0	D, B	1.84			6.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	0.91 cfs		0.91 cfs	
Depth:	0.15 ft	1.99 ft	0.37 ft	2.21 ft
Top Width:	6.92 ft	17.96 ft	8.21 ft	19.25 ft
Velocity:	0.92 fps		0.35 fps	
X-Section Area:	1.00 sq ft		2.62 sq ft	
Hydraulic Radius:	0.143 ft		0.315 ft	
Froude Number:	0.43		0.11	
Roughness Coefficient:	0.1086		0.4845	

Structure #34 (Null)

Null Confluence Trib 6

Structure #31 (Vegetated Channel)

Trib 5

Trapezoidal Vegetated Channel Inputs:

Material: Smooth brome

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
6.00	3.0:1	3.0:1	4.0	D, B	2.77			7.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	1.01 cfs		1.01 cfs	
Depth:	0.18 ft	2.95 ft	0.43 ft	3.20 ft
Top Width:	7.09 ft	23.71 ft	8.59 ft	25.21 ft
Velocity:	0.84 fps		0.32 fps	
X-Section Area:	1.19 sq ft		3.14 sq ft	
Hydraulic Radius:	0.167 ft		0.360 ft	
Froude Number:	0.36		0.09	
Roughness Coefficient:	0.1061		0.4713	

Structure #30 (Null)

Null Confluence Trib 5

Structure #33 (Vegetated Channel)

Trib 4

Trapezoidal Vegetated Channel Inputs:

Material: Smooth brome

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
6.00	3.0:1	3.0:1	16.0	D, B	2.86			5.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	1.93 cfs		1.93 cfs	
Depth:	0.16 ft	3.02 ft	0.34 ft	3.20 ft
Top Width:	6.94 ft	24.10 ft	8.03 ft	25.19 ft
Velocity:	1.90 fps		0.81 fps	
X-Section Area:	1.02 sq ft		2.38 sq ft	
Hydraulic Radius:	0.145 ft		0.292 ft	
Froude Number:	0.88		0.26	
Roughness Coefficient:	0.0863		0.3222	

Structure #32 (Null)

Null Confluence Trib 4

Structure #29 (Vegetated Channel)

Trib 3

Trapezoidal Vegetated Channel Inputs:

Material: Smooth brome

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
6.00	3.0:1	3.0:1	11.0	D, B	2.48			5.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	11.18 cfs		11.18 cfs	
Depth:	0.37 ft	2.85 ft	0.64 ft	3.12 ft
Top Width:	8.21 ft	23.09 ft	9.86 ft	24.74 ft

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Velocity:	4.28 fps		2.19 fps	
X-Section Area:	2.61 sq ft		5.10 sq ft	
Hydraulic Radius:	0.314 ft		0.506 ft	
Froude Number:	1.34		0.54	
Roughness Coefficient:	0.0533		0.1430	

Structure #28 (Null)

Null Confluence Trib 3

Structure #25 (Vegetated Channel)

EFSP-2 to Station 116+97

Trapezoidal Vegetated Channel Inputs:

Material: Bermuda grass

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
12.00	3.0:1	3.0:1	5.4	D, B	3.49			7.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	14.36 cfs		14.36 cfs	
Depth:	0.38 ft	3.87 ft	0.68 ft	4.17 ft
Top Width:	14.26 ft	35.20 ft	16.09 ft	37.03 ft
Velocity:	2.91 fps		1.50 fps	
X-Section Area:	4.94 sq ft		9.58 sq ft	
Hydraulic Radius:	0.343 ft		0.587 ft	
Froude Number:	0.87		0.34	
Roughness Coefficient:	0.0583		0.1617	

Structure #24 (Pond)

EFSP-2 Stockpond

Pond Inputs:

Initial Pool Elev:	92.00 ft
Initial Pool:	0.15 ac-ft

Straight Pipe

Barrel Diameter (in)	Barrel Length (ft)	Barrel Slope (%)	Manning's n	Spillway Elev (ft)	Entrance Loss Coefficient	Tailwater Depth (ft)
12.00	100.00	1.50	0.0150	98.00	0.50	0.00

Emergency Spillway

Spillway Elev	Crest Length (ft)	Left Sideslope	Right Sideslope	Bottom Width (ft)
100.00	20.00	2.00:1	2.00:1	10.00

Pond Results:

Peak Elevation:	99.20 ft
Dewater Time:	0.75 days

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)	
90.00	0.050	0.000	0.000		
91.00	0.072	0.061	0.000		
92.00	0.098	0.145	0.000		
93.00	0.128	0.258	0.000		
94.00	0.162	0.403	0.000		
95.00	0.200	0.583	0.000		
96.00	0.231	0.799	0.000		
97.00	0.265	1.046	0.000		
98.00	0.301	1.329	0.000		Spillway #1
99.00	0.339	1.649	2.094	15.05	
99.20	0.348	1.721	2.529	3.05	Peak Stage
100.00	0.380	2.008	4.263		Spillway #2
101.00	0.554	2.473	30.516		
102.00	0.761	3.127	98.736		
103.00	1.000	4.005	207.246		

Detailed Discharge Table

Elevation (ft)	Straight Pipe (cfs)	Emergency Spillway (cfs)	Combined Total Discharge (cfs)
90.00	0.000	0.000	0.000
91.00	0.000	0.000	0.000
92.00	0.000	0.000	0.000
93.00	0.000	0.000	0.000
94.00	0.000	0.000	0.000
95.00	0.000	0.000	0.000
96.00	0.000	0.000	0.000
97.00	0.000	0.000	0.000
98.00	0.000	0.000	0.000
99.00	(3)>2.094	0.000	2.094
100.00	(5)>4.263	0.000	4.263
101.00	(6)>5.033	25.483	30.516
102.00	(6)>5.701	93.036	98.736
103.00	(6)>6.275	200.972	207.246

Structure #23 (Vegetated Channel)

EFSP-1 to EFSP-2 Veg Channel

Trapezoidal Vegetated Channel Inputs:

Material: Smooth brome

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
12.00	3.0:1	3.0:1	2.1	D, B	2.97			7.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	38.90 cfs		38.90 cfs	
Depth:	0.76 ft	3.73 ft	1.23 ft	4.20 ft
Top Width:	16.57 ft	34.39 ft	19.40 ft	37.22 ft
Velocity:	3.57 fps		2.01 fps	
X-Section Area:	10.89 sq ft		19.38 sq ft	
Hydraulic Radius:	0.647 ft		0.978 ft	
Froude Number:	0.78		0.35	
Roughness Coefficient:	0.0451		0.1060	

Structure #22 (Pond)

EFSP-1 Stock Pond

Pond Inputs:

Initial Pool Elev:	92.00 ft
Initial Pool:	0.15 ac-ft

Straight Pipe

Barrel Diameter (in)	Barrel Length (ft)	Barrel Slope (%)	Manning's n	Spillway Elev (ft)	Entrance Loss Coefficient	Tailwater Depth (ft)
12.00	100.00	1.50	0.0150	98.00	0.50	0.00

Emergency Spillway

Spillway Elev	Crest Length (ft)	Left Sideslope	Right Sideslope	Bottom Width (ft)
100.00	20.00	2.00:1	2.00:1	10.00

Pond Results:

Peak Elevation:	100.15 ft
Dewater Time:	1.11 days

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)	
90.00	0.050	0.000	0.000		
91.00	0.072	0.061	0.000		
92.00	0.098	0.145	0.000		
93.00	0.128	0.258	0.000		
94.00	0.162	0.403	0.000		
95.00	0.200	0.583	0.000		
96.00	0.231	0.799	0.000		
97.00	0.265	1.046	0.000		
98.00	0.301	1.329	0.000		Spillway #1
99.00	0.339	1.649	2.094	13.70	
100.00	0.380	2.008	4.263	7.50	Spillway #2
100.15	0.462	2.077	8.165	5.35	Peak Stage
101.00	0.554	2.473	30.516		
102.00	0.761	3.127	98.736		
103.00	1.000	4.005	207.246		

Detailed Discharge Table

Elevation (ft)	Straight Pipe (cfs)	Emergency Spillway (cfs)	Combined Total Discharge (cfs)
90.00	0.000	0.000	0.000
91.00	0.000	0.000	0.000
92.00	0.000	0.000	0.000
93.00	0.000	0.000	0.000
94.00	0.000	0.000	0.000
95.00	0.000	0.000	0.000
96.00	0.000	0.000	0.000
97.00	0.000	0.000	0.000
98.00	0.000	0.000	0.000
99.00	(3)>2.094	0.000	2.094
100.00	(5)>4.263	0.000	4.263
101.00	(6)>5.033	25.483	30.516
102.00	(6)>5.701	93.036	98.736
103.00	(6)>6.275	200.972	207.246

Structure #21 (Vegetated Channel)

East 7800' Terrace Ditch

Triangular Vegetated Channel Inputs:

Material: Smooth brome

Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
1.5:1	3.0:1	1.5	D, B				7.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	8.43 cfs		8.43 cfs	
Depth:	1.26 ft		1.90 ft	
Top Width:	5.65 ft		8.55 ft	
Velocity:	2.38 fps		1.04 fps	
X-Section Area:	3.55 sq ft		8.11 sq ft	
Hydraulic Radius:	0.574 ft		0.868 ft	
Froude Number:	0.53		0.19	
Roughness Coefficient:	0.0530		0.1596	

Structure #20 (Null)

Null 7800' Terrace Ditch

Structure #19 (Vegetated Channel)

7600' Terrace Ditch

Triangular Vegetated Channel Inputs:

Material: Smooth brome

Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
1.5:1	3.0:1	1.5	D, B	2.45			7.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	0.55 cfs		0.55 cfs	
Depth:	0.56 ft	3.01 ft	1.04 ft	3.49 ft
Top Width:	2.54 ft	13.56 ft	4.68 ft	15.70 ft
Velocity:	0.77 fps		0.23 fps	
X-Section Area:	0.72 sq ft		2.43 sq ft	
Hydraulic Radius:	0.258 ft		0.475 ft	
Froude Number:	0.26		0.06	
Roughness Coefficient:	0.0955		0.4878	

Structure #18 (Null)

Null 7600' Terrace Ditch

Structure #17 (Riprap Channel)

East Fork Taylor Ditch 0+00 to EFSP-1

Trapezoidal Riprap Channel Inputs:

Material: Riprap

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)
12.00	3.0:1	3.0:1	25.0	3.97		

Riprap Channel Results:

Simons/OSM Method - Steep Slope Design

	w/o Freeboard	w/ Freeboard
Design Discharge:	10.21 cfs	
Depth:	0.06 ft	4.03 ft
Top Width:	12.35 ft	36.17 ft
Velocity*:		
X-Section Area:	0.70 sq ft	
Hydraulic Radius:	0.057 ft	
Froude Number*:		
Manning's n*:		
Dmin:	3.00 in	
D50:	9.00 in	
Dmax:	11.25 in	

Velocity and Manning's n calculations may not apply for this method.

Structure #16 (Vegetated Channel)

7700' Terrace Ditch

Triangular Vegetated Channel Inputs:

Material: Smooth brome

Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
1.5:1	3.0:1	1.5	D, B	2.38			7.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	1.01 cfs		1.01 cfs	
Depth:	0.67 ft	3.05 ft	1.19 ft	3.57 ft
Top Width:	3.03 ft	13.74 ft	5.34 ft	16.05 ft
Velocity:	0.99 fps		0.32 fps	
X-Section Area:	1.02 sq ft		3.17 sq ft	
Hydraulic Radius:	0.307 ft		0.542 ft	
Froude Number:	0.30		0.07	
Roughness Coefficient:	0.0839		0.3812	

Structure #15 (Null)

Null 7700' Terrace Ditch

Structure #14 (Vegetated Channel)

West 7800' Terrace Ditch

Triangular Vegetated Channel Inputs:

Material: Smooth brome

Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
1.5:1	3.0:1	1.5	D, B	2.54			7.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	5.04 cfs		5.04 cfs	
Depth:	1.08 ft	3.62 ft	1.69 ft	4.23 ft
Top Width:	4.86 ft	16.29 ft	7.62 ft	19.05 ft
Velocity:	1.92 fps		0.78 fps	
X-Section Area:	2.62 sq ft		6.46 sq ft	
Hydraulic Radius:	0.493 ft		0.774 ft	
Froude Number:	0.46		0.15	
Roughness Coefficient:	0.0593		0.1971	

Structure #13 (Null)

Null Confluence West 7800' Terrace Ditch

Structure #10 (Vegetated Channel)

Trib 1

Trapezoidal Vegetated Channel Inputs:

Material: Smooth brome

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
6.00	3.0:1	3.0:1	5.0	D, B	2.15			7.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	22.27 cfs		22.27 cfs	
Depth:	0.62 ft	2.77 ft	1.01 ft	3.16 ft
Top Width:	9.73 ft	22.63 ft	12.05 ft	24.95 ft
Velocity:	4.55 fps		2.44 fps	
X-Section Area:	4.89 sq ft		9.11 sq ft	
Hydraulic Radius:	0.493 ft		0.736 ft	
Froude Number:	1.13		0.50	
Roughness Coefficient:	0.0456		0.1110	

Structure #9 (Null)

Null Confluence Trib 1

Structure #27 (Vegetated Channel)

Trib 2

Trapezoidal Vegetated Channel Inputs:

Material: Smooth brome

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
6.00	3.0:1	3.0:1	11.0	D, B	2.48			5.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	11.57 cfs		11.57 cfs	
Depth:	0.37 ft	2.85 ft	0.65 ft	3.13 ft
Top Width:	8.24 ft	23.12 ft	9.90 ft	24.78 ft
Velocity:	4.36 fps		2.24 fps	
X-Section Area:	2.66 sq ft		5.17 sq ft	
Hydraulic Radius:	0.318 ft		0.511 ft	
Froude Number:	1.35		0.55	
Roughness Coefficient:	0.0528		0.1408	

Structure #26 (Null)

Null Confluence Trib 2

Structure #8 (Vegetated Channel)

WFSP-2 to Station 85+00

Trapezoidal Vegetated Channel Inputs:

Material: Bermuda grass

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
12.00	3.0:1	3.0:1	10.2	D, B	3.35			6.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	46.06 cfs		46.06 cfs	
Depth:	0.51 ft	3.86 ft	0.79 ft	4.14 ft
Top Width:	15.04 ft	35.14 ft	16.74 ft	36.84 ft
Velocity:	6.72 fps		4.06 fps	
X-Section Area:	6.86 sq ft		11.35 sq ft	
Hydraulic Radius:	0.451 ft		0.668 ft	
Froude Number:	1.75		0.87	
Roughness Coefficient:	0.0416		0.0895	

Structure #7 (Pond)

WFSP-2 Stockpond

Pond Inputs:

Initial Pool Elev:	91.00 ft
Initial Pool:	0.06 ac-ft

Emergency Spillway

Spillway Elev	Crest Length (ft)	Left Sideslope	Right Sideslope	Bottom Width (ft)
100.00	20.00	2.00:1	2.00:1	5.00

Straight Pipe

Barrel Diameter (in)	Barrel Length (ft)	Barrel Slope (%)	Manning's n	Spillway Elev (ft)	Entrance Loss Coefficient	Tailwater Depth (ft)
12.00	100.00	1.00	0.0150	98.00	0.90	0.00

Pond Results:

Peak Elevation:	100.32 ft
Dewater Time:	0.92 days

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)	
90.00	0.050	0.000	0.000		
91.00	0.072	0.061	0.000		
92.00	0.098	0.145	0.000		
93.00	0.128	0.258	0.000		
94.00	0.162	0.403	0.000		
95.00	0.200	0.583	0.000		
96.00	0.231	0.799	0.000		
97.00	0.265	1.046	0.000		
98.00	0.301	1.329	0.000		Spillway #2
99.00	0.339	1.649	2.094	11.85	
100.00	0.380	2.008	3.745	7.60	Spillway #1
100.32	0.481	2.157	8.502	2.75	Peak Stage
101.00	0.554	2.473	18.584		
102.00	0.761	3.127	61.251		
103.00	1.000	4.005	135.506		

Detailed Discharge Table

Elevation (ft)	Emergency Spillway (cfs)	Straight Pipe (cfs)	Combined Total Discharge (cfs)
90.00	0.000	0.000	0.000
91.00	0.000	0.000	0.000
92.00	0.000	0.000	0.000
93.00	0.000	0.000	0.000
94.00	0.000	0.000	0.000
95.00	0.000	0.000	0.000
96.00	0.000	0.000	0.000
97.00	0.000	0.000	0.000
98.00	0.000	0.000	0.000
99.00	0.000	(3)>2.094	2.094
100.00	0.000	(6)>3.745	3.745
101.00	14.046	(6)>4.538	18.584
102.00	56.062	(6)>5.189	61.251

Elevation (ft)	Emergency Spillway (cfs)	Straight Pipe (cfs)	Combined Total Discharge (cfs)
103.00	129.713	(6)>5.793	135.506

Structure #6 (Vegetated Channel)

Channel WFSP-1 to WFSP-2

Trapezoidal Vegetated Channel Inputs:

Material: Smooth brome

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
12.00	3.0:1	3.0:1	1.3	D, B	2.69			7.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	49.87 cfs		49.87 cfs	
Depth:	0.98 ft	3.67 ft	1.55 ft	4.24 ft
Top Width:	17.86 ft	34.00 ft	21.27 ft	37.41 ft
Velocity:	3.42 fps		1.94 fps	
X-Section Area:	14.59 sq ft		25.70 sq ft	
Hydraulic Radius:	0.802 ft		1.181 ft	
Froude Number:	0.67		0.31	
Roughness Coefficient:	0.0428		0.0977	

Structure #5 (Pond)

WFSP-1 Stock Pond

Pond Inputs:

Initial Pool Elev:	91.00 ft
Initial Pool:	0.06 ac-ft

Straight Pipe

Barrel Diameter (in)	Barrel Length (ft)	Barrel Slope (%)	Manning's n	Spillway Elev (ft)	Entrance Loss Coefficient	Tailwater Depth (ft)
12.00	100.00	1.50	0.0150	98.00	0.90	0.00

Emergency Spillway

Spillway Elev	Crest Length (ft)	Left Sideslope	Right Sideslope	Bottom Width (ft)
100.00	20.00	2.00:1	2.00:1	10.00

Pond Results:

Peak Elevation:	100.43 ft
Dewater Time:	1.11 days

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)	
90.00	0.050	0.000	0.000		
91.00	0.072	0.061	0.000		
92.00	0.098	0.145	0.000		
93.00	0.128	0.258	0.000		
94.00	0.162	0.403	0.000		
95.00	0.200	0.583	0.000		
96.00	0.231	0.799	0.000		
97.00	0.265	1.046	0.000		
98.00	0.301	1.329	0.000		Spillway #1
99.00	0.339	1.649	2.094	13.45	
100.00	0.380	2.008	4.162	5.90	Spillway #2
100.43	0.493	2.208	15.430	7.20	Peak Stage
101.00	0.554	2.473	30.351		
102.00	0.761	3.127	98.545		
103.00	1.000	4.005	207.032		

Detailed Discharge Table

Elevation (ft)	Straight Pipe (cfs)	Emergency Spillway (cfs)	Combined Total Discharge (cfs)
90.00	0.000	0.000	0.000
91.00	0.000	0.000	0.000
92.00	0.000	0.000	0.000
93.00	0.000	0.000	0.000
94.00	0.000	0.000	0.000

Elevation (ft)	Straight Pipe (cfs)	Emergency Spillway (cfs)	Combined Total Discharge (cfs)
95.00	0.000	0.000	0.000
96.00	0.000	0.000	0.000
97.00	0.000	0.000	0.000
98.00	0.000	0.000	0.000
99.00	(3)>2.094	0.000	2.094
100.00	(6)>4.162	0.000	4.162
101.00	(6)>4.868	25.483	30.351
102.00	(6)>5.509	93.036	98.545
103.00	(6)>6.061	200.972	207.032

Structure #4 (Riprap Channel)

0+00 to WFSP-1 West Fork Taylor Ditch

Trapezoidal Riprap Channel Inputs:

Material: Riprap

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)
12.00	3.0:1	3.0:1	26.0	3.98		

Riprap Channel Results:

Simons/OSM Method - Steep Slope Design

	w/o Freeboard	w/ Freeboard
Design Discharge:	16.31 cfs	
Depth:	0.08 ft	4.06 ft
Top Width:	12.48 ft	36.36 ft
Velocity*:		
X-Section Area:	0.99 sq ft	
Hydraulic Radius:	0.079 ft	
Froude Number*:		
Manning's n*:		
Dmin:	3.00 in	
D50:	9.00 in	
Dmax:	11.25 in	

Velocity and Manning's n calculations may not apply for this method.

Structure #3 (Null)

Null Above West Taylor Pond

Structure #2 (Pond)

West Taylor Pond

Pond Inputs:

Initial Pool Elev:	7,468.00 ft
Initial Pool:	1.77 ac-ft

Perforated Riser

Riser Diameter (in)	Riser Height (ft)	Barrel Diameter (in)	Barrel Length (ft)	Barrel Slope (%)	Manning's n	Spillway Elev (ft)	Number of Holes per Elev
18.00	10.50	18.00	150.00	2.00	0.0150	7,471.00	2

Emergency Spillway

Spillway Elev	Crest Length (ft)	Left Sideslope	Right Sideslope	Bottom Width (ft)
7,475.00	30.00	2.00:1	2.00:1	30.00

Pond Results:

Peak Elevation:	7,473.78 ft
Dewater Time:	1.70 days

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)	
7,455.00	0.022	0.000	0.000		
7,456.00	0.032	0.027	0.000		
7,457.00	0.043	0.064	0.000		
7,458.00	0.054	0.113	0.000		
7,459.00	0.066	0.173	0.000		
7,460.00	0.079	0.245	0.000		
7,461.00	0.103	0.336	0.000		
7,462.00	0.139	0.456	0.000		
7,463.00	0.162	0.607	0.000		
7,464.00	0.188	0.781	0.000		
7,465.00	0.213	0.981	0.000		
7,466.00	0.244	1.209	0.000		
7,467.00	0.279	1.470	0.000		
7,468.00	0.312	1.766	0.000		Low hole SPW #1

Elevation	Area (ac)	Capacity (ac-ft)	Discharge (cfs)	Dewater Time (hrs)	
7,469.00	0.360	2.102	0.473	8.60*	
7,470.00	0.389	2.476	0.669	8.10	
7,471.00	0.430	2.886	0.819	8.20	Spillway #1
7,472.00	0.463	3.332	8.509	8.45	
7,473.00	0.503	3.814	12.033	4.15	
7,473.78	0.532	4.220	14.133	3.30	Peak Stage
7,474.00	0.541	4.336	14.738		
7,475.00	0.580	4.897	17.018		Spillway #2
7,476.00	0.581	5.477	83.791		
7,477.00	0.582	6.058	246.034		
7,478.00	0.583	6.641	483.806		
7,479.00	0.584	7.224	794.453		
7,480.00	0.585	7.809	1,172.300		

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

Detailed Discharge Table

Elevation (ft)	Perf. Riser (cfs)	Emergency Spillway (cfs)	Combined Total Discharge (cfs)
7,455.00	0.000	0.000	0.000
7,456.00	0.000	0.000	0.000
7,457.00	0.000	0.000	0.000
7,458.00	0.000	0.000	0.000
7,459.00	0.000	0.000	0.000
7,460.00	0.000	0.000	0.000
7,461.00	0.000	0.000	0.000
7,462.00	0.000	0.000	0.000
7,463.00	0.000	0.000	0.000
7,464.00	0.000	0.000	0.000
7,465.00	0.000	0.000	0.000
7,466.00	0.000	0.000	0.000
7,467.00	0.000	0.000	0.000
7,468.00	3.00>0.000	0.000	0.000
7,469.00	0.473	0.000	0.473
7,470.00	0.669	0.000	0.669
7,471.00	0.819	0.000	0.819
7,472.00	8.509	0.000	8.509
7,473.00	12.033	0.000	12.033
7,474.00	14.738	0.000	14.738

Elevation (ft)	Perf. Riser (cfs)	Emergency Spillway (cfs)	Combined Total Discharge (cfs)
7,475.00	17.018	0.000	17.018
7,476.00	19.026	64.765	83.791
7,477.00	20.842	225.191	246.034
7,478.00	22.512	461.294	483.806
7,479.00	24.066	770.387	794.453
7,480.00	25.526	1,146.774	1,172.300

Structure #1 (Null)

Null Below West Taylor Pond

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)
#37	1	25.600	0.224	0.000	0.000	62.000	M	1.16	0.275
	Σ	**25.600**						**1.16**	**0.275**
#36	Σ	**25.600**						**1.16**	**0.275**
#35	1	6.600	0.042	0.000	0.000	62.000	M	0.91	0.088
	Σ	**6.600**						**0.91**	**0.088**
#34	Σ	**6.600**						**0.91**	**0.088**
#31	1	23.800	0.253	0.000	0.000	62.000	M	1.01	0.255
	Σ	**23.800**						**1.01**	**0.255**
#30	Σ	**23.800**						**1.01**	**0.255**
#33	1	14.000	0.059	0.000	0.000	62.000	M	1.93	0.186
	Σ	**14.000**						**1.93**	**0.186**
#32	Σ	**14.000**						**1.93**	**0.186**
#29	1	10.700	0.050	0.000	0.000	80.000	F	9.13	0.671
	2	14.900	0.094	0.000	0.000	62.000	M	2.06	0.198
	Σ	**25.600**						**11.18**	**0.869**
#28	Σ	**25.600**						**11.18**	**0.869**
#25	1	144.700	0.644	0.000	0.000	62.000	M	4.06	1.539
	Σ	**240.300**						**14.36**	**3.213**
#24	Σ	**240.300**						**14.36**	**3.213**
#23	1	70.600	0.365	0.000	0.000	80.000	F	38.67	4.174
	2	2.500	0.021	0.000	0.000	47.000	S	0.00	0.000
	3	6.800	0.053	0.000	0.000	62.000	M	0.94	0.091
	Σ	**320.200**						**38.90**	**6.293**
#22	Σ	**320.200**						**38.90**	**6.293**
#21	1	3.000	0.006	0.000	0.000	62.000	M	0.41	0.040
	2	9.400	0.036	0.000	0.000	80.000	F	8.02	0.589
	Σ	**12.400**						**8.43**	**0.629**
#20	Σ	**12.400**						**8.43**	**0.629**
#19	1	4.000	0.016	0.000	0.000	62.000	M	0.55	0.053

Stru #	SWS #	SWS Area (ac)	Time of Conc (hrs)	Musk K (hrs)	Musk X	Curve Number	UHS	Peak Discharge (cfs)	Runoff Volume (ac-ft)
	Σ	**4.000**						**0.55**	**0.053**
#18	Σ	**4.000**						**0.55**	**0.053**
#17	1	1.100	0.011	0.000	0.000	80.000	M	0.94	0.069
	2	21.500	0.090	0.000	0.000	47.000	S	0.00	0.000
	3	0.600	0.012	0.000	0.000	62.000	M	0.08	0.003
	4	0.600	0.010	0.000	0.000	62.000	M	0.08	0.003
	5	0.900	0.013	0.000	0.000	62.000	M	0.12	0.008
	Σ	**361.300**						**10.21**	**5.874**
#16	1	7.300	0.015	0.000	0.000	62.000	M	1.01	0.097
	Σ	**7.300**						**1.01**	**0.097**
#15	Σ	**7.300**						**1.01**	**0.097**
#14	1	1.900	0.008	0.000	0.000	62.000	M	0.26	0.025
	2	5.600	0.043	0.000	0.000	80.000	F	4.78	0.351
	Σ	**7.500**						**5.04**	**0.376**
#13	Σ	**7.500**						**5.04**	**0.376**
#10	1	35.700	0.252	0.000	0.000	80.000	F	22.27	2.135
	2	98.000	0.045	0.000	0.000	47.000	S	0.02	0.001
	Σ	**133.700**						**22.27**	**2.136**
#9	Σ	**133.700**						**22.27**	**2.136**
#27	1	76.400	0.290	0.000	0.000	62.000	M	2.97	0.815
	2	13.900	0.136	0.000	0.000	80.000	F	9.62	0.841
	Σ	**90.300**						**11.57**	**1.655**
#26	Σ	**90.300**						**11.57**	**1.655**
#8	1	52.200	0.229	0.000	0.000	80.000	F	33.37	3.116
	2	30.900	0.122	0.000	0.000	62.000	M	4.27	0.412
	3	23.500	0.089	0.000	0.000	47.000	S	0.00	0.000
	4	4.000	0.218	0.000	0.000	62.000	M	0.18	0.043
	Σ	**200.900**						**46.06**	**5.225**
#7	Σ	**200.900**						**46.06**	**5.225**
#6	1	43.000	0.095	0.000	0.000	47.000	S	0.00	0.000
	2	39.900	0.161	0.000	0.000	80.000	F	27.61	2.414
	3	0.400	0.015	0.000	0.000	47.000	S	0.00	0.000
	4	1.600	0.020	0.000	0.000	47.000	S	0.00	0.000
	5	1.200	0.021	0.000	0.000	47.000	S	0.00	0.000

Stru #	SWS #	SWS Area (ac)	Time of Conc (hrs)	Musk K (hrs)	Musk X	Curve Number	UHS	Peak Discharge (cfs)	Runoff Volume (ac-ft)
	Σ	**420.700**						**49.87**	**8.506**
#5	Σ	**420.700**						**49.87**	**8.506**
#4	1	1.000	0.007	0.000	0.000	80.000	M	0.85	0.063
	2	2.800	0.019	0.000	0.000	47.000	S	0.00	0.000
	3	0.900	0.010	0.000	0.000	62.000	M	0.12	0.008
	4	23.300	0.094	0.000	0.000	47.000	S	0.00	0.000
	5	1.000	0.020	0.000	0.000	62.000	M	0.14	0.009
	Σ	**464.500**						**16.31**	**7.789**
#3	Σ	**825.800**						**25.66**	**13.663**
#2	1	10.500	0.051	0.000	0.000	47.000	S	0.00	0.000
	2	17.100	0.058	0.000	0.000	47.000	S	0.00	0.000
	Σ	**853.400**						**25.66**	**13.663**
#1	Σ	**853.400**						**14.13**	**13.417**

Subwatershed Time of Concentration Details:

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#2	1	3. Short grass pasture	45.00	443.25	985.00	5.360	0.051
#2	**1**	**Time of Concentration:**					**0.051**
#2	2	3. Short grass pasture	40.00	425.60	1,064.00	5.050	0.058
#2	**2**	**Time of Concentration:**					**0.058**
#4	1	5. Nearly bare and untilled, and alluvial valley fans	16.00	100.80	630.00	4.000	0.043
#4	**1**	**Time of Concentration:**					**0.007**
#4	2	5. Nearly bare and untilled, and alluvial valley fans	33.00	50.16	152.00	5.740	0.007
#4	**2**	**Time of Concentration:**					**0.019**
#4	3	3. Short grass pasture	20.00	50.00	250.00	3.570	0.019
#4	**3**	**Time of Concentration:**					**0.010**
#4	4	3. Short grass pasture	19.00	24.70	130.00	3.480	0.010
#4	**4**	**Time of Concentration:**					**0.094**
#4	5	3. Short grass pasture	31.00	101.37	327.00	4.450	0.020
#4	**5**	**Time of Concentration:**					**0.020**
#6	1	3. Short grass pasture	14.60	75.01	513.76	3.050	0.046
		8. Large gullies, diversions, and low flowing streams	1.50	5.67	378.00	3.670	0.028
#6	**1**	**Time of Concentration:**					**0.095**

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#6	2	5. Nearly bare and untilled, and alluvial valley fans	8.00	131.03	1,638.00	2.820	0.161
#6	**2**	**Time of Concentration:**					**0.161**
#6	3	3. Short grass pasture	15.00	25.35	169.00	3.090	0.015
#6	**3**	**Time of Concentration:**					**0.015**
#6	4	3. Short grass pasture	12.00	24.24	202.00	2.770	0.020
#6	**4**	**Time of Concentration:**					**0.020**
#6	5	3. Short grass pasture	12.00	25.20	210.00	2.770	0.021
#6	**5**	**Time of Concentration:**					**0.021**
#8	1	5. Nearly bare and untilled, and alluvial valley fans	9.00	222.84	2,476.00	3.000	0.229
#8	**1**	**Time of Concentration:**					**0.229**
#8	2	3. Short grass pasture	18.00	269.82	1,499.00	3.390	0.122
#8	**2**	**Time of Concentration:**					**0.122**
#8	3	3. Short grass pasture	24.00	303.35	1,264.00	3.910	0.089
#8	**3**	**Time of Concentration:**					**0.089**
#8	4	3. Short grass pasture	1.00	6.30	630.00	0.800	0.218
#8	**4**	**Time of Concentration:**					**0.218**
#10	1	5. Nearly bare and untilled, and alluvial valley fans	8.00	204.96	2,562.00	2.820	0.252
#10	**1**	**Time of Concentration:**					**0.252**
#10	2	3. Short grass pasture	35.00	272.29	778.00	4.730	0.045
#10	**2**	**Time of Concentration:**					**0.045**
#14	1	3. Short grass pasture	30.00	40.80	135.99	4.380	0.008
#14	**1**	**Time of Concentration:**					**0.008**
#14	2	5. Nearly bare and untilled, and alluvial valley fans	16.00	100.80	630.00	4.000	0.043
#14	**2**	**Time of Concentration:**					**0.043**
#16	1	3. Short grass pasture	30.00	73.50	244.99	4.380	0.015
#16	**1**	**Time of Concentration:**					**0.015**
#17	1	5. Nearly bare and untilled, and alluvial valley fans	25.00	50.25	201.00	5.000	0.011
#17	**1**	**Time of Concentration:**					**0.011**
#17	2	5. Nearly bare and untilled, and alluvial valley fans	24.80	49.60	200.00	4.970	0.011
#17	**2**	**Time of Concentration:**					**0.090**
#17	3	3. Short grass pasture	27.00	49.41	183.00	4.150	0.012
#17	**3**	**Time of Concentration:**					**0.012**
#17	4	3. Short grass pasture	30.00	50.40	168.00	4.380	0.010
#17	**4**	**Time of Concentration:**					**0.010**
#17	5	3. Short grass pasture	33.00	74.25	225.00	4.590	0.013
#17	**5**	**Time of Concentration:**					**0.013**
#19	1	3. Short grass pasture	30.00	78.00	260.00	4.380	0.016
#19	**1**	**Time of Concentration:**					**0.016**

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#21	1	3. Short grass pasture	26.00	24.70	95.00	4.070	0.006
#21	**1**	**Time of Concentration:**					**0.006**
#21	2	5. Nearly bare and untilled, and alluvial valley fans	18.00	101.34	563.00	4.240	0.036
#21	**2**	**Time of Concentration:**					**0.036**
#23	1	5. Nearly bare and untilled, and alluvial valley fans	6.00	192.78	3,213.00	2.440	0.365
#23	**1**	**Time of Concentration:**					**0.365**
#23	2	3. Short grass pasture	19.00	50.35	265.00	3.480	0.021
#23	**2**	**Time of Concentration:**					**0.021**
#23	3	3. Short grass pasture	19.00	127.68	672.00	3.480	0.053
#23	**3**	**Time of Concentration:**					**0.053**
#25	1	3. Short grass pasture	4.00	148.44	3,711.00	1.600	0.644
#25	**1**	**Time of Concentration:**					**0.644**
#27	1	3. Short grass pasture	14.00	438.34	3,131.00	2.990	0.290
#27	**1**	**Time of Concentration:**					**0.290**
#27	2	5. Nearly bare and untilled, and alluvial valley fans	11.00	179.52	1,632.00	3.310	0.136
#27	**2**	**Time of Concentration:**					**0.136**
#29	1	5. Nearly bare and untilled, and alluvial valley fans	12.00	74.87	624.00	3.460	0.050
#29	**1**	**Time of Concentration:**					**0.050**
#29	2	3. Short grass pasture	11.00	98.78	898.00	2.650	0.094
#29	**2**	**Time of Concentration:**					**0.094**
#31	1	3. Short grass pasture	6.00	106.98	1,783.00	1.950	0.253
#31	**1**	**Time of Concentration:**					**0.253**
#33	1	3. Short grass pasture	15.00	98.85	659.00	3.090	0.059
#33	**1**	**Time of Concentration:**					**0.059**
#35	1	3. Short grass pasture	19.00	100.32	528.00	3.480	0.042
#35	**1**	**Time of Concentration:**					**0.042**
#37	1	3. Short grass pasture	10.00	203.40	2,034.00	2.520	0.224
#37	**1**	**Time of Concentration:**					**0.224**

West Taylor Pond
100 Yr - 24 Hr Strom Event

Post Mine Channel Demonstration

Post Mining

Tony Tennyson

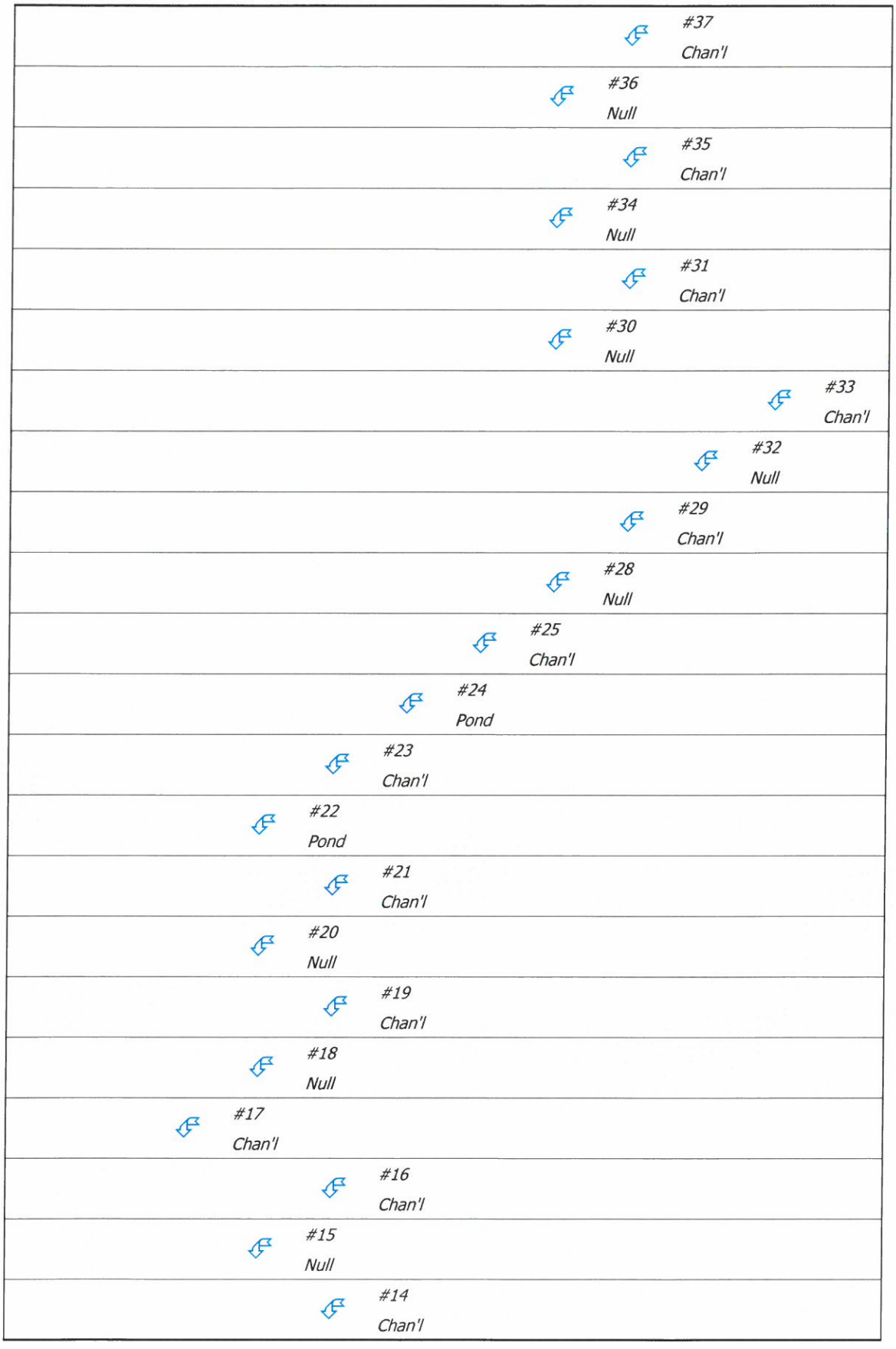
General Information

Storm Information:

Storm Type:	NRCS Type II
Design Storm:	100 yr - 24 hr
Rainfall Depth:	2.700 inches

Structure Networking:

Type	Stru #	(flows into)	Stru #	Musk. K (hrs)	Musk. X	Description
Null	#1	==>	End	0.000	0.000	Null Below West Taylor Pond
Pond	#2	==>	#1	0.000	0.000	West Taylor Pond
Null	#3	==>	#2	0.000	0.000	Null Above West Taylor Pond
Channel	#4	==>	#3	0.000	0.000	0+00 to WFSP-1 West Fork Taylor Ditch
Pond	#5	==>	#4	0.000	0.000	WFSP-1 Stock Pond
Channel	#6	==>	#5	0.000	0.000	Channel WFSP-1 to WFSP-2
Pond	#7	==>	#6	0.000	0.000	WFSP-2 Stockpond
Channel	#8	==>	#7	0.000	0.000	WFSP-2 to Station 85+00
Null	#9	==>	#6	0.000	0.000	Null Confluence Trib 1
Channel	#10	==>	#9	0.000	0.000	Trib 1
Null	#13	==>	#4	0.000	0.000	Null Confluence West 7800' Terrace Ditch
Channel	#14	==>	#13	0.000	0.000	West 7800' Terrace Ditch
Null	#15	==>	#4	0.000	0.000	Null 7700' Terrace Ditch
Channel	#16	==>	#15	0.000	0.000	7700' Terrace Ditch
Channel	#17	==>	#3	0.000	0.000	East Fork Taylor Ditch 0+00 to EFSP-1
Null	#18	==>	#17	0.000	0.000	Null 7600' Terrace Ditch
Channel	#19	==>	#18	0.000	0.000	7600' Terrace Ditch
Null	#20	==>	#17	0.000	0.000	Null 7800' Terrace Ditch
Channel	#21	==>	#20	0.000	0.000	East 7800' Terrace Ditch
Pond	#22	==>	#17	0.000	0.000	EFSP-1 Stock Pond
Channel	#23	==>	#22	0.000	0.000	EFSP-1 to EFSP-2 Veg Channel
Pond	#24	==>	#23	0.000	0.000	EFSP-2 Stockpond
Channel	#25	==>	#24	0.000	0.000	EFSP-2 to Station 116+97
Null	#26	==>	#8	0.000	0.000	Null Confluence Trib 2
Channel	#27	==>	#26	0.000	0.000	Trib 2
Null	#28	==>	#25	0.000	0.000	Null Confluence Trib 3
Channel	#29	==>	#28	0.000	0.000	Trib 3
Null	#30	==>	#25	0.000	0.000	Null Confluence Trib 5
Channel	#31	==>	#30	0.000	0.000	Trib 5
Null	#32	==>	#29	0.000	0.000	Null Confluence Trib 4
Channel	#33	==>	#32	0.000	0.000	Trib 4
Null	#34	==>	#25	0.000	0.000	Null Confluence Trib 6
Channel	#35	==>	#34	0.000	0.000	Trib 6
Null	#36	==>	#25	0.000	0.000	Null Confluence Trib 7
Channel	#37	==>	#36	0.000	0.000	Trib 7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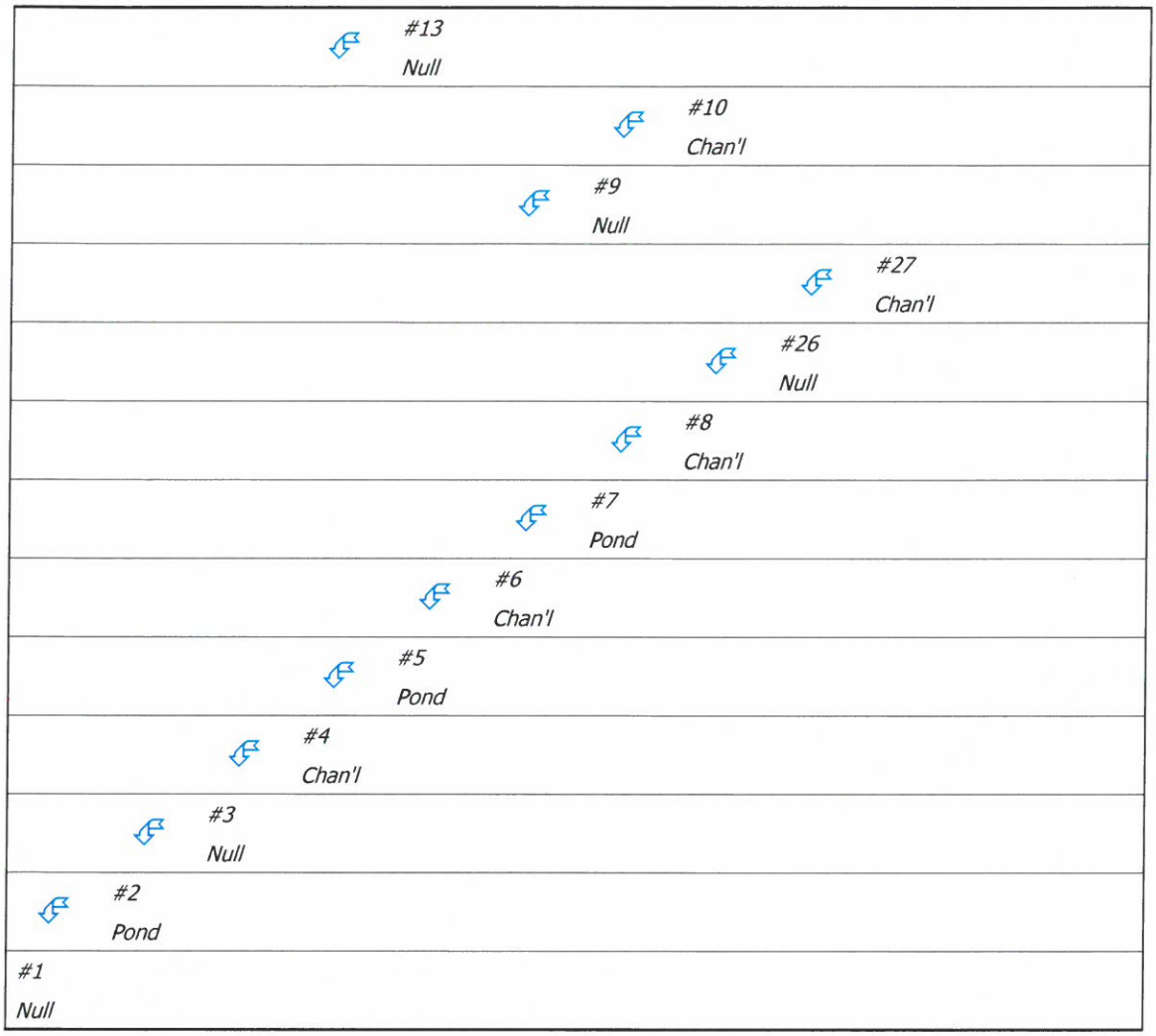
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Chan'l
#5
Pond
#4
Chan'l
#3
Null
#2
Pond
#1
Null

Structure Summary:

		Immediate Contributing Area (ac)	Total Contributing Area (ac)	Peak Discharge (cfs)	Total Runoff Volume (ac-ft)
#37		25.600	25.600	3.19	0.49
#36		0.000	25.600	3.19	0.49
#35		6.600	6.600	2.03	0.16
#34		0.000	6.600	2.03	0.16
#31		23.800	23.800	2.81	0.45
#30		0.000	23.800	2.81	0.45
#33		14.000	14.000	4.30	0.33
#32		0.000	14.000	4.30	0.33
#29		25.600	25.600	16.81	1.27
#28		0.000	25.600	16.81	1.27
#25		144.700	240.300	26.15	5.45
#24	In	0.000	240.300	26.15	5.45
	Out			7.89	0.00
#23		79.900	320.200	54.25	10.13
#22	In	0.000	320.200	54.25	10.13
	Out			21.87	0.00
#21		12.400	12.400	11.67	0.88
#20		0.000	12.400	11.67	0.88
#19		4.000	4.000	1.23	0.10
#18		0.000	4.000	1.23	0.10
#17		24.700	361.300	25.00	10.09
#16		7.300	7.300	2.24	0.17
#15		0.000	7.300	2.24	0.17
#14		7.500	7.500	6.99	0.53
#13		0.000	7.500	6.99	0.53
#10		133.700	133.700	30.87	3.05
#9		0.000	133.700	30.87	3.05
#27		90.300	90.300	20.26	2.60
#26		0.000	90.300	20.26	2.60
#8		110.600	200.900	68.97	7.70
#7	In	0.000	200.900	68.97	7.70
	Out			24.95	0.00
#6		86.100	420.700	71.02	12.85
#5	In	0.000	420.700	71.02	12.85
	Out			43.71	0.00
#4		29.000	464.500	46.17	12.44
#3		0.000	825.800	71.16	22.52

		Immediate Contributing Area (ac)	Total Contributing Area (ac)	Peak Discharge (cfs)	Total Runoff Volume (ac-ft)
#2	In	27.600	853.400	71.16	22.56
	Out			49.99	0.00
#1		0.000	853.400	49.99	22.29

Structure Detail:

Structure #37 (Vegetated Channel)

Trib 7

Trapezoidal Vegetated Channel Inputs:

Material: Smooth brome

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
6.00	3.0:1	3.0:1	7.0	D, B	2.81			6.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	3.19 cfs		3.19 cfs	
Depth:	0.25 ft	3.06 ft	0.51 ft	3.32 ft
Top Width:	7.49 ft	24.35 ft	9.06 ft	25.92 ft
Velocity:	1.90 fps		0.83 fps	
X-Section Area:	1.68 sq ft		3.84 sq ft	
Hydraulic Radius:	0.222 ft		0.416 ft	
Froude Number:	0.71		0.22	
Roughness Coefficient:	0.0759		0.2645	

Structure #36 (Null)

Null Confluence Trib 7

Structure #35 (Vegetated Channel)

Trib 6

Trapezoidal Vegetated Channel Inputs:

Material: Smooth brome

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
6.00	3.0:1	3.0:1	6.0	D, B	1.84			6.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	2.03 cfs		2.03 cfs	
Depth:	0.22 ft	2.06 ft	0.47 ft	2.31 ft
Top Width:	7.30 ft	18.34 ft	8.81 ft	19.85 ft
Velocity:	1.41 fps		0.58 fps	
X-Section Area:	1.44 sq ft		3.47 sq ft	
Hydraulic Radius:	0.195 ft		0.387 ft	
Froude Number:	0.56		0.16	
Roughness Coefficient:	0.0865		0.3305	

Structure #34 (Null)

Null Confluence Trib 6

Structure #31 (Vegetated Channel)

Trib 5

Trapezoidal Vegetated Channel Inputs:

Material: Smooth brome

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
6.00	3.0:1	3.0:1	4.0	D, B	2.77			7.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	2.81 cfs		2.81 cfs	
Depth:	0.28 ft	3.05 ft	0.59 ft	3.36 ft
Top Width:	7.68 ft	24.30 ft	9.52 ft	26.14 ft
Velocity:	1.47 fps		0.62 fps	
X-Section Area:	1.92 sq ft		4.55 sq ft	
Hydraulic Radius:	0.246 ft		0.468 ft	
Froude Number:	0.52		0.16	
Roughness Coefficient:	0.0796		0.2905	

Structure #30 (Null)

Null Confluence Trib 5

Structure #33 (Vegetated Channel)

Trib 4

Trapezoidal Vegetated Channel Inputs:

Material: Smooth brome

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
6.00	3.0:1	3.0:1	16.0	D, B	2.86			5.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	4.30 cfs		4.30 cfs	
Depth:	0.22 ft	3.08 ft	0.43 ft	3.29 ft
Top Width:	7.32 ft	24.48 ft	8.58 ft	25.74 ft
Velocity:	2.93 fps		1.37 fps	
X-Section Area:	1.47 sq ft		3.13 sq ft	
Hydraulic Radius:	0.198 ft		0.360 ft	
Froude Number:	1.16		0.40	
Roughness Coefficient:	0.0688		0.2194	

Structure #32 (Null)

Null Confluence Trib 4

Structure #29 (Vegetated Channel)

Trib 3

Trapezoidal Vegetated Channel Inputs:

Material: Smooth brome

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
6.00	3.0:1	3.0:1	11.0	D, B	2.48			5.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	16.81 cfs		16.81 cfs	
Depth:	0.44 ft	2.92 ft	0.73 ft	3.21 ft
Top Width:	8.62 ft	23.50 ft	10.36 ft	25.24 ft

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Velocity:	5.26 fps		2.83 fps	
X-Section Area:	3.19 sq ft		5.94 sq ft	
Hydraulic Radius:	0.365 ft		0.561 ft	
Froude Number:	1.52		0.66	
Roughness Coefficient:	0.0478		0.1186	

Structure #28 (Null)

Null Confluence Trib 3

Structure #25 (Vegetated Channel)

EFSP-2 to Station 116+97

Trapezoidal Vegetated Channel Inputs:

Material: Bermuda grass

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
12.00	3.0:1	3.0:1	5.4	D, B	3.49			7.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	26.15 cfs		26.15 cfs	
Depth:	0.48 ft	3.97 ft	0.81 ft	4.30 ft
Top Width:	14.90 ft	35.84 ft	16.89 ft	37.83 ft
Velocity:	4.02 fps		2.22 fps	
X-Section Area:	6.51 sq ft		11.77 sq ft	
Hydraulic Radius:	0.432 ft		0.686 ft	
Froude Number:	1.07		0.47	
Roughness Coefficient:	0.0493		0.1211	

Structure #24 (Pond)

EFSP-2 Stockpond

Pond Inputs:

Initial Pool Elev:	92.00 ft
Initial Pool:	0.15 ac-ft

Straight Pipe

Barrel Diameter (in)	Barrel Length (ft)	Barrel Slope (%)	Manning's n	Spillway Elev (ft)	Entrance Loss Coefficient	Tailwater Depth (ft)
12.00	100.00	1.50	0.0150	98.00	0.50	0.00

Emergency Spillway

Spillway Elev	Crest Length (ft)	Left Sideslope	Right Sideslope	Bottom Width (ft)
100.00	20.00	2.00:1	2.00:1	10.00

Pond Results:

Peak Elevation:	100.14 ft
Dewater Time:	0.93 days

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)	
90.00	0.050	0.000	0.000		
91.00	0.072	0.061	0.000		
92.00	0.098	0.145	0.000		
93.00	0.128	0.258	0.000		
94.00	0.162	0.403	0.000		
95.00	0.200	0.583	0.000		
96.00	0.231	0.799	0.000		
97.00	0.265	1.046	0.000		
98.00	0.301	1.329	0.000		Spillway #1
99.00	0.339	1.649	2.094	11.30	
100.00	0.380	2.008	4.263	8.25	Spillway #2
100.14	0.461	2.072	7.885	2.70	Peak Stage
101.00	0.554	2.473	30.516		
102.00	0.761	3.127	98.736		
103.00	1.000	4.005	207.246		

Detailed Discharge Table

Elevation (ft)	Straight Pipe (cfs)	Emergency Spillway (cfs)	Combined Total Discharge (cfs)
90.00	0.000	0.000	0.000
91.00	0.000	0.000	0.000
92.00	0.000	0.000	0.000
93.00	0.000	0.000	0.000
94.00	0.000	0.000	0.000
95.00	0.000	0.000	0.000
96.00	0.000	0.000	0.000
97.00	0.000	0.000	0.000
98.00	0.000	0.000	0.000
99.00	(3)>2.094	0.000	2.094
100.00	(5)>4.263	0.000	4.263
101.00	(6)>5.033	25.483	30.516
102.00	(6)>5.701	93.036	98.736
103.00	(6)>6.275	200.972	207.246

Structure #23 (Vegetated Channel)

EFSP-1 to EFSP-2 Veg Channel

Trapezoidal Vegetated Channel Inputs:

Material: Smooth brome

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
12.00	3.0:1	3.0:1	2.1	D, B	2.97			7.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	54.25 cfs		54.25 cfs	
Depth:	0.88 ft	3.85 ft	1.36 ft	4.33 ft
Top Width:	17.26 ft	35.08 ft	20.18 ft	38.00 ft
Velocity:	4.23 fps		2.47 fps	
X-Section Area:	12.81 sq ft		21.93 sq ft	
Hydraulic Radius:	0.731 ft		1.063 ft	
Froude Number:	0.87		0.42	
Roughness Coefficient:	0.0413		0.0909	

Structure #22 (Pond)

EFSP-1 Stock Pond

Pond Inputs:

Initial Pool Elev:	92.00 ft
Initial Pool:	0.15 ac-ft

Straight Pipe

Barrel Diameter (in)	Barrel Length (ft)	Barrel Slope (%)	Manning's n	Spillway Elev (ft)	Entrance Loss Coefficient	Tailwater Depth (ft)
12.00	100.00	1.50	0.0150	98.00	0.50	0.00

Emergency Spillway

Spillway Elev	Crest Length (ft)	Left Sideslope	Right Sideslope	Bottom Width (ft)
100.00	20.00	2.00:1	2.00:1	10.00

Pond Results:

Peak Elevation:	100.67 ft
Dewater Time:	1.16 days

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)	
90.00	0.050	0.000	0.000		
91.00	0.072	0.061	0.000		
92.00	0.098	0.145	0.000		
93.00	0.128	0.258	0.000		
94.00	0.162	0.403	0.000		
95.00	0.200	0.583	0.000		
96.00	0.231	0.799	0.000		
97.00	0.265	1.046	0.000		
98.00	0.301	1.329	0.000		Spillway #1
99.00	0.339	1.649	2.094	13.45	
100.00	0.380	2.008	4.263	4.20	Spillway #2
100.67	0.519	2.320	21.867	10.10	Peak Stage
101.00	0.554	2.473	30.516		
102.00	0.761	3.127	98.736		
103.00	1.000	4.005	207.246		

Detailed Discharge Table

Elevation (ft)	Straight Pipe (cfs)	Emergency Spillway (cfs)	Combined Total Discharge (cfs)
90.00	0.000	0.000	0.000
91.00	0.000	0.000	0.000
92.00	0.000	0.000	0.000
93.00	0.000	0.000	0.000
94.00	0.000	0.000	0.000
95.00	0.000	0.000	0.000
96.00	0.000	0.000	0.000
97.00	0.000	0.000	0.000
98.00	0.000	0.000	0.000
99.00	(3)>2.094	0.000	2.094
100.00	(5)>4.263	0.000	4.263
101.00	(6)>5.033	25.483	30.516
102.00	(6)>5.701	93.036	98.736
103.00	(6)>6.275	200.972	207.246

Structure #21 (Vegetated Channel)

East 7800' Terrace Ditch

Triangular Vegetated Channel Inputs:

Material: Smooth brome

Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
1.5:1	3.0:1	1.5	D, B	0.93			7.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	11.67 cfs		11.67 cfs	
Depth:	1.38 ft	2.31 ft	2.04 ft	2.97 ft
Top Width:	6.22 ft	10.40 ft	9.18 ft	13.37 ft
Velocity:	2.72 fps		1.25 fps	
X-Section Area:	4.30 sq ft		9.36 sq ft	
Hydraulic Radius:	0.631 ft		0.932 ft	
Froude Number:	0.58		0.22	
Roughness Coefficient:	0.0495		0.1397	

Structure #20 (Null)

Null 7800' Terrace Ditch

Structure #19 (Vegetated Channel)

7600' Terrace Ditch

Triangular Vegetated Channel Inputs:

Material: Smooth brome

Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
1.5:1	3.0:1	1.5	D, B	1.72			7.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	1.23 cfs		1.23 cfs	
Depth:	0.71 ft	2.43 ft	1.24 ft	2.96 ft
Top Width:	3.21 ft	10.95 ft	5.58 ft	13.32 ft
Velocity:	1.07 fps		0.36 fps	
X-Section Area:	1.14 sq ft		3.46 sq ft	
Hydraulic Radius:	0.326 ft		0.567 ft	
Froude Number:	0.32		0.08	
Roughness Coefficient:	0.0804		0.3516	

Structure #18 (Null)

Null 7600' Terrace Ditch

Structure #17 (Riprap Channel)

East Fork Taylor Ditch 0+00 to EFSP-1

Trapezoidal Riprap Channel Inputs:

Material: Riprap

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)
12.00	3.0:1	3.0:1	25.0	3.97		

Riprap Channel Results:

Simons/OSM Method - Steep Slope Design

	w/o Freeboard	w/ Freeboard
Design Discharge:	25.00 cfs	
Depth:	0.13 ft	4.10 ft
Top Width:	12.76 ft	36.58 ft
Velocity*:		
X-Section Area:	1.57 sq ft	
Hydraulic Radius:	0.123 ft	
Froude Number*:		
Manning's n*:		
Dmin:	3.00 in	
D50:	9.00 in	
Dmax:	11.25 in	

Velocity and Manning's n calculations may not apply for this method.

Structure #16 (Vegetated Channel)

7700' Terrace Ditch

Triangular Vegetated Channel Inputs:

Material: Smooth brome

Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
1.5:1	3.0:1	1.5	D, B	1.54			7.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	2.24 cfs		2.24 cfs	
Depth:	0.85 ft	2.39 ft	1.42 ft	2.96 ft
Top Width:	3.83 ft	10.76 ft	6.37 ft	13.30 ft
Velocity:	1.38 fps		0.50 fps	
X-Section Area:	1.63 sq ft		4.51 sq ft	
Hydraulic Radius:	0.389 ft		0.647 ft	
Froude Number:	0.37		0.10	
Roughness Coefficient:	0.0706		0.2747	

Structure #15 (Null)

Null 7700' Terrace Ditch

Structure #14 (Vegetated Channel)

West 7800' Terrace Ditch

Triangular Vegetated Channel Inputs:

Material: Smooth brome

Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
1.5:1	3.0:1	1.5	D, B	1.15			7.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	6.99 cfs		6.99 cfs	
Depth:	1.19 ft	2.34 ft	1.82 ft	2.97 ft
Top Width:	5.35 ft	10.53 ft	8.19 ft	13.37 ft
Velocity:	2.20 fps		0.94 fps	
X-Section Area:	3.18 sq ft		7.46 sq ft	
Hydraulic Radius:	0.543 ft		0.832 ft	
Froude Number:	0.50		0.17	
Roughness Coefficient:	0.0552		0.1724	

Structure #13 (Null)

Null Confluence West 7800' Terrace Ditch

Structure #10 (Vegetated Channel)

Trib 1

Trapezoidal Vegetated Channel Inputs:

Material: Smooth brome

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
6.00	3.0:1	3.0:1	5.0	D, B	2.15			7.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	30.87 cfs		30.87 cfs	
Depth:	0.71 ft	2.86 ft	1.11 ft	3.26 ft
Top Width:	10.27 ft	23.17 ft	12.67 ft	25.57 ft
Velocity:	5.33 fps		2.98 fps	
X-Section Area:	5.79 sq ft		10.37 sq ft	
Hydraulic Radius:	0.552 ft		0.796 ft	
Froude Number:	1.25		0.58	
Roughness Coefficient:	0.0419		0.0960	

Structure #9 (Null)

Null Confluence Trib 1

Structure #27 (Vegetated Channel)

Trib 2

Trapezoidal Vegetated Channel Inputs:

Material: Smooth brome

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
6.00	3.0:1	3.0:1	11.0	D, B	2.48			5.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	20.26 cfs		20.26 cfs	
Depth:	0.47 ft	2.95 ft	0.77 ft	3.25 ft
Top Width:	8.83 ft	23.71 ft	10.61 ft	25.49 ft
Velocity:	5.79 fps		3.18 fps	
X-Section Area:	3.50 sq ft		6.38 sq ft	
Hydraulic Radius:	0.390 ft		0.587 ft	
Froude Number:	1.62		0.72	
Roughness Coefficient:	0.0455		0.1089	

Structure #26 (Null)

Null Confluence Trib 2

Structure #8 (Vegetated Channel)

WFSP-2 to Station 85+00

Trapezoidal Vegetated Channel Inputs:

Material: Bermuda grass

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
12.00	3.0:1	3.0:1	10.2	D, B	3.35			6.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	68.97 cfs		68.97 cfs	
Depth:	0.60 ft	3.95 ft	0.89 ft	4.24 ft
Top Width:	15.61 ft	35.71 ft	17.35 ft	37.45 ft
Velocity:	8.31 fps		5.28 fps	
X-Section Area:	8.30 sq ft		13.07 sq ft	
Hydraulic Radius:	0.525 ft		0.741 ft	
Froude Number:	2.01		1.07	
Roughness Coefficient:	0.0372		0.0738	

Structure #7 (Pond)

WFSP-2 Stockpond

Pond Inputs:

Initial Pool Elev:	91.00 ft
Initial Pool:	0.06 ac-ft

Emergency Spillway

Spillway Elev	Crest Length (ft)	Left Sideslope	Right Sideslope	Bottom Width (ft)
100.00	20.00	2.00:1	2.00:1	5.00

Straight Pipe

Barrel Diameter (in)	Barrel Length (ft)	Barrel Slope (%)	Manning's n	Spillway Elev (ft)	Entrance Loss Coefficient	Tailwater Depth (ft)
12.00	100.00	1.00	0.0150	98.00	0.90	0.00

Pond Results:

Peak Elevation:	101.15 ft
Dewater Time:	0.98 days

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)	
90.00	0.050	0.000	0.000		
91.00	0.072	0.061	0.000		
92.00	0.098	0.145	0.000		
93.00	0.128	0.258	0.000		
94.00	0.162	0.403	0.000		
95.00	0.200	0.583	0.000		
96.00	0.231	0.799	0.000		
97.00	0.265	1.046	0.000		
98.00	0.301	1.329	0.000		Spillway #2
99.00	0.339	1.649	2.094	11.15	
100.00	0.380	2.008	3.745	6.75	Spillway #1
101.00	0.554	2.473	18.584	5.35	
101.15	0.599	2.570	24.954	0.35	Peak Stage
102.00	0.761	3.127	61.251		
103.00	1.000	4.005	135.506		

Detailed Discharge Table

Elevation (ft)	Emergency Spillway (cfs)	Straight Pipe (cfs)	Combined Total Discharge (cfs)
90.00	0.000	0.000	0.000
91.00	0.000	0.000	0.000
92.00	0.000	0.000	0.000
93.00	0.000	0.000	0.000
94.00	0.000	0.000	0.000
95.00	0.000	0.000	0.000
96.00	0.000	0.000	0.000
97.00	0.000	0.000	0.000
98.00	0.000	0.000	0.000
99.00	0.000	(3)>2.094	2.094
100.00	0.000	(6)>3.745	3.745
101.00	14.046	(6)>4.538	18.584
102.00	56.062	(6)>5.189	61.251

Elevation (ft)	Emergency Spillway (cfs)	Straight Pipe (cfs)	Combined Total Discharge (cfs)
103.00	129.713	(6)>5.793	135.506

Structure #6 (Vegetated Channel)

Channel WFSP-1 to WFSP-2

Trapezoidal Vegetated Channel Inputs:

Material: Smooth brome

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
12.00	3.0:1	3.0:1	1.3	D, B	2.69			7.0

Vegetated Channel Results:

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	71.02 cfs		71.02 cfs	
Depth:	1.13 ft	3.82 ft	1.72 ft	4.41 ft
Top Width:	18.79 ft	34.93 ft	22.30 ft	38.44 ft
Velocity:	4.08 fps		2.41 fps	
X-Section Area:	17.41 sq ft		29.43 sq ft	
Hydraulic Radius:	0.909 ft		1.288 ft	
Froude Number:	0.75		0.37	
Roughness Coefficient:	0.0391		0.0832	

Structure #5 (Pond)

WFSP-1 Stock Pond

Pond Inputs:

Initial Pool Elev:	91.00 ft
Initial Pool:	0.06 ac-ft

Straight Pipe

Barrel Diameter (in)	Barrel Length (ft)	Barrel Slope (%)	Manning's n	Spillway Elev (ft)	Entrance Loss Coefficient	Tailwater Depth (ft)
12.00	100.00	1.50	0.0150	98.00	0.90	0.00

Emergency Spillway

Spillway Elev	Crest Length (ft)	Left Sideslope	Right Sideslope	Bottom Width (ft)
100.00	20.00	2.00:1	2.00:1	10.00

Pond Results:

Peak Elevation:	101.20 ft
Dewater Time:	1.16 days

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)	
90.00	0.050	0.000	0.000		
91.00	0.072	0.061	0.000		
92.00	0.098	0.145	0.000		
93.00	0.128	0.258	0.000		
94.00	0.162	0.403	0.000		
95.00	0.200	0.583	0.000		
96.00	0.231	0.799	0.000		
97.00	0.265	1.046	0.000		
98.00	0.301	1.329	0.000		Spillway #1
99.00	0.339	1.649	2.094	13.40	
100.00	0.380	2.008	4.162	2.75	Spillway #2
101.00	0.554	2.473	30.351	11.35	
101.20	0.608	2.601	43.706	0.40	Peak Stage
102.00	0.761	3.127	98.545		
103.00	1.000	4.005	207.032		

Detailed Discharge Table

Elevation (ft)	Straight Pipe (cfs)	Emergency Spillway (cfs)	Combined Total Discharge (cfs)
90.00	0.000	0.000	0.000
91.00	0.000	0.000	0.000
92.00	0.000	0.000	0.000
93.00	0.000	0.000	0.000
94.00	0.000	0.000	0.000

Elevation (ft)	Straight Pipe (cfs)	Emergency Spillway (cfs)	Combined Total Discharge (cfs)
95.00	0.000	0.000	0.000
96.00	0.000	0.000	0.000
97.00	0.000	0.000	0.000
98.00	0.000	0.000	0.000
99.00	(3)>2.094	0.000	2.094
100.00	(6)>4.162	0.000	4.162
101.00	(6)>4.868	25.483	30.351
102.00	(6)>5.509	93.036	98.545
103.00	(6)>6.061	200.972	207.032

Structure #4 (Riprap Channel)

0+00 to WFSP-1 West Fork Taylor Ditch

Trapezoidal Riprap Channel Inputs:

Material: Riprap

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)
12.00	3.0:1	3.0:1	26.0	3.98		

Riprap Channel Results:

Simons/OSM Method - Steep Slope Design

	w/o Freeboard	w/ Freeboard
Design Discharge:	46.17 cfs	
Depth:	0.20 ft	4.18 ft
Top Width:	13.21 ft	37.09 ft
Velocity*:		
X-Section Area:	2.55 sq ft	
Hydraulic Radius:	0.192 ft	
Froude Number*:		
Manning's n*:		
Dmin:	4.00 in	
D50:	12.00 in	
Dmax:	15.00 in	

Velocity and Manning's n calculations may not apply for this method.

Structure #3 (Null)

Null Above West Taylor Pond

Structure #2 (Pond)

West Taylor Pond

Pond Inputs:

Initial Pool Elev:	7,468.00 ft
Initial Pool:	1.77 ac-ft

Perforated Riser

Riser Diameter (in)	Riser Height (ft)	Barrel Diameter (in)	Barrel Length (ft)	Barrel Slope (%)	Manning's n	Spillway Elev (ft)	Number of Holes per Elev
18.00	10.50	18.00	150.00	2.00	0.0150	7,471.00	2

Emergency Spillway

Spillway Elev	Crest Length (ft)	Left Sideslope	Right Sideslope	Bottom Width (ft)
7,475.00	30.00	2.00:1	2.00:1	30.00

Pond Results:

Peak Elevation:	7,475.49 ft
Dewater Time:	1.82 days

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)	
7,455.00	0.022	0.000	0.000		
7,456.00	0.032	0.027	0.000		
7,457.00	0.043	0.064	0.000		
7,458.00	0.054	0.113	0.000		
7,459.00	0.066	0.173	0.000		
7,460.00	0.079	0.245	0.000		
7,461.00	0.103	0.336	0.000		
7,462.00	0.139	0.456	0.000		
7,463.00	0.162	0.607	0.000		
7,464.00	0.188	0.781	0.000		
7,465.00	0.213	0.981	0.000		
7,466.00	0.244	1.209	0.000		
7,467.00	0.279	1.470	0.000		
7,468.00	0.312	1.766	0.000		Low hole SPW #1

Elevation	Area (ac)	Capacity (ac-ft)	Discharge (cfs)	Dewater Time (hrs)	
7,469.00	0.360	2.102	0.473	8.60*	
7,470.00	0.389	2.476	0.669	8.05	
7,471.00	0.430	2.886	0.819	8.20	Spillway #1
7,472.00	0.463	3.332	8.509	6.15	
7,473.00	0.503	3.814	12.033	3.40	
7,474.00	0.541	4.336	14.738	2.40	
7,475.00	0.580	4.897	17.018	3.25	Spillway #2
7,475.49	0.571	5.183	49.990	3.65	Peak Stage
7,476.00	0.581	5.477	83.791		
7,477.00	0.582	6.058	246.034		
7,478.00	0.583	6.641	483.806		
7,479.00	0.584	7.224	794.453		
7,480.00	0.585	7.809	1,172.300		

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

Detailed Discharge Table

Elevation (ft)	Perf. Riser (cfs)	Emergency Spillway (cfs)	Combined Total Discharge (cfs)
7,455.00	0.000	0.000	0.000
7,456.00	0.000	0.000	0.000
7,457.00	0.000	0.000	0.000
7,458.00	0.000	0.000	0.000
7,459.00	0.000	0.000	0.000
7,460.00	0.000	0.000	0.000
7,461.00	0.000	0.000	0.000
7,462.00	0.000	0.000	0.000
7,463.00	0.000	0.000	0.000
7,464.00	0.000	0.000	0.000
7,465.00	0.000	0.000	0.000
7,466.00	0.000	0.000	0.000
7,467.00	0.000	0.000	0.000
7,468.00	3.00>0.000	0.000	0.000
7,469.00	0.473	0.000	0.473
7,470.00	0.669	0.000	0.669
7,471.00	0.819	0.000	0.819
7,472.00	8.509	0.000	8.509
7,473.00	12.033	0.000	12.033
7,474.00	14.738	0.000	14.738

Elevation (ft)	Perf. Riser (cfs)	Emergency Spillway (cfs)	Combined Total Discharge (cfs)
7,475.00	17.018	0.000	17.018
7,476.00	19.026	64.765	83.791
7,477.00	20.842	225.191	246.034
7,478.00	22.512	461.294	483.806
7,479.00	24.066	770.387	794.453
7,480.00	25.526	1,146.774	1,172.300

Structure #1 (Null)

Null Below West Taylor Pond

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)
#37	1	25.600	0.224	0.000	0.000	62.000	M	3.19	0.490
	Σ	**25.600**						**3.19**	**0.490**
#36	Σ	**25.600**						**3.19**	**0.490**
#35	1	6.600	0.042	0.000	0.000	62.000	M	2.03	0.157
	Σ	**6.600**						**2.03**	**0.157**
#34	Σ	**6.600**						**2.03**	**0.157**
#31	1	23.800	0.253	0.000	0.000	62.000	M	2.81	0.455
	Σ	**23.800**						**2.81**	**0.455**
#30	Σ	**23.800**						**2.81**	**0.455**
#33	1	14.000	0.059	0.000	0.000	62.000	M	4.30	0.333
	Σ	**14.000**						**4.30**	**0.333**
#32	Σ	**14.000**						**4.30**	**0.333**
#29	1	10.700	0.050	0.000	0.000	80.000	F	12.23	0.917
	2	14.900	0.094	0.000	0.000	62.000	M	4.57	0.354
	Σ	**25.600**						**16.81**	**1.271**
#28	Σ	**25.600**						**16.81**	**1.271**
#25	1	144.700	0.644	0.000	0.000	62.000	M	10.10	2.747
	Σ	**240.300**						**26.15**	**5.453**
#24	Σ	**240.300**						**26.15**	**5.453**
#23	1	70.600	0.365	0.000	0.000	80.000	F	53.79	5.705
	2	2.500	0.021	0.000	0.000	47.000	S	0.00	0.000
	3	6.800	0.053	0.000	0.000	62.000	M	2.09	0.162
	Σ	**320.200**						**54.25**	**10.134**
#22	Σ	**320.200**						**54.25**	**10.134**
#21	1	3.000	0.006	0.000	0.000	62.000	M	0.92	0.071
	2	9.400	0.036	0.000	0.000	80.000	F	10.75	0.806
	Σ	**12.400**						**11.67**	**0.877**
#20	Σ	**12.400**						**11.67**	**0.877**
#19	1	4.000	0.016	0.000	0.000	62.000	M	1.23	0.095

Stru #	SWS #	SWS Area (ac)	Time of Conc (hrs)	Musk K (hrs)	Musk X	Curve Number	UHS	Peak Discharge (cfs)	Runoff Volume (ac-ft)
	Σ	**4.000**						**1.23**	**0.095**
#18	Σ	**4.000**						**1.23**	**0.095**
#17	1	1.100	0.011	0.000	0.000	80.000	M	1.26	0.094
	2	21.500	0.090	0.000	0.000	47.000	S	0.05	0.030
	3	0.600	0.012	0.000	0.000	62.000	M	0.18	0.010
	4	0.600	0.010	0.000	0.000	62.000	M	0.18	0.010
	5	0.900	0.013	0.000	0.000	62.000	M	0.28	0.020
	Σ	**361.300**						**25.00**	**10.086**
#16	1	7.300	0.015	0.000	0.000	62.000	M	2.24	0.174
	Σ	**7.300**						**2.24**	**0.174**
#15	Σ	**7.300**						**2.24**	**0.174**
#14	1	1.900	0.008	0.000	0.000	62.000	M	0.58	0.045
	2	5.600	0.043	0.000	0.000	80.000	F	6.40	0.480
	Σ	**7.500**						**6.99**	**0.525**
#13	Σ	**7.500**						**6.99**	**0.525**
#10	1	35.700	0.252	0.000	0.000	80.000	F	30.87	2.917
	2	98.000	0.045	0.000	0.000	47.000	S	0.24	0.137
	Σ	**133.700**						**30.87**	**3.054**
#9	Σ	**133.700**						**30.87**	**3.054**
#27	1	76.400	0.290	0.000	0.000	62.000	M	8.40	1.453
	2	13.900	0.136	0.000	0.000	80.000	F	13.15	1.149
	Σ	**90.300**						**20.26**	**2.603**
#26	Σ	**90.300**						**20.26**	**2.603**
#8	1	52.200	0.229	0.000	0.000	80.000	F	46.24	4.258
	2	30.900	0.122	0.000	0.000	62.000	M	9.49	0.735
	3	23.500	0.089	0.000	0.000	47.000	S	0.06	0.033
	4	4.000	0.218	0.000	0.000	62.000	M	0.50	0.076
	Σ	**200.900**						**68.97**	**7.704**
#7	Σ	**200.900**						**68.97**	**7.704**
#6	1	43.000	0.095	0.000	0.000	47.000	S	0.10	0.060
	2	39.900	0.161	0.000	0.000	80.000	F	37.75	3.299
	3	0.400	0.015	0.000	0.000	47.000	S	0.00	0.000
	4	1.600	0.020	0.000	0.000	47.000	S	0.00	0.000
	5	1.200	0.021	0.000	0.000	47.000	S	0.00	0.000

Stru #	SWS #	SWS Area (ac)	Time of Conc (hrs)	Musk K (hrs)	Musk X	Curve Number	UHS	Peak Discharge (cfs)	Runoff Volume (ac-ft)
	Σ	**420.700**						**71.02**	**12.848**
#5	Σ	**420.700**						**71.02**	**12.848**
#4	1	1.000	0.007	0.000	0.000	80.000	M	1.14	0.086
	2	2.800	0.019	0.000	0.000	47.000	S	0.00	0.000
	3	0.900	0.010	0.000	0.000	62.000	M	0.28	0.020
	4	23.300	0.094	0.000	0.000	47.000	S	0.06	0.032
	5	1.000	0.020	0.000	0.000	62.000	M	0.31	0.024
	Σ	**464.500**						**46.17**	**12.438**
#3	Σ	**825.800**						**71.16**	**22.524**
#2	1	10.500	0.051	0.000	0.000	47.000	S	0.03	0.014
	2	17.100	0.058	0.000	0.000	47.000	S	0.04	0.024
	Σ	**853.400**						**71.16**	**22.562**
#1	Σ	**853.400**						**49.99**	**22.291**

Subwatershed Time of Concentration Details:

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#2	1	3. Short grass pasture	45.00	443.25	985.00	5.360	0.051
#2	**1**	**Time of Concentration:**					**0.051**
#2	2	3. Short grass pasture	40.00	425.60	1,064.00	5.050	0.058
#2	**2**	**Time of Concentration:**					**0.058**
#4	1	5. Nearly bare and untilled, and alluvial valley fans	16.00	100.80	630.00	4.000	0.043
#4	**1**	**Time of Concentration:**					**0.007**
#4	2	5. Nearly bare and untilled, and alluvial valley fans	33.00	50.16	152.00	5.740	0.007
#4	**2**	**Time of Concentration:**					**0.019**
#4	3	3. Short grass pasture	20.00	50.00	250.00	3.570	0.019
#4	**3**	**Time of Concentration:**					**0.010**
#4	4	3. Short grass pasture	19.00	24.70	130.00	3.480	0.010
#4	**4**	**Time of Concentration:**					**0.094**
#4	5	3. Short grass pasture	31.00	101.37	327.00	4.450	0.020
#4	**5**	**Time of Concentration:**					**0.020**
#6	1	3. Short grass pasture	14.60	75.01	513.76	3.050	0.046
		8. Large gullies, diversions, and low flowing streams	1.50	5.67	378.00	3.670	0.028
#6	**1**	**Time of Concentration:**					**0.095**

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#6	2	5. Nearly bare and untilled, and alluvial valley fans	8.00	131.03	1,638.00	2.820	0.161
#6	**2**	**Time of Concentration:**					**0.161**
#6	3	3. Short grass pasture	15.00	25.35	169.00	3.090	0.015
#6	**3**	**Time of Concentration:**					**0.015**
#6	4	3. Short grass pasture	12.00	24.24	202.00	2.770	0.020
#6	**4**	**Time of Concentration:**					**0.020**
#6	5	3. Short grass pasture	12.00	25.20	210.00	2.770	0.021
#6	**5**	**Time of Concentration:**					**0.021**
#8	1	5. Nearly bare and untilled, and alluvial valley fans	9.00	222.84	2,476.00	3.000	0.229
#8	**1**	**Time of Concentration:**					**0.229**
#8	2	3. Short grass pasture	18.00	269.82	1,499.00	3.390	0.122
#8	**2**	**Time of Concentration:**					**0.122**
#8	3	3. Short grass pasture	24.00	303.35	1,264.00	3.910	0.089
#8	**3**	**Time of Concentration:**					**0.089**
#8	4	3. Short grass pasture	1.00	6.30	630.00	0.800	0.218
#8	**4**	**Time of Concentration:**					**0.218**
#10	1	5. Nearly bare and untilled, and alluvial valley fans	8.00	204.96	2,562.00	2.820	0.252
#10	**1**	**Time of Concentration:**					**0.252**
#10	2	3. Short grass pasture	35.00	272.29	778.00	4.730	0.045
#10	**2**	**Time of Concentration:**					**0.045**
#14	1	3. Short grass pasture	30.00	40.80	135.99	4.380	0.008
#14	**1**	**Time of Concentration:**					**0.008**
#14	2	5. Nearly bare and untilled, and alluvial valley fans	16.00	100.80	630.00	4.000	0.043
#14	**2**	**Time of Concentration:**					**0.043**
#16	1	3. Short grass pasture	30.00	73.50	244.99	4.380	0.015
#16	**1**	**Time of Concentration:**					**0.015**
#17	1	5. Nearly bare and untilled, and alluvial valley fans	25.00	50.25	201.00	5.000	0.011
#17	**1**	**Time of Concentration:**					**0.011**
#17	2	5. Nearly bare and untilled, and alluvial valley fans	24.80	49.60	200.00	4.970	0.011
#17	**2**	**Time of Concentration:**					**0.090**
#17	3	3. Short grass pasture	27.00	49.41	183.00	4.150	0.012
#17	**3**	**Time of Concentration:**					**0.012**
#17	4	3. Short grass pasture	30.00	50.40	168.00	4.380	0.010
#17	**4**	**Time of Concentration:**					**0.010**
#17	5	3. Short grass pasture	33.00	74.25	225.00	4.590	0.013
#17	**5**	**Time of Concentration:**					**0.013**
#19	1	3. Short grass pasture	30.00	78.00	260.00	4.380	0.016
#19	**1**	**Time of Concentration:**					**0.016**

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#21	1	3. Short grass pasture	26.00	24.70	95.00	4.070	0.006
#21	**1**	**Time of Concentration:**					**0.006**
#21	2	5. Nearly bare and untilled, and alluvial valley fans	18.00	101.34	563.00	4.240	0.036
#21	**2**	**Time of Concentration:**					**0.036**
#23	1	5. Nearly bare and untilled, and alluvial valley fans	6.00	192.78	3,213.00	2.440	0.365
#23	**1**	**Time of Concentration:**					**0.365**
#23	2	3. Short grass pasture	19.00	50.35	265.00	3.480	0.021
#23	**2**	**Time of Concentration:**					**0.021**
#23	3	3. Short grass pasture	19.00	127.68	672.00	3.480	0.053
#23	**3**	**Time of Concentration:**					**0.053**
#25	1	3. Short grass pasture	4.00	148.44	3,711.00	1.600	0.644
#25	**1**	**Time of Concentration:**					**0.644**
#27	1	3. Short grass pasture	14.00	438.34	3,131.00	2.990	0.290
#27	**1**	**Time of Concentration:**					**0.290**
#27	2	5. Nearly bare and untilled, and alluvial valley fans	11.00	179.52	1,632.00	3.310	0.136
#27	**2**	**Time of Concentration:**					**0.136**
#29	1	5. Nearly bare and untilled, and alluvial valley fans	12.00	74.87	624.00	3.460	0.050
#29	**1**	**Time of Concentration:**					**0.050**
#29	2	3. Short grass pasture	11.00	98.78	898.00	2.650	0.094
#29	**2**	**Time of Concentration:**					**0.094**
#31	1	3. Short grass pasture	6.00	106.98	1,783.00	1.950	0.253
#31	**1**	**Time of Concentration:**					**0.253**
#33	1	3. Short grass pasture	15.00	98.85	659.00	3.090	0.059
#33	**1**	**Time of Concentration:**					**0.059**
#35	1	3. Short grass pasture	19.00	100.32	528.00	3.480	0.042
#35	**1**	**Time of Concentration:**					**0.042**
#37	1	3. Short grass pasture	10.00	203.40	2,034.00	2.520	0.224
#37	**1**	**Time of Concentration:**					**0.224**