Falcon DBPS

Subbasin Properties

Subbasin ID	Area (mi^2)[2]	Existing % Impervious[3]	Curve Number[3]			Lag Time (min)		
			Historical	Existing	Future	Historical[4]	Existing[2]	Future[5]
ET010	0.15	21.72%	61	69	72	33.64	25.23	18.92
ET020	0.21	19.07%	61	68	73	23.15	17.37	13.02
ET030	0.20	27.31%	41	71	72	42.61	31.96	23.97
ET040	0.15	20.35%	42	69	69	29.71	22.28	22.28
ET050	0.12	19.07%	39	68	68	10.36	7.77	7.77
ET060	0.29	21.94%	39	69	69	7.38	5.54	5.54
ET070	0.25	26.60%	39	71	71	10.51	7.88	7.88
ET080	0.29	37.81%	39	75	76	25.98	19.49	14.61
ET090	0.12	12.34%	39	61	74	54.90	41.18	30.88
ET100	0.05	3.12%	39	48	63	10.67	8.00	6.00
ET110[1]	0.23	1.49%	39	54	61	25.68	25.68	19.26
ET120	0.11	6.79%	39	60	61	38.28	28.71	21.53
ET130	0.13	6.57%	39	61	63	61.63	46.22	34.67
ET140	0.27	3.21%	39	61	63	92.13	69.09	51.82
ET150[1]	0.18	1.79%	39	62	62	25.39	25.39	25.39
ET160	0.19	3.36%	42	64	64	41.04	30.78	30.78
FS010	0.12	1.16%	44	49	56	41.23	30.92	23.19
MT010	0.29	6.99%	45	64	64	42.16	31.62	31.62
MT020[1]	0.09	1.48%	57	62	68	12.94	12.94	9.71
MT030	0.16	13.35%	54	66	67	19.92	14.94	11.21
MT040	0.31	7.07%	55	64	75	35.44	26.58	19.93
MT050	0.12	16.00%	39	67	67	34.84	26.13	26.13
MT060[1]	0.19	1.83%	39	55	66	27.90	27.90	20.93
MT070	0.20	5.68%	42	59	67	54.09	40.57	30.42
MT080	0.06	63.24%	48	86	87	6.91	5.18	3.88
MT090	0.04	60.08%	39	83	85	4.92	3.69	2.77
MT100	0.06	13.21%	39	67	70	21.19	15.89	11.92
MT110	0.12	18.56%	39	68	68	32.51	24.38	24.38
WT010[1]	0.14	2.31%	56	58	58	24.38	24.38	24.38
WT020[1]	0.07	2.39%	56	59	59	27.95	27.95	27.95
WT030	0.08	3.57%	57	59	59	17.99	13.49	13.49
WT040[1]	0.19	2.72%	56	58	58	34.99	34.99	34.99
WT050[1]	0.19	1.60%	60	62	62	26.99	26.99	26.99
WT060	0.20	2.35%	59	61	61	44.53	33.40	33.40
WT070[1]	0.17	1.31%	56	58	58	18.77	18.77	18.77
WT080[1]	0.07	1.95%	60	62	62	17.52	17.52	17.52
WT090[1]	0.15	0.66%	61	62	63	21.52	21.52	16.14
WT100[1]	0.19	1.28%	61	62	69	13.65	13.65	10.24
WT110[1]	0.19	2.04%	60	61	63	29.57	29.57	22.18
WT120[1]	0.05	2.96%	43	54	63	19.24	19.24	14.43

Falcon DBPS

Subbasin Properties

Subbasin ID	Area (mi^2)[2]	Existing % Impervious[3]	Curve Number[3]			Lag Time (min)		
			Historical	Existing	Future	Historical[4]	Existing[2]	Future[5]
WT130	0.10	28.51%	60	72	72	15.26	11.44	11.44
WT140[1]	0.13	1.68%	61	62	70	21.46	21.46	16.09
WT150	0.23	9.68%	61	65	74	54.71	41.04	30.78
WT160	0.11	20.33%	61	69	69	10.10	7.58	7.58
WT170[1]	0.12	2.54%	55	58	64	18.61	18.61	13.96
WT180[1]	0.10	0.12%	39	41	61	38.49	38.49	28.87
WT190	0.06	7.96%	39	64	64	15.16	11.37	11.37
WT200	0.30	4.15%	39	57	64	67.27	50.45	37.84
WT210	0.27	12.12%	40	56	70	77.09	57.82	43.37
WT220	0.19	12.58%	47	61	72	35.69	26.77	20.08
WT230	0.20	26.68%	51	70	73	21.17	15.88	11.91
WT240	0.08	27.03%	58	71	74	11.27	8.45	6.34
WT250	0.15	17.91%	53	67	73	13.46	10.10	7.57
WT260	0.14	5.48%	59	63	63	54.23	40.67	40.67
WT270	0.03	18.71%	47	67	71	17.02	12.76	9.57
WT280	0.27	2.41%	61	63	63	26.29	19.72	19.72
WT290[1]	0.10	2.45%	51	63	63	16.05	16.05	16.05
WT300	0.10	4.24%	58	63	63	26.25	19.69	19.69
WT310	0.28	1.45%	46	60	62	36.15	27.12	20.34
WT320	0.21	2.03%	41	61	63	33.29	24.97	18.72
WT330[1]	0.33	2.03%	40	58	63	36.05	36.05	27.03
WT340	0.28	2.24%	42	63	63	57.87	43.40	43.40
WT350	0.30	3.10%	48	62	64	39.68	29.76	22.32
WT360	0.07	2.82%	47	62	62	29.93	22.45	22.45
WT370	0.21	1.34%	40	45	52	33.48	25.11	18.83

Notes:

[1] Based on observation Longest Flow Path delineation and Time of Concentration Calculation are not impacted by development for Existing conditions.

[2] Calculated in Geo-HMS

[3] Calculated in GIS

[4] Calculated value by setting the decrease in lag time to existing conditions equal to 25%. Only applied to basins that are developed in existing conditions.

[5] Calculated value by decreasing the existing lag time by 25%. Only applied to subbasins where additional development occurred in the future condition.

Falcon DBPS
Curve Numbers

Historical Curve Numbers

Land Use	Hydrologic Soil Group			
	A	B	C	D
Rangeland Good Condition	39	61	74	80
Woods Good Condition	30	55	70	77
Water	98	98	98	98

Notes:

1 Rangeland Good Condition values from Aerawide Urban Runoff Conrol Manual, Pg. 26-27

2 Other values from TR55, Table 2-2

Existing Curve Numbers

Land Use	Hydrologic Soil Group			
	A[1]	B	C	D
Rangeland Good Condition	39	61	74	80
Woods Good Condition	30	55	70	77
Open Space Good Condition	39	61	74	80
Gravel Roads	76	85	89	91
Water	98	98	98	98
Impervious Area	98	98	98	98

Notes:

[1] All HSG Type A soils that have been graded shall be considered HSG Type B soils

2 Rangeland Good Condition values from Aerawide Urban Runoff Conrol Manual, Pg. 26-27

3 Other values from TR55, Table 2-2

Future Curve Numbers

Land Use	Average CN
0.50 Acre Residential	71
2.5 Acre Rural Residentail	64
5 Acre Rural Residentail - Woods	58
5 Acre Rural Residential - Rangeland	62
Community Commercial/Service Commercial	81
Light Industrial	96
Single Family Urban	79

Notes:

1 Values represent the average CN values that were developed for Existing Conditions for each corresponding land use

Falcon DBPS

Ia Adjustment

Subbasin ID	Historical CN	Ia (in)	Existing CN	Ia (in)	Future CN	Ia (in)
ET010	61	0.64	69	0.45	72	0.39
ET020	61	0.64	68	0.47	73	0.37
ET030	41	1.44	71	0.41	72	0.39
ET040	42	1.38	69	0.45	69	0.45
ET050	39	1.56	68	0.47	68	0.47
ET060	39	1.56	69	0.45	69	0.45
ET070	39	1.56	71	0.41	71	0.41
ET080	39	1.56	75	0.33	76	0.32
ET090	39	1.56	61	0.64	74	0.35
ET100	39	1.56	48	1.08	63	0.59
ET110	39	1.56	54	0.85	61	0.64
ET120	39	1.56	60	0.67	61	0.64
ET130	39	1.56	61	0.64	63	0.59
ET140	39	1.56	61	0.64	63	0.59
ET150	39	1.56	62	0.61	62	0.61
ET160	42	1.38	64	0.56	64	0.56
FS010	44	1.27	49	1.04	56	0.79
MT010	45	1.22	64	0.56	64	0.56
MT020	57	0.75	62	0.61	68	0.47
MT030	54	0.85	66	0.52	67	0.49
MT040	55	0.82	64	0.56	75	0.33
MT050	39	1.56	67	0.49	67	0.49
MT060	39	1.56	55	0.82	66	0.52
MT070	42	1.38	59	0.69	67	0.49
MT080	48	1.08	86	0.16	87	0.15
MT090	39	1.56	83	0.20	85	0.18
MT100	39	1.56	67	0.49	70	0.43
MT110	39	1.56	68	0.47	68	0.47
WT010	56	0.79	58	0.72	58	0.72
WT020	56	0.79	59	0.69	59	0.69
WT030	57	0.75	59	0.69	59	0.69
WT040	56	0.79	58	0.72	58	0.72
WT050	60	0.67	62	0.61	62	0.61
WT060	59	0.69	61	0.64	61	0.64
WT070	56	0.79	58	0.72	58	0.72
WT080	60	0.67	62	0.61	62	0.61
WT090	61	0.64	62	0.61	63	0.59
WT100	61	0.64	62	0.61	69	0.45
WT110	60	0.67	61	0.64	63	0.59
WT120	43	1.33	54	0.85	63	0.59
WT130	60	0.67	72	0.39	72	0.39
WT140	61	0.64	62	0.61	70	0.43
WT150	61	0.64	65	0.54	74	0.35

Falcon DBPS

Ia Adjustment

Subbasin ID	Historical CN	Ia (in)	Existing CN	Ia (in)	Future CN	Ia (in)
WT160	61	0.64	69	0.45	69	0.45
WT170	55	0.82	58	0.72	64	0.56
WT180	39	1.56	41	1.44	61	0.64
WT190	39	1.56	64	0.56	64	0.56
WT200	39	1.56	57	0.75	64	0.56
WT210	40	1.50	56	0.79	70	0.43
WT220	47	1.13	61	0.64	72	0.39
WT230	51	0.96	70	0.43	73	0.37
WT240	58	0.72	71	0.41	74	0.35
WT250	53	0.89	67	0.49	73	0.37
WT260	59	0.69	63	0.59	63	0.59
WT270	47	1.13	67	0.49	71	0.41
WT280	61	0.64	63	0.59	63	0.59
WT290	51	0.96	63	0.59	63	0.59
WT300	58	0.72	63	0.59	63	0.59
WT310	46	1.17	60	0.67	62	0.61
WT320	41	1.44	61	0.64	63	0.59
WT330	40	1.50	58	0.72	63	0.59
WT340	42	1.38	63	0.59	63	0.59
WT350	48	1.08	62	0.61	64	0.56
WT360	47	1.13	62	0.61	62	0.61
WT370	40	1.50	45	1.22	52	0.92

Notes:

[1] Ia (in) = 0.10*(1000/CN)-10

Falcon DBPS

Existing Time of Concentration Calculations

Worksheet for computation of time of travel according to TR-55 methodology

Blue - GIS defined, Green - user specified, White and yellow - calculated, Red - final result

Watershed Name	WT060	WT050	WT080	WT090	WT110	WT100	ET070	WT150	WT140	MT010	ET060	WT170
Watershed ID	**177**	**66**	**342**	**69**	**70**	**71**	**83**	**332**	**146**	**151**	**210**	**282**
Sheet Flow Characteristics												
Manning's Roughness Coefficient	0.4	0.15	0.15	0.15	0.4	0.011	0.011	0.011	0.15	0.15	0.011	0.15
Flow Length (ft)	100	297	152	131	125	47.4265	100	100	252.4879	220.7734	44.6252	120.7109
Two-Year 24-hour Rainfall (in)	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Land Slope (ft/ft)	0.0776	0.0316	0.0712	0.0669	0.0937	0.0401	0.0437	0.0174	0.0715	0.0874	0.1261	0.0224
Sheet Flow Tt (hr)	0.26	0.40	0.17	0.15	0.29	0.01	0.02	0.03	0.25	0.21	0.01	0.22
Shallow Concentrated Flow Characteristics												
Surface Description (1 - unpaved, 2 - paved)	1	1	1	1	1	1	1	1	1	1	1	1
Flow Length (ft)	629	630	921	4216	2838	625.1232	564.9179	0	340.5642	3491.1034	278.3003	723.4077
Watercourse Slope (ft/ft)	0.0429	0.0401	0.0474	0.0339	0.034	0.0471	0.0115	0	0.0301	0.0267	0.0446	0.0168
Average Velocity - computed (ft/s)	3.34	3.23	3.51	2.97	2.98	3.50	1.73	0.00	2.80	2.64	3.41	2.09
Shallow Concentrated Flow Tt (hr)	0.05	0.05	0.07	0.39	0.26	0.05	0.09	0.00	0.03	0.37	0.02	0.10
Channel Flow Characterisitics												
Cross-sectional Flow Area (ft2)	3.82	102.48	26.55	41.73	5.37	112.64	9.62	9	3.47	60.78	15.9	76.89
Wetted Perimeter (ft)	12.23	70.06	41.28	84.92	11.19	110.27	11	14.04	12.11	77.26	14.14	58.7
Hydraulic Radius - computed (ft)	0.31	1.46	0.64	0.49	0.48	1.02	0.87	0.64	0.29	0.79	1.12	1.31
Channel Slope (ft/ft)	0.0344	0.024	0.0247	0.012	0.0219	0.021	0.013	0.0036	0.0255	0.0226	0.0132	0.0184
Manning's Roughness Coefficient	0.06	0.05	0.05	0.03	0.05	0.05	0.013	0.05	0.05	0.05	0.013	0.05
Average Velocity - computed (ft/s)	2.12	5.95	3.49	3.39	2.70	4.38	11.95	1.33	2.07	3.82	14.24	4.84
Flow Length (ft)	4722	6298	3073	604	2635	5032.4692	4731.5554	5328.7401	2294.7909	4121.0832	6400.2723	3430.8373
Channel Flow Tt (hr)	0.62	0.29	0.24	0.05	0.27	0.32	0.11	1.11	0.31	0.30	0.12	0.20
Watershed Time of travel (hr)	**0.93**	**0.75**	**0.49**	**0.60**	**0.82**	**0.38**	**0.22**	**1.14**	**0.60**	**0.88**	**0.15**	**0.52**
Watershed Lag Time (min)	**33.40**	**26.99**	**17.52**	**21.52**	**29.57**	**13.65**	**7.88**	**41.04**	**21.46**	**31.62**	**5.54**	**18.61**

Number of watersheds	64
MXD Path	Falcon_DBPS.mxd
Stored workbook	
$AVHOME directory	
Name of the table to store the results of the calculation	Subbasin1
Workspace path	C:\GeoHMS\Falcon_DBPS\Falcon_DBPS.mdb

Notes:

[1] Sheet Flow Manning's n values from Table 3-1 in TR55

[2] For LFP's with no Shallow Concentrated Flow length, slopes were manually changed from NaN (default) to 0 and Shallow Concentrated Flow Tc was changed to 0 so Watershed Time of Travel could be computed.

[3] Channel Flow Manning's n values were selected from multiple sources and are documented in the Manning's n Value Selection Quality Assurance packet

[4] Watershed Lag Time = 0.6*Watershed Time of Travel

Falcon DBPS

Existing Time of Concentration Calculations

Worksheet for computation of time of travel according to TR-55 methodology

Blue - GIS defined, Green - user specified, White and yellow - calculated, Red - final result

Watershed Name	WT120	ET030	WT160	ET150	MT100	MT090	MT080	MT030	MT060	ET080	MT070	MT110	WT310	WT300
Watershed ID	**284**	**303**	**298**	**551**	**612**	**608**	**613**	**633**	**643**	**94**	**157**	**167**	**171**	**173**
Sheet Flow Characteristics														
Manning's Roughness Coefficient	0.15	0.011	0.011	0.15	0.15	0.011	0.011	0.15	0.011	0.24	0.15	0.011	0.011	0.15
Flow Length (ft)	191.3389	20.537	26.2133	100	142.9726	100	119.91	88.6543	43.2844	141.055	145.5913	54.54	37.3701	292.2798
Two-Year 24-hour Rainfall (in)	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Land Slope (ft/ft)	0.057	0.0182	0.0352	0.0443	0.0452	0.0054	0.0008	0.0979	0.0326	0.0316	0.0154	0.067	0.0459	0.0418
Sheet Flow Tt (hr)	0.22	0.01	0.01	0.15	0.19	0.04	0.10	0.10	0.01	0.32	0.30	0.01	0.01	0.35
Shallow Concentrated Flow Characteristics														
Surface Description (1 - unpaved, 2 - paved)	1	1	2	1	1	2	2	1	1	1	1	1	1	1
Flow Length (ft)	515.1666	710.4925	0	2978.6929	0	259.7955	0	1309.2521	6116.429	844.1173	6399.686	3391.19	1766.78	883.1998
Watercourse Slope (ft/ft)	0.021	0.0337	0	0.0221	0	0.0253	0	0.032	0.0194	0.0183	0.0204	0.012	0.0273	0.0351
Average Velocity - computed (ft/s)	2.34	2.96	0.00	2.40	0.00	3.23	0.00	2.89	2.25	2.18	2.30	1.77	2.67	3.02
Shallow Concentrated Flow Tt (hr)	0.06	0.07	0.00	0.34	0.00	0.02	0.00	0.13	0.76	0.11	0.77	0.53	0.18	0.08
Channel Flow Characterisitics														
Cross-sectional Flow Area (ft2)	39.43	20.5	4.39	18.39	6.31	25.13	64	19.13	19.69	15.9	4.9	19.9	6.02	3.64
Wetted Perimeter (ft)	101.84	42.22	23.26	32.36	22.61	25.13	32	49.99	35.22	14.14	26.77	39.66	24.31	13.97
Hydraulic Radius - computed (ft)	0.39	0.49	0.19	0.57	0.28	1.00	2.00	0.38	0.56	1.12	0.18	0.50	0.25	0.26
Channel Slope (ft/ft)	0.0154	0.0093	0.0249	0.0094	0.0105	0.0093	0.014	0.0207	0.0355	0.0124	0.012	0.013	0.015	0.0239
Manning's Roughness Coefficient	0.03	0.07	0.013	0.05	0.03	0.013	0.013	0.03	0.06	0.013	0.03	0.07	0.06	0.03
Average Velocity - computed (ft/s)	3.27	1.27	5.95	1.98	2.17	11.05	21.53	3.77	3.18	13.80	1.75	1.53	1.20	3.13
Flow Length (ft)	2950.9478	3715.1193	4363.7964	1523.8687	1939.0988	1519.2867	3055.11	2604.7205	97.6779	5559.793	335.5838	744.17	2422.127	1259.995
Channel Flow Tt (hr)	0.25	0.81	0.20	0.21	0.25	0.04	0.04	0.19	0.01	0.11	0.05	0.13	0.56	0.11
Watershed Time of travel (hr)	**0.53**	**0.89**	**0.21**	**0.71**	**0.44**	**0.10**	**0.14**	**0.42**	**0.78**	**0.54**	**1.13**	**0.68**	**0.75**	**0.55**
Watershed Lag Time (min)	**19.24**	**31.96**	**7.58**	**25.39**	**15.89**	**3.69**	**5.18**	**14.94**	**27.90**	**19.49**	**40.56**	**24.38**	**27.12**	**19.69**

Number of watersheds
MXD Path
Stored workbook
$AVHOME directory
Name of the table to store the results of the calculation
Workspace path

Falcon DBPS

Existing Time of Concentration Calculations

Worksheet for computation of time of travel according to TR-55 methodology

Blue - GIS defined, Green - user specified, White and yellow - calculated, Red - final result

Watershed Name	WT010	WT280	ET140	ET130	WT230	WT040	MT020	MT050	WT240	WT250	ET110	ET100	WT220	WT370	WT350	WT340	WT330
Watershed ID	**183**	**247**	**351**	**353**	**407**	**588**	**635**	**649**	**663**	**667**	**681**	**682**	**267**	**114**	**214**	**116**	**123**
Sheet Flow Characteristics																	
Manning's Roughness Coefficient	0.4	0.15	0.15	0.15	0.24	0.4	0.15	0.24	0.011	0.011	0.15	0.011	0.011	0.15	0.15	0.15	0.15
Flow Length (ft)	146.5688	68.6391	118.6398	119.4977	45.0001	128.3412	16.2369	167.7821	54	110.7786	296.0756	48.2844	56.2392	148.5814	199.706	296.2138	298.7012
Two-Year 24-hour Rainfall (in)	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Land Slope (ft/ft)	0.0766	0.0321	0.0214	0.0243	0.1104	0.0443	0.0215	0.0209	0.037	0.0125	0.0362	0.1191	0.019	0.0363	0.024	0.0345	0.05
Sheet Flow Tt (hr)	0.35	0.12	0.22	0.22	0.08	0.39	0.05	0.44	0.01	0.03	0.38	0.01	0.02	0.22	0.33	0.39	0.34
Shallow Concentrated Flow Characteristics																	
Surface Description (1 - unpaved, 2 - paved)	1	1	1	1	2	1	1	2	2	2	1	1	1	1	1	1	1
Flow Length (ft)	742.1945	1860.327	1172.282	828.555	181.5689	984.9924	3260.587	275.2087	0	0	2365.505	762.0473	5060.256	0	3420.637	4497.88	5188.524
Watercourse Slope (ft/ft)	0.04	0.0259	0.0172	0.0128	0.0228	0.0516	0.032	0.0239	0	0	0.0271	0.0225	0.021	0	0.0467	0.0237	0.0225
Average Velocity - computed (ft/s)	3.23	2.60	2.12	1.83	3.07	3.67	2.89	3.14	0.00	0.00	2.66	2.42	2.34	0.00	3.49	2.48	2.42
Shallow Concentrated Flow Tt (hr)	0.06	0.20	0.15	0.13	0.02	0.07	0.31	0.02	0.00	0.00	0.25	0.09	0.60	0.00	0.27	0.50	0.60
Channel Flow Characterisitics																	
Cross-sectional Flow Area (ft2)	3.99	2.43	25.47	21.02	4.39	8.4	20.97	2.91	4.39	4.39	39.65	4.58	6.73	30.81	59.79	6.55	12.59
Wetted Perimeter (ft)	15.4	9.26	84.23	169.15	23.26	26.23	40.88	6.68	23.26	23.26	105.42	8.91	12.27	26.96	38.47	17.42	25.95
Hydraulic Radius - computed (ft)	0.26	0.26	0.30	0.12	0.19	0.32	0.51	0.44	0.19	0.19	0.38	0.51	0.55	1.14	1.55	0.38	0.49
Channel Slope (ft/ft)	0.0324	0.0179	0.0113	0.0144	0.009	0.026	0	0.0173	0.0175	0.0112	0.0114	0.0119	0.0108	0.0119	0.0088	0.0209	0.0119
Manning's Roughness Coefficient	0.06	0.03	0.06	0.05	0.013	0.05	0.05	0.03	0.013	0.013	0.03	0.03	0.03	0.05	0.05	0.03	0.05
Average Velocity - computed (ft/s)	1.82	2.72	1.19	0.89	3.58	2.25	0.00	3.75	4.99	3.99	2.76	3.48	3.46	3.55	3.75	3.74	2.01
Flow Length (ft)	1719.181	2209.347	6595.197	3022.555	4460.603	4086.883	0	3582.906	4002.366	3560.407	866.4156	1602.548	1573.016	6132.815	3083.294	4257.557	508.9379
Channel Flow Tt (hr)	0.26	0.23	1.54	0.94	0.35	0.50	0.00	0.27	0.22	0.25	0.09	0.13	0.13	0.48	0.23	0.32	0.07
Watershed Time of travel (hr)	**0.68**	**0.55**	**1.92**	**1.28**	**0.44**	**0.97**	**0.36**	**0.73**	**0.23**	**0.28**	**0.71**	**0.22**	**0.74**	**0.70**	**0.83**	**1.21**	**1.00**
Watershed Lag Time (min)	**24.38**	**19.72**	**69.09**	**46.22**	**15.88**	**34.99**	**12.94**	**26.13**	**8.45**	**10.10**	**25.68**	**8.00**	**26.77**	**25.11**	**29.76**	**43.40**	**36.05**

Number of watersheds	
MXD Path	
Stored workbook	
$AVHOME directory	
Name of the table to store the results of the calculation	
Workspace path	

Falcon DBPS

Existing Time of Concentration Calculations

Worksheet for computation of time of travel according to TR-55 methodology

Blue - GIS defined, Green - user specified, White and yellow - calculated, Red - final result

Watershed Name	WT030	WT020	WT210	ET160	WT360	WT260	WT290	WT270	ET120	ET090	WT180	MT040	WT200	WT190	WT130	WT320	ET010
Watershed ID	**187**	**189**	**199**	**221**	**227**	**256**	**238**	**242**	**252**	**262**	**848**	**272**	**276**	**278**	**288**	**308**	**318**
Sheet Flow Characteristics																	
Manning's Roughness Coefficient	0.15	0.4	0.15	0.15	0.011	0.15	0.011	0.011	0.011	0.24	0.25	0.15	0.15	0.011	0.15	0.15	0.15
Flow Length (ft)	141.2626	266.2251	285.0006	80.005	87.4266	100	100	40.3554	61.2133	138.9952	296	75.2183	183.5462	100	88.7973	261.2747	78
Two-Year 24-hour Rainfall (in)	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Land Slope (ft/ft)	0.103	0.1066	0.0231	0.0189	0.0402	0.0508	0.0513	0.0274	0.0332	0.0589	0.027	0.0608	0.0297	0.0174	0.0421	0.0858	0.0256
Sheet Flow Tt (hr)	0.14	0.50	0.44	0.17	0.02	0.14	0.02	0.01	0.01	0.25	0.64	0.10	0.28	0.03	0.14	0.24	0.15
Shallow Concentrated Flow Characteristics																	
Surface Description (1 - unpaved, 2 - paved)	1	1	1	1	1	1	1	1	1	1	2	1	1	1	2	1	1
Flow Length (ft)	432.1399	295.3505	4198.315	3912.236	2241.548	1133.028	267.4881	0	5817.561	0	4489.17	3144.352	9180.05	0	0	2919.894	528
Watercourse Slope (ft/ft)	0.0424	0.0619	0.0198	0.0146	0.0171	0.0154	0.0196	0	0.0164	0	0.024	0.03	0.0209	0	0	0.0372	0.0303
Average Velocity - computed (ft/s)	3.32	4.01	2.27	1.95	2.11	2.00	2.26	0.00	2.07	0.00	3.15	2.79	2.33	0.00	0.00	3.11	2.81
Shallow Concentrated Flow Tt (hr)	0.04	0.02	0.51	0.56	0.30	0.16	0.03	0.00	0.78	0.00	0.40	0.31	1.09	0.00	0.00	0.26	0.05
Channel Flow Characterisitics																	
Cross-sectional Flow Area (ft2)	6.12	8.51	39.77	22.37	10.27	0.82	41.59	9.66	25.13	9.72	163.44	4.32	25.69	3.88	4.39	28.9	15.97
Wetted Perimeter (ft)	11.83	29.87	160.6	24.5	37.46	3.97	114.48	33.28	25.13	31.92	140.79	7.39	57.74	14.09	23.26	26.6	31.94
Hydraulic Radius - computed (ft)	0.52	0.28	0.25	0.91	0.27	0.21	0.36	0.29	1.00	0.30	1.16	0.58	0.44	0.28	0.19	1.09	0.50
Channel Slope (ft/ft)	0.0224	0.0271	0.0145	0.0093	0.0083	0.0082	0.0107	0.0147	0.005	0.0096	0.0135	0.0172	0.0316	0.0232	0.0249	0.0101	0.0217
Manning's Roughness Coefficient	0.05	0.06	0.06	0.03	0.05	0.06	0.05	0.03	0.013	0.03	0.05	0.03	0.05	0.03	0.013	0.05	0.05
Average Velocity - computed (ft/s)	2.87	1.77	1.18	4.51	1.15	0.79	1.57	2.64	8.10	2.20	3.82	4.55	3.09	3.20	5.95	3.17	2.77
Flow Length (ft)	2076.623	1662.612	2770.435	2028.925	1285.17	2358.52	2236.363	3268.233	47.5001	7102.49	443	5292.631	316	3336.891	3894.055	2166.302	4966.49
Channel Flow Tt (hr)	0.20	0.26	0.65	0.13	0.31	0.83	0.40	0.34	0.00	0.90	0.03	0.32	0.03	0.29	0.18	0.19	0.50
Watershed Time of travel (hr)	**0.37**	**0.78**	**1.61**	**0.85**	**0.62**	**1.13**	**0.45**	**0.35**	**0.80**	**1.14**	**1.07**	**0.74**	**1.40**	**0.32**	**0.32**	**0.69**	**0.70**
Watershed Lag Time (min)	**13.49**	**27.95**	**57.82**	**30.78**	**22.45**	**40.67**	**16.05**	**12.76**	**28.71**	**41.18**	**38.49**	**26.58**	**50.45**	**11.37**	**11.44**	**24.97**	**25.23**

Number of watersheds
MXD Path
Stored workbook
$AVHOME directory
Name of the table to store the results of the calculation
Workspace path

Falcon DBPS

Existing Time of Concentration Calculations

Worksheet for computation of time of travel according to TR-55 methodology

Blue - GIS defined, Green - user specified, White and yellow - calculated, Red - final result

Watershed Name	ET020	WT070	ET050	ET040	FS010
Watershed ID	**328**	**343**	**467**	**468**	**5**
Sheet Flow Characteristics					
Manning's Roughness Coefficient	0.15	0.4	0.011	0.011	0.011
Flow Length (ft)	43.6613	45.0001	47.0712	301.3711	29
Two-Year 24-hour Rainfall (in)	2.1	2.1	2.1	2.1	2.1
Land Slope (ft/ft)	0.1105	0.0566	0.0263	0.052	0.0552
Sheet Flow Tt (hr)	0.05	0.15	0.01	0.04	0.01
Shallow Concentrated Flow Characteristics					
Surface Description (1 - unpaved, 2 - paved)	2	1	1	1	1
Flow Length (ft)	0	861.3369	1478.833	0	0
Watercourse Slope (ft/ft)	0	0.0441	0.0202	0	0
Average Velocity - computed (ft/s)	0.00	3.39	2.29	0.00	0.00
Shallow Concentrated Flow Tt (hr)	0.00	0.07	0.18	0.00	0.00
Channel Flow Characterisitics					
Cross-sectional Flow Area (ft2)	3.55	13.56	12.57	2.07	10
Wetted Perimeter (ft)	9.58	20.48	12.57	6.76	40.01
Hydraulic Radius - computed (ft)	0.37	0.66	1.00	0.31	0.25
Channel Slope (ft/ft)	0.0211	0.0236	0.0125	0.0171	0.0208
Manning's Roughness Coefficient	0.03	0.05	0.013	0.03	0.06
Average Velocity - computed (ft/s)	3.72	3.48	12.81	2.95	1.42
Flow Length (ft)	5760.795	3717.648	1130.583	6137.448	4362
Channel Flow Tt (hr)	0.43	0.30	0.02	0.58	0.85
Watershed Time of travel (hr)	**0.48**	**0.52**	**0.22**	**0.62**	**0.86**
Watershed Lag Time (min)	**17.37**	**18.77**	**7.77**	**22.28**	**30.92**

Number of watersheds	1
MXD Path	Falcon_DBPS.mxd
Stored workbook	
$AVHOME directory	
Name of the table to store the results of the calculation	Subbasin3
Workspace path	C:\GeoHMS\Falcon_DBPS_South\Falcon_DBPS_South.mdb

Falcon DBPS

Manning's n Values

Manning's n Description	Selected Value
Vegetated Roadside Ditch	**0.03**
Grass Swale	**0.06**
Channel - Sand	**0.03**
Channel - Grass	**0.05**
Channel - Willow	**0.07**
Floodplain - Grass	**0.08**
Floodplain - Willow	**0.15**

References:

1 Guide for Selecting Manning's Roughness Coefficients for Natural Channels and Floodplains, USGS Water Supply Paper 2339

2 City of Colorado Springs DCM

3 CDOT DCM

4 UDFCD DCM

5 Guide for Selecting Roughness Coefficient "n" Values For Channels, NRCS (SCS), 1963

6 Cottonwood Creek DBPS

Falcon DBPS

Routing Description

Reach	Length (ft)	Slope (ft/ft)	Manning's n	Invert (ft)	Shape	Diameter (ft)	Width (ft)	Side Slope (h:v)	L.B. Manning's n	R.B. Manning's n
RET020	3063.9	0.0186036	0.05	7113.75	Eight Point	--	--	--	0.08	0.08
RET030	5307.2	0.0146972	0.07	7019.43	Eight Point	--	--	--	0.08	0.08
RET040	1951	0.0194768	0.07	6958.54	Eight Point	--	--	--	0.15	0.15
RET050	1877.3	0.0207744	0.07	6938.26	Eight Point	--	--	--	0.08	0.08
RET060	1866	0.0117898	0.05	6896.01	Eight Point	--	--	--	0.08	0.08
RET070	2209.2	0.0185584	0.07	6868.86	Eight Point	--	--	--	0.08	0.08
RET080	1569.2	0.0044608	0.07	6855.75	Eight Point	--	--	--	0.15	0.15
RET090	378.7	0.0052812	0.07	6854.04	Eight Point	--	--	--	0.15	0.15
RET100	1916.5	0.0203494	0.03	6832.6	Eight Point	--	--	--	0.08	0.08
RET110	2956.5	0.0145443	0.03	6780.51	Eight Point	--	--	--	0.08	0.08
RET120	1474.5	0.0047475	0.03	6766.26	Eight Point	--	--	--	0.08	0.08
RET140	4052.5	0.0134575	0.03	6779.63	Eight Point	--	--	--	0.08	0.08
RET152	2217.2	0.0175895	0.03	6755.38	Eight Point	--	--	--	0.08	0.08
RET154	2358.2	0.0132409	0.05	6743.88	Eight Point	--	--	--	0.08	0.08
RET156	1006.8	0.0079457	0.03	6727.09	Eight Point	--	--	--	0.08	0.08
RET162	3410.6	0.0108486	0.05	6699.33	Eight Point	--	--	--	0.08	0.08
RET164	2094.9	0.0124114	0.03	6671.23	Eight Point	--	--	--	0.08	0.08
RMT030	3636.4	0.0202839	0.03	7033.46	Eight Point	--	--	--	0.08	0.08
RMT040	1310.1	0.0091599	0.03	6984	Eight Point	--	--	--	0.08	0.08
RMT050	1567.7	0.0191364	0.03	6965.39	Eight Point	--	--	--	0.08	0.08
RMT062	6001.9	0.0201602	0.05	6928.82	Eight Point	--	--	--	0.08	0.08
RMT064	3355.9	0.0160912	0.05	6911.23	Eight Point	--	--	--	0.08	0.08
RMT070	1118.3	0.0107303	0.05	6881.93	Eight Point	--	--	--	0.08	0.08
RMT080	2187.7	0.0118848	0.013		Rectangle	--	8	--		
RMT090	284.64	0.0105	0.013		Circle	3	--	--		
RMT102	1101.3	0.0208837	0.07	6840.11	Eight Point	--	--	--	0.15	0.15
RMT104	866.69	0.015	0.05	6846	Eight Point	--	--	--	0.08	0.08
RMT106	234.5	0.0042644	0.07	6831.79	Eight Point	--	--	--	0.15	0.15
RMT112	3556.1	0.0143416	0.07	6802.15	Eight Point	--	--	--	0.15	0.15
RMT114	1760.2	0.0170437	0.05	6758.55	Eight Point	--	--	--	0.08	0.08
RWT030	2078.5	0.0232	0.05	7392.86	Eight Point	--	--	--	0.08	0.08
RWT042	1561.2	0.0263708	0.05	7366.57	Eight Point	--	--	--	0.08	0.08
RWT044	2369.4	0.0291215	0.05	7367.84	Eight Point	--	--	--	0.08	0.08
RWT046	2587.6	0.0212553	0.05	7294.2	Eight Point	--	--	--	0.08	0.08
RWT054	2699.213562	0.021117	0.05	7267.87	Eight Point	--	--	--	0.08	0.08
RWT080	3461.5	0.0271559	0.05	7253.59	Eight Point	--	--	--	0.08	0.08
RWT092	651.99	0.0184053	0.03	7224.51	Eight Point	--	--	--	0.08	0.08
RWT094	2357.7	0.0114517	0.03	7190.23	Eight Point	--	--	--	0.08	0.08
RWT122	561.63	0.0124637	0.03	7184.96	Eight Point	--	--	--	0.08	0.08
RWT124	2423.9	0.0165024	0.03	7153.3	Eight Point	--	--	--	0.08	0.08
RWT150	2608	0.019	0.05	7174.97	Eight Point	--	--	--	0.08	0.08
RWT160	1565.7	0.0204375	0.05	7114.22	Eight Point	--	--	--	0.08	0.08
RWT172	3101.9	0.0190205	0.05	7114.4	Eight Point	--	--	--	0.08	0.08

Falcon DBPS

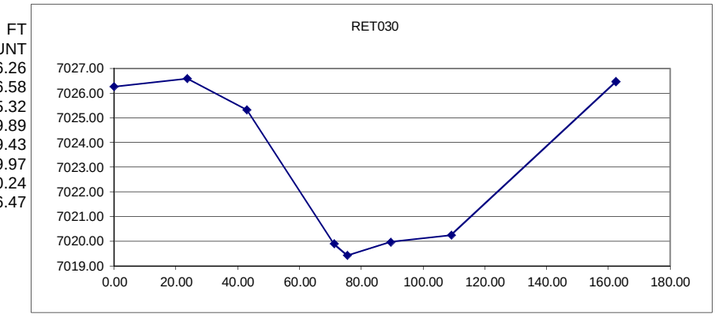
Routing Description

Reach	Length (ft)	Slope (ft/ft)	Manning's n	Invert (ft)	Shape	Diameter (ft)	Width (ft)	Side Slope (h:v)	L.B. Manning's n	R.B. Manning's n
RWT174	1869.6	0.0160463	0.05	7105.07	Eight Point	--	--	--	0.08	0.08
RWT176	326.42	0.0122541	0.03	7079.07	Eight Point	--	--	--	0.08	0.08
RWT180	3727.614345	0.0204	0.05	7015.13	Eight Point	--	--	--	0.08	0.08
RWT202	3011.790196	0.0212	0.05	6953.23	Eight Point	--	--	--	0.08	0.08
RWT204	3538.4	0.0218	0.05	6952	Eight Point	--	--	--	0.08	0.08
RWT210	2914.7	0.0133803	0.03	6906.35	Eight Point	--	--	--	0.08	0.08
RWT232	2180	0.0178898	0.05	6861.66	Eight Point	--	--	--	0.08	0.08
RWT234	2126.1	0.0201117	0.05	6860	Eight Point	--	--	--	0.08	0.08
RWT236	124.98	0.008	0.013		Rectangle		42		--	--
RWT240	1044	0.013	0.05	6837.41	Eight Point	--	--	--	0.08	0.08
RWT240_Diversion Reach	929	0.013	0.07	6826	Eight Point	--	--	--	0.15	0.15
RWT250	184.35	0.0054245	0.07	6818.14	Eight Point	--	--	--	0.15	0.15
RWT260	2371.1	0.015183	0.05	6800.68	Eight Point	--	--	--	0.08	0.08
RWT291	986.55	0.0223001	0.05	6780.96	Eight Point	--	--	--	0.08	0.08
RWT292	733.2	0.0165	0.05	6779.41	Eight Point	--	--	--	0.08	0.08
RWT294	536.02	0.0149	0.05	6772.93	Eight Point	--	--	--	0.08	0.08
RWT295	217	0.0091575	0.05	6763.06	Eight Point	--	--	--	0.08	0.08
RWT296	1202.594155	0.0091575	0.05	6763.06	Eight Point	--	--	--	0.08	0.08
RWT312	3295.8	0.0265	0.05	6731.53	Eight Point	--	--	--	0.08	0.08
RWT314	2428.7	0.0148227	0.05	6734.64	Eight Point	--	--	--	0.08	0.08
RWT320	2459.5	0.0093515	0.05	6692.49	Eight Point	--	--	--	0.08	0.08
RWT344	1380.563492	0.010865	0.03	6666	Eight Point	--	--	--	0.08	0.08
RWT352	3134.2	0.0121	0.05	6662.01	Eight Point	--	--	--	0.08	0.08
RWT354	14.142	0.0121	0.05	6658.11	Eight Point	--	--	--	0.08	0.08
RWT372	1466.3	0.0184133	0.07	6642.65	Eight Point	--	--	--	0.15	0.15
RWT374	2309.9	0.016	0.05	6659.99	Eight Point	--	--	--	0.08	0.08
RWT376	2601.5	0.0103788	0.05	6623.3	Eight Point	--	--	--	0.08	0.08

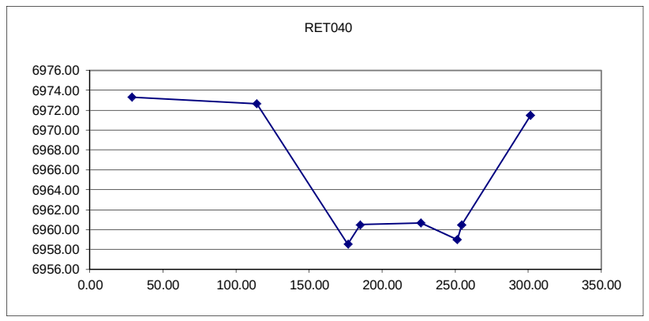
Falcon DBPS
Routing Sections

Labels	**RET020**	
Units	FT	FT
Type	UNT	UNT
1	50.81	7120.32
2	72.59	7118.20
3	154.56	7115.65
4	225.04	7115.04
5	243.61	7113.75
6	262.48	7114.93
7	318.49	7115.76
8	344.20	7115.76

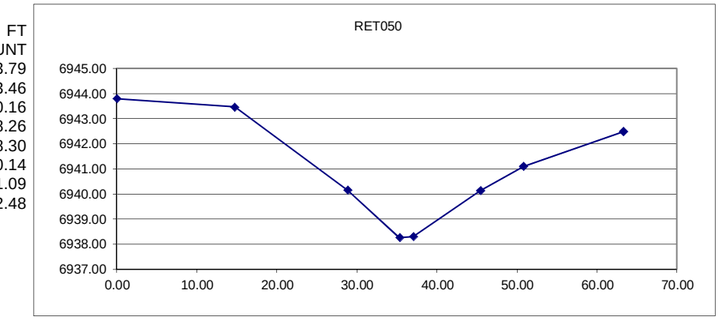
Labels	**RET030**	
Units	FT	FT
Type	UNT	UNT
1	0.00	7026.26
2	23.68	7026.58
3	42.94	7025.32
4	71.15	7019.89
5	75.55	7019.43
6	89.59	7019.97
7	109.14	7020.24
8	162.48	7026.47



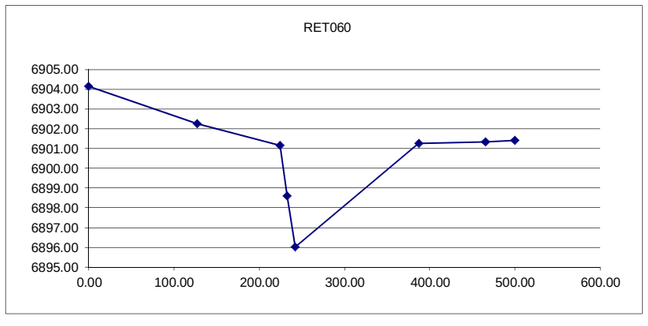
Labels	**RET040**	
Units	FT	FT
Type	UNT	UNT
1	28.99	6973.29
2	114.15	6972.63
3	176.67	6958.54
4	185.20	6960.48
5	226.47	6960.65
6	251.46	6958.99
7	254.60	6960.48
8	301.51	6971.47



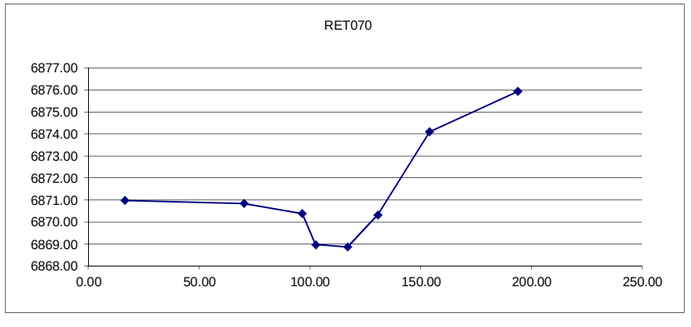
Labels	**RET050**	
Units	FT	FT
Type	UNT	UNT
1	0.00	6943.79
2	14.74	6943.46
3	28.85	6940.16
4	35.34	6938.26
5	37.06	6938.30
6	45.44	6940.14
7	50.83	6941.09
8	63.32	6942.48



Labels	**RET060**	
Units	FT	FT
Type	UNT	UNT
1	0.00	6904.16
2	127.10	6902.26
3	224.45	6901.16
4	232.40	6898.60
5	242.02	6896.01
6	386.92	6901.27
7	465.15	6901.33
8	500.00	6901.42

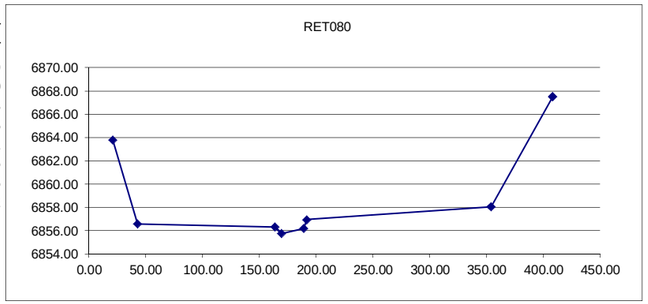


Labels	**RET070**	
Units	FT	FT
Type	UNT	UNT
1	16.60	6870.98
2	70.22	6870.85
3	96.52	6870.39
4	102.62	6868.97
5	117.03	6868.86
6	130.63	6870.31
7	154.05	6874.10
8	193.94	6875.94

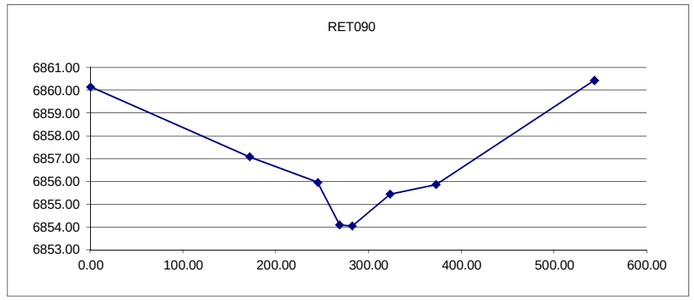


Falcon DBPS
Routing Sections

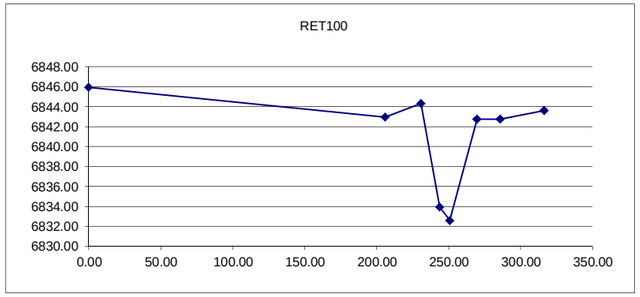
Labels	RET080	
Units	FT	FT
Type	UNT	UNT
1	21.35	6863.79
2	43.06	6856.60
3	163.93	6856.33
4	169.39	6855.75
5	189.29	6856.21
6	191.64	6856.96
7	354.03	6858.06
8	408.08	6867.52



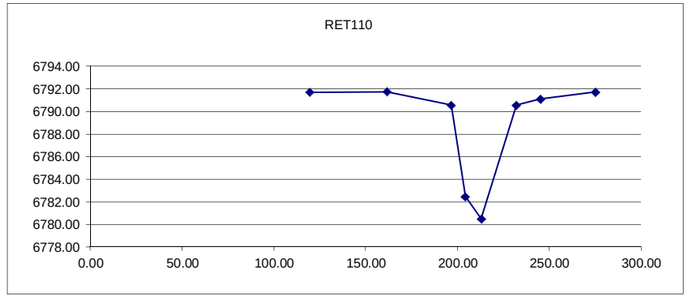
Labels	RET090	
Units	FT	FT
Type	UNT	UNT
1	0.00	6860.16
2	171.56	6857.08
3	245.14	6855.96
4	268.81	6854.08
5	282.37	6854.04
6	323.31	6855.43
7	372.89	6855.86
8	543.83	6860.45



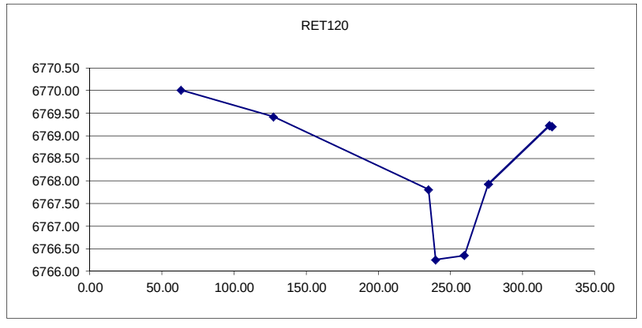
Labels	RET100	
Units	FT	FT
Type	UNT	UNT
1	0.00	6845.96
2	205.92	6842.96
3	230.83	6844.31
4	243.63	6833.94
5	250.79	6832.60
6	269.64	6842.77
7	285.91	6842.76
8	316.17	6843.61



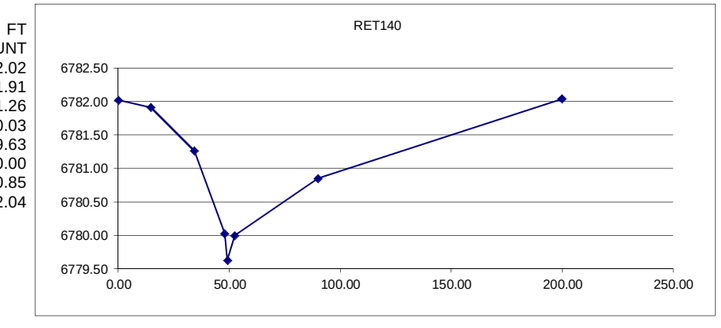
Labels	RET110	
Units	FT	FT
Type	UNT	UNT
1	119.58	6791.69
2	161.68	6791.75
3	196.52	6790.56
4	204.34	6782.47
5	212.97	6780.51
6	232.09	6790.57
7	245.15	6791.10
8	275.25	6791.73



Labels	RET120	
Units	FT	FT
Type	UNT	UNT
1	63.05	6770.01
2	127.34	6769.42
3	234.80	6767.81
4	239.61	6766.26
5	259.64	6766.35
6	276.25	6767.93
7	318.89	6769.23
8	320.54	6769.20

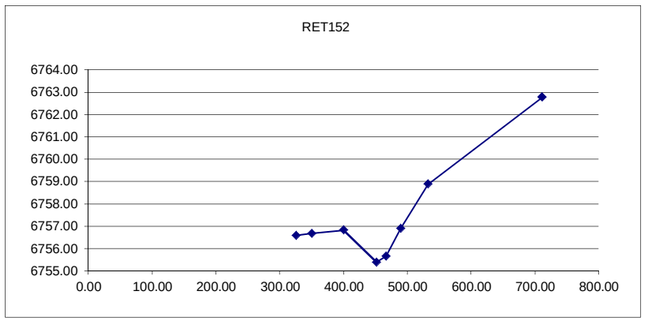


Labels	RET140	
Units	FT	FT
Type	UNT	UNT
1	0.00	6782.02
2	14.66	6781.91
3	34.31	6781.26
4	47.95	6780.03
5	49.22	6779.63
6	52.49	6780.00
7	90.03	6780.85
8	199.95	6782.04

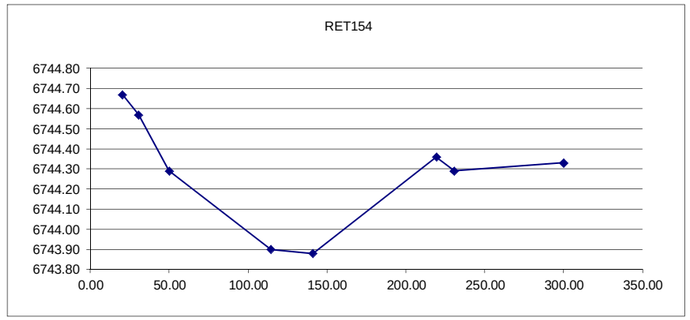


Falcon DBPS
Routing Sections

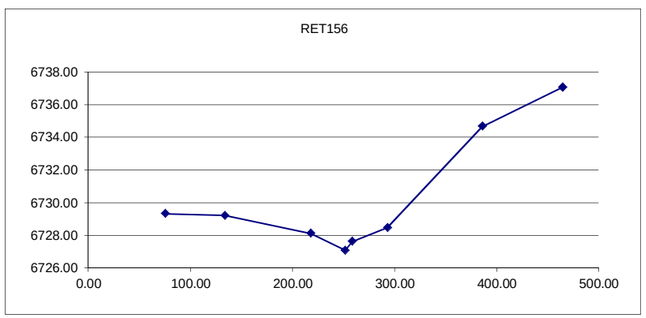
Labels	**RET152**	
Units	FT	FT
Type	UNT	UNT
1	325.91	6756.58
2	350.21	6756.68
3	400.45	6756.82
4	451.87	6755.39
5	466.44	6755.66
6	489.70	6756.90
7	532.40	6758.88
8	711.47	6762.77



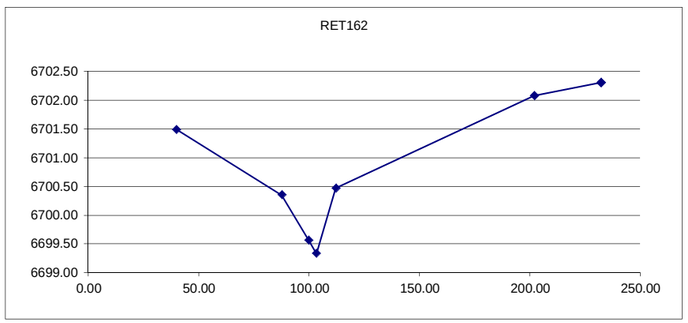
Labels	**RET154**	
Units	FT	FT
Type	UNT	UNT
1	20.28	6744.67
2	30.64	6744.57
3	50.01	6744.29
4	114.41	6743.90
5	141.03	6743.88
6	219.26	6744.36
7	230.63	6744.29
8	300.00	6744.33



Labels	**RET156**	
Units	FT	FT
Type	UNT	UNT
1	75.39	6729.33
2	133.64	6729.22
3	217.76	6728.12
4	251.52	6727.09
5	258.63	6727.63
6	293.28	6728.47
7	386.01	6734.67
8	465.04	6737.07

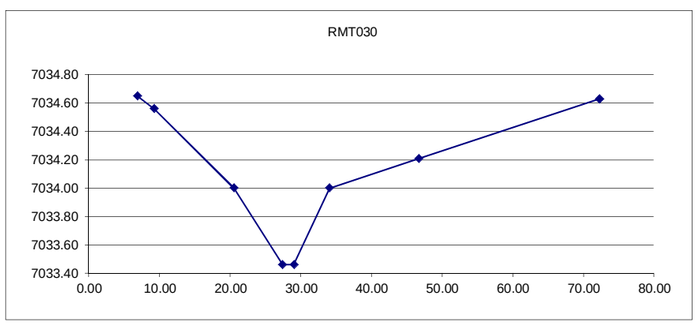


Labels	**RET162**	
Units	FT	FT
Type	UNT	UNT
1	39.95	6701.49
2	87.67	6700.35
3	99.86	6699.56
4	103.34	6699.33
5	112.17	6700.47
6	202.10	6702.08
7	232.27	6702.31
8	232.27	6702.31



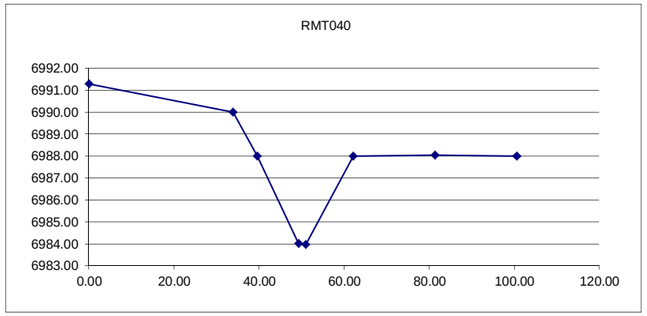
Labels	**RET164**	
Units	FT	FT
Type	UNT	UNT
1	0.00	6674.05
2	9.86	6673.58
3	11.48	6673.49
4	28.47	6671.23
5	29.93	6671.61
6	41.40	6673.41
7	174.93	6673.93
8	235.34	6675.17

Labels	**RMT030**	
Units	FT	FT
Type	UNT	UNT
1	6.87	7034.65
2	9.27	7034.56
3	20.57	7034.00
4	27.43	7033.46
5	29.03	7033.46
6	34.08	7034.00
7	46.71	7034.21
8	72.27	7034.63

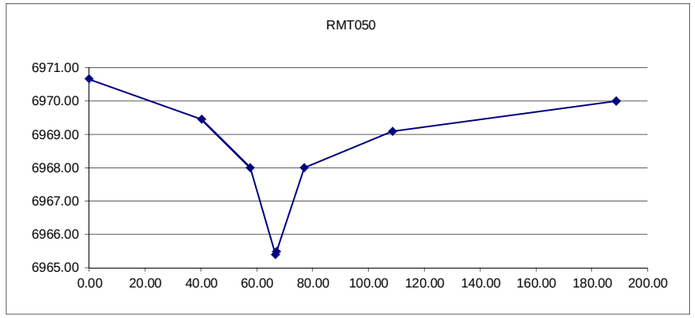


Falcon DBPS
Routing Sections

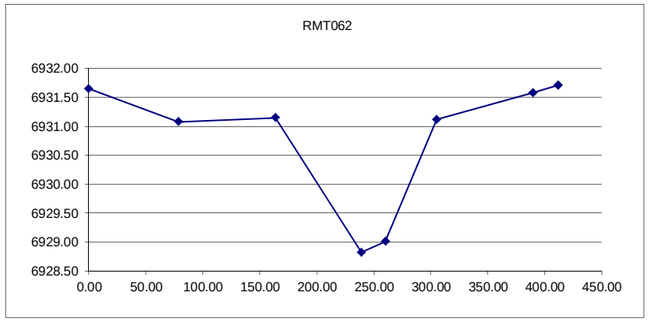
Labels	RMT040	
Units	FT	FT
Type	UNT	UNT
1	0.00	6991.29
2	33.94	6990.00
3	39.61	6988.00
4	49.34	6984.00
5	50.96	6983.96
6	62.12	6988.00
7	81.42	6988.04
8	100.64	6988.00



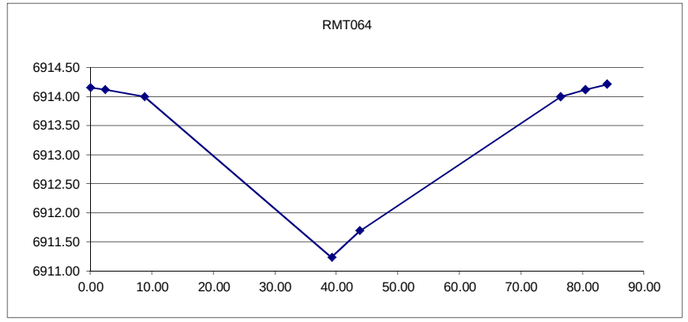
Labels	RMT050	
Units	FT	FT
Type	UNT	UNT
1	0.00	6970.66
2	40.22	6969.46
3	57.69	6968.00
4	66.66	6965.39
5	67.06	6965.49
6	77.04	6968.00
7	108.54	6969.09
8	188.80	6970.00



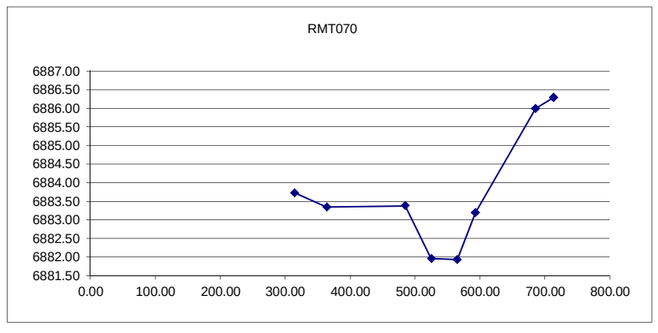
Labels	RMT062	
Units	FT	FT
Type	UNT	UNT
1	0.00	6931.65
2	78.73	6931.08
3	163.58	6931.15
4	239.02	6928.82
5	260.11	6929.01
6	305.00	6931.12
7	389.85	6931.58
8	412.03	6931.71



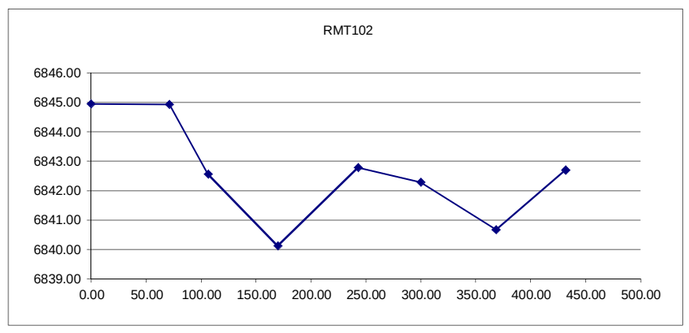
Labels	RMT064	
Units	FT	FT
Type	UNT	UNT
1	0.00	6914.15
2	2.40	6914.12
3	8.83	6914.00
4	39.25	6911.23
5	43.83	6911.69
6	76.48	6914.00
7	80.52	6914.12
8	83.98	6914.21



Labels	RMT070	
Units	FT	FT
Type	UNT	UNT
1	314.71	6883.72
2	364.02	6883.35
3	484.74	6883.38
4	524.98	6881.96
5	565.22	6881.93
6	593.09	6883.20
7	685.93	6886.00
8	713.63	6886.30

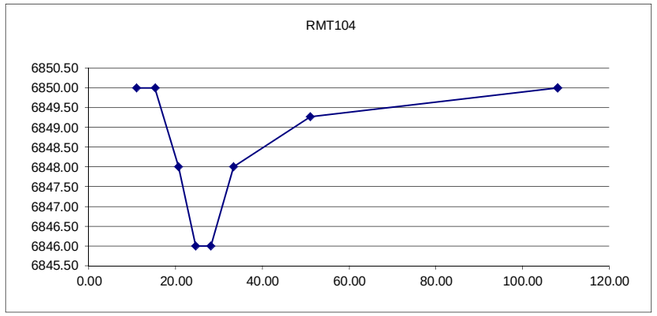


Labels	RMT102	
Units	FT	FT
Type	UNT	UNT
1	0.00	6844.95
2	71.02	6844.93
3	106.33	6842.56
4	169.73	6840.11
5	242.89	6842.79
6	299.76	6842.29
7	368.42	6840.66
8	431.85	6842.70

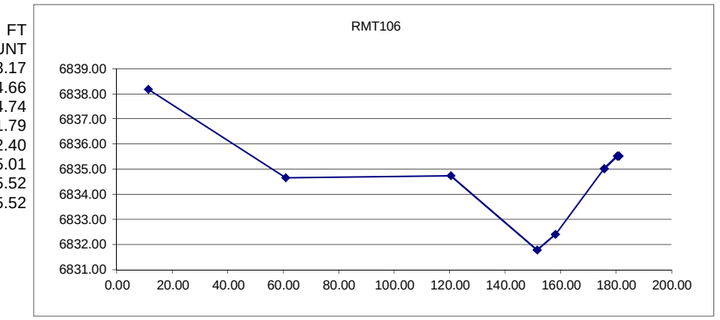


Falcon DBPS
Routing Sections

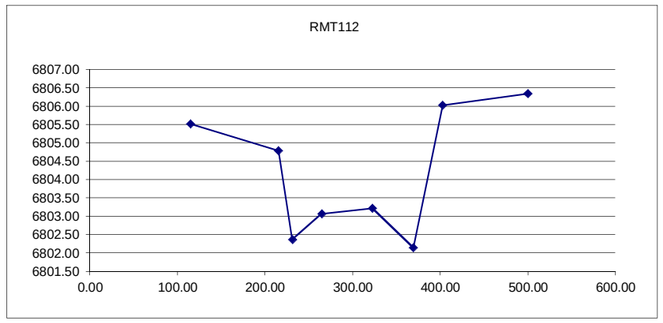
Labels	**RMT104**	
Units	FT	FT
Type	UNT	UNT
1	11.03	6850.00
2	15.26	6850.00
3	20.69	6848.00
4	24.60	6846.00
5	28.11	6846.00
6	33.39	6848.00
7	51.05	6849.27
8	108.05	6850.00



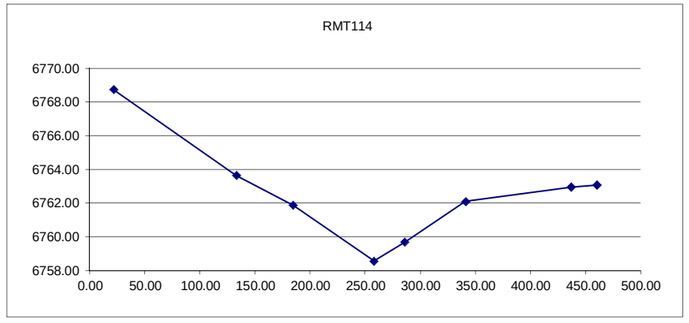
Labels	**RMT106**	
Units	FT	FT
Type	UNT	UNT
1	11.44	6838.17
2	60.93	6834.66
3	120.44	6834.74
4	151.63	6831.79
5	158.12	6832.40
6	175.71	6835.01
7	180.42	6835.52
8	180.98	6835.52



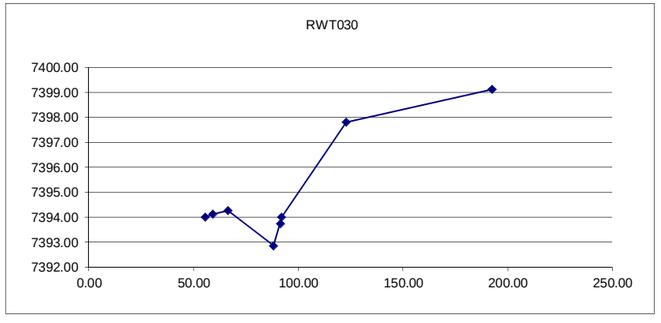
Labels	**RMT112**	
Units	FT	FT
Type	UNT	UNT
1	115.00	6805.51
2	215.31	6804.79
3	231.24	6802.36
4	264.69	6803.07
5	322.79	6803.22
6	369.32	6802.15
7	402.94	6806.02
8	500.00	6806.34



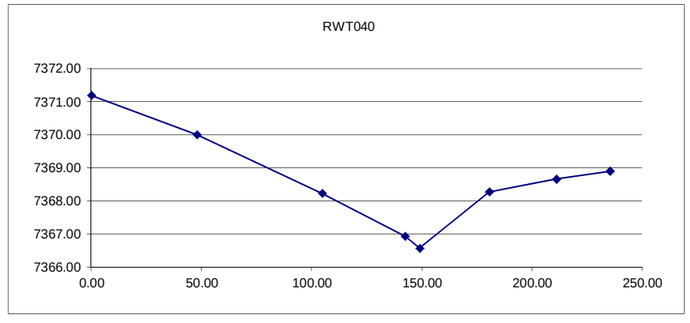
Labels	**RMT114**	
Units	FT	FT
Type	UNT	UNT
1	21.65	6768.74
2	133.02	6763.63
3	184.62	6761.87
4	257.87	6758.55
5	285.86	6759.67
6	341.26	6762.09
7	437.17	6762.95
8	460.35	6763.07



Labels	**RWT030**	
Units	FT	FT
Type	UNT	UNT
1	55.54	7394.00
2	59.18	7394.12
3	66.45	7394.27
4	88.20	7392.86
5	91.40	7393.75
6	92.02	7394.00
7	122.98	7397.80
8	192.58	7399.12

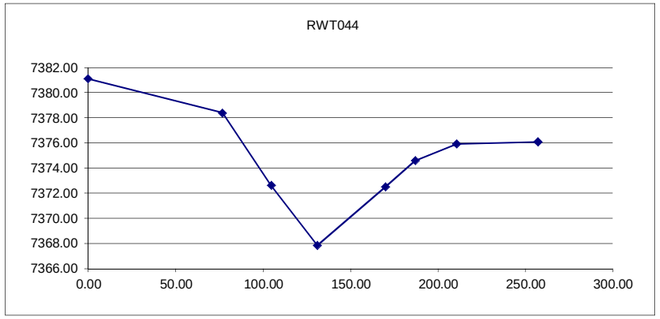


Labels	**RWT042**	
Units	FT	FT
Type	UNT	UNT
1	0.00	7371.19
2	48.11	7370.00
3	104.78	7368.23
4	142.47	7366.93
5	149.01	7366.57
6	180.68	7368.27
7	211.25	7368.66
8	235.51	7368.90

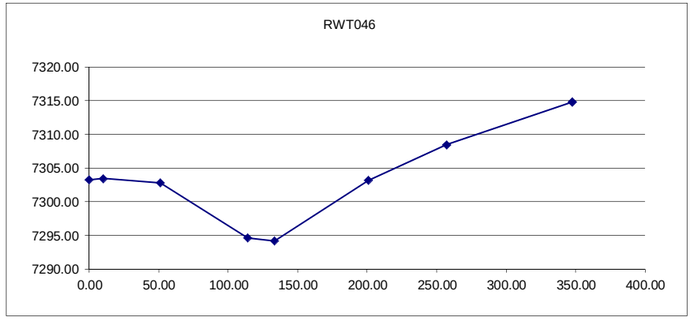


Falcon DBPS
Routing Sections

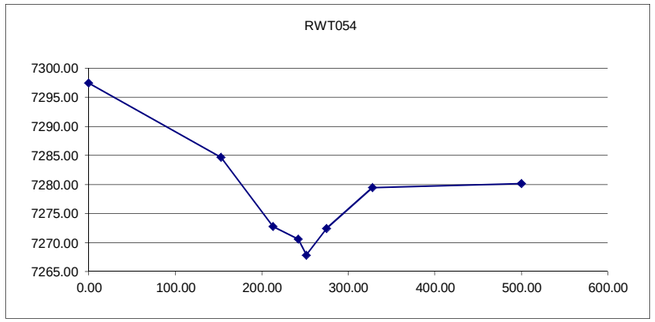
Labels	**RWT044**	
Units	FT	FT
Type	UNT	UNT
1	0.00	7381.10
2	76.67	7378.39
3	104.57	7372.63
4	131.04	7367.84
5	170.08	7372.49
6	186.94	7374.58
7	210.82	7375.91
8	257.15	7376.07



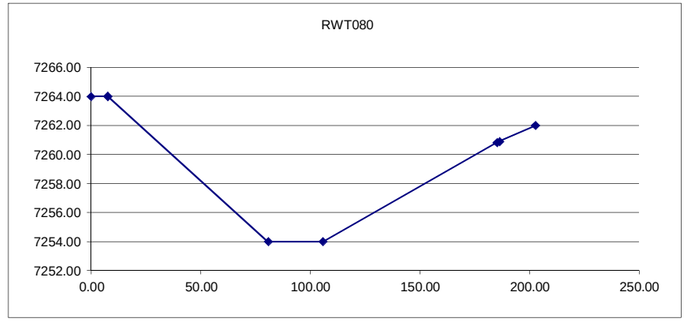
Labels	**RWT046**	
Units	FT	FT
Type	UNT	UNT
1	0.00	7303.27
2	10.13	7303.45
3	51.06	7302.81
4	114.03	7294.62
5	133.23	7294.20
6	200.77	7303.20
7	257.27	7308.47
8	347.47	7314.82



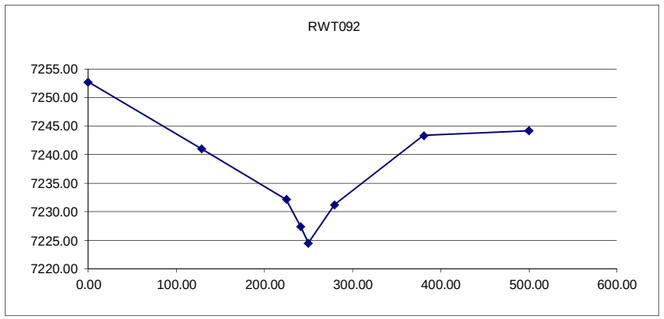
Labels	**RWT054**	
Units	FT	FT
Type	UNT	UNT
1	0.00	7297.47
2	152.96	7284.67
3	212.83	7272.79
4	242.00	7270.60
5	251.51	7267.87
6	275.00	7272.46
7	328.13	7279.47
8	500.00	7280.15



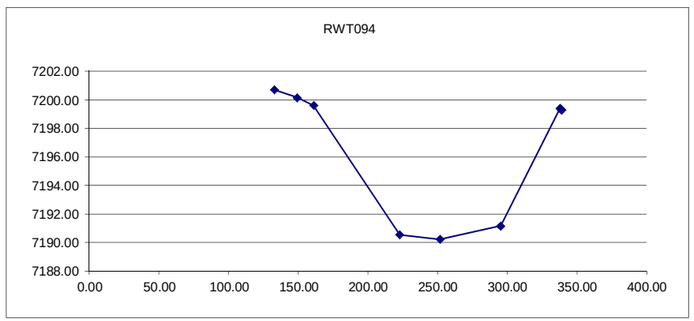
Labels	**RWT080**	
Units	FT	FT
Type	UNT	UNT
1	0.00	7264.00
2	7.43	7264.01
3	7.61	7264.00
4	80.74	7254.00
5	105.68	7254.00
6	185.19	7260.83
7	186.28	7260.90
8	202.74	7262.00



Labels	**RWT092**	
Units	FT	FT
Type	UNT	UNT
1	0.00	7252.72
2	128.77	7241.03
3	224.78	7232.15
4	240.99	7227.40
5	249.93	7224.51
6	279.49	7231.23
7	380.70	7243.36
8	500.00	7244.21

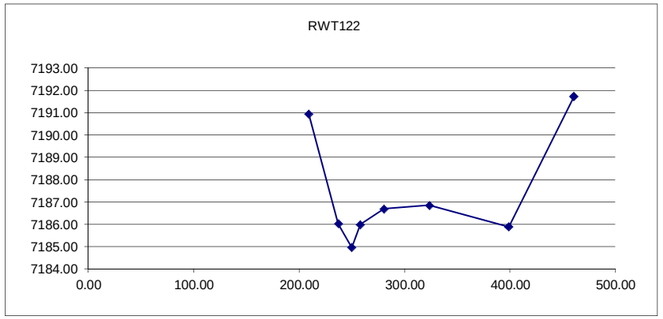


Labels	**RWT094**	
Units	FT	FT
Type	UNT	UNT
1	133.00	7200.70
2	149.09	7200.16
3	160.98	7199.61
4	222.84	7190.54
5	251.66	7190.23
6	295.32	7191.17
7	337.86	7199.40
8	339.13	7199.29

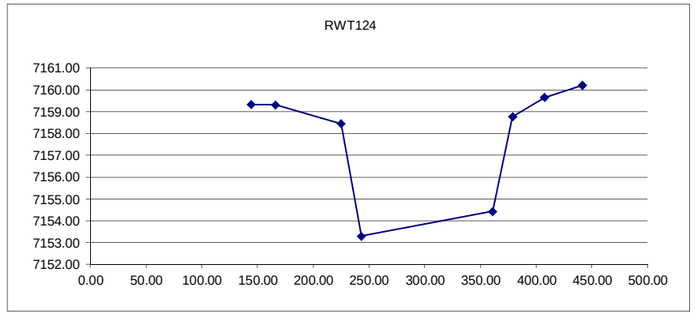


Falcon DBPS
Routing Sections

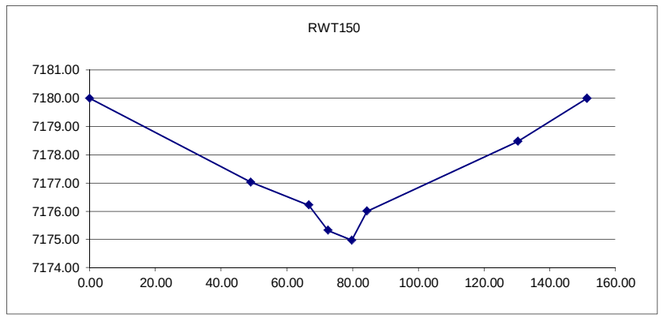
Labels	**RWT122**	
Units	FT	FT
Type	UNT	UNT
1	209.10	7190.94
2	237.22	7186.03
3	249.83	7184.96
4	257.88	7185.99
5	280.40	7186.70
6	323.40	7186.85
7	398.76	7185.89
8	460.81	7191.73



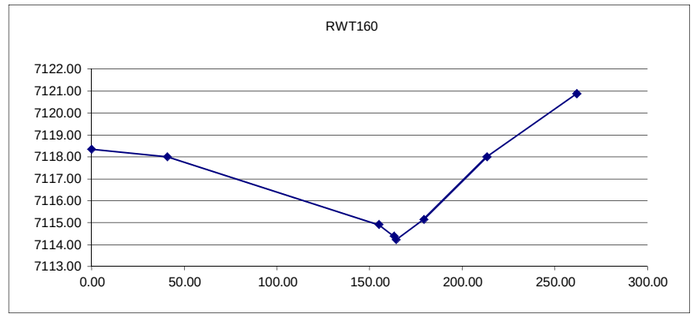
Labels	**RWT124**	
Units	FT	FT
Type	UNT	UNT
1	144.47	7159.33
2	165.81	7159.32
3	225.00	7158.45
4	243.03	7153.30
5	360.96	7154.43
6	378.91	7158.77
7	407.54	7159.65
8	441.39	7160.21



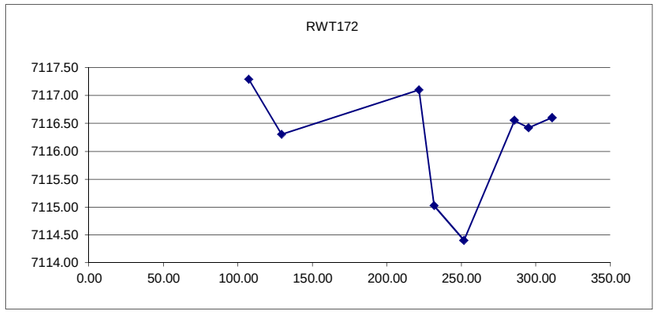
Labels	**RWT150**	
Units	FT	FT
Type	UNT	UNT
1	0.00	7180.00
2	48.99	7177.03
3	66.68	7176.21
4	72.56	7175.32
5	79.79	7174.97
6	84.31	7176.00
7	130.24	7178.47
8	151.42	7180.00



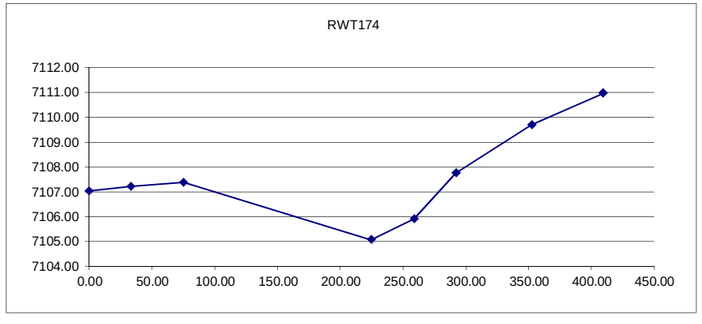
Labels	**RWT160**	
Units	FT	FT
Type	UNT	UNT
1	0.00	7118.34
2	40.85	7118.00
3	155.00	7114.90
4	163.26	7114.37
5	164.31	7114.22
6	179.11	7115.14
7	213.16	7118.00
8	261.68	7120.87



Labels	**RWT172**	
Units	FT	FT
Type	UNT	UNT
1	107.33	7117.29
2	129.47	7116.30
3	221.61	7117.10
4	231.82	7115.02
5	251.70	7114.40
6	285.48	7116.55
7	295.13	7116.42
8	310.80	7116.60

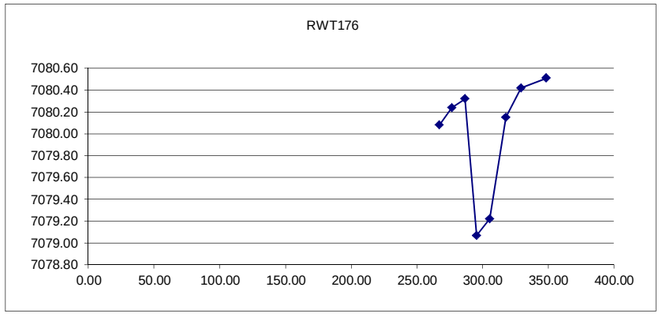


Labels	**RWT174**	
Units	FT	FT
Type	UNT	UNT
1	0.00	7107.04
2	33.35	7107.22
3	75.19	7107.38
4	224.47	7105.07
5	259.06	7105.91
6	292.24	7107.77
7	352.43	7109.70
8	409.42	7110.97

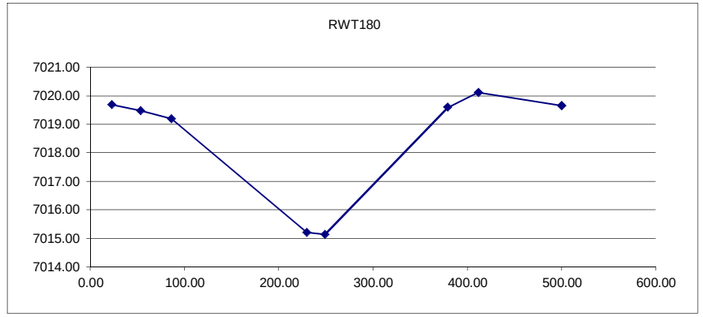


Falcon DBPS
Routing Sections

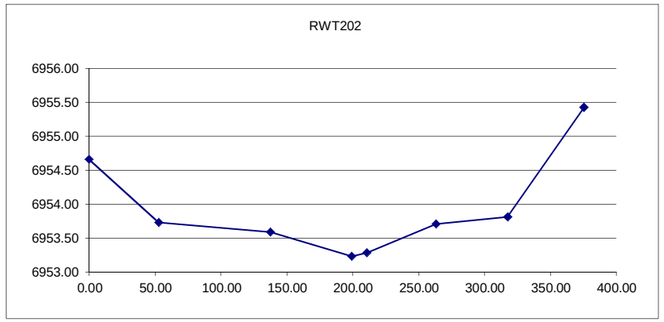
Labels	**RWT176**	
Units	FT	FT
Type	UNT	UNT
1	267.13	7080.08
2	276.58	7080.24
3	286.54	7080.32
4	295.48	7079.07
5	305.44	7079.22
6	317.77	7080.15
7	329.21	7080.42
8	348.60	7080.51



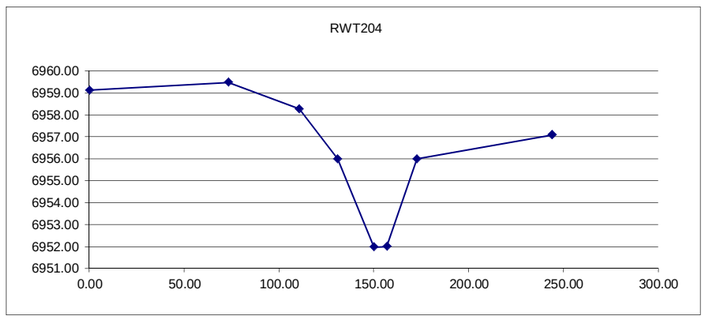
Labels	**RWT180**	
Units	FT	FT
Type	UNT	UNT
1	22.49	7019.69
2	53.48	7019.47
3	86.04	7019.19
4	229.71	7015.21
5	248.86	7015.13
6	379.12	7019.59
7	411.68	7020.11
8	500.00	7019.65



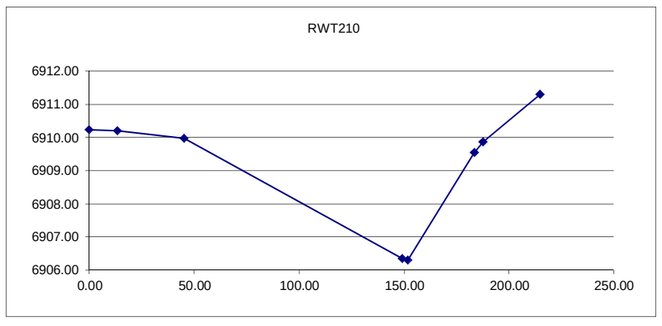
Labels	**RWT202**	
Units	FT	FT
Type	UNT	UNT
1	0.00	6954.66
2	52.88	6953.73
3	137.42	6953.59
4	199.08	6953.23
5	210.51	6953.28
6	263.05	6953.71
7	317.37	6953.81
8	375.41	6955.43



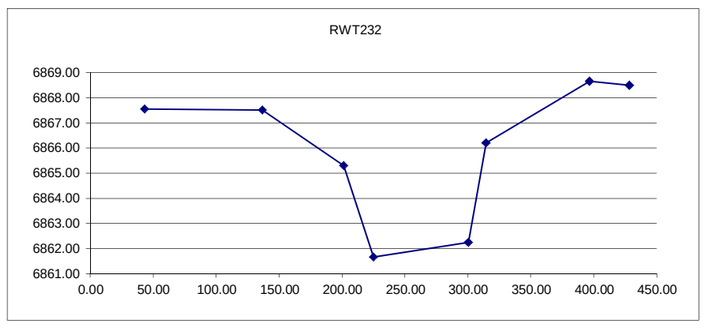
Labels	**RWT204**	
Units	FT	FT
Type	UNT	UNT
1	0.00	6959.13
2	73.39	6959.48
3	110.74	6958.27
4	130.93	6956.00
5	150.09	6951.98
6	156.89	6952.00
7	172.71	6956.00
8	243.93	6957.09



Labels	**RWT210**	
Units	FT	FT
Type	UNT	UNT
1	0.00	6910.23
2	13.30	6910.20
3	45.11	6909.98
4	149.18	6906.35
5	151.75	6906.30
6	183.44	6909.54
7	187.60	6909.87
8	214.75	6911.30

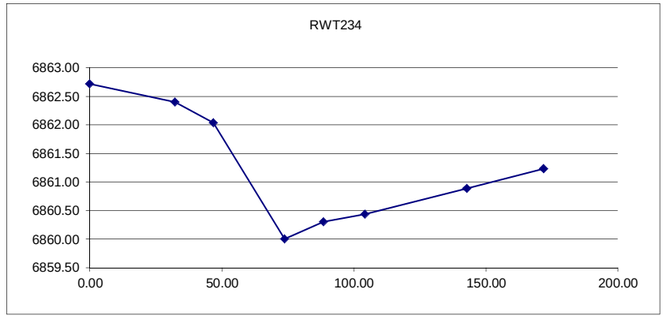


Labels	**RWT232**	
Units	FT	FT
Type	UNT	UNT
1	43.28	6867.55
2	136.55	6867.51
3	201.23	6865.30
4	224.94	6861.66
5	300.27	6862.25
6	314.50	6866.21
7	396.66	6868.65
8	428.43	6868.50

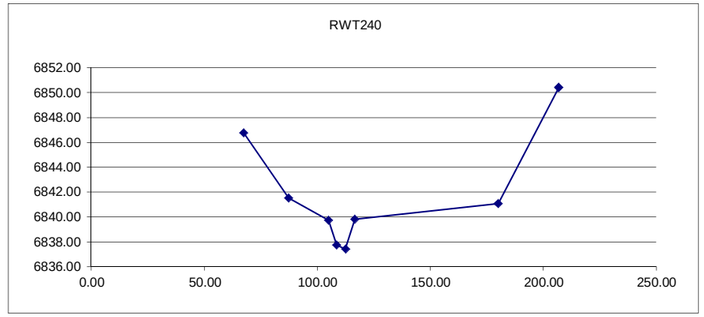


Falcon DBPS
Routing Sections

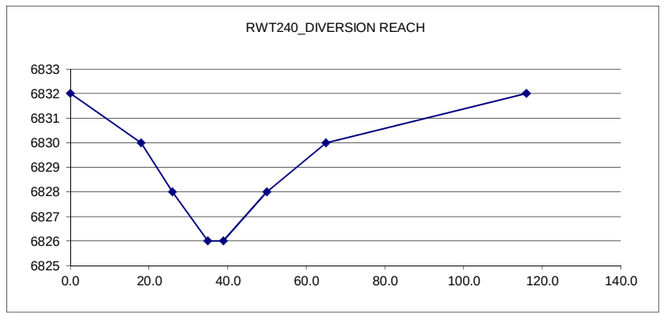
Labels	**RWT234**	
Units	FT	FT
Type	UNT	UNT
1	0.00	6862.72
2	32.34	6862.40
3	46.74	6862.04
4	73.82	6860.00
5	88.41	6860.30
6	104.15	6860.44
7	142.84	6860.89
8	171.85	6861.23



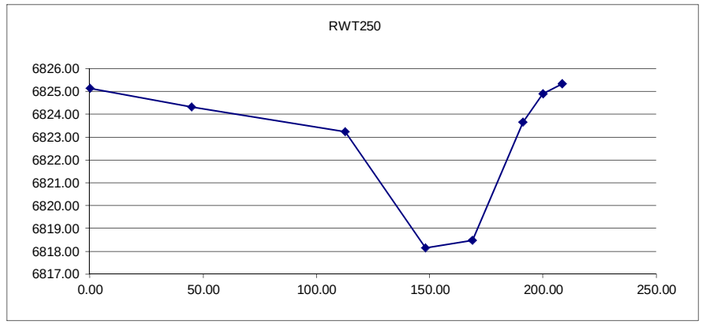
Labels	**RWT240**	
Units	FT	FT
Type	UNT	UNT
1	67.35	6846.78
2	87.29	6841.51
3	104.93	6839.72
4	108.60	6837.76
5	112.48	6837.41
6	116.52	6839.81
7	180.04	6841.07
8	206.93	6850.42



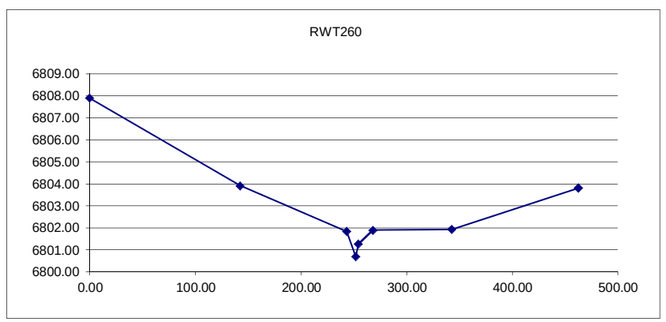
Labels	**RWT240_DIVERSION REACH**	
Units	FT	FT
Type	UNT	UNT
1	0.0	6832
2	18.0	6830
3	26.0	6828
4	35.0	6826
5	39.0	6826
6	50.0	6828
7	65.0	6830
8	116.0	6832



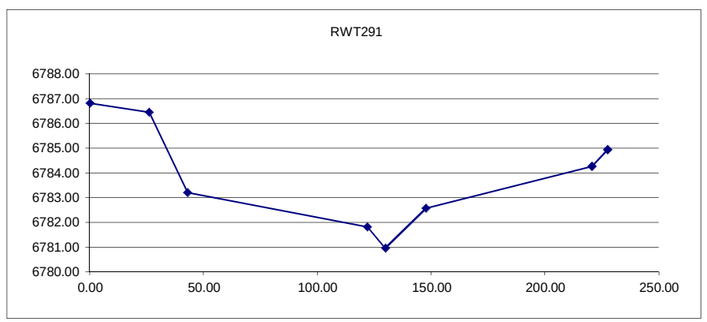
Labels	**RWT250**	
Units	FT	FT
Type	UNT	UNT
1	0.00	6825.14
2	44.98	6824.31
3	112.76	6823.23
4	148.21	6818.14
5	168.90	6818.47
6	191.15	6823.65
7	199.99	6824.90
8	208.51	6825.33



Labels	**RWT260**	
Units	FT	FT
Type	UNT	UNT
1	0.00	6807.90
2	142.25	6803.91
3	243.13	6801.84
4	252.00	6800.68
5	254.28	6801.25
6	267.95	6801.89
7	342.53	6801.93
8	462.54	6803.81

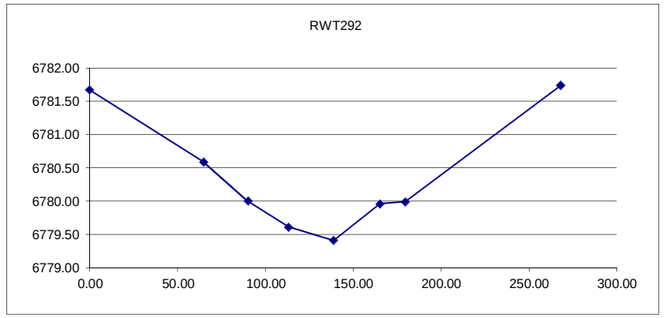


Labels	**RWT291**	
Units	FT	FT
Type	UNT	UNT
1	0.00	6786.81
2	26.18	6786.44
3	42.93	6783.20
4	121.98	6781.82
5	129.83	6780.96
6	147.77	6782.57
7	220.67	6784.27
8	227.58	6784.94

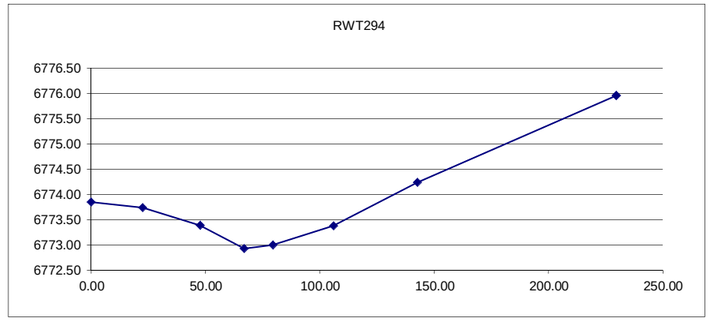


Falcon DBPS
Routing Sections

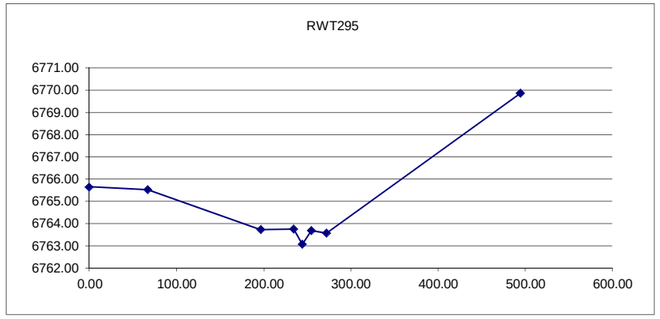
Labels	**RWT292**	
Units	FT	FT
Type	UNT	UNT
1	0.00	6781.67
2	64.69	6780.59
3	90.00	6780.00
4	113.05	6779.61
5	138.68	6779.41
6	165.15	6779.96
7	179.52	6779.99
8	267.99	6781.74



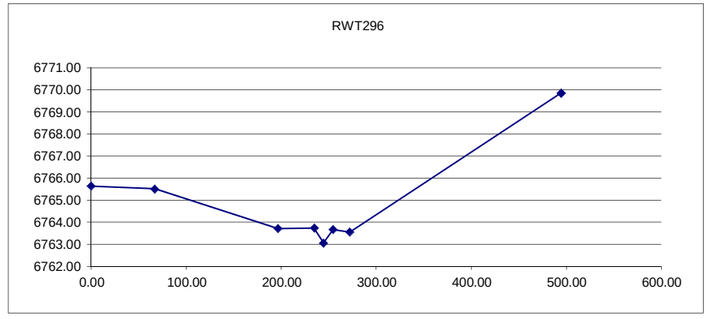
Labels	**RWT294**	
Units	FT	FT
Type	UNT	UNT
1	0.00	6773.85
2	22.39	6773.74
3	47.54	6773.39
4	66.92	6772.93
5	79.37	6773.00
6	105.84	6773.38
7	142.64	6774.24
8	229.72	6775.96



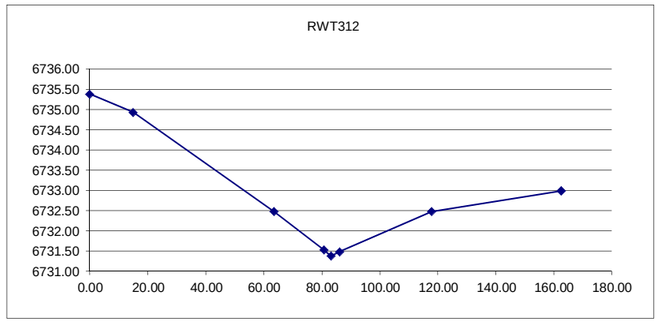
Labels	**RWT295**	
Units	FT	FT
Type	UNT	UNT
1	0.00	6765.64
2	66.75	6765.51
3	196.45	6763.72
4	234.63	6763.74
5	244.49	6763.06
6	254.51	6763.67
7	271.86	6763.56
8	494.62	6769.86



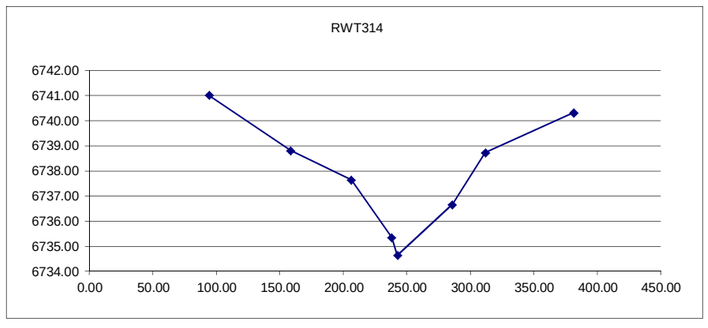
Labels	**RWT296**	
Units	FT	FT
Type	UNT	UNT
1	0.00	6765.64
2	66.75	6765.51
3	196.45	6763.72
4	234.63	6763.74
5	244.49	6763.06
6	254.51	6763.67
7	271.86	6763.56
8	494.62	6769.86



Labels	**RWT312**	
Units	FT	FT
Type	UNT	UNT
1	0.00	6735.38
2	14.86	6734.93
3	63.48	6732.48
4	80.76	6731.53
5	83.13	6731.38
6	86.19	6731.49
7	117.80	6732.48
8	162.53	6732.99

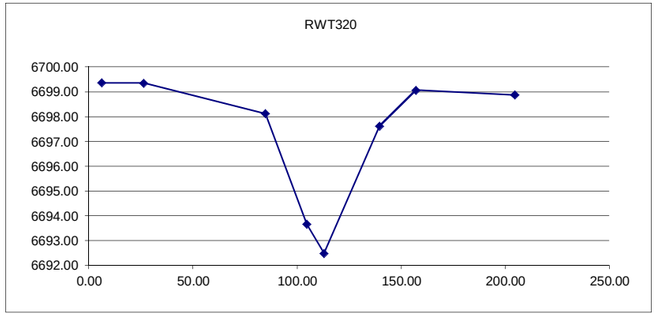


Labels	**RWT314**	
Units	FT	FT
Type	UNT	UNT
1	94.28	6741.01
2	158.66	6738.81
3	206.30	6737.64
4	237.96	6735.35
5	242.69	6734.64
6	285.80	6736.66
7	311.84	6738.73
8	381.41	6740.32

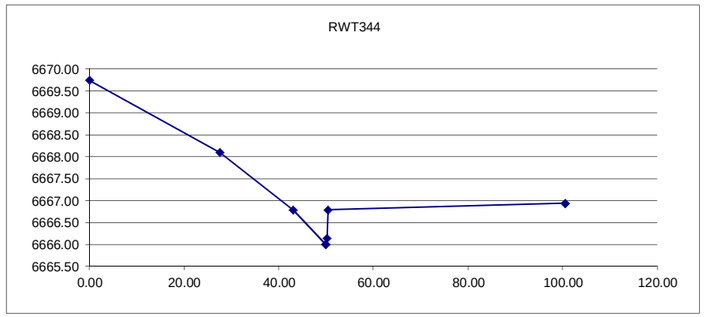


Falcon DBPS
Routing Sections

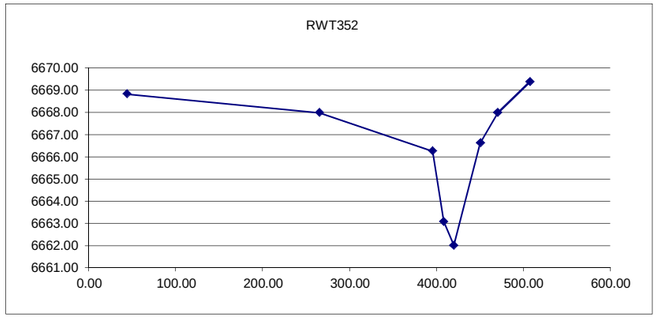
Labels	**RWT320**	
Units	FT	FT
Type	UNT	UNT
1	6.12	6699.36
2	26.38	6699.35
3	84.74	6698.12
4	104.75	6693.66
5	112.85	6692.49
6	139.61	6697.62
7	157.07	6699.07
8	204.59	6698.87



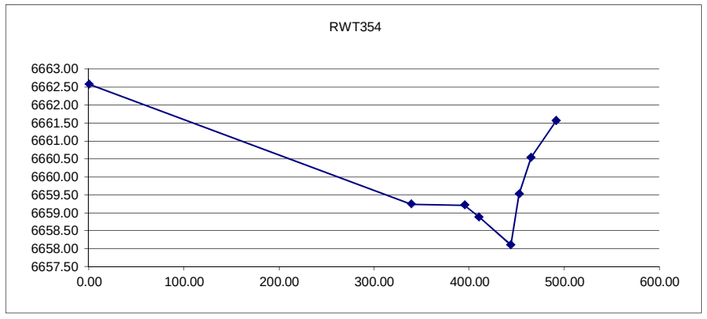
Labels	**RWT344**	
Units	FT	FT
Type	UNT	UNT
1	0.00	6669.74
2	27.58	6668.10
3	43.00	6666.79
4	49.89	6666.00
5	49.98	6666.00
6	50.20	6666.14
7	50.46	6666.79
8	100.52	6666.94



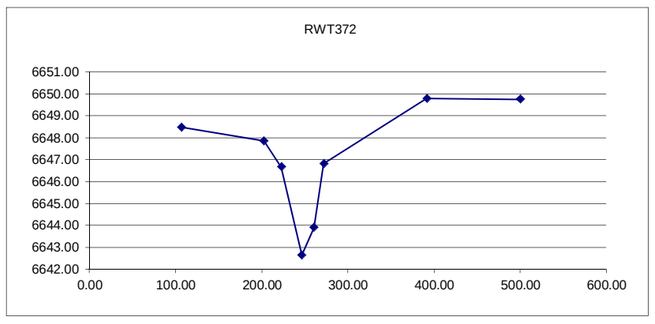
Labels	**RWT352**	
Units	FT	FT
Type	UNT	UNT
1	44.22	6668.83
2	265.35	6667.98
3	395.49	6666.25
4	408.32	6663.08
5	419.88	6662.01
6	450.31	6666.62
7	470.17	6667.98
8	507.52	6669.38



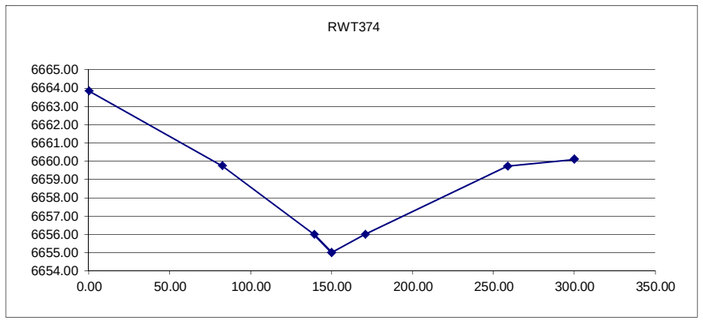
Labels	**RWT354**	
Units	FT	FT
Type	UNT	UNT
1	0.00	6662.58
2	339.24	6659.24
3	395.35	6659.21
4	410.56	6658.88
5	443.90	6658.11
6	452.55	6659.52
7	465.25	6660.54
8	491.74	6661.57



Labels	**RWT372**	
Units	FT	FT
Type	UNT	UNT
1	106.79	6648.47
2	202.67	6647.85
3	222.74	6646.66
4	246.49	6642.65
5	260.41	6643.90
6	272.03	6646.81
7	391.59	6649.78
8	500.00	6649.75

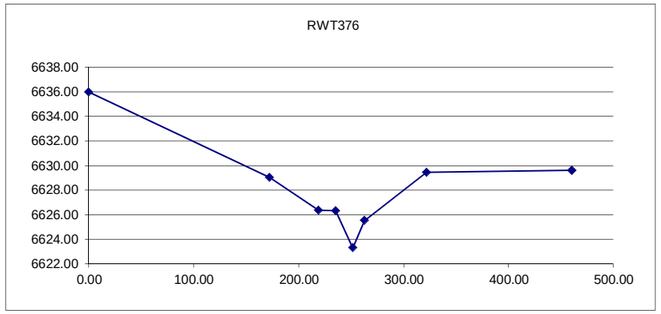


Labels	**RWT374**	
Units	FT	FT
Type	UNT	UNT
1	0.00	6663.85
2	82.61	6659.74
3	139.17	6656.00
4	149.91	6654.99
5	150.00	6654.99
6	170.74	6656.00
7	258.71	6659.73
8	300.00	6660.10



Falcon DBPS
Routing Sections

Labels	**RWT376**	
Units	FT	FT
Type	UNT	UNT
1	0.00	6635.98
2	172.25	6629.03
3	219.02	6626.37
4	235.16	6626.32
5	251.45	6623.30
6	262.65	6625.52
7	322.01	6629.45
8	460.28	6629.62



Matrix Design Group, Inc.
An Employee Owned Company

Job. No. _____
Date 6 / 22 / 11
Sheet 1 of 1
By GJB

Project Falcon DBPS
Subject Diversion @ JWT174

Diversion Channel Dimensions (Measured w/ Topo & Aerial in GIS)

Bottom Width = 16 FT

Z_L = 3.25 : 1

Z_R = 8.5 : 1

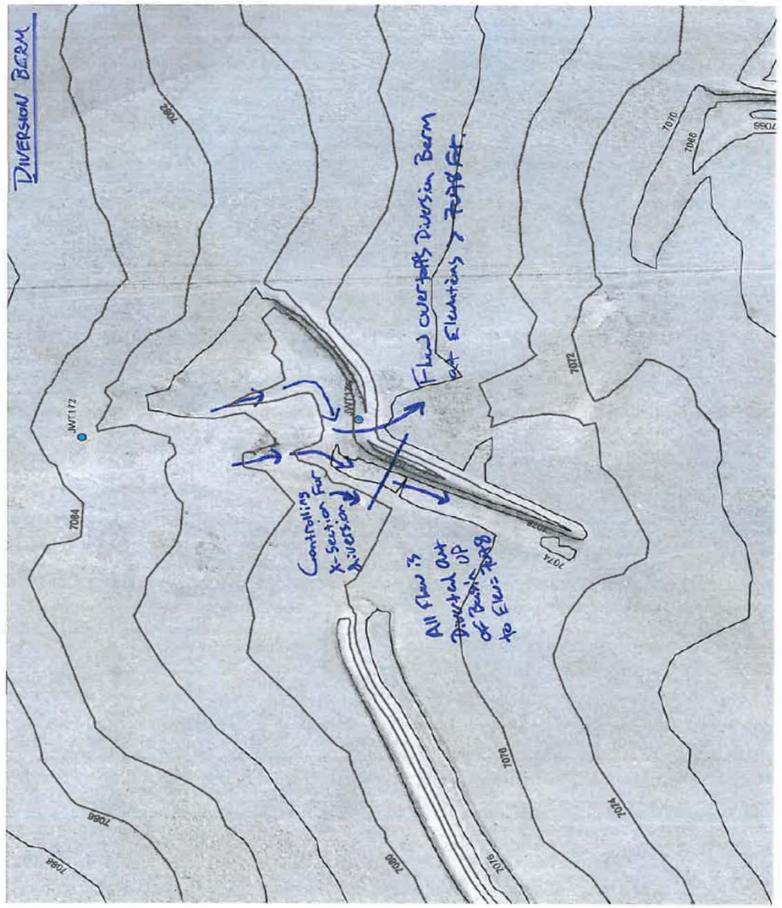
Longitudinal Slope = 0.009 Ft/Ft

Max Elevation before Diversion Berm is Overtopped = 7078 FT

Diversion INVERT = 7076 FT

n = 0.05 (Previously Determined)

NORMAL DEPTH CAPACITY = 195 cfs (FLOWMASTER)



Worksheet for Diversion Channel Capacity Calculation

Project Description		
Friction Method	Manning Formula	
Solve For	Discharge	
Input Data		
Roughness Coefficient	0.050	
Channel Slope	0.00900	ft/ft
Normal Depth	2.00	ft
Left Side Slope	3.25	ft/ft (H:V)
Right Side Slope	8.50	ft/ft (H:V)
Bottom Width	16.00	ft
Results		
Discharge	194.92	ft³/s
Flow Area	55.50	ft²
Wetted Perimeter	39.92	ft
Top Width	39.50	ft
Critical Depth	1.39	ft
Critical Slope	0.03638	ft/ft
Velocity	3.51	ft/s
Velocity Head	0.19	ft
Specific Energy	2.19	ft
Froude Number	0.52	
Flow Type	Subcritical	
GVF Input Data		
Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	
GVF Output Data		
Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	2.00	ft
Critical Depth	1.39	ft
Channel Slope	0.00900	ft/ft
Critical Slope	0.03638	ft/ft

Stage Storage Discharge

Data for spillway and embankment: Woodmen Hills Pond #1 North

References: Topo, field survey, and FDR

Spillway Length (ft) =	20
Spillway Elevation (ft) =	6960.0
Spillway C_d [1] =	0.56
Embankment Length (ft) =	361
Embankment Elevation (ft) =	6962.0
Embankment C_d [1] =	0.56
Acceleration due to Gravity, g (ft/s^2) =	32.2

Data for outlet pipe and grate:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (in)*	*C_d [1]*	*Area (ft^2)*	*Centerline Elevation (ft)*	*Bottom Elevation [2] (ft)*	*Top Elevation [3] (ft)*
Orifice 1 :	Circular			72	0.6	28.27	6955.00	6952.00	6958.00
Orifice 2:	Circular			72	0.6	28.27	6955.00	6952.00	6958.00
Orifice 3:	None Selected					0.00		0.00	0.00
Orifice 4:	None Selected					0.00		0.00	0.00

Check Dimen Check Dimensions

Stand Pipe Dimensions:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (ft)*	*C_d [1]*	*Area (ft^2)*	*Elevation (ft)*	*Perimeter (ft)*
Grate :	None Selected				0.6	0.00		0.00

Stage			*Storage*				*Discharge*								
Stage	*Elevation (ft)*	*Height (ft)*	*Area*		*Volume [4]*		*Spillway [5] (cfs)*	*Embankment [5] (cfs)*	*Orifice (max outflow cfs)*				*Grate (max outflow cfs)*	*Total Flow [6] (cfs)*
			(ft^2)	*(acres)*	*(ac-ft)*	*(cum ac-ft)*			*1*	*2*	*3*	*4*		
	6952.0	0.0	7633	0.18	0.00	0.00	-	-	-	-	-	-	-	-
	6954.0	2.0	23810	0.55	0.72	0.72	-	-	48.28	48.28	-	-	-	96.55
	6956.0	4.0	36215	0.83	1.38	2.10	-	-	136.14	136.14	-	-	-	272.28
	6958.0	6.0	54552	1.25	2.08	4.18	-	-	235.80	235.80	-	-	-	471.60
	6960.0	8.0	73999	1.70	2.95	7.13	-	-	304.42	304.42	-	-	-	608.84
	6962.0	10.0	91244	2.09	3.79	10.93	169.48	-	360.19	360.19	-	-	-	889.87
	6964.0	12.0	115044	2.64	4.74	15.66	479.36	3,059.09	408.42	408.42	-	-	-	4,355.29

DO NOT INCLUDE WATER QUALITY CAPTURE VOLUME IN THIS STORAGE AREA.

Notes:

1) Coefficient of discharge, C_d, taken from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, page 303

2) Bottom Elevation is the Centerline Elevation minus half the Height or the Diameter, example: 6132.25ft-0.5*30in/(12ft/in)=6131.00ft

3) Top Elevation is the Centerline Elevation plus half the Height of the Diameter, example: 6132.25ft+0.5*30in/(12ft/in)=6133.50ft

4) Volume for each elevation is calculated using the average end area and then accumulated, example: (5ft-3ft)(16.8ac+15.78ac)*0.5=64.43ac-ft

5) Weir equation for Embankment and Spillway is from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, equation 6.22: $Q=\frac{2}{3}C_d(2g)^{0.5}LH^{1.5}$

6) Total Flow is the sum of the folws through the Embankment, Spillway, and Culvert (Does not account for outlet capacity, this needs to be checked seperately.)

Calculated by: BAS

Date:

Checked by:

Date:

Stage Storage Discharge

Data for spillway and embankment: Woodmen Hills Pond #1 South

References: Topo, field survey, and FDR

Spillway Length (ft) =	21
Spillway Elevation (ft) =	6954.0
Spillway C_d [1] =	0.56
Embankment Length (ft) =	625
Embankment Elevation (ft) =	6956.0
Embankment C_d [1] =	0.56
Acceleration due to Gravity, g (ft/s ^{2}) =	32.2

Data for outlet pipe and grate:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (in)*	*C_d [1]*	*Area (ft ^{2})*	*Centerline Elevation (ft)*	*Bottom Elevation [2] (ft)*	*Top Elevation [3] (ft)*
Orifice 1 :	Circular			12	0.6	0.79	6948.50	6948.00	6949.00
Orifice 2:	None Selected					0.00		0.00	0.00
Orifice 3:	None Selected					0.00		0.00	0.00
Orifice 4:	None Selected					0.00		0.00	0.00

Stand Pipe Dimensions:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (ft)*	*C_d [1]*	*Area (ft ^{2})*	*Elevation (ft)*	*Perimeter (ft)*
Grate :	Circular			2.0	0.6	3.14	6951.0	6.28

Stage			*Storage*				*Discharge*							
Stage	*Elevation (ft)*	*Height (ft)*	*Area*		*Volume [4]*		*Spillway [5] (cfs)*	*Embankment [5] (cfs)*	*Orifice (max outflow cfs)*				*Grate (max outflow cfs)*	*Total Flow [6] (cfs)*
			(ft ^{2})	*(acres)*	*(ac-ft)*	*(cum ac-ft)*			*1*	*2*	*3*	*4*		
	6948.0	0.0	23810	0.55	0.00	0.00	-	-	-	-	-	-	-	-
	6950.0	2.0	61448	1.41	1.96	1.96	-	-	4.63	-	-	-	-	4.63
	6952.0	4.0	76242	1.75	3.16	5.12	-	-	7.07	-	-	-	15.13	22.20
	6954.0	6.0	83106	1.91	3.66	8.78	-	-	8.87	-	-	-	26.20	35.07
	6956.0	8.0	89660	2.06	3.97	12.74	177.95	-	10.36	-	-	-	33.82	222.13
	6958.0	10.0	117602	2.70	4.76	17.50	503.33	5,296.20	11.66	-	-	-	40.02	5,851.21

DO NOT INCLUDE WATER QUALITY CAPTURE VOLUME IN THIS STORAGE AREA.

Notes:

1) Coefficient of discharge, C_d, taken from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, page 303

2) Bottom Elevation is the Centerline Elevation minus half the Height or the Diameter, example: 6132.25ft-0.5*30in/(12ft/in)=6131.00ft

3) Top Elevation is the Centerline Elevation plus half the Height of the Diameter, example: 6132.25ft+0.5*30in/(12ft/in)=6133.50ft

4) Volume for each elevation is calculated using the average end area and then accumulated, example: (5ft-3ft)(16.8ac+15.78ac)*0.5=64.43ac-ft

5) Weir equation for Embankment and Spillway is from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, equation 6.22: $Q=\frac{2}{3}C_d(2g)^{0.5}LH^{1.5}$

6) Total Flow is the sum of the folws through the Embankment, Spillway, and Culvert (Does not account for outlet capacity, this needs to be checked seperately.)

Calculated by: BAS

Date:

Checked by:

Date:

Stage Storage Discharge

Data for spillway and embankment: Woodmen Hills Pond #2

References: Topo and field survey

Spillway Length (ft) =	20
Spillway Elevation (ft) =	6930.0
Spillway C_d [1] =	0.56
Embankment Length (ft) =	630
Embankment Elevation (ft) =	6932.0
Embankment C_d [1] =	0.56
Acceleration due to Gravity, g (ft/s ^{2}) =	32.2

Data for outlet pipe and grate:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (in)*	*C_d [1]*	*Area (ft ^{2})*	*Centerline Elevation (ft)*	*Bottom Elevation [2] (ft)*	*Top Elevation [3] (ft)*
Orifice 1 :	None Selected				0.6	0.00		0.00	0.00
Orifice 2:	None Selected					0.00		0.00	0.00
Orifice 3:	None Selected					0.00		0.00	0.00
Orifice 4:	None Selected					0.00		0.00	0.00

Stand Pipe Dimensions:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (ft)*	*C_d [1]*	*Area (ft ^{2})*	*Elevation (ft)*	*Perimeter (ft)*
Grate :	Circular			1.5	0.6	1.77	6929.0	4.71

Stage			*Storage*				*Discharge*							
Stage	*Elevation (ft)*	*Height (ft)*	*Area*		*Volume [4]*		*Spillway [5] (cfs)*	*Embankment [5] (cfs)*	*Orifice (max outflow cfs)*				*Grate (max outflow cfs)*	*Total Flow [6] (cfs)*
			(ft ^{2})	*(acres)*	*(ac-ft)*	*(cum ac-ft)*			*1*	*2*	*3*	*4*		
	6926.0	0.0	68500	1.57	0.00	0.00	-	-	-	-	-	-	-	-
	6928.0	2.0	105743	2.43	4.00	4.00	-	-	-	-	-	-	-	-
	6930.0	4.0	119783	2.75	5.18	9.18	-	-	-	-	-	-	8.51	8.51
	6932.0	6.0	147832	3.39	6.14	15.32	169.48	-	-	-	-	-	14.74	184.22
	6934.0	8.0	190507	4.37	7.77	23.09	479.36	5,338.57	-	-	-	-	19.03	5,836.96

DO NOT INCLUDE WATER QUALITY CAPTURE VOLUME IN THIS STORAGE AREA.

Notes:

1) Coefficient of discharge, C_d, taken from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, page 303

2) Bottom Elevation is the Centerline Elevation minus half the Height or the Diameter, example: 6132.25ft-0.5*30in/(12ft/in)=6131.00ft

3) Top Elevation is the Centerline Elevation plus half the Height of the Diameter, example: 6132.25ft+0.5*30in/(12ft/in)=6133.50ft

4) Volume for each elevation is calculated using the average end area and then accumulated, example: (5ft-3ft)(16.8ac+15.78ac)*0.5=64.43ac-ft

5) Weir equation for Embankment and Spillway is from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, equation 6.22: $Q=\frac{2}{3}C_d(2g)^{0.5}LH^{1.5}$

6) Total Flow is the sum of the folws through the Embankment, Spillway, and Culvert (Does not account for outlet capacity, this needs to be checked seperately.)

Calculated by: BAS

Date:

Checked by:

Date:

Stage Storage Discharge

Data for spillway and embankment: Woodmen Hills Pond #3

References: Topo and field survey

Spillway Length (ft) =	120
Spillway Elevation (ft) =	6902.0
Spillway C_d [1] =	0.56
Embankment Length (ft) =	400
Embankment Elevation (ft) =	6904.0
Embankment C_d [1] =	0.56
Acceleration due to Gravity, g (ft/s^2) =	32.2

Data for outlet pipe and grate:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (in)*	*C_d [1]*	*Area (ft^2)*	*Centerline Elevation (ft)*	*Bottom Elevation [2] (ft)*	*Top Elevation [3] (ft)*
Orifice 1 :	Circular			42	0.6	9.62	6901.75	6900.00	6903.50
Orifice 2:	Circular			42	0.6	9.62	6901.75	6900.00	6903.50
Orifice 3:	Circular			12	0.6	0.79	6900.50	6900.00	6901.00
Orifice 4:	None Selected					0.00		0.00	0.00

Stand Pipe Dimensions:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (ft)*	*C_d [1]*	*Area (ft^2)*	*Elevation (ft)*	*Perimeter (ft)*
Grate :	None Selected				0.6	0.00		0.00

Stage			*Storage*				*Discharge*								
Stage	*Elevation (ft)*	*Height (ft)*	*Area*		*Volume [4]*		*Spillway [5] (cfs)*	*Embankment [5] (cfs)*	*Orifice (max outflow cfs)*				*Grate (max outflow cfs)*	*Total Flow [6] (cfs)*
			(ft^2)	*(acres)*	*(ac-ft)*	*(cum ac-ft)*			*1*	*2*	*3*	*4*		
	6900.0	0.0	125010	2.87	0.00	0.00	-	-	-	-	-	-	-	-
	6902.0	2.0	238533	5.48	8.35	8.35	-	-	23.16	23.16	4.63	-	-	50.96
	6904.0	4.0	289267	6.64	12.12	20.46	1,016.87	-	69.49	69.49	7.07	-	-	1,162.92

DO NOT INCLUDE WATER QUALITY CAPTURE VOLUME IN THIS STORAGE AREA.

Notes:

1) Coefficient of discharge, C_d, taken from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, page 303

2) Bottom Elevation is the Centerline Elevation minus half the Height or the Diameter, example: 6132.25ft-0.5*30in/(12ft/in)=6131.00ft

3) Top Elevation is the Centerline Elevation plus half the Height of the Diameter, example: 6132.25ft+0.5*30in/(12ft/in)=6133.50ft

4) Volume for each elevation is calculated using the average end area and then accumulated, example: (5ft-3ft)(16.8ac+15.78ac)*0.5=64.43ac-ft

5) Weir equation for Embankment and Spillway is from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, equation 6.22: $Q=^2/_3 C_d (2g)^{0.5} L H^{1.5}$

6) Total Flow is the sum of the folws through the Embankment, Spillway, and Culvert (Does not account for outlet capacity, this needs to be checked seperately.)

Calculated by: BAS

Date:

Checked by:

Date:

Data for spillway and embankment: Woodmen Hills Pond #4

References: Topo and field survey

Spillway Length (ft) =	44
Spillway Elevation (ft) =	6860.0
Spillway C_d [1] =	0.56
Embankment Length (ft) =	870
Embankment Elevation (ft) =	6862.0
Embankment C_d [1] =	0.56
Acceleration due to Gravity, g (ft/s^2) =	32.2

Data for outlet pipe and grate:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (in)*	*C_d [1]*	*Area (ft^2)*	*Centerline Elevation (ft)*	*Bottom Elevation [2] (ft)*	*Top Elevation [3] (ft)*
Orifice 1 :	None Selected				0.6	0.00		0.00	0.00
Orifice 2:	None Selected					0.00		0.00	0.00
Orifice 3:	None Selected					0.00		0.00	0.00
Orifice 4:	None Selected					0.00		0.00	0.00

Stand Pipe Dimensions:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (ft)*	*C_d [1]*	*Area (ft^2)*	*Elevation (ft)*	*Perimeter (ft)*
Grate 1:	Circular			3.0	0.6	7.07	6858.00	9.42
Grate 2:	Circular			3.0	0.6	7.07	6859.00	9.42
Grate 3:	Circular			3.0	0.6	7.07	6859.50	9.42

Stage			*Storage*				*Discharge*									
Stage	*Elevation (ft)*	*Height (ft)*	*Area*		*Volume [4]*		*Spillway [5] (cfs)*	*Embankment [5] (cfs)*	*Orifice (max outflow cfs)*				*Grate 1 (max outflow cfs)*	*Grate 2 (max outflow cfs)*	*Grate 3 (max outflow cfs)*	*Total Flow [6] (cfs)*
			(ft^2)	*(acres)*	*(ac-ft)*	*(cum ac-ft)*			*1*	*2*	*3*	*4*				
	6856.0	0.0	95635	2.20	0.00	0.00	-	-	-	-	-	-	-	-	-	-
	6858.0	2.0	254580	5.84	8.04	8.04	-	-	-	-	-	-	-	-	-	-
	6860.0	4.0	354329	8.13	13.98	22.02	-	-	-	-	-	-	48.13	30.25	10.70	89.08
	6862.0	6.0	448586	10.30	18.43	40.45	372.85	-	-	-	-	-	68.07	58.95	53.81	553.69

DO NOT INCLUDE WATER QUALITY CAPTURE VOLUME IN THIS STORAGE AREA.

Notes:

1) Coefficient of discharge, C_d, taken from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, page 303

2) Bottom Elevation is the Centerline Elevation minus half the Height or the Diameter, example: 6132.25ft-0.5*30in/(12ft/in)=6131.00ft

3) Top Elevation is the Centerline Elevation plus half the Height of the Diameter, example: 6132.25ft+0.5*30in/(12ft/in)=6133.50ft

4) Volume for each elevation is calculated using the average end area and then accumulated, example: (5ft-3ft)(16.8ac+15.78ac)*0.5=64.43ac-ft

5) Weir equation for Embankment and Spillway is from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, equation 6.22: $Q = {}^2/_3 C_d (2g)^{0.5} L H^{1.5}$

6) Total Flow is the sum of the folws through the Embankment, Spillway, and Culvert (Does not account for outlet capacity, this needs to be checked seperately.)

Calculated by: BAS

Date:

Checked by:

Date:

Stage Storage Discharge

Data for spillway and embankment: Woodmen Hills Pond 5

References: Topo and field survey

Spillway Length (ft) =	55
Spillway Elevation (ft) =	6854.0
Spillway C_d [1] =	0.56
Embankment Length (ft) =	590
Embankment Elevation (ft) =	6856.0
Embankment C_d [1] =	0.56
Acceleration due to Gravity, g (ft/s^2) =	32.2

Data for outlet pipe and grate:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (in)*	*C_d [1]*	*Area (ft^2)*	*Centerline Elevation (ft)*	*Bottom Elevation [2] (ft)*	*Top Elevation [3] (ft)*
Orifice 1 :	Circular			12	0.6	0.79	6850.50	6850.00	6851.00
Orifice 2:	None Selected					0.00		0.00	0.00
Orifice 3:	None Selected					0.00		0.00	0.00
Orifice 4:	None Selected					0.00		0.00	0.00

Stand Pipe Dimensions:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (ft)*	*C_d [1]*	*Area (ft^2)*	*Elevation (ft)*	*Perimeter (ft)*
Grate 1:	Circular			1.0	0.6	0.79	6851.50	3.14
Grate 2:	Circular			2.0	0.6	3.14	6851.50	6.28

Stage			*Storage*				*Discharge*									
Stage	*Elevation (ft)*	*Height (ft)*	*Area*		*Volume [4]*		*Spillway [5] (cfs)*	*Embankment [5] (cfs)*	*Orifice (max outflow cfs)*				*Grate 1 (max outflow cfs)*	*Grate 2 (max outflow cfs)*	*Total Flow [6] (cfs)*	
			(ft^2)	*(acres)*	*(ac-ft)*	*(cum ac-ft)*			*1*	*2*	*3*	*4*				
	6850.0	0.0	14889	0.34	0.00	0.00	-	-	-	-	-	-	-	-	-	
	6852.0	2.0	48165	1.11	1.45	1.45	-	-	4.63	-	-	-	2.67	7.13	14.44	
	6854.0	4.0	67245	1.54	2.65	4.10	-	-	7.07	-	-	-	5.98	23.92	36.97	
	6856.0	6.0	77625	1.78	3.33	7.42	466.07	-	8.87	-	-	-	8.02	32.09	515.05	

DO NOT INCLUDE WATER QUALITY CAPTURE VOLUME IN THIS STORAGE AREA.

Notes:

1) Coefficient of discharge, C_d, taken from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, page 303

2) Bottom Elevation is the Centerline Elevation minus half the Height or the Diameter, example: 6132.25ft-0.5*30in/(12ft/in)=6131.00ft

3) Top Elevation is the Centerline Elevation plus half the Height of the Diameter, example: 6132.25ft+0.5*30in/(12ft/in)=6133.50ft

4) Volume for each elevation is calculated using the average end area and then accumulated, example: (5ft-3ft)(16.8ac+15.78ac)*0.5=64.43ac-ft

5) Weir equation for Embankment and Spillway is from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, equation 6.22: $Q=^2/_3 C_d (2g)^{0.5} L H^{1.5}$

6) Total Flow is the sum of the folws through the Embankment, Spillway, and Culvert (Does not account for outlet capacity, this needs to be checked seperately.)

Calculated by: BAS

Date:

Checked by:

Date:

Stage Storage Discharge

Data for spillway and embankment: Woodmen Hills Pond H

References: Topo and field survey

Spillway Length (ft) =	67
Spillway Elevation (ft) =	6976.0
Spillway C_d [1] =	0.56
Embankment Length (ft) =	475
Embankment Elevation (ft) =	6978.0
Embankment C_d [1] =	0.56
Acceleration due to Gravity, g (ft/s^2) =	32.2

Data for outlet pipe and grate:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (in)*	*C_d [1]*	*Area (ft^2)*	*Centerline Elevation (ft)*	*Bottom Elevation [2] (ft)*	*Top Elevation [3] (ft)*
Orifice 1 :	Rectangular	1.33	1.5		0.6	2.00	6972.75	6972.00	6973.50
Orifice 2:	Rectangular	1.33	1.5		0.6	2.00	6973.83	6973.08	6974.58
Orifice 3:	None Selected					0.00		0.00	0.00
Orifice 4:	None Selected					0.00		0.00	0.00

Stand Pipe Dimensions:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (ft)*	*C_d [1]*	*Area (ft^2)*	*Elevation (ft)*	*Perimeter (ft)*
Grate 1:	Circular			2.0	0.6	3.14	6974.17	6.28
Grate 2:	Circular			3.0	0.6	7.07	6975.25	9.42

Stage			*Storage*				*Discharge*								
Stage	*Elevation (ft)*	*Height (ft)*	*Area*		*Volume [4]*		*Spillway [5] (cfs)*	*Embankment [5] (cfs)*	*Orifice (max outflow cfs)*				*Grate 1 (max outflow cfs)*	*Grate 2 (max outflow cfs)*	*Total Flow [6] (cfs)*
			(ft^2)	*(acres)*	*(ac-ft)*	*(cum ac-ft)*			*1*	*2*	*3*	*4*			
	6972.0	0.0	4746	0.11	0.00	0.00	-	-	-	-	-	-	-	-	-
	6974.0	2.0	33814	0.78	0.89	0.89	-	-	10.74	3.77	-	-	-	-	14.51
	6976.0	4.0	43393	1.00	1.77	2.66	-	-	17.32	14.15	-	-	20.46	19.65	71.58
	6978.0	6.0	50875	1.17	2.16	4.82	567.75	-	22.01	19.62	-	-	29.60	56.44	695.42
	6980.0	8.0	61092	1.40	2.57	7.39	1,605.85	4,025.12	25.86	23.86	-	-	36.52	74.18	5,791.39

DO NOT INCLUDE WATER QUALITY CAPTURE VOLUME IN THIS STORAGE AREA.

Notes:

1) Coefficient of discharge, C_d, taken from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, page 303

2) Bottom Elevation is the Centerline Elevation minus half the Height or the Diameter, example: 6132.25ft-0.5*30in/(12ft/in)=6131.00ft

3) Top Elevation is the Centerline Elevation plus half the Height of the Diameter, example: 6132.25ft+0.5*30in/(12ft/in)=6133.50ft

4) Volume for each elevation is calculated using the average end area and then accumulated, example: (5ft-3ft)(16.8ac+15.78ac)*0.5=64.43ac-ft

5) Weir equation for Embankment and Spillway is from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, equation 6.22: $Q=^2/_3 C_d (2g)^{0.5} L H^{1.5}$

6) Total Flow is the sum of the folws through the Embankment, Spillway, and Culvert (Does not account for outlet capacity, this needs to be checked seperately.)

Calculated by: BAS

Date:

Checked by:

Date:

Stage Storage Discharge

Data for spillway and embankment: The Meadows Pond #1

References: Topo, field survey, FDR

Spillway Length (ft) =	321
Spillway Elevation (ft) =	7015.0
Spillway C_d [1] =	0.56
Embankment Length (ft) =	
Embankment Elevation (ft) =	
Embankment C_d [1] =	0.56
Acceleration due to Gravity, g (ft/s [2]) =	32.2

Data for outlet pipe and grate:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (in)*	*C_d [1]*	*Area (ft [2])*	*Centerline Elevation (ft)*	*Bottom Elevation [2] (ft)*	*Top Elevation [3] (ft)*
Orifice 1 :	Circular			18	0.6	1.77	7010.75	7010.00	7011.50
Orifice 2:	Rectangular	5	1.5		0.6	7.50	7013.25	7012.50	7014.00
Orifice 3:	Rectangular	5	1.5		0.6	7.50	7013.25	7012.50	7014.00
Orifice 4:	None Selected					0.00		0.00	0.00

Stand Pipe Dimensions:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (ft)*	*C_d [1]*	*Area (ft [2])*	*Elevation (ft)*	*Perimeter (ft)*
Grate :	Rectangular	4.0	5.0		0.6	20.00	7014.5	18.00

Stage			*Storage*				*Discharge*							
Stage	*Elevation (ft)*	*Height (ft)*	*Area*		*Volume [4]*		*Spillway [5] (cfs)*	*Embankment [5] (cfs)*	*Orifice (max outflow cfs)*				*Grate (max outflow cfs)*	*Total Flow [6] (cfs)*
			(ft [2])	*(acres)*	*(ac-ft)*	*(cum ac-ft)*			*1*	*2*	*3*	*4*		
	7010.0	0.0	2872	0.07	0.00	0.00	-	-	-	-	-	-	-	-
	7012.0	2.0	23756	0.55	0.61	0.61	-	-	9.51	-	-	-	-	9.51
	7014.0	4.0	43274	0.99	1.54	2.15	-	-	15.34	29.49	29.49	-	-	74.31
	7016.0	6.0	61765	1.42	2.41	4.56	961.71	-	19.50	59.89	59.89	-	106.15	1,207.13

DO NOT INCLUDE WATER QUALITY CAPTURE VOLUME IN THIS STORAGE AREA.

Notes:

1) Coefficient of discharge, C_d, taken from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, page 303

2) Bottom Elevation is the Centerline Elevation minus half the Height or the Diameter, example: 6132.25ft-0.5*30in/(12ft/in)=6131.00ft

3) Top Elevation is the Centerline Elevation plus half the Height of the Diameter, example: 6132.25ft+0.5*30in/(12ft/in)=6133.50ft

4) Volume for each elevation is calculated using the average end area and then accumulated, example: (5ft-3ft)(16.8ac+15.78ac)*0.5=64.43ac-ft

5) Weir equation for Embankment and Spillway is from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, equation 6.22: $Q=^{2}/_{3}C_d(2g)^{0.5}LH^{1.5}$

6) Total Flow is the sum of the folws through the Embankment, Spillway, and Culvert (Does not account for outlet capacity, this needs to be checked seperately.)

Calculated by: BAS

Date:

Checked by:

Date:

Stage Storage Discharge

Data for spillway and embankment: The Meadows Pond #2

References: Topo and field survey

Spillway Length (ft) =	115
Spillway Elevation (ft) =	7011.0
Spillway C_d [1] =	0.56
Embankment Length (ft) =	625
Embankment Elevation (ft) =	7012.0
Embankment C_d [1] =	0.56
Acceleration due to Gravity, g (ft/s^2) =	32.2

Data for outlet pipe and grate:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (in)*	*C_d [1]*	*Area (ft^2)*	*Centerline Elevation (ft)*	*Bottom Elevation [2] (ft)*	*Top Elevation [3] (ft)*
Orifice 1 :	Rectangular	5	1.75		0.6	8.75	7009.30	7008.43	7010.18
Orifice 2:	Rectangular	5	1.75		0.6	8.75	7009.30	7008.43	7010.18
Orifice 3:	None Selected					0.00		0.00	0.00
Orifice 4:	None Selected					0.00		0.00	0.00

Stand Pipe Dimensions:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (ft)*	*C_d [1]*	*Area (ft^2)*	*Elevation (ft)*	*Perimeter (ft)*
Grate :	Rectangular	5.5	7.5		0.6	41.25	7011.0	26.00

Stage			*Storage*				*Discharge*							
Stage	*Elevation (ft)*	*Height (ft)*	*Area*		*Volume [4]*		*Spillway [5] (cfs)*	*Embankment [5] (cfs)*	*Orifice (max outflow cfs)*				*Grate (max outflow cfs)*	*Total Flow [6] (cfs)*
			(ft^2)	*(acres)*	*(ac-ft)*	*(cum ac-ft)*			*1*	*2*	*3*	*4*		
	7004.0	0.0	1202	0.03	0.00	0.00	-	-	-	-	-	-	-	-
	7006.0	2.0	46729	1.07	1.10	1.10	-	-	-	-	-	-	-	-
	7008.0	4.0	55287	1.27	2.34	3.44	-	-	-	-	-	-	-	-
	7010.0	6.0	67516	1.55	2.82	6.26	-	-	31.72	31.72	-	-	-	63.45
	7012.0	8.0	90179	2.07	3.62	9.88	344.54	-	69.23	69.23	-	-	83.46	566.45

DO NOT INCLUDE WATER QUALITY CAPTURE VOLUME IN THIS STORAGE AREA.

Notes:

1) Coefficient of discharge, C_d, taken from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, page 303

2) Bottom Elevation is the Centerline Elevation minus half the Height or the Diameter, example: 6132.25ft-0.5*30in/(12ft/in)=6131.00ft

3) Top Elevation is the Centerline Elevation plus half the Height of the Diameter, example: 6132.25ft+0.5*30in/(12ft/in)=6133.50ft

4) Volume for each elevation is calculated using the average end area and then accumulated, example: (5ft-3ft)(16.8ac+15.78ac)*0.5=64.43ac-ft

5) Weir equation for Embankment and Spillway is from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, equation 6.22: $Q = {}^2/_3 C_d (2g)^{0.5} L H^{1.5}$

6) Total Flow is the sum of the folws through the Embankment, Spillway, and Culvert (Does not account for outlet capacity, this needs to be checked seperately.)

Calculated by: BAS

Date:

Checked by:

Date:

Stage Storage Discharge

Data for spillway and embankment: Regional Pond WU North

References: Topo and field survey

Spillway Length (ft) =	6
Spillway Elevation (ft) =	6836.0
Spillway C_d [1] =	0.56
Embankment Length (ft) =	461
Embankment Elevation (ft) =	6840.0
Embankment C_d [1] =	0.56
Acceleration due to Gravity, g (ft/s ^{2}) =	32.2

Data for outlet pipe and grate:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (in)*	*C_d [1]*	*Area (ft ^{2})*	*Centerline Elevation (ft)*	*Bottom Elevation [2] (ft)*	*Top Elevation [3] (ft)*
Orifice 1 :	Circular			18	0.6	1.77	6835.25	6834.50	6836.00
Orifice 2:	Circular			18	0.6	1.77	6835.25	6834.50	6836.00
Orifice 3:	Circular			18	0.6	1.77	6834.75	6834.00	6835.50
Orifice 4:	None Selected					0.00		0.00	0.00

Check Dimen Check Dimensions Check Dimensions

Stand Pipe Dimensions:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (ft)*	*C_d [1]*	*Area (ft ^{2})*	*Elevation (ft)*	*Perimeter (ft)*
Grate :	None Selected				0.6	0.00		0.00

Stage			*Storage*				*Discharge*								
Stage	*Elevation (ft)*	*Height (ft)*	*Area*		*Volume [4]*		*Spillway [5] (cfs)*	*Embankment [5] (cfs)*	*Orifice (max outflow cfs)*				*Grate (max outflow cfs)*	*Total Flow [6] (cfs)*
			(ft ^{2})	*(acres)*	*(ac-ft)*	*(cum ac-ft)*			*1*	*2*	*3*	*4*		
	6834.0	0.0	32248	0.74	0.00	0.00	-	-	-	-	-	-	-	-
	6836.0	2.0	51729	1.19	1.93	1.93	-	-	7.37	7.37	9.51	-	-	24.25
	6838.0	4.0	83226	1.91	3.10	5.03	50.84	-	14.11	14.11	15.34	-	-	94.40
	6840.0	6.0	171170	3.93	5.84	10.87	143.81	-	18.54	18.54	19.50	-	-	200.39
	6842.0	8.0	256231	5.88	9.81	20.68	264.19	3,906.48	22.11	22.11	22.91	-	-	4,237.79

DO NOT INCLUDE WATER QUALITY CAPTURE VOLUME IN THIS STORAGE AREA.

Notes:

1) Coefficient of discharge, C_d, taken from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, page 303

2) Bottom Elevation is the Centerline Elevation minus half the Height or the Diameter, example: 6132.25ft-0.5*30in/(12ft/in)=6131.00ft

3) Top Elevation is the Centerline Elevation plus half the Height of the Diameter, example: 6132.25ft+0.5*30in/(12ft/in)=6133.50ft

4) Volume for each elevation is calculated using the average end area and then accumulated, example: (5ft-3ft)(16.8ac+15.78ac)*0.5=64.43ac-ft

5) Weir equation for Embankment and Spillway is from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, equation 6.22: $Q=^2/_3 C_d (2g)^{0.5} L H^{1.5}$

6) Total Flow is the sum of the folws through the Embankment, Spillway, and Culvert (Does not account for outlet capacity, this needs to be checked seperately.)

Calculated by: BAS

Date:

Checked by:

Date:

Stage Storage Discharge

Data for spillway and embankment: Regional Pond WU South

References: Topo and field survey

Spillway Length (ft) =	238
Spillway Elevation (ft) =	6832.0
Spillway C_d [1] =	0.56
Embankment Length (ft) =	1400
Embankment Elevation (ft) =	6834.0
Embankment C_d [1] =	0.56
Acceleration due to Gravity, g (ft/s^2) =	32.2

Data for outlet pipe and grate:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (in)*	*C_d [1]*	*Area (ft^2)*	*Centerline Elevation (ft)*	*Bottom Elevation [2] (ft)*	*Top Elevation [3] (ft)*
Orifice 1:	Circular			12	0.6	0.79	6824.00	6823.50	6824.50
Orifice 2:	Circular			24	0.6	3.14	6823.00	6822.00	6824.00
Orifice 3:	Circular			24	0.6	3.14	6823.00	6822.00	6824.00
Orifice 4:	Circular			12	0.6	0.79	6824.00	6823.50	6824.50
Orifice 5:	Circular			48	0.6	12.57	6824.00	6822.00	6826.00
Orifice 6:	Circular			60	0.6	19.63	6824.50	6822.00	6827.00
Orifice 7:	Circular			60	0.6	19.63	6824.50	6822.00	6827.00
Orifice 8:	Circular			60	0.6	19.63	6824.50	6822.00	6827.00

Stage			*Storage*				*Discharge*								
Stage	*Elevation (ft)*	*Height (ft)*	*Area*		*Volume [4]*		*Spillway [5] (cfs)*	*Embankment [5] (cfs)*	*Low Flow Orifices (max outflow cfs)*				*Weir Flow (max outflow cfs)*	*Major Orifices (max outflow cfs)*	*Total Flow [6] (cfs)*
			(ft^2)	*(acres)*	*(ac-ft)*	*(cum ac-ft)*			*1*	*2*	*3*	*4*			
	6822.0	0.0	21261	0.49	0.00	0.00	-	-	-	-	-	-	-	-	-
	6822.2	0.2	31330	0.72	0.12	0.12	-	-	-	0.51	0.51	-	-	4.83	1.02
	6822.4	0.4	41399	0.95	0.17	0.29	-	-	-	1.44	1.44	-	-	13.67	2.88
	6822.6	0.6	51468	1.18	0.21	0.50	-	-	-	2.64	2.64	-	-	25.12	5.29
	6822.8	0.8	61537	1.41	0.26	0.76	-	-	-	4.07	4.07	-	-	38.68	8.14
	6823.0	1.0	71607	1.64	0.31	1.07	-	-	-	5.69	5.69	-	-	54.05	11.38
	6823.2	1.2	81676	1.88	0.35	1.42	-	-	-	6.76	6.76	-	-	71.05	13.53
	6823.4	1.4	91745	2.11	0.40	1.82	-	-	-	9.42	9.42	-	-	89.54	18.85
	6823.6	1.6	101814	2.34	0.44	2.26	-	-	0.09	11.51	11.51	0.09	-	109.39	23.21
	6823.8	1.8	111883	2.57	0.49	2.75	-	-	0.47	13.53	13.53	0.47	-	130.53	27.99
	6824.0	2.0	121952	2.80	0.54	3.29	-	-	1.01	15.13	15.13	1.01	-	152.88	32.26
	6824.2	2.2	128920	2.96	0.58	3.86	-	-	1.67	16.57	16.57	1.67	-	166.30	36.47
	6824.4	2.4	135889	3.12	0.61	4.47	-	-	2.39	17.90	17.90	2.39	-	196.92	40.58
	6824.6	2.6	142858	3.28	0.64	5.11	-	-	2.93	19.13	19.13	2.93	-	136.56	44.13
	6824.8	2.8	149826	3.44	0.67	5.78	-	-	3.38	20.29	20.29	3.38	-	208.66	47.35
	6825.0	3.0	156795	3.60	0.70	6.49	-	-	3.78	21.39	21.39	3.78	-	259.68	50.35
	6825.2	3.2	163763	3.76	0.74	7.22	-	-	4.14	22.44	22.44	4.14	-	302.44	53.16
	6825.4	3.4	170731	3.92	0.77	7.99	-	-	4.47	23.43	23.43	4.47	-	338.86	55.82
	6825.6	3.6	177700	4.08	0.80	8.79	-	-	4.78	24.39	24.39	4.78	-	368.01	58.35
	6825.8	3.8	184669	4.24	0.83	9.62	-	-	5.07	25.31	25.31	5.07	-	397.27	60.77
	6826.0	4.0	191637	4.40	0.86	10.49	-	-	5.35	26.20	26.20	5.35	-	426.94	63.10
	6826.2	4.2	192989	4.43	0.88	11.37	-	-	5.61	27.06	27.06	5.61	-	457.04	65.34
	6826.4	4.4	194341	4.46	0.89	12.26	-	-	5.86	27.89	27.89	5.86	-	484.69	67.50
	6826.6	4.6	195693	4.49	0.90	13.15	-	-	6.10	28.70	28.70	6.10	10.02	508.58	79.62
	6826.8	4.8	197045	4.52	0.90	14.06	-	-	6.33	29.49	29.49	6.33	31.47	531.39	103.10
	6827.0	5.0	198397	4.55	0.91	14.96	-	-	6.55	30.25	30.25	6.55	60.74	553.25	134.34
	6827.2	5.2	199749	4.59	0.91	15.88	-	-	6.76	31.00	31.00	6.76	96.88	574.28	172.41
	6827.4	5.4	201101	4.62	0.92	16.80	-	-	6.97	31.73	31.73	6.97	139.48	594.57	216.89
	6827.6	5.6	202453	4.65	0.93	17.72	-	-	7.18	32.44	32.44	7.18	188.32	614.18	267.55
	6827.8	5.8	203805	4.68	0.93	18.66	-	-	7.37	33.14	33.14	7.37	243.25	633.18	324.28
	6828.0	6.0	205157	4.71	0.94	19.60	-	-	7.56	33.82	33.82	7.56	304.24	651.63	387.01
	6828.2	6.2	206367	4.74	0.94	20.54	-	-	7.75	34.49	34.49	7.75	371.25	669.57	455.74
	6828.4	6.4	207577	4.77	0.95	21.49	-	-	7.93	35.15	35.15	7.93	444.29	687.04	530.46
	6828.6	6.6	208786	4.79	0.96	22.45	-	-	8.11	35.80	35.80	8.11	523.38	704.07	611.19
	6828.8	6.8	209996	4.82	0.96	23.41	-	-	8.29	36.43	36.43	8.29	608.55	720.70	697.98
	6829.0	7.0	211206	4.85	0.97	24.38	-	-	8.46	37.05	37.05	8.46	699.85	736.96	736.96
	6829.2	7.2	212416	4.88	0.97	25.35	-	-	8.62	37.67	37.67	8.62	797.33	752.86	752.86
	6829.4	7.4	213626	4.90	0.98	26.33	-	-	8.79	38.27	38.27	8.79	901.05	768.44	862.55
	6829.6	7.6	214835	4.93	0.98	27.31	-	-	8.95	38.86	38.86	8.95	1,011.06	783.70	879.32
	6829.8	7.8	216045	4.96	0.99	28.30	-	-	9.11	39.45	39.45	9.11	1,127.43	798.67	895.78
	6830.0	8.0	217255	4.99	0.99	29.29	-	-	9.26	40.02	40.02	9.26	1,250.22	813.37	911.94
	6830.2	8.2	218455	5.02	1.00	30.29	-	-	9.42	40.59	40.59	9.42	-	827.81	927.82
	6830.4	8.4	219654	5.04	1.01	31.30	-	-	9.57	41.15	41.15	9.57	-	842.00	943.43
	6830.6	8.6	220854	5.07	1.01	32.31	-	-	9.72	41.70	41.70	9.72	-	855.95	958.78
	6830.8	8.8	222053	5.10	1.02	33.33	-	-	9.86	42.25	42.25	9.86	-	869.68	973.89
	6831.0	9.0	223253	5.13	1.02	34.35	-	-	10.01	42.78	42.78	10.01	-	883.19	988.77
	6831.2	9.2	224453	5.15	1.03	35.38	-	-	10.15	43.32	43.32	10.15	-	896.50	1,003.43
	6831.4	9.4	225652	5.18	1.03	36.41	-	-	10.29	43.84	43.84	10.29	-	909.62	1,017.88
	6831.6	9.6	226852	5.21	1.04	37.45	-	-	10.43	44.36	44.36	10.43	-	922.55	1,032.12
	6831.8	9.8	228051	5.24	1.04	38.49	-	-	10.56	44.87	44.87	10.56	-	935.30	1,046.17
	6832.0	10.0	229251	5.26	1.05	39.54	-	-	10.70	45.38	45.38	10.70	-	947.88	1,060.03
	6832.2	10.2	230593	5.29	1.06	40.60	63.78	-	10.83	45.88	45.88	10.83	-	960.29	1,137.49
	6832.4	10.4	231935	5.32	1.06	41.66	180.39	-	10.96	46.38	46.38	10.96	-	972.55	1,267.61
	6832.6	10.6	233277	5.36	1.07	42.73	331.39	-	11.09	46.87	46.87	11.09	-	984.65	1,431.96
	6832.8	10.8	234619	5.39	1.07	43.80	510.21	-	11.22	47.35	47.35	11.22	-	996.61	1,623.97
	6833.0	11.0	235961	5.42	1.08	44.88	713.04	-	11.35	47.83	47.83	11.35	-	1,008.42	1,839.83
	6833.2	11.2	237302	5.45	1.09	45.97	937.32	-	11.47	48.31	48.31	11.47	-	1,020.10	2,076.99
	6833.4	11.4	238644	5.48	1.09	47.06	1,181.16	-	11.59	48.78	48.78	11.59	-	1,031.65	2,333.56
	6833.6	11.6	239986	5.51	1.10	48.16	1,443.10	-	11.72	49.25	49.25	11.72	-	1,043.06	2,608.10
	6833.8	11.8	241328	5.54	1.10	49.27	1,721.97	-	11.84	49.71	49.71	11.84	-	1,054.36	2,899.43
	6834.0	12.0	242670	5.57	1.11	50.38	2,016.79	-	11.96	50.17	50.17	11.96	-	1,065.53	3,206.58

DO NOT INCLUDE WATER QUALITY CAPTURE VOLUME IN THIS STORAGE AREA.

Notes:
1) Coefficient of discharge, C_d, taken from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, page 303
2) Bottom Elevation is the Centerline Elevation minus half the Height or the Diameter, example: 6132.25ft-0.5*30in/(12ft/in)=6131.00ft
3) Top Elevation is the Centerline Elevation plus half the Height of the Diameter, example: 6132.25ft+0.5*30in/(12ft/in)=6133.50ft
4) Volume for each elevation is calculated using the average end area and then accumulated, example: (5ft-3ft)(16.8ac+15.78ac)*0.5=64.43ac-ft
5) Weir equation for Embankment and Spillway is from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, equation 6.22: $Q=\frac{2}{3}C_d(2g)^{0.5}LH^{1.5}$
6) Total Flow is the sum of the folws through the Embankment, Spillway, and Culvert (Does not account for outlet capacity, this needs to be checked seperately.)

Calculated by: BAS
Date:
Checked by:
Date:

Stage Storage Discharge

Data for spillway and embankment: Regional Pond MN

References: Topo and field survey

Spillway Length (ft) =	252
Spillway Elevation (ft) =	6854.0
Spillway C_d [1] =	0.56
Embankment Length (ft) =	308
Embankment Elevation (ft) =	6856.0
Embankment C_d [1] =	0.56
Acceleration due to Gravity, g (ft/s^2) =	32.2

Data for outlet pipe and grate:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (in)*	*C_d [1]*	*Area (ft^2)*	*Centerline Elevation (ft)*	*Bottom Elevation [2] (ft)*	*Top Elevation [3] (ft)*
Orifice 1 :	Rectangular	1.5	2.5		0.6	3.75	6851.25	6850.00	6852.50
Orifice 2:	Rectangular	15.42	2.29		0.6	35.31	6853.65	6852.50	6854.79
Orifice 3:	None Selected					0.00		0.00	0.00
Orifice 4:	None Selected					0.00		0.00	0.00

Stand Pipe Dimensions:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (ft)*	*C_d [1]*	*Area (ft^2)*	*Elevation (ft)*	*Perimeter (ft)*
Grate :	Rectangular	20.0	6.8		0.6	135.00	6855.8	53.50

Stage			*Storage*				*Discharge*							
Stage	*Elevation (ft)*	*Height (ft)*	*Area*		*Volume [4]*		*Spillway [5] (cfs)*	*Embankment [5] (cfs)*	*Orifice (max outflow cfs)*				*Grate (max outflow cfs)*	*Total Flow [6] (cfs)*
			(ft^2)	*(acres)*	*(ac-ft)*	*(cum ac-ft)*			*1*	*2*	*3*	*4*		
	6850.0	0.0	72765	1.67	0.00	0.00	-	-	-	-	-	-	-	-
	6852.0	2.0	81967	1.88	3.55	3.55	-	-	13.62	-	-	-	-	13.62
	6854.0	4.0	91240	2.09	3.98	7.53	-	-	29.94	90.93	-	-	-	120.88
	6856.0	6.0	100323	2.30	4.40	11.93	2,135.43	-	39.35	260.92	-	-	12.04	2,447.74

DO NOT INCLUDE WATER QUALITY CAPTURE VOLUME IN THIS STORAGE AREA.

Notes:

1) Coefficient of discharge, C_d, taken from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, page 303

2) Bottom Elevation is the Centerline Elevation minus half the Height or the Diameter, example: 6132.25ft-0.5*30in/(12ft/in)=6131.00ft

3) Top Elevation is the Centerline Elevation plus half the Height of the Diameter, example: 6132.25ft+0.5*30in/(12ft/in)=6133.50ft

4) Volume for each elevation is calculated using the average end area and then accumulated, example: (5ft-3ft)(16.8ac+15.78ac)*0.5=64.43ac-ft

5) Weir equation for Embankment and Spillway is from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, equation 6.22: $Q=\frac{2}{3}C_d(2g)^{0.5}LH^{1.5}$

6) Total Flow is the sum of the folws through the Embankment, Spillway, and Culvert (Does not account for outlet capacity, this needs to be checked seperately.)

Calculated by: BAS

Date:

Checked by:

Date:

Stage Storage Discharge

Data for spillway and embankment: Paint Brush Hills Pond #4

References: Topo and field survey

Spillway Length (ft) =	14
Spillway Elevation (ft) =	7134.0
Spillway C_d [1] =	0.56
Embankment Length (ft) =	700
Embankment Elevation (ft) =	7136.0
Embankment C_d [1] =	0.56
Acceleration due to Gravity, g (ft/s^2) =	32.2

Data for outlet pipe and grate:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (in)*	*C_d [1]*	*Area (ft^2)*	*Centerline Elevation (ft)*	*Bottom Elevation [2] (ft)*	*Top Elevation [3] (ft)*
Orifice 1 :	Circular			42	0.6	9.62	7131.75	7130.00	7133.50
Orifice 2:	None Selected					0.00		0.00	0.00
Orifice 3:	None Selected					0.00		0.00	0.00
Orifice 4:	None Selected					0.00		0.00	0.00

Check Dimen

Stand Pipe Dimensions:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (ft)*	*C_d [1]*	*Area (ft^2)*	*Elevation (ft)*	*Perimeter (ft)*
Grate :	None Selected				0.6	0.00		0.00

Stage			*Storage*				*Discharge*							
Stage	*Elevation (ft)*	*Height (ft)*	*Area*		*Volume [4]*		*Spillway [5] (cfs)*	*Embankment [5] (cfs)*	*Orifice (max outflow cfs)*				*Grate (max outflow cfs)*	*Total Flow [6] (cfs)*
			(ft^2)	*(acres)*	*(ac-ft)*	*(cum ac-ft)*			*1*	*2*	*3*	*4*		
	7130.0	0.0	49	0.00	0.00	0.00	-	-	-	-	-	-	-	-
	7132.0	2.0	8991	0.21	0.21	0.21	-	-	23.16	-	-	-	-	23.16
	7134.0	4.0	40420	0.93	1.13	1.34	-	-	69.49	-	-	-	-	69.49
	7136.0	6.0	73961	1.70	2.63	3.97	118.63	-	95.50	-	-	-	-	214.14

DO NOT INCLUDE WATER QUALITY CAPTURE VOLUME IN THIS STORAGE AREA.

Notes:

1) Coefficient of discharge, C_d, taken from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, page 303

2) Bottom Elevation is the Centerline Elevation minus half the Height or the Diameter, example: 6132.25ft-0.5*30in/(12ft/in)=6131.00ft

3) Top Elevation is the Centerline Elevation plus half the Height of the Diameter, example: 6132.25ft+0.5*30in/(12ft/in)=6133.50ft

4) Volume for each elevation is calculated using the average end area and then accumulated, example: (5ft-3ft)(16.8ac+15.78ac)*0.5=64.43ac-ft

5) Weir equation for Embankment and Spillway is from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, equation 6.22: $Q=^2/_3 C_d (2g)^{0.5} L H^{1.5}$

6) Total Flow is the sum of the folws through the Embankment, Spillway, and Culvert (Does not account for outlet capacity, this needs to be checked seperately.)

Calculated by: BAS

Date:

Checked by:

Date:

Stage Storage Discharge

Data for spillway and embankment: Paint Brush Hills Pond A

References: Topo and field survey

Spillway Length (ft) =	27
Spillway Elevation (ft) =	7148.0
Spillway C_d [1] =	0.56
Embankment Length (ft) =	420
Embankment Elevation (ft) =	7150.0
Embankment C_d [1] =	0.56
Acceleration due to Gravity, g (ft/s^2) =	32.2

Data for outlet pipe and grate:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (in)*	*C_d [1]*	*Area (ft^2)*	*Centerline Elevation (ft)*	*Bottom Elevation [2] (ft)*	*Top Elevation [3] (ft)*
Orifice 1 :	Circular			18	0.6	1.77	7144.75	7144.00	7145.50
Orifice 2:	None Selected					0.00		0.00	0.00
Orifice 3:	None Selected					0.00		0.00	0.00
Orifice 4:	None Selected					0.00		0.00	0.00

Stand Pipe Dimensions:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (ft)*	*C_d [1]*	*Area (ft^2)*	*Elevation (ft)*	*Perimeter (ft)*
Grate :	Circular			3.0	0.6	7.07	7147.3	9.42

Stage			*Storage*				*Discharge*							
Stage	*Elevation (ft)*	*Height (ft)*	*Area*		*Volume [4]*		*Spillway [5] (cfs)*	*Embankment [5] (cfs)*	*Orifice (max outflow cfs)*				*Grate (max outflow cfs)*	*Total Flow [6] (cfs)*
			(ft^2)	*(acres)*	*(ac-ft)*	*(cum ac-ft)*			*1*	*2*	*3*	*4*		
	7144.0	0.0	2301	0.05	0.00	0.00	-	-	-	-	-	-	-	-
	7146.0	2.0	32617	0.75	0.80	0.80	-	-	9.51	-	-	-	-	9.51
	7148.0	4.0	46611	1.07	1.82	2.62	-	-	15.34	-	-	-	16.59	31.93
	7150.0	6.0	52403	1.20	2.27	4.89	228.80	-	19.50	-	-	-	55.61	303.91

DO NOT INCLUDE WATER QUALITY CAPTURE VOLUME IN THIS STORAGE AREA.

Notes:

1) Coefficient of discharge, C_d, taken from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, page 303

2) Bottom Elevation is the Centerline Elevation minus half the Height or the Diameter, example: 6132.25ft-0.5*30in/(12ft/in)=6131.00ft

3) Top Elevation is the Centerline Elevation plus half the Height of the Diameter, example: 6132.25ft+0.5*30in/(12ft/in)=6133.50ft

4) Volume for each elevation is calculated using the average end area and then accumulated, example: (5ft-3ft)(16.8ac+15.78ac)*0.5=64.43ac-ft

5) Weir equation for Embankment and Spillway is from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, equation 6.22: $Q=^2/_3 C_d (2g)^{0.5} L H^{1.5}$

6) Total Flow is the sum of the folws through the Embankment, Spillway, and Culvert (Does not account for outlet capacity, this needs to be checked seperately.)

Calculated by: BAS

Date:

Checked by:

Date:

Stage Storage Discharge

Data for spillway and embankment: Paint Brush Hills Pond B1

References: Topo and field survey

Spillway Length (ft) =	60
Spillway Elevation (ft) =	7158.0
Spillway C_d [1] =	0.56
Embankment Length (ft) =	663
Embankment Elevation (ft) =	7160.0
Embankment C_d [1] =	0.56
Acceleration due to Gravity, g (ft/s^2) =	32.2

Data for outlet pipe and grate:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (in)*	*C_d [1]*	*Area (ft^2)*	*Centerline Elevation (ft)*	*Bottom Elevation [2] (ft)*	*Top Elevation [3] (ft)*
Orifice 1 :	Circular			42	0.6	9.62	7151.75	7150.00	7153.50
Orifice 2:	Circular			42	0.6	9.62	7151.75	7150.00	7153.50
Orifice 3:	None Selected					0.00		0.00	0.00
Orifice 4:	None Selected					0.00		0.00	0.00

Check Dimen Check Dimensions !

Stand Pipe Dimensions:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (ft)*	*C_d [1]*	*Area (ft^2)*	*Elevation (ft)*	*Perimeter (ft)*
Grate :	None Selected				0.6	0.00		0.00

Stage			*Storage*				*Discharge*								
Stage	*Elevation (ft)*	*Height (ft)*	*Area*		*Volume [4]*		*Spillway [5] (cfs)*	*Embankment [5] (cfs)*	*Orifice (max outflow cfs)*				*Grate (max outflow cfs)*	*Total Flow [6] (cfs)*
			(ft^2)	*(acres)*	*(ac-ft)*	*(cum ac-ft)*			*1*	*2*	*3*	*4*		
	7150.0	0.0	27719	0.64	0.00	0.00	-	-	-	-	-	-	-	-
	7152.0	2.0	42805	0.98	1.62	1.62	-	-	23.16	23.16	-	-	-	46.33
	7154.0	4.0	50226	1.15	2.14	3.75	-	-	69.49	69.49	-	-	-	138.98
	7156.0	6.0	58005	1.33	2.48	6.24	-	-	95.50	95.50	-	-	-	191.00
	7158.0	8.0	69547	1.60	2.93	9.17	-	-	115.81	115.81	-	-	-	231.63
	7160.0	10.0	97375	2.24	3.83	13.00	508.44	-	133.06	133.06	-	-	-	774.56

DO NOT INCLUDE WATER QUALITY CAPTURE VOLUME IN THIS STORAGE AREA.

Notes:

1) Coefficient of discharge, C_d, taken from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, page 303

2) Bottom Elevation is the Centerline Elevation minus half the Height or the Diameter, example: 6132.25ft-0.5*30in/(12ft/in)=6131.00ft

3) Top Elevation is the Centerline Elevation plus half the Height of the Diameter, example: 6132.25ft+0.5*30in/(12ft/in)=6133.50ft

4) Volume for each elevation is calculated using the average end area and then accumulated, example: (5ft-3ft)(16.8ac+15.78ac)*0.5=64.43ac-ft

5) Weir equation for Embankment and Spillway is from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, equation 6.22: $Q=\frac{2}{3}C_d(2g)^{0.5}LH^{1.5}$

6) Total Flow is the sum of the folws through the Embankment, Spillway, and Culvert (Does not account for outlet capacity, this needs to be checked seperately.)

Calculated by: BAS

Date:

Checked by:

Date:

Stage Storage Discharge

Data for spillway and embankment: Paint Brush Hills Pond B2

References: Topo and field survey

Spillway Length (ft) =	25
Spillway Elevation (ft) =	7148.0
Spillway C_d [1] =	0.56
Embankment Length (ft) =	600
Embankment Elevation (ft) =	7150.0
Embankment C_d [1] =	0.56
Acceleration due to Gravity, g (ft/s^2) =	32.2

Data for outlet pipe and grate:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (in)*	*C_d [1]*	*Area (ft^2)*	*Centerline Elevation (ft)*	*Bottom Elevation [2] (ft)*	*Top Elevation [3] (ft)*
Orifice 1 :	Circular			18	0.6	1.77	7140.75	7140.00	7141.50
Orifice 2:	None Selected					0.00		0.00	0.00
Orifice 3:	None Selected					0.00		0.00	0.00
Orifice 4:	None Selected					0.00		0.00	0.00

Stand Pipe Dimensions:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (ft)*	*C_d [1]*	*Area (ft^2)*	*Elevation (ft)*	*Perimeter (ft)*
Grate :	Circular			5.0	0.6	19.63	7146.5	15.71

Stage			*Storage*				*Discharge*							
Stage	*Elevation (ft)*	*Height (ft)*	*Area*		*Volume [4]*		*Spillway [5] (cfs)*	*Embankment [5] (cfs)*	*Orifice (max outflow cfs)*				*Grate (max outflow cfs)*	*Total Flow [6] (cfs)*
			(ft^2)	*(acres)*	*(ac-ft)*	*(cum ac-ft)*			*1*	*2*	*3*	*4*		
	7140.0	0.0	6171	0.14	0.00	0.00	-	-	-	-	-	-	-	-
	7142.0	2.0	33600	0.77	0.91	0.91	-	-	9.51	-	-	-	-	9.51
	7144.0	4.0	72649	1.67	2.44	3.35	-	-	15.34	-	-	-	-	15.34
	7146.0	6.0	99742	2.29	3.96	7.31	-	-	19.50	-	-	-	-	19.50
	7148.0	8.0	108583	2.49	4.78	12.09	-	-	22.91	-	-	-	92.63	115.54
	7150.0	10.0	117383	2.69	5.19	17.28	211.85	-	25.88	-	-	-	176.87	414.60
	7152.0	12.0	125020	2.87	5.56	22.84	599.20	5,084.36	28.54	-	-	-	221.72	5,933.81

DO NOT INCLUDE WATER QUALITY CAPTURE VOLUME IN THIS STORAGE AREA.

Notes:

1) Coefficient of discharge, C_d, taken from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, page 303

2) Bottom Elevation is the Centerline Elevation minus half the Height or the Diameter, example: 6132.25ft-0.5*30in/(12ft/in)=6131.00ft

3) Top Elevation is the Centerline Elevation plus half the Height of the Diameter, example: 6132.25ft+0.5*30in/(12ft/in)=6133.50ft

4) Volume for each elevation is calculated using the average end area and then accumulated, example: (5ft-3ft)(16.8ac+15.78ac)*0.5=64.43ac-ft

5) Weir equation for Embankment and Spillway is from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, equation 6.22: $Q=\frac{2}{3}C_d(2g)^{0.5}LH^{1.5}$

6) Total Flow is the sum of the folws through the Embankment, Spillway, and Culvert (Does not account for outlet capacity, this needs to be checked seperately.)

Calculated by: BAS

Date:

Checked by:

Date:

Stage Storage Discharge

Data for spillway and embankment: Paint Brush Hills Pond C

References: Topo and field survey

Spillway Length (ft) =	57
Spillway Elevation (ft) =	7200.0
Spillway C_d [1] =	0.56
Embankment Length (ft) =	515
Embankment Elevation (ft) =	7202.0
Embankment C_d [1] =	0.56
Acceleration due to Gravity, g (ft/s ^{2}) =	32.2

Data for outlet pipe and grate:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (in)*	*C_d [1]*	*Area (ft ^{2})*	*Centerline Elevation (ft)*	*Bottom Elevation [2] (ft)*	*Top Elevation [3] (ft)*
Orifice 1 :	Circular			18	0.6	1.77	7194.75	7194.00	7195.50
Orifice 2:	None Selected					0.00		0.00	0.00
Orifice 3:	None Selected					0.00		0.00	0.00
Orifice 4:	None Selected					0.00		0.00	0.00

Stand Pipe Dimensions:

	Type	*Width (ft)*	*Height (ft)*	*Diameter (ft)*	*C_d [1]*	*Area (ft ^{2})*	*Elevation (ft)*	*Perimeter (ft)*
Grate :	Circular			5.5	0.6	23.76	7199.0	17.28

Stage			*Storage*				*Discharge*								
Stage	*Elevation (ft)*	*Height (ft)*	*Area*		*Volume [4]*		*Spillway [5] (cfs)*	*Embankment [5] (cfs)*	*Orifice (max outflow cfs)*				*Grate (max outflow cfs)*	*Total Flow [6] (cfs)*
			(ft ^{2})	*(acres)*	*(ac-ft)*	*(cum ac-ft)*			*1*	*2*	*3*	*4*		
	7194.0	0.0	3524	0.08	0.00	0.00	-	-	-	-	-	-	-	-
	7196.0	2.0	34432	0.79	0.87	0.87	-	-	9.51	-	-	-	-	9.51
	7198.0	4.0	70646	1.62	2.41	3.28	-	-	15.34	-	-	-	-	15.34
	7200.0	6.0	81277	1.87	3.49	6.77	-	-	19.50	-	-	-	55.46	74.96
	7202.0	8.0	94041	2.16	4.02	10.80	483.01	-	22.91	-	-	-	198.14	704.06

DO NOT INCLUDE WATER QUALITY CAPTURE VOLUME IN THIS STORAGE AREA.

Notes:

1) Coefficient of discharge, C_d, taken from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, page 303

2) Bottom Elevation is the Centerline Elevation minus half the Height or the Diameter, example: 6132.25ft-0.5*30in/(12ft/in)=6131.00ft

3) Top Elevation is the Centerline Elevation plus half the Height of the Diameter, example: 6132.25ft+0.5*30in/(12ft/in)=6133.50ft

4) Volume for each elevation is calculated using the average end area and then accumulated, example: (5ft-3ft)(16.8ac+15.78ac)*0.5=64.43ac-ft

5) Weir equation for Embankment and Spillway is from Hydrology and Hydraulic Systems by R.S. Gupta, 2001, equation 6.22: $Q=\frac{2}{3}C_d(2g)^{0.5}LH^{1.5}$

6) Total Flow is the sum of the folws through the Embankment, Spillway, and Culvert (Does not account for outlet capacity, this needs to be checked seperately.)

Calculated by: BAS

Date:

Checked by:

Date:

24-hr Rainfall Depths

Recurrence Interval	NOAA Depth (in)[1]	Adjusted Depth (in)
2-yr	2	1.96
5-yr	2.6	2.55
10-yr	3	2.94
25-yr	3.8	3.72
50-yr	4.2	4.12
100-yr	4.6	4.51
	Areal Reduction	**0.98**
	DA=10.6 mi²	

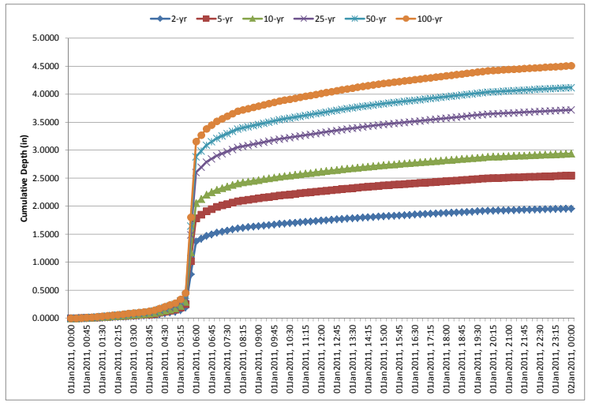
Notes:

[1] NOAA Atlas 2 Vol. III

Falcon DBPS

TypeIIA Rainfall Distribution

Ordinate	Date/Time	Type IIa Cumulative Precipitation (in)	Recurrence 2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
1	01Jan2011, 00:00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	01Jan2011, 00:15	0.0005	0.0010	0.0013	0.0015	0.0019	0.0021	0.0023
3	01Jan2011, 00:30	0.0015	0.0029	0.0038	0.0044	0.0056	0.0062	0.0068
4	01Jan2011, 00:45	0.0030	0.0059	0.0077	0.0088	0.0112	0.0124	0.0135
5	01Jan2011, 01:00	0.0045	0.0088	0.0115	0.0132	0.0167	0.0185	0.0203
6	01Jan2011, 01:15	0.0060	0.0118	0.0153	0.0176	0.0223	0.0247	0.0271
7	01Jan2011, 01:30	0.0080	0.0157	0.0204	0.0235	0.0298	0.0330	0.0361
8	01Jan2011, 01:45	0.0100	0.0196	0.0255	0.0294	0.0372	0.0412	0.0451
9	01Jan2011, 02:00	0.0120	0.0235	0.0306	0.0353	0.0446	0.0494	0.0541
10	01Jan2011, 02:15	0.0143	0.0280	0.0365	0.0420	0.0532	0.0589	0.0645
11	01Jan2011, 02:30	0.0165	0.0323	0.0421	0.0485	0.0614	0.0680	0.0744
12	01Jan2011, 02:45	0.0188	0.0368	0.0479	0.0553	0.0699	0.0775	0.0848
13	01Jan2011, 03:00	0.0210	0.0412	0.0536	0.0617	0.0781	0.0865	0.0947
14	01Jan2011, 03:15	0.0233	0.0457	0.0594	0.0685	0.0867	0.0960	0.1051
15	01Jan2011, 03:30	0.0255	0.0500	0.0650	0.0750	0.0949	0.1051	0.1150
16	01Jan2011, 03:45	0.0278	0.0545	0.0709	0.0817	0.1034	0.1145	0.1254
17	01Jan2011, 04:00	0.0320	0.0627	0.0816	0.0941	0.1190	0.1318	0.1443
18	01Jan2011, 04:15	0.0390	0.0764	0.0995	0.1147	0.1451	0.1607	0.1759
19	01Jan2011, 04:30	0.0460	0.0902	0.1173	0.1352	0.1711	0.1895	0.2075
20	01Jan2011, 04:45	0.0530	0.1039	0.1352	0.1558	0.1972	0.2184	0.2390
21	01Jan2011, 05:00	0.0600	0.1176	0.1530	0.1764	0.2232	0.2472	0.2706
22	01Jan2011, 05:15	0.0750	0.1470	0.1913	0.2205	0.2790	0.3090	0.3383
23	01Jan2011, 05:30	0.1000	0.1960	0.2550	0.2940	0.3720	0.4120	0.4510
24	01Jan2011, 05:45	0.4000	0.7840	1.0200	1.1760	1.4880	1.6480	1.8040
25	01Jan2011, 06:00	0.7000	1.3720	1.7850	2.0580	2.6040	2.8840	3.1570
26	01Jan2011, 06:15	0.7250	1.4210	1.8488	2.1315	2.6970	2.9870	3.2698
27	01Jan2011, 06:30	0.7500	1.4700	1.9125	2.2050	2.7900	3.0900	3.3825
28	01Jan2011, 06:45	0.7650	1.4994	1.9508	2.2491	2.8458	3.1518	3.4502
29	01Jan2011, 07:00	0.7800	1.5288	1.9890	2.2932	2.9016	3.2136	3.5178
30	01Jan2011, 07:15	0.7900	1.5484	2.0145	2.3226	2.9388	3.2548	3.5629
31	01Jan2011, 07:30	0.8000	1.5680	2.0400	2.3520	2.9760	3.2960	3.6080
32	01Jan2011, 07:45	0.8100	1.5876	2.0655	2.3814	3.0132	3.3372	3.6531
33	01Jan2011, 08:00	0.8200	1.6072	2.0910	2.4108	3.0504	3.3784	3.6982
34	01Jan2011, 08:15	0.8250	1.6170	2.1038	2.4255	3.0690	3.3990	3.7208
35	01Jan2011, 08:30	0.8300	1.6268	2.1165	2.4402	3.0876	3.4196	3.7433
36	01Jan2011, 08:45	0.8350	1.6366	2.1293	2.4549	3.1062	3.4402	3.7659
37	01Jan2011, 09:00	0.8400	1.6464	2.1420	2.4696	3.1248	3.4608	3.7884
38	01Jan2011, 09:15	0.8450	1.6562	2.1548	2.4843	3.1434	3.4814	3.8110
39	01Jan2011, 09:30	0.8500	1.6660	2.1675	2.4990	3.1620	3.5020	3.8335
40	01Jan2011, 09:45	0.8550	1.6758	2.1803	2.5137	3.1806	3.5226	3.8561
41	01Jan2011, 10:00	0.8600	1.6856	2.1930	2.5284	3.1992	3.5432	3.8786
42	01Jan2011, 10:15	0.8638	1.6930	2.2027	2.5396	3.2133	3.5589	3.8957
43	01Jan2011, 10:30	0.8675	1.7003	2.2121	2.5505	3.2271	3.5741	3.9124
44	01Jan2011, 10:45	0.8713	1.7077	2.2218	2.5616	3.2412	3.5898	3.9296
45	01Jan2011, 11:00	0.8750	1.7150	2.2313	2.5725	3.2550	3.6050	3.9463
46	01Jan2011, 11:15	0.8788	1.7224	2.2409	2.5837	3.2691	3.6207	3.9634
47	01Jan2011, 11:30	0.8825	1.7297	2.2504	2.5946	3.2829	3.6359	3.9801
48	01Jan2011, 11:45	0.8863	1.7371	2.2601	2.6057	3.2970	3.6516	3.9972
49	01Jan2011, 12:00	0.8900	1.7444	2.2695	2.6166	3.3108	3.6668	4.0139
50	01Jan2011, 12:15	0.8938	1.7518	2.2792	2.6278	3.3249	3.6825	4.0310
51	01Jan2011, 12:30	0.8975	1.7591	2.2886	2.6387	3.3387	3.6977	4.0477
52	01Jan2011, 12:45	0.9013	1.7665	2.2983	2.6498	3.3528	3.7134	4.0649
53	01Jan2011, 13:00	0.9050	1.7738	2.3078	2.6607	3.3666	3.7286	4.0816
54	01Jan2011, 13:15	0.9083	1.7803	2.3162	2.6704	3.3789	3.7422	4.0964
55	01Jan2011, 13:30	0.9115	1.7865	2.3243	2.6798	3.3908	3.7554	4.1109
56	01Jan2011, 13:45	0.9148	1.7930	2.3327	2.6895	3.4031	3.7690	4.1257
57	01Jan2011, 14:00	0.9180	1.7993	2.3409	2.6989	3.4150	3.7822	4.1402
58	01Jan2011, 14:15	0.9210	1.8052	2.3486	2.7077	3.4261	3.7945	4.1537
59	01Jan2011, 14:30	0.9240	1.8110	2.3562	2.7166	3.4373	3.8069	4.1672
60	01Jan2011, 14:45	0.9270	1.8169	2.3639	2.7254	3.4484	3.8192	4.1808
61	01Jan2011, 15:00	0.9300	1.8228	2.3715	2.7342	3.4596	3.8316	4.1943
62	01Jan2011, 15:15	0.9325	1.8277	2.3779	2.7416	3.4689	3.8419	4.2056
63	01Jan2011, 15:30	0.9350	1.8326	2.3843	2.7489	3.4782	3.8522	4.2169
64	01Jan2011, 15:45	0.9375	1.8375	2.3906	2.7563	3.4875	3.8625	4.2281
65	01Jan2011, 16:00	0.9400	1.8424	2.3970	2.7636	3.4968	3.8728	4.2394
66	01Jan2011, 16:15	0.9425	1.8473	2.4034	2.7710	3.5061	3.8831	4.2507
67	01Jan2011, 16:30	0.9450	1.8522	2.4098	2.7783	3.5154	3.8934	4.2620
68	01Jan2011, 16:45	0.9475	1.8571	2.4161	2.7857	3.5247	3.9037	4.2732
69	01Jan2011, 17:00	0.9500	1.8620	2.4225	2.7930	3.5340	3.9140	4.2845
70	01Jan2011, 17:15	0.9525	1.8669	2.4289	2.8004	3.5433	3.9243	4.2958
71	01Jan2011, 17:30	0.9550	1.8718	2.4353	2.8077	3.5526	3.9346	4.3071
72	01Jan2011, 17:45	0.9575	1.8767	2.4416	2.8151	3.5619	3.9449	4.3183
73	01Jan2011, 18:00	0.9600	1.8816	2.4480	2.8224	3.5712	3.9552	4.3296
74	01Jan2011, 18:15	0.9625	1.8865	2.4544	2.8298	3.5805	3.9655	4.3409
75	01Jan2011, 18:30	0.9650	1.8914	2.4608	2.8371	3.5898	3.9758	4.3522
76	01Jan2011, 18:45	0.9675	1.8963	2.4671	2.8445	3.5991	3.9861	4.3634
77	01Jan2011, 19:00	0.9700	1.9012	2.4735	2.8518	3.6084	3.9964	4.3747
78	01Jan2011, 19:15	0.9725	1.9061	2.4799	2.8592	3.6177	4.0067	4.3860
79	01Jan2011, 19:30	0.9750	1.9110	2.4863	2.8665	3.6270	4.0170	4.3973
80	01Jan2011, 19:45	0.9775	1.9159	2.4926	2.8739	3.6363	4.0273	4.4085
81	01Jan2011, 20:00	0.9800	1.9208	2.4990	2.8812	3.6456	4.0376	4.4198
82	01Jan2011, 20:15	0.9813	1.9233	2.5023	2.8850	3.6504	4.0430	4.4257
83	01Jan2011, 20:30	0.9825	1.9257	2.5054	2.8886	3.6549	4.0479	4.4311
84	01Jan2011, 20:45	0.9838	1.9282	2.5087	2.8924	3.6597	4.0533	4.4369
85	01Jan2011, 21:00	0.9850	1.9306	2.5118	2.8959	3.6642	4.0582	4.4424
86	01Jan2011, 21:15	0.9863	1.9331	2.5151	2.8997	3.6690	4.0636	4.4482
87	01Jan2011, 21:30	0.9875	1.9355	2.5181	2.9033	3.6735	4.0685	4.4536
88	01Jan2011, 21:45	0.9888	1.9380	2.5214	2.9071	3.6783	4.0739	4.4595
89	01Jan2011, 22:00	0.9900	1.9404	2.5245	2.9106	3.6828	4.0788	4.4649
90	01Jan2011, 22:15	0.9913	1.9429	2.5278	2.9144	3.6876	4.0842	4.4708
91	01Jan2011, 22:30	0.9925	1.9453	2.5309	2.9180	3.6921	4.0891	4.4762
92	01Jan2011, 22:45	0.9938	1.9478	2.5342	2.9218	3.6969	4.0945	4.4820
93	01Jan2011, 23:00	0.9950	1.9502	2.5373	2.9253	3.7014	4.0994	4.4875
94	01Jan2011, 23:15	0.9963	1.9527	2.5406	2.9291	3.7062	4.1048	4.4933
95	01Jan2011, 23:30	0.9975	1.9551	2.5436	2.9327	3.7107	4.1097	4.4987
96	01Jan2011, 23:45	0.9988	1.9576	2.5469	2.9365	3.7155	4.1151	4.5046
97	02Jan2011, 00:00	1.0000	1.9600	2.5500	2.9400	3.7200	4.1200	4.5100



Falcon DBPS
Peak Flow Results

Hydrologic Element	Area (sq mi)	Historical Peak Flows (cfs)					
		2-year	5-year	10-year	25-year	50-year	100-year
ET010	0.15	10	22	32	57	71	86
ET020	0.21	20	44	63	110	140	170
ET030	0.20	0	2	5	14	21	28
ET040	0.15	0	2	5	16	22	30
ET050	0.12	0	1	5	18	27	38
ET060	0.29	0	4	15	54	80	110
ET070	0.25	0	3	10	38	58	79
ET080	0.29	0	2	6	23	35	49
ET090	0.12	0	1	2	6	9	12
ET100	0.05	0	1	2	7	11	15
ET110	0.23	0	1	5	18	27	38
ET120	0.11	0	1	2	6	10	14
ET130	0.13	0	1	2	6	8	12
ET140	0.27	0	1	3	8	12	17
ET150	0.18	0	1	4	14	22	30
ET160	0.19	0	2	6	15	22	30
FS010	0.12	0	2	5	12	17	23
JET010	0.15	10	22	32	57	71	86
JET020	0.36	20	45	67	130	160	200
JET030	0.56	20	46	71	140	180	230
JET040	0.71	19	48	74	150	190	240
JET050	0.83	19	48	75	150	200	250
JET060	1.11	19	48	77	150	200	260
JET070	1.36	19	49	79	160	210	260
JET080	1.66	17	46	74	150	200	250
JET090	1.78	17	47	75	150	200	260
JET100	1.83	17	47	75	150	200	260
JET110	2.05	17	47	76	160	210	260
JET120	2.16	17	47	77	160	210	270
JET130	0.13	0	1	2	6	8	12
JET140	0.40	0	2	4	14	21	29
JET152	2.57	17	49	81	170	230	290
JET154	2.74	17	49	82	170	230	300
JET160	2.93	18	48	81	180	240	300
JFS010_OUTLET	0.12	0	2	5	12	17	23
JMT010	0.29	1	7	13	32	44	57
JMT020	0.09	8	20	30	54	68	83
JMT030	0.25	15	38	58	100	130	160
JMT040	0.56	24	65	99	180	230	290
JMT050	0.67	24	65	100	190	240	300
JMT060	1.16	24	66	100	200	260	330
JMT070	1.36	24	67	110	210	280	350
JMT080	1.42	24	68	110	210	280	350
JMT090	0.04	0	1	3	10	14	19
JMT102	1.46	24	68	110	220	280	360
JMT104	0.04	0	1	3	10	14	19
JMT106	1.52	24	68	110	210	280	360
JMT110	1.64	22	63	120	220	290	360
JWT010	0.14	7	18	27	51	65	80
JWT020	0.07	3	8	12	23	29	36
JWT030	0.14	6	15	23	46	60	75
JWT042	0.28	12	32	50	97	120	160
JWT044	0.46	19	49	77	150	190	240
JWT050	0.85	33	87	140	260	330	410
JWT070	0.17	10	27	42	77	99	120
JWT080	1.09	40	110	170	330	420	510
JWT090	1.43	49	120	200	380	500	610
JWT110	1.63	56	150	220	440	580	720
JWT120	1.77	58	150	230	460	600	750
JWT140	0.13	13	28	40	70	88	110
JWT150	0.36	21	44	64	110	140	170
JWT160	0.47	23	50	71	120	160	190
JWT172	2.24	79	200	300	580	750	930
JWT174	2.36	81	200	310	590	760	950
JWT180	2.46	81	200	310	600	770	960

Hydrologic Element	Area (sq mi)	Existing Peak Flows (cfs)					
		2-year	5-year	10-year	25-year	50-year	100-year
ET010	0.15	25	47	64	100	130	150
ET020	0.21	44	84	110	180	220	260
ET030	0.20	34	62	84	130	160	190
ET040	0.15	28	53	72	120	140	170
ET050	0.12	37	67	89	140	170	200
ET060	0.29	110	190	250	380	450	530
ET070	0.25	94	160	220	330	400	460
ET080	0.29	91	160	210	320	380	440
ET090	0.12	7	16	24	41	52	63
ET100	0.05	1	6	10	21	27	34
ET110	0.23	8	24	38	73	94	120
ET120	0.11	8	18	26	46	57	70
ET130	0.13	7	16	23	41	51	62
ET140	0.27	11	23	34	59	73	89
ET150	0.18	17	37	53	91	110	140
ET160	0.19	19	39	55	92	110	140
FS010	0.12	2	6	11	24	32	41
JET010	0.15	23	37	49	80	99	120
JET020	0.36	44	85	120	190	240	280
JET030	0.56	65	130	190	310	380	460
JET040	0.71	23	59	110	260	390	480
JET050	0.83	7	32	67	170	260	410
JET060	1.11	13	28	45	180	240	340
JET070	1.36	94	170	220	350	420	490
JET080	1.66	14	36	55	170	230	320
JET090	1.78	15	39	64	170	270	370
JET100	1.83	15	40	65	170	270	380
JET110	2.05	16	43	76	180	300	410
JET120	2.16	17	48	84	190	320	430
JET130	0.13	7	16	23	41	51	62
JET140	0.40	18	39	57	99	120	150
JET152	2.57	28	86	140	290	430	570
JET154	2.74	31	91	140	300	450	590
JET160	2.93	32	96	150	320	470	620
JFS010_OUTLET	0.12	2	6	11	24	32	41
JMT010	0.29	1	11	25	62	120	160
JMT020	0.09	14	29	41	70	86	100
JMT030	0.25	34	74	100	160	200	240
JMT040	0.56	40	120	190	320	400	470
JMT050	0.67	50	150	230	390	490	580
JMT060	1.16	54	160	250	450	560	670
JMT070	1.36	61	180	280	510	630	760
JMT080	1.42	40	110	260	510	640	770
JMT090	0.04	8	13	16	23	27	30
JMT102	1.46	44	110	270	530	660	790
JMT104	0.04	8	13	16	23	27	30
JMT106	1.52	45	120	260	530	660	800
JMT110	1.64	46	120	260	540	680	820
JWT010	0.14	9	21	32	58	73	89
JWT020	0.07	4	10	15	27	34	42
JWT030	0.14	9	20	30	55	69	85
JWT042	0.28	15	37	57	110	140	170
JWT044	0.46	24	59	89	170	210	260
JWT050	0.85	43	110	170	310	390	480
JWT070	0.17	14	33	49	87	110	130
JWT080	1.09	54	140	210	400	500	610
JWT090	1.43	67	160	250	470	600	740
JWT110	1.63	76	180	280	540	700	850
JWT120	1.77	84	190	300	570	740	910
JWT140	0.13	14	30	43	74	92	110
JWT150	0.36	11	15	17	43	66	91
JWT160	0.47	35	64	85	130	160	180
JWT172	2.24	90	210	320	600	760	930
JWT174	2.36	92	210	320	610	780	960
JWT174 Diversion	2.36	0	15	130	410	580	760

Hydrologic Element	Area (sq mi)	Future Peak Flows (cfs)					
		2-year	5-year	10-year	25-year	50-year	100-year
ET010	0.15	38	67	90	140	170	200
ET020	0.21	73	130	170	260	310	360
ET030	0.20	45	81	110	170	210	240
ET040	0.15	28	53	72	120	140	170
ET050	0.12	37	67	89	140	170	200
ET060	0.29	110	190	250	380	450	530
ET070	0.25	94	160	220	330	400	460
ET080	0.29	110	190	250	380	450	520
ET090	0.12	26	46	61	95	110	130
ET100	0.05	11	22	31	50	61	72
ET110	0.23	24	53	76	130	160	200
ET120	0.11	11	24	34	59	74	89
ET130	0.13	11	23	33	57	71	85
ET140	0.27	16	33	48	82	100	120
ET150	0.18	17	37	53	91	110	140
ET160	0.19	19	39	55	92	110	140
FS010	0.12	6	17	26	48	61	75
JET010	0.15	29	49	64	110	130	150
JET020	0.36	74	130	170	270	330	390
JET030	0.56	97	180	250	410	500	580
JET040	0.71	27	85	140	380	500	570
JET050	0.83	11	38	88	210	380	530
JET060	1.11	13	32	68	210	300	430
JET070	1.36	94	170	220	350	420	480
JET080	1.66	15	38	61	200	270	350
JET090	1.78	26	47	81	200	290	390
JET100	1.83	27	49	83	200	290	390
JET110	2.05	40	85	120	210	320	440
JET120	2.16	49	110	160	270	340	450
JET130	0.13	11	23	33	57	71	85
JET140	0.40	26	55	80	140	170	200
JET152	2.57	51	120	180	350	500	650
JET154	2.74	62	140	200	370	530	680
JET160	2.93	66	150	230	410	550	710
JFS010_OUTLET	0.12	6	17	26	48	61	75
JMT010	0.29	1	11	25	62	120	160
JMT020	0.09	26	47	64	100	120	140
JMT030	0.25	50	94	130	200	250	290
JMT040	0.56	110	240	330	520	620	750
JMT050	0.67	120	280	380	590	710	850
JMT060	1.16	130	310	430	700	850	1,000
JMT070	1.36	150	350	490	800	980	1,200
JMT080	1.42	86	330	490	810	980	1,200
JMT090	0.04	9	15	18	25	29	32
JMT102	1.46	91	330	500	820	1,000	1,200
JMT104	0.04	9	15	18	25	29	32
JMT106	1.52	92	320	490	820	1,000	1,200
JMT110	1.64	94	320	500	830	1,000	1,200
JWT010	0.14	9	21	32	58	73	89
JWT020	0.07	4	10	15	27	34	42
JWT030	0.14	9	20	30	55	69	85
JWT042	0.28	15	37	57	110	140	170
JWT044	0.46	24	59	89	170	210	260
JWT050	0.85	43	110	170	310	390	480
JWT070	0.17	14	33	49	87	110	130
JWT080	1.09	54	140	210	400	500	610
JWT090	1.43	68	160	250	480	610	730
JWT110	1.63	77	170	280	530	690	840
JWT120	1.77	85	190	300	570	730	920
JWT140	0.13	32	59	80	130	150	180
JWT150	0.36	15	19	39	97	140	170
JWT160	0.47	35	64	85	130	160	190
JWT172	2.24	99	210	320	600	760	960
JWT174	2.36	100	210	330	610	780	990
JWT180	2.46	100	220	330	620	800	1,000

Falcon DBPS

Peak Flow Results

Hydrologic Element	Area (sq mi)	Historical Peak Flows (cfs)					
		2-year	5-year	10-year	25-year	50-year	100-year
JWT190	0.06	0	0	2	7	10	14
JWT200	2.82	80	200	310	610	790	990
JWT210	3.09	80	200	320	620	810	1,000
JWT220	0.19	1	7	12	28	38	49
JWT232	3.28	81	210	320	630	830	1,000
JWT234	3.47	82	210	330	640	840	1,100
JWT240	3.55	83	210	330	650	840	1,100
JWT250	3.70	84	210	330	650	850	1,100
JWT260	3.84	86	220	340	670	870	1,100
JWT270	0.03	0	2	4	8	11	15
JWT280	0.27	22	50	72	130	160	190
JWT292	3.87	86	220	340	670	870	1,100
JWT294	4.13	89	220	350	690	900	1,100
JWT296	5.88	110	290	420	860	1,100	1,400
JWT300	0.10	6	14	22	39	50	61
JWT310	6.25	110	290	430	870	1,100	1,500
JWT320	6.46	110	290	430	880	1,100	1,500
JWT330	0.33	0	3	7	23	34	47
JWT352	9.69	110	300	460	970	1,300	1,600
JWT354	10.30	110	310	470	990	1,300	1,700
JWT360	0.07	1	3	5	11	15	20
JWT372	10.36	110	310	470	990	1,300	1,700
JWT374_OUTLET	10.58	110	310	470	990	1,300	1,700
MT010	0.29	1	7	13	32	44	57
MT020	0.09	8	20	30	54	68	83
MT030	0.16	7	20	32	61	78	97
MT040	0.31	10	28	43	82	110	130
MT050	0.12	0	1	2	7	11	16
MT060	0.19	0	1	4	14	22	31
MT070	0.20	0	2	5	13	19	25
MT080	0.06	2	8	14	29	38	48
MT090	0.04	0	1	3	10	14	19
MT100	0.06	0	0	1	5	8	11
MT110	0.12	0	1	2	8	12	16
RET020	0.15	10	22	32	57	71	82
RET030	0.36	19	44	67	120	160	200
RET040	0.56	19	46	71	140	180	230
RET050	0.71	19	47	74	150	190	240
RET060	0.83	19	47	75	150	190	250
RET070	1.11	19	48	77	150	200	250
RET080	1.36	17	45	72	140	190	240
RET090	1.66	17	46	74	150	200	250
RET100	1.78	17	47	75	150	200	260
RET110	1.83	17	47	75	150	200	260
RET120	2.05	17	47	76	160	210	260
RET140	0.13	0	1	2	6	8	12
RET152	2.16	17	47	77	160	210	270
RET154	0.40	0	2	4	14	21	29
RET156	2.57	17	49	81	170	230	290
RET162	2.74	17	48	80	170	230	300
RET164	2.93	18	48	81	180	240	300
RMT030	0.09	8	20	30	54	67	82
RMT040	0.25	14	38	57	100	130	160
RMT050	0.56	24	65	99	180	230	290
RMT062	0.29	1	7	13	31	44	57
RMT064	0.67	24	65	100	190	240	300
RMT070	1.16	24	66	100	200	260	330
RMT080	1.36	24	67	110	210	280	350
RMT090	0.04	0	1	3	10	14	19
RMT102	1.42	24	68	110	210	280	350
RMT104	0.04	0	1	3	10	14	19
RMT106	1.46	24	67	110	210	280	350
RMT112	1.52	22	62	120	210	280	360
RMT114	1.64	22	63	110	220	290	360
RWT030	0.07	3	8	12	23	29	36

Hydrologic Element	Area (sq mi)	Existing Peak Flows (cfs)					
		2-year	5-year	10-year	25-year	50-year	100-year
JWT174 Diversion_OUTLET	0.00	92	200	200	200	200	200
JWT180	2.46	0	15	130	420	590	770
JWT190	0.06	4	7	12	26	35	43
JWT200	2.82	14	32	150	470	670	880
JWT210	3.09	21	50	170	510	720	950
JWT220	0.19	16	35	50	88	110	130
JWT232	3.28	27	64	180	530	750	990
JWT234	3.47	50	93	180	540	760	1,000
JWT240	3.55	26	54	86	410	670	890
JWT250	3.70	39	75	100	420	680	890
JWT260	3.84	47	92	130	420	690	910
JWT270	0.03	8	14	20	31	38	45
JWT280	0.27	33	70	100	170	210	250
JWT292	3.87	49	97	130	430	690	910
JWT294	4.13	71	140	200	440	700	930
JWT296	5.88	94	190	350	700	1,000	1,300
JWT300	0.10	12	26	36	62	76	92
JWT310	6.25	120	230	370	730	1,000	1,300
JWT320	6.46	120	250	370	740	1,000	1,300
JWT330	0.33	16	38	57	100	130	160
JWT352	9.69	160	320	520	1,000	1,400	1,900
JWT354	10.30	190	400	590	1,100	1,400	1,900
JWT360	0.07	7	15	21	37	46	55
JWT372	10.36	190	400	600	1,200	1,500	1,900
JWT374_OUTLET	10.58	190	400	600	1,200	1,500	1,900
MT010	0.29	28	58	82	140	170	210
MT020	0.09	14	29	41	70	86	100
MT030	0.16	30	59	82	130	160	190
MT040	0.31	34	70	100	170	210	250
MT050	0.12	17	33	46	76	92	110
MT060	0.19	8	21	33	62	80	99
MT070	0.20	10	23	34	61	77	93
MT080	0.06	58	86	110	140	170	190
MT090	0.04	36	54	67	94	110	120
MT100	0.06	11	22	30	49	59	70
MT110	0.12	19	36	50	81	99	120
Paint Brush Hills Pond #4	0.15	23	37	49	80	99	120
Paint Brush Hills Pond A	0.10	10	18	24	64	97	130
Paint Brush Hills Pond B1	0.36	23	46	70	120	150	170
Paint Brush Hills Pond B2	0.36	11	15	17	43	66	91
Paint Brush Hills Pond C	0.19	7	11	13	30	45	60
Regional Pond MN	1.42	40	110	260	510	640	770
Regional Pond WU Diversion	3.55	14	46	97	510	730	970
Regional Pond WU North	3.55	30	69	130	550	770	1,000
Regional Pond WU South	3.55	10	32	57	370	630	850
RET020	0.15	23	37	49	79	98	120
RET030	0.36	43	83	110	190	230	280
RET040	0.56	62	130	190	310	380	460
RET050	0.71	23	59	110	260	380	480
RET060	0.83	7	32	67	170	260	400
RET070	1.11	13	28	45	180	240	340
RET080	1.36	65	120	160	270	340	420
RET090	1.66	14	36	55	170	230	320
RET100	1.78	15	39	64	170	270	370
RET110	1.83	15	40	65	170	270	380
RET120	2.05	16	43	76	180	300	410
RET140	0.13	7	16	23	41	51	62
RET152	2.16	17	48	84	190	320	430
RET154	0.40	18	39	57	99	120	150
RET156	2.57	28	86	140	290	430	570
RET162	2.74	30	91	140	300	450	590
RET164	2.93	32	96	150	310	470	620
RMT030	0.09	14	29	41	69	85	100
RMT040	0.25	33	73	100	160	200	240
RMT050	0.56	40	120	190	320	400	470

Hydrologic Element	Area (sq mi)	Future Peak Flows (cfs)					
		2-year	5-year	10-year	25-year	50-year	100-year
JWT190	0.06	4	7	12	26	35	43
JWT200	2.82	110	230	360	690	890	1,200
JWT210	3.09	120	250	400	760	990	1,300
JWT220	0.19	47	85	110	180	210	250
JWT232	3.28	120	260	410	790	1,000	1,400
JWT234	3.47	130	270	420	810	1,000	1,400
JWT240	3.55	83	200	380	770	940	1,100
JWT250	3.70	85	210	390	780	950	1,100
JWT260	3.84	86	210	390	790	970	1,100
JWT270	0.03	11	20	27	41	49	57
JWT280	0.27	33	70	100	170	210	250
JWT292	3.87	86	210	390	790	970	1,100
JWT294	4.13	96	210	400	800	990	1,100
JWT296	5.88	160	410	620	1,100	1,400	1,700
JWT300	0.10	12	26	36	62	76	92
JWT310	6.25	160	420	640	1,100	1,400	1,700
JWT320	6.46	160	410	630	1,100	1,400	1,700
JWT330	0.33	32	68	98	170	210	250
JWT352	9.69	210	530	820	1,400	2,000	2,400
JWT354	10.30	230	560	870	1,500	2,000	2,500
JWT360	0.07	7	15	21	37	46	55
JWT372	10.36	230	560	860	1,500	2,000	2,500
JWT374_OUTLET	10.58	230	560	860	1,500	2,000	2,500
MT010	0.29	28	58	82	140	170	210
MT020	0.09	26	47	64	100	120	140
MT030	0.16	39	73	100	160	190	230
MT040	0.31	95	160	220	330	390	460
MT050	0.12	17	33	46	76	92	110
MT060	0.19	30	59	83	140	170	200
MT070	0.20	25	50	69	110	140	170
MT080	0.06	62	92	110	150	170	190
MT090	0.04	40	59	73	100	110	130
MT100	0.06	17	30	40	63	75	88
MT110	0.12	19	36	50	81	99	120
Paint Brush Hills Pond #4	0.15	29	49	64	110	130	150
Paint Brush Hills Pond A	0.10	10	18	24	64	97	130
Paint Brush Hills Pond B1	0.36	51	100	140	190	210	270
Paint Brush Hills Pond B2	0.36	15	19	39	97	140	170
Paint Brush Hills Pond C	0.19	11	14	23	56	74	160
Regional Pond MN	1.42	86	330	490	810	980	1,200
Regional Pond WU Diversion	3.55	83	230	380	770	1,000	1,300
Regional Pond WU North	3.55	110	270	420	810	1,100	1,400
Regional Pond WU South	3.55	55	170	340	730	900	1,000
RET020	0.15	29	49	64	100	130	150
RET030	0.36	71	130	170	270	320	380
RET040	0.56	95	180	250	400	490	580
RET050	0.71	27	85	140	370	490	570
RET060	0.83	11	38	88	210	370	530
RET070	1.11	13	32	68	210	300	430
RET080	1.36	65	120	170	270	340	420
RET090	1.66	15	38	61	200	270	350
RET100	1.78	26	47	81	200	290	390
RET110	1.83	27	49	83	200	290	390
RET120	2.05	39	84	120	210	320	430
RET140	0.13	11	23	33	57	70	85
RET152	2.16	49	110	150	270	340	450
RET154	0.40	26	55	80	140	170	200
RET156	2.57	50	120	180	350	500	650
RET162	2.74	59	130	200	360	530	680
RET164	2.93	66	150	230	410	550	710
RMT030	0.09	25	47	63	100	120	140
RMT040	0.25	49	93	130	200	250	290
RMT050	0.56	110	240	330	520	620	750
RMT062	0.29	1	11	25	62	110	160
RMT064	0.67	120	270	370	590	710	850

Falcon DBPS
Peak Flow Results

Hydrologic Element	Area (sq mi)	Historical Peak Flows (cfs)					
		2-year	5-year	10-year	25-year	50-year	100-year
RWT042	0.14	6	15	23	46	60	75
RWT044	0.14	7	18	27	51	65	80
RWT046	0.28	12	32	50	97	120	150
RWT054	0.46	18	49	77	150	190	240
RWT080	0.17	10	27	42	77	98	120
RWT092	0.85	33	87	140	260	330	410
RWT094	1.09	40	110	170	330	420	510
RWT122	1.43	48	120	200	380	500	610
RWT124	1.63	56	140	220	440	580	720
RWT150	0.13	13	28	40	70	87	110
RWT160	0.36	21	44	64	110	140	170
RWT172	1.77	58	150	230	460	600	750
RWT174	0.47	23	49	71	120	160	190
RWT176	2.24	79	200	300	580	750	930
RWT180	2.36	81	200	310	590	760	950
RWT202	2.46	80	200	310	600	770	960
RWT204	0.06	0	0	2	7	10	14
RWT210	2.82	80	200	310	610	790	990
RWT232	3.09	80	200	320	620	810	1,000
RWT234	0.19	1	7	12	28	38	49
RWT236	3.28	81	210	320	630	830	1,000
RWT240	3.47	82	210	330	640	840	1,100
RWT250	3.55	83	210	330	650	840	1,100
RWT260	3.70	84	210	330	650	850	1,100
RWT291	3.84	86	220	340	670	870	1,100
RWT292	0.03	0	2	4	8	11	15
RWT294	0.27	22	50	72	130	160	190
RWT295	3.87	86	220	340	670	870	1,100
RWT296	4.13	88	220	350	680	890	1,100
RWT312	0.10	6	14	22	39	49	60
RWT314	5.88	110	290	420	860	1,100	1,400
RWT320	6.25	110	290	430	870	1,100	1,500
RWT344	0.33	0	3	7	23	34	47
RWT352	6.46	110	290	430	870	1,100	1,500
RWT354	9.69	110	300	460	970	1,300	1,600
RWT372	10.30	110	310	470	990	1,300	1,700
RWT374	0.07	1	3	5	11	15	20
RWT376	10.36	110	310	470	990	1,300	1,700
WT010	0.14	7	18	27	51	65	80
WT020	0.07	3	8	12	23	29	36
WT030	0.08	6	14	21	38	48	59
WT040	0.19	7	18	28	53	68	83
WT050	0.19	14	32	47	83	100	130
WT060	0.20	9	21	31	55	70	85
WT070	0.17	10	27	42	77	99	120
WT080	0.07	7	16	23	41	51	62
WT090	0.15	15	33	48	83	100	130
WT100	0.19	25	55	78	130	170	200
WT110	0.19	13	30	45	79	100	120
WT120	0.05	0	1	3	8	11	15
WT130	0.10	11	25	37	64	80	97
WT140	0.13	13	28	40	70	88	110
WT150	0.23	11	24	35	61	77	93
WT160	0.11	17	36	51	86	110	130
WT170	0.12	7	18	28	52	67	82
WT180	0.10	0	1	2	6	9	12
WT190	0.06	0	0	2	7	10	14
WT200	0.30	0	1	4	12	18	25
WT210	0.27	0	2	4	11	16	21
WT220	0.19	1	7	12	28	38	49
WT230	0.20	5	18	29	60	79	99
WT240	0.08	9	20	29	52	64	78
WT250	0.15	7	22	35	68	88	110
WT260	0.14	6	13	19	33	42	51
WT270	0.03	0	2	4	8	11	15

Hydrologic Element	Area (sq mi)	Existing Peak Flows (cfs)					
		2-year	5-year	10-year	25-year	50-year	100-year
RMT062	0.29	1	11	25	62	110	160
RMT064	0.67	50	140	230	390	490	580
RMT070	1.16	54	150	250	440	560	670
RMT080	1.36	61	180	280	500	630	760
RMT090	0.04	8	13	16	23	27	30
RMT102	1.42	40	110	260	510	640	770
RMT104	0.04	8	13	16	23	27	30
RMT106	1.46	44	110	250	520	650	780
RMT112	1.52	44	120	250	520	650	790
RMT114	1.64	46	120	260	540	670	820
RWT030	0.07	4	10	15	27	34	42
RWT042	0.14	9	20	30	54	69	85
RWT044	0.14	9	21	32	57	73	89
RWT046	0.28	15	37	57	110	140	170
RWT054	0.46	24	59	89	170	210	260
RWT080	0.17	14	33	48	87	110	130
RWT092	0.85	43	110	170	310	390	480
RWT094	1.09	54	140	210	400	500	610
RWT122	1.43	66	160	250	470	600	740
RWT124	1.63	76	180	280	540	700	850
RWT150	0.13	14	30	43	74	92	110
RWT160	0.36	11	15	17	43	66	91
RWT172	1.77	84	190	300	570	730	900
RWT174	0.47	35	62	84	130	160	180
RWT176	2.24	90	210	320	600	760	930
RWT180	2.36	0	14	130	410	580	760
RWT202	2.46	0	14	130	420	590	770
RWT204	0.06	4	7	12	26	34	43
RWT210	2.82	14	32	150	470	670	880
RWT232	3.09	20	50	170	510	720	950
RWT234	0.19	16	35	50	88	110	130
RWT236	3.28	27	64	180	530	750	990
RWT240	3.47	50	93	180	540	760	1,000
RWT240_Diversion Reach	0.00	16	23	31	38	38	39
RWT250	3.55	26	54	86	410	670	880
RWT260	3.70	38	73	100	410	670	890
RWT291	3.84	46	91	130	420	690	910
RWT292	0.03	8	14	19	31	38	45
RWT294	0.27	33	70	100	170	210	250
RWT295	3.87	49	97	130	430	690	910
RWT296	4.13	70	140	200	440	700	920
RWT312	0.10	12	25	36	61	76	91
RWT314	5.88	93	190	350	700	1,000	1,300
RWT320	6.25	120	230	360	720	1,000	1,300
RWT344	0.33	16	38	57	100	130	160
RWT352	6.46	120	240	360	730	1,000	1,300
RWT354	9.69	160	320	520	1,000	1,400	1,900
RWT372	10.30	190	400	590	1,100	1,400	1,900
RWT374	0.07	7	15	21	36	45	55
RWT376	10.36	190	400	600	1,100	1,500	1,900
The Meadows Pond #1	0.06	4	7	12	26	35	43
The Meadows Pond #2	0.29	1	11	25	62	120	160
Woodmen Hills Pond #1 North	0.71	59	130	190	320	400	480
Woodmen Hills Pond #1 South	0.71	23	59	110	260	390	480
Woodmen Hills Pond #2	0.83	7	32	67	170	260	410
Woodmen Hills Pond #3	1.11	13	28	45	180	240	340
Woodmen Hills Pond #4	1.66	14	36	55	170	230	320
Woodmen Hills Pond #5	0.04	8	13	16	23	27	30
Woodmen Hills Pond H	0.56	40	120	190	320	400	470
WT010	0.14	9	21	32	58	73	89
WT020	0.07	4	10	15	27	34	42
WT030	0.08	9	20	29	50	62	75
WT040	0.19	9	22	33	60	76	93
WT050	0.19	17	37	54	93	120	140
WT060	0.20	14	30	44	77	96	120

Hydrologic Element	Area (sq mi)	Future Peak Flows (cfs)					
		2-year	5-year	10-year	25-year	50-year	100-year
RMT070	1.16	130	310	430	690	840	1,000
RMT080	1.36	150	350	490	800	980	1,200
RMT090	0.04	9	15	18	25	29	32
RMT102	1.42	86	320	490	800	980	1,200
RMT104	0.04	9	15	18	25	29	32
RMT106	1.46	91	320	490	810	990	1,200
RMT112	1.52	92	310	490	810	990	1,200
RMT114	1.64	94	320	500	830	1,000	1,200
RWT030	0.07	4	10	15	27	34	42
RWT042	0.14	9	20	30	54	69	85
RWT044	0.14	9	21	32	57	73	89
RWT046	0.28	15	37	57	110	140	170
RWT054	0.46	24	59	89	170	210	260
RWT080	0.17	14	33	48	87	110	130
RWT092	0.85	43	110	170	310	390	480
RWT094	1.09	54	140	210	400	500	610
RWT122	1.43	68	160	250	480	610	730
RWT124	1.63	77	170	280	530	690	840
RWT150	0.13	32	59	79	130	150	180
RWT160	0.36	15	19	39	97	140	170
RWT172	1.77	85	190	300	570	730	920
RWT174	0.47	35	63	84	130	160	180
RWT176	2.24	98	210	320	600	760	960
RWT180	2.36	100	210	330	610	780	990
RWT202	2.46	100	220	330	620	800	1,000
RWT204	0.06	4	7	12	26	34	43
RWT210	2.82	110	230	360	690	890	1,200
RWT232	3.09	120	250	400	760	990	1,300
RWT234	0.19	47	84	110	180	210	250
RWT236	3.28	120	260	410	790	1,000	1,400
RWT240	3.47	130	270	420	810	1,000	1,400
RWT240_Diversion Reach	0.00	30	37	38	38	39	39
RWT250	3.55	83	200	380	770	940	1,100
RWT260	3.70	85	210	380	780	950	1,100
RWT291	3.84	86	210	390	790	970	1,100
RWT292	0.03	11	20	26	41	49	57
RWT294	0.27	33	70	100	170	210	250
RWT295	3.87	86	210	390	790	970	1,100
RWT296	4.13	94	210	400	800	990	1,100
RWT312	0.10	12	25	36	61	76	91
RWT314	5.88	160	400	620	1,100	1,400	1,700
RWT320	6.25	160	400	620	1,100	1,400	1,700
RWT344	0.33	32	68	97	170	210	250
RWT352	6.46	160	400	620	1,100	1,400	1,700
RWT354	9.69	210	530	820	1,400	2,000	2,400
RWT372	10.30	230	560	860	1,500	2,000	2,500
RWT374	0.07	7	15	21	36	45	55
RWT376	10.36	230	550	850	1,500	2,000	2,500
The Meadows Pond #1	0.06	4	7	12	26	35	43
The Meadows Pond #2	0.29	1	11	25	62	120	160
Woodmen Hills Pond #1 North	0.71	88	180	260	420	500	570
Woodmen Hills Pond #1 South	0.71	27	85	140	380	500	570
Woodmen Hills Pond #2	0.83	11	38	88	210	380	530
Woodmen Hills Pond #3	1.11	13	32	68	210	300	430
Woodmen Hills Pond #4	1.66	15	38	61	200	270	350
Woodmen Hills Pond #5	0.04	9	15	18	25	29	32
Woodmen Hills Pond H	0.56	110	240	330	520	620	750
WT010	0.14	9	21	32	58	73	89
WT020	0.07	4	10	15	27	34	42
WT030	0.08	9	20	29	50	62	75
WT040	0.19	9	22	33	60	76	93
WT050	0.19	17	37	54	93	120	140
WT060	0.20	14	30	44	77	96	120
WT070	0.17	14	33	49	87	110	130
WT080	0.07	9	19	27	45	56	67

Falcon DBPS
Peak Flow Results

Hydrologic Element	Area (sq mi)	Historical Peak Flows (cfs)					
		2-year	5-year	10-year	25-year	50-year	100-year
WT280	0.27	22	50	72	130	160	190
WT290	0.10	3	11	19	38	50	62
WT300	0.10	6	14	22	39	50	61
WT310	0.28	2	8	16	37	51	67
WT320	0.21	0	2	6	17	26	35
WT330	0.33	0	3	7	23	34	47
WT340	0.28	0	3	6	17	25	34
WT350	0.30	3	12	21	45	61	78
WT360	0.07	1	3	5	11	15	20
WT370	0.21	0	2	5	16	24	33

Sig Figs (<10cfs) 1
Sig Figs (>10cfs) 2

Hydrologic Element	Area (sq mi)	Existing Peak Flows (cfs)					
		2-year	5-year	10-year	25-year	50-year	100-year
WT070	0.17	14	33	49	87	110	130
WT080	0.07	9	19	27	45	56	67
WT090	0.15	17	36	51	88	110	130
WT100	0.19	28	59	83	140	170	210
WT110	0.19	15	33	48	84	110	130
WT120	0.05	2	6	10	19	25	31
WT130	0.10	35	61	81	120	150	170
WT140	0.13	14	30	43	74	92	110
WT150	0.23	20	40	56	95	120	140
WT160	0.11	35	64	85	130	160	180
WT170	0.12	10	23	35	62	79	96
WT180	0.10	0	1	3	7	11	15
WT190	0.06	11	23	31	51	63	75
WT200	0.30	10	25	37	69	87	110
WT210	0.27	7	18	27	51	65	80
WT220	0.19	16	35	50	88	110	130
WT230	0.20	50	92	120	200	240	280
WT240	0.08	28	49	65	100	120	140
WT250	0.15	39	72	98	160	190	220
WT260	0.14	10	21	30	52	64	78
WT270	0.03	8	14	20	31	38	45
WT280	0.27	33	70	100	170	210	250
WT290	0.10	15	31	44	75	92	110
WT300	0.10	12	26	36	62	76	92
WT310	0.28	20	47	68	120	150	180
WT320	0.21	18	40	58	100	130	150
WT330	0.33	16	38	57	100	130	160
WT340	0.28	19	40	57	98	120	150
WT350	0.30	26	55	80	140	170	210
WT360	0.07	7	15	21	37	46	55
WT370	0.21	1	7	14	35	49	64

Hydrologic Element	Area (sq mi)	Future Peak Flows (cfs)					
		2-year	5-year	10-year	25-year	50-year	100-year
WT090	0.15	22	46	65	110	140	160
WT100	0.19	56	100	140	210	260	300
WT110	0.19	22	47	67	110	140	170
WT120	0.05	8	16	22	37	46	55
WT130	0.10	35	61	81	120	150	170
WT140	0.13	32	59	80	130	150	180
WT150	0.23	49	86	110	180	210	250
WT160	0.11	35	64	85	130	160	180
WT170	0.12	21	43	60	99	120	140
WT180	0.10	8	17	25	43	54	66
WT190	0.06	11	23	31	51	63	75
WT200	0.30	25	52	74	130	160	190
WT210	0.27	32	60	81	130	160	190
WT220	0.19	47	85	110	180	210	250
WT230	0.20	71	120	160	250	300	350
WT240	0.08	36	61	79	120	140	160
WT250	0.15	63	110	140	210	250	290
WT260	0.14	10	21	30	52	64	78
WT270	0.03	11	20	27	41	49	57
WT280	0.27	33	70	100	170	210	250
WT290	0.10	15	31	44	75	92	110
WT300	0.10	12	26	36	62	76	92
WT310	0.28	31	67	96	170	210	250
WT320	0.21	27	56	80	140	170	200
WT330	0.33	32	68	98	170	210	250
WT340	0.28	19	40	57	98	120	150
WT350	0.30	38	79	110	190	230	280
WT360	0.07	7	15	21	37	46	55
WT370	0.21	7	23	38	76	99	120

Falcon DBPS

Peak Flow Volume Results

Hydrologic Element	Area (sq mi)	Historical Peak Flow Volume (ac ft)					
		2-year	5-year	10-year	25-year	50-year	100-year
ET010	0.15	2	3	5	8	9	11
ET020	0.21	3	5	7	11	14	17
ET030	0.20	0	1	2	3	5	6
ET040	0.15	0	1	1	3	4	5
ET050	0.12	0	0	1	2	2	3
ET060	0.29	0	1	2	4	6	7
ET070	0.25	0	1	2	4	5	6
ET080	0.29	0	1	2	4	6	7
ET090	0.12	0	0	1	2	2	3
ET100	0.05	0	0	0	1	1	1
ET110	0.23	0	1	1	3	4	6
ET120	0.11	0	0	1	2	2	3
ET130	0.13	0	0	1	2	3	3
ET140	0.27	0	1	2	4	5	7
ET150	0.18	0	1	1	3	3	4
ET160	0.19	0	1	2	3	5	6
FS010	0.12	0	1	1	3	3	4
JET010	0.15	2	3	5	8	9	11
JET020	0.36	4	8	12	19	23	28
JET030	0.56	4	9	13	22	28	33
JET040	0.71	5	10	14	25	31	38
JET050	0.83	5	10	15	26	33	41
JET060	1.11	5	11	17	30	39	48
JET070	1.36	5	12	18	34	44	54
JET080	1.66	5	13	19	37	49	60
JET090	1.78	5	13	20	39	51	63
JET100	1.83	5	13	20	40	52	64
JET110	2.05	5	14	22	43	56	70
JET120	2.16	5	14	22	44	58	73
JET130	0.13	0	0	1	2	3	3
JET140	0.40	0	1	2	5	8	10
JET152	2.57	5	15	24	50	65	82
JET154	2.74	5	16	25	52	69	86
JET160	2.93	5	16	27	55	73	92
JFS010_OUTLET	0.12	0	1	1	3	3	4
JMT010	0.29	1	2	3	7	9	11
JMT020	0.09	1	2	2	4	5	6
JMT030	0.25	2	4	6	10	13	15
JMT040	0.56	4	9	13	22	28	34
JMT050	0.67	4	9	14	24	30	37
JMT060	1.16	5	12	18	33	42	52
JMT070	1.36	5	13	19	37	47	58
JMT080	1.42	5	13	20	38	49	61
JMT090	0.04	0	0	0	1	1	1
JMT102	1.46	5	13	21	39	50	62
JMT104	0.04	0	0	0	1	1	1
JMT106	1.52	5	14	21	40	51	63
JMT110	1.64	5	14	22	41	53	66
JWT010	0.14	1	2	3	6	7	9
JWT020	0.07	1	1	2	3	4	4
JWT030	0.14	1	3	4	6	8	9
JWT042	0.28	2	5	7	12	15	18
JWT044	0.46	4	8	11	20	25	30
JWT050	0.85	8	16	23	39	48	58
JWT070	0.17	1	3	4	7	9	11
JWT080	1.09	10	21	29	50	61	74
JWT090	1.43	14	29	40	68	84	100
JWT110	1.63	16	33	46	77	96	110
JWT120	1.77	17	35	50	83	100	120
JWT140	0.13	2	3	4	7	8	10
JWT150	0.36	4	8	12	19	23	28
JWT160	0.47	6	11	15	25	30	36
JWT172	2.24	23	46	64	110	130	160
JWT174	2.36	24	48	67	110	140	170
JWT180	2.46	24	48	67	110	140	170

Hydrologic Element	Area (sq mi)	Existing Peak Flow Volume (ac ft)					
		2-year	5-year	10-year	25-year	50-year	100-year
ET010	0.15	3	5	7	11	13	15
ET020	0.21	4	7	10	15	18	21
ET030	0.20	5	8	11	16	19	22
ET040	0.15	3	5	7	11	13	15
ET050	0.12	2	4	5	8	10	12
ET060	0.29	6	10	14	21	25	29
ET070	0.25	6	10	13	20	24	27
ET080	0.29	8	14	18	27	31	36
ET090	0.12	2	3	4	7	8	10
ET100	0.05	0	0	1	1	2	2
ET110	0.23	2	3	5	9	11	13
ET120	0.11	1	2	3	6	7	8
ET130	0.13	2	3	4	7	9	10
ET140	0.27	3	6	9	14	17	21
ET150	0.18	2	4	6	10	12	14
ET160	0.19	3	5	7	11	14	16
FS010	0.12	1	1	2	4	5	6
JET010	0.15	3	5	7	11	13	15
JET020	0.36	7	12	16	26	31	36
JET030	0.56	12	20	27	42	50	58
JET040	0.71	13	24	32	50	60	70
JET050	0.83	8	19	28	49	61	73
JET060	1.11	12	27	40	67	83	99
JET070	1.36	18	37	52	87	110	130
JET080	1.66	16	40	58	100	120	150
JET090	1.78	17	42	62	110	130	160
JET100	1.83	17	43	63	110	130	160
JET110	2.05	19	46	67	120	140	170
JET120	2.16	20	48	70	120	150	180
JET130	0.13	2	3	4	7	9	10
JET140	0.40	5	9	13	21	26	31
JET152	2.57	24	57	83	140	170	210
JET154	2.74	27	61	89	150	190	220
JET160	2.93	29	65	95	160	200	240
JFS010_OUTLET	0.12	1	1	2	4	5	6
JMT010	0.29	1	5	7	14	18	22
JMT020	0.09	1	2	3	5	6	7
JMT030	0.25	4	7	10	15	18	22
JMT040	0.56	8	15	21	34	41	48
JMT050	0.67	10	19	26	42	50	59
JMT060	1.16	13	27	38	63	78	92
JMT070	1.36	15	31	43	73	89	110
JMT080	1.42	16	34	47	78	96	110
JMT090	0.04	2	3	4	5	6	7
JMT102	1.46	18	36	50	83	100	120
JMT104	0.04	2	3	4	5	6	7
JMT106	1.52	19	38	53	87	110	130
JMT110	1.64	21	41	58	94	120	140
JWT010	0.14	1	3	4	6	8	9
JWT020	0.07	1	1	2	3	4	5
JWT030	0.14	2	3	4	7	9	10
JWT042	0.28	3	6	8	13	16	20
JWT044	0.46	5	9	13	22	27	32
JWT050	0.85	9	18	26	43	53	63
JWT070	0.17	2	3	5	8	10	12
JWT080	1.09	12	24	33	55	67	80
JWT090	1.43	16	32	44	73	90	110
JWT110	1.63	19	36	51	84	100	120
JWT120	1.77	21	41	57	94	110	140
JWT140	0.13	2	3	4	7	9	10
JWT150	0.36	5	10	13	21	26	31
JWT160	0.47	7	13	18	29	35	41
JWT172	2.24	28	54	75	120	150	180
JWT174	2.36	30	57	78	130	160	190
JWT174 Diversion	2.36	0	0	6	28	45	64

Hydrologic Element	Area (sq mi)	Future Peak Flow Volume (ac ft)					
		2-year	5-year	10-year	25-year	50-year	100-year
ET010	0.15	4	6	8	12	14	16
ET020	0.21	5	9	12	18	21	25
ET030	0.20	5	8	11	17	20	23
ET040	0.15	3	5	7	11	13	15
ET050	0.12	2	4	5	8	10	12
ET060	0.29	6	10	14	21	25	29
ET070	0.25	6	10	13	20	24	27
ET080	0.29	9	14	18	27	32	37
ET090	0.12	3	6	7	11	13	15
ET100	0.05	1	1	2	3	3	4
ET110	0.23	3	5	7	12	15	18
ET120	0.11	1	3	4	6	7	9
ET130	0.13	2	4	5	8	10	11
ET140	0.27	4	7	10	15	19	22
ET150	0.18	2	4	6	10	12	14
ET160	0.19	3	5	7	11	14	16
FS010	0.12	1	2	3	5	6	8
JET010	0.15	4	6	8	12	14	16
JET020	0.36	9	15	20	30	35	41
JET030	0.56	14	23	31	46	55	64
JET040	0.71	15	27	35	55	65	76
JET050	0.83	10	22	32	54	66	78
JET060	1.11	14	30	43	72	88	100
JET070	1.36	19	40	56	92	110	130
JET080	1.66	18	43	62	110	130	150
JET090	1.78	21	48	69	120	140	170
JET100	1.83	22	50	71	120	140	170
JET110	2.05	24	55	78	130	160	190
JET120	2.16	25	57	81	140	170	200
JET130	0.13	2	4	5	8	10	11
JET140	0.40	6	10	14	23	28	33
JET152	2.57	31	67	95	160	190	230
JET154	2.74	33	71	100	170	210	240
JET160	2.93	35	76	110	180	220	260
JFS010_OUTLET	0.12	1	2	3	5	6	8
JMT010	0.29	1	5	7	14	18	22
JMT020	0.09	2	3	4	6	8	9
JMT030	0.25	5	8	11	17	21	24
JMT040	0.56	13	23	29	45	53	62
JMT050	0.67	15	26	35	53	63	73
JMT060	1.16	19	37	50	79	96	110
JMT070	1.36	23	43	58	93	110	130
JMT080	1.42	25	46	62	98	120	140
JMT090	0.04	2	3	4	5	6	7
JMT102	1.46	27	49	65	100	120	150
JMT104	0.04	2	3	4	5	6	7
JMT106	1.52	28	51	68	110	130	150
JMT110	1.64	30	54	73	110	140	160
JWT010	0.14	1	3	4	6	8	9
JWT020	0.07	1	1	2	3	4	5
JWT030	0.14	2	3	4	7	9	10
JWT042	0.28	3	6	8	13	16	20
JWT044	0.46	5	9	13	22	27	32
JWT050	0.85	9	18	26	43	53	63
JWT070	0.17	2	3	5	8	10	12
JWT080	1.09	12	24	33	55	67	80
JWT090	1.43	18	34	47	77	94	110
JWT110	1.63	20	39	54	88	110	130
JWT120	1.77	23	44	61	99	120	140
JWT140	0.13	3	5	6	10	12	14
JWT150	0.36	9	15	20	30	35	41
JWT160	0.47	11	19	25	37	44	51
JWT172	2.24	34	63	85	140	160	190
JWT174	2.36	36	66	90	140	170	200
JWT180	2.46	37	68	93	150	180	210

Falcon DBPS

Peak Flow Volume Results

Hydrologic Element	Area (sq mi)	Historical Peak Flow Volume (ac ft)					
		2-year	5-year	10-year	25-year	50-year	100-year
JWT190	0.06	0	0	0	1	1	1
JWT200	2.82	24	49	69	120	150	180
JWT210	3.09	24	49	71	120	150	180
JWT220	0.19	1	2	3	5	6	8
JWT232	3.28	24	51	73	130	160	190
JWT234	3.47	25	53	77	130	170	200
JWT240	3.55	26	55	79	140	170	210
JWT250	3.70	27	57	82	140	180	210
JWT260	3.84	28	59	85	150	190	220
JWT270	0.03	0	0	0	1	1	1
JWT280	0.27	3	6	9	14	17	21
JWT292	3.87	28	60	86	150	190	220
JWT294	4.13	31	66	94	160	200	250
JWT296	5.88	37	80	120	210	260	320
JWT300	0.10	1	2	3	5	6	7
JWT310	6.25	38	84	120	220	270	330
JWT320	6.46	38	85	120	220	280	340
JWT330	0.33	0	1	2	5	7	9
JWT352	9.69	44	100	150	280	360	440
JWT354	10.30	45	110	160	290	370	460
JWT360	0.07	0	1	1	2	2	3
JWT372	10.36	45	110	160	290	380	460
JWT374_OUTLET	10.58	45	110	160	300	380	470
MT010	0.29	1	2	3	7	9	11
MT020	0.09	1	2	2	4	5	6
MT030	0.16	1	2	3	6	8	9
MT040	0.31	2	5	7	12	16	19
MT050	0.12	0	0	1	2	2	3
MT060	0.19	0	1	1	3	4	5
MT070	0.20	0	1	2	4	5	6
MT080	0.06	0	1	1	2	2	3
MT090	0.04	0	0	0	1	1	1
MT100	0.06	0	0	0	1	1	1
MT110	0.12	0	0	1	2	2	3
RET020	0.15	2	3	5	8	9	11
RET030	0.36	4	8	11	19	23	27
RET040	0.56	4	9	13	22	28	33
RET050	0.71	5	10	14	25	31	38
RET060	0.83	5	10	15	26	33	41
RET070	1.11	5	11	16	30	39	48
RET080	1.36	5	12	18	33	43	53
RET090	1.66	5	13	19	37	49	60
RET100	1.78	5	13	20	39	51	63
RET110	1.83	5	13	20	40	52	64
RET120	2.05	5	14	22	43	56	70
RET140	0.13	0	0	1	2	3	3
RET152	2.16	5	14	22	44	58	72
RET154	0.40	0	1	2	5	7	10
RET156	2.57	5	15	24	49	65	82
RET162	2.74	5	15	25	52	68	86
RET164	2.93	5	16	27	55	72	92
RMT030	0.09	1	2	2	4	5	6
RMT040	0.25	2	4	6	10	13	15
RMT050	0.56	4	9	13	22	28	34
RMT062	0.29	1	2	3	6	8	11
RMT064	0.67	4	9	14	24	30	37
RMT070	1.16	5	12	18	33	42	52
RMT080	1.36	5	13	19	37	47	58
RMT090	0.04	0	0	0	1	1	1
RMT102	1.42	5	13	20	38	49	61
RMT104	0.04	0	0	0	1	1	1
RMT106	1.46	5	13	21	39	50	62
RMT112	1.52	5	13	21	40	51	63
RMT114	1.64	5	14	21	41	53	66
RWT030	0.07	1	1	2	3	4	4

Hydrologic Element	Area (sq mi)	Existing Peak Flow Volume (ac ft)					
		2-year	5-year	10-year	25-year	50-year	100-year
JWT174 Diversion_OUTLET	0.00	30	56	72	100	110	120
JWT180	2.46	0	1	7	29	47	67
JWT190	0.06	1	2	2	3	4	5
JWT200	2.82	4	8	17	46	68	92
JWT210	3.09	6	12	23	57	82	110
JWT220	0.19	2	4	6	10	12	15
JWT232	3.28	8	17	29	67	94	120
JWT234	3.47	12	24	39	82	110	140
JWT240	3.55	14	26	42	87	120	150
JWT250	3.70	16	31	48	97	130	160
JWT260	3.84	18	35	53	110	140	180
JWT270	0.03	1	1	1	2	3	3
JWT280	0.27	4	7	10	15	19	22
JWT292	3.87	19	36	55	110	140	180
JWT294	4.13	22	43	64	120	160	200
JWT296	5.88	44	86	120	220	280	350
JWT300	0.10	1	3	4	6	7	8
JWT310	6.25	49	95	140	240	310	370
JWT320	6.46	51	99	140	250	320	390
JWT330	0.33	3	6	9	15	19	23
JWT352	9.69	83	170	250	430	540	650
JWT354	10.30	90	180	270	460	580	700
JWT360	0.07	1	2	2	4	5	5
JWT372	10.36	90	190	270	460	580	700
JWT374_OUTLET	10.58	90	190	270	470	580	710
MT010	0.29	4	8	11	18	21	25
MT020	0.09	1	2	3	5	6	7
MT030	0.16	3	5	6	10	12	15
MT040	0.31	5	9	12	19	23	27
MT050	0.12	2	4	5	8	10	11
MT060	0.19	1	3	5	8	10	12
MT070	0.20	2	4	6	10	12	14
MT080	0.06	3	5	6	8	10	11
MT090	0.04	2	3	4	5	6	7
MT100	0.06	1	2	2	4	5	5
MT110	0.12	2	4	5	8	10	12
Paint Brush Hills Pond #4	0.15	3	5	7	11	13	15
Paint Brush Hills Pond A	0.10	2	4	5	8	10	11
Paint Brush Hills Pond B1	0.36	5	10	13	22	26	31
Paint Brush Hills Pond B2	0.36	5	10	13	21	26	31
Paint Brush Hills Pond C	0.19	2	5	6	10	13	15
Regional Pond MN	1.42	16	34	47	78	96	110
Regional Pond WU Diversion	3.55	6	14	25	65	93	120
Regional Pond WU North	3.55	14	27	42	88	120	150
Regional Pond WU South	3.55	5	14	25	64	92	120
RET020	0.15	3	5	7	11	13	15
RET030	0.36	7	12	16	26	31	36
RET040	0.56	12	20	27	41	50	58
RET050	0.71	13	24	32	50	60	70
RET060	0.83	8	19	28	49	60	72
RET070	1.11	12	27	39	67	83	98
RET080	1.36	17	36	51	85	100	120
RET090	1.66	16	39	58	100	120	150
RET100	1.78	17	42	62	110	130	160
RET110	1.83	17	42	62	110	130	160
RET120	2.05	19	45	67	120	140	170
RET140	0.13	2	3	4	7	9	10
RET152	2.16	20	48	70	120	150	180
RET154	0.40	5	9	13	21	26	31
RET156	2.57	24	57	83	140	170	210
RET162	2.74	26	60	88	150	190	220
RET164	2.93	29	65	94	160	200	240
RMT030	0.09	1	2	3	5	6	7
RMT040	0.25	4	7	10	15	18	22
RMT050	0.56	8	15	21	34	41	48

Hydrologic Element	Area (sq mi)	Future Peak Flow Volume (ac ft)					
		2-year	5-year	10-year	25-year	50-year	100-year
JWT190	0.06	1	2	2	3	4	5
JWT200	2.82	42	78	110	170	210	240
JWT210	3.09	47	87	120	190	230	270
JWT220	0.19	5	8	10	16	18	21
JWT232	3.28	52	95	130	200	250	290
JWT234	3.47	57	100	140	220	270	310
JWT240	3.55	57	100	140	220	270	320
JWT250	3.70	61	110	150	240	280	330
JWT260	3.84	63	110	150	240	290	340
JWT270	0.03	1	1	2	3	3	4
JWT280	0.27	4	7	10	15	19	22
JWT292	3.87	63	110	150	240	300	350
JWT294	4.13	67	120	160	260	310	370
JWT296	5.88	98	180	240	380	460	540
JWT300	0.10	1	3	4	6	7	8
JWT310	6.25	100	190	250	400	480	570
JWT320	6.46	100	190	260	410	500	580
JWT330	0.33	5	9	12	19	23	27
JWT352	9.69	140	270	380	610	740	870
JWT354	10.30	150	290	400	640	780	920
JWT360	0.07	1	2	2	4	5	5
JWT372	10.36	150	290	400	640	780	920
JWT374_OUTLET	10.58	150	290	400	650	790	930
MT010	0.29	4	8	11	18	21	25
MT020	0.09	2	3	4	6	8	9
MT030	0.16	3	5	7	11	13	15
MT040	0.31	9	15	19	28	33	38
MT050	0.12	2	4	5	8	10	11
MT060	0.19	3	6	8	13	15	18
MT070	0.20	4	6	9	14	16	19
MT080	0.06	3	5	6	9	10	11
MT090	0.04	2	3	4	6	6	7
MT100	0.06	1	2	3	4	5	6
MT110	0.12	2	4	5	8	10	12
Paint Brush Hills Pond #4	0.15	4	6	8	12	14	16
Paint Brush Hills Pond A	0.10	2	4	5	8	10	11
Paint Brush Hills Pond B1	0.36	9	15	20	30	36	41
Paint Brush Hills Pond B2	0.36	9	15	20	30	35	41
Paint Brush Hills Pond C	0.19	4	7	9	14	16	19
Regional Pond MN	1.42	25	46	62	98	120	140
Regional Pond WU Diversion	3.55	34	73	110	190	230	280
Regional Pond WU North	3.55	58	110	140	230	270	320
Regional Pond WU South	3.55	34	73	110	180	230	270
RET020	0.15	4	6	8	12	14	16
RET030	0.36	9	15	20	30	35	41
RET040	0.56	14	23	31	46	55	64
RET050	0.71	15	27	35	55	65	76
RET060	0.83	9	22	32	53	66	78
RET070	1.11	14	30	43	72	88	100
RET080	1.36	19	39	55	90	110	130
RET090	1.66	18	43	62	110	130	150
RET100	1.78	21	48	69	120	140	170
RET110	1.83	21	49	71	120	140	170
RET120	2.05	24	54	78	130	160	190
RET140	0.13	2	4	5	8	9	11
RET152	2.16	25	57	81	140	170	200
RET154	0.40	5	10	14	23	28	33
RET156	2.57	30	67	95	160	190	230
RET162	2.74	32	70	100	170	200	240
RET164	2.93	35	75	110	180	220	260
RMT030	0.09	2	3	4	6	8	9
RMT040	0.25	5	8	11	17	21	24
RMT050	0.56	13	23	29	45	53	62
RMT062	0.29	1	4	7	14	18	21
RMT064	0.67	15	26	34	53	63	73

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Peak Flow Volume Results

Hydrologic Element	Area (sq mi)	Historical Peak Flow Volume (ac ft)					
		2-year	5-year	10-year	25-year	50-year	100-year
RWT042	0.14	1	3	4	6	8	9
RWT044	0.14	1	2	3	6	7	9
RWT046	0.28	2	5	7	12	15	18
RWT054	0.46	4	8	11	20	25	30
RWT080	0.17	1	3	4	7	9	11
RWT092	0.85	8	16	23	39	48	58
RWT094	1.09	10	21	29	49	61	74
RWT122	1.43	14	29	40	68	83	100
RWT124	1.63	16	33	46	77	95	110
RWT150	0.13	2	3	4	7	8	10
RWT160	0.36	4	8	12	19	23	28
RWT172	1.77	17	35	49	83	100	120
RWT174	0.47	6	11	15	25	30	36
RWT176	2.24	23	46	64	110	130	160
RWT180	2.36	24	48	67	110	140	170
RWT202	2.46	23	48	67	110	140	170
RWT204	0.06	0	0	0	1	1	1
RWT210	2.82	24	49	69	120	150	180
RWT232	3.09	24	49	71	120	150	180
RWT234	0.19	1	2	3	5	6	8
RWT236	3.28	24	51	73	130	160	190
RWT240	3.47	25	53	77	130	170	200
RWT250	3.55	26	55	79	140	170	210
RWT260	3.70	27	56	81	140	180	210
RWT291	3.84	28	59	85	150	180	220
RWT292	0.03	0	0	0	1	1	1
RWT294	0.27	3	6	9	14	17	21
RWT295	3.87	28	59	86	150	190	220
RWT296	4.13	31	65	94	160	200	250
RWT312	0.10	1	2	3	5	6	7
RWT314	5.88	37	80	120	210	260	320
RWT320	6.25	38	84	120	220	270	330
RWT344	0.33	0	1	2	5	7	9
RWT352	6.46	38	84	120	220	280	340
RWT354	9.69	44	100	150	280	360	440
RWT372	10.30	45	110	160	290	370	460
RWT374	0.07	0	1	1	2	2	3
RWT376	10.36	44	110	160	290	370	460
WT010	0.14	1	2	3	6	7	9
WT020	0.07	1	1	2	3	4	4
WT030	0.08	1	1	2	3	4	5
WT040	0.19	2	3	5	8	10	12
WT050	0.19	2	4	6	10	12	14
WT060	0.20	2	4	6	10	12	14
WT070	0.17	1	3	4	7	9	11
WT080	0.07	1	2	2	4	4	5
WT090	0.15	2	4	5	8	10	12
WT100	0.19	2	4	6	10	12	15
WT110	0.19	2	4	6	10	12	15
WT120	0.05	0	0	0	1	1	2
WT130	0.10	1	2	3	5	6	8
WT140	0.13	2	3	4	7	8	10
WT150	0.23	3	5	7	12	15	18
WT160	0.11	1	3	3	6	7	8
WT170	0.12	1	2	3	5	6	7
WT180	0.10	0	0	1	1	2	2
WT190	0.06	0	0	0	1	1	1
WT200	0.30	0	1	2	4	6	7
WT210	0.27	0	1	2	4	5	7
WT220	0.19	1	2	3	5	6	8
WT230	0.20	1	2	4	7	8	10
WT240	0.08	1	2	2	4	4	5
WT250	0.15	1	2	3	5	7	8
WT260	0.14	1	3	4	7	8	10
WT270	0.03	0	0	0	1	1	1

Hydrologic Element	Area (sq mi)	Existing Peak Flow Volume (ac ft)					
		2-year	5-year	10-year	25-year	50-year	100-year
RMT062	0.29	1	4	7	14	18	21
RMT064	0.67	10	19	26	42	50	59
RMT070	1.16	12	27	38	63	78	92
RMT080	1.36	15	31	43	73	89	110
RMT090	0.04	2	3	4	5	6	7
RMT102	1.42	16	33	47	78	95	110
RMT104	0.04	2	3	4	5	6	7
RMT106	1.46	18	36	50	83	100	120
RMT112	1.52	19	38	52	86	110	130
RMT114	1.64	21	41	57	94	120	140
RWT030	0.07	1	1	2	3	4	5
RWT042	0.14	2	3	4	7	9	10
RWT044	0.14	1	3	4	6	8	9
RWT046	0.28	3	6	8	13	16	20
RWT054	0.46	5	9	13	22	27	32
RWT080	0.17	2	3	5	8	10	12
RWT092	0.85	9	18	26	43	53	63
RWT094	1.09	12	23	33	55	67	80
RWT122	1.43	16	32	44	73	90	110
RWT124	1.63	18	36	50	84	100	120
RWT150	0.13	2	3	4	7	9	10
RWT160	0.36	5	10	13	21	26	30
RWT172	1.77	21	41	57	93	110	140
RWT174	0.47	7	13	18	29	35	41
RWT176	2.24	28	54	75	120	150	180
RWT180	2.36	0	0	6	28	45	64
RWT202	2.46	0	1	7	30	47	67
RWT204	0.06	1	2	2	3	4	5
RWT210	2.82	4	8	17	46	68	92
RWT232	3.09	6	12	23	57	82	110
RWT234	0.19	2	4	6	10	12	15
RWT236	3.28	8	17	29	67	94	120
RWT240	3.47	12	24	39	82	110	140
RWT240_Diversion Reach	0.00	8	13	17	23	25	27
RWT250	3.55	14	26	42	87	120	150
RWT260	3.70	16	31	48	97	130	160
RWT291	3.84	18	35	53	100	140	180
RWT292	0.03	1	1	1	2	3	3
RWT294	0.27	4	7	10	15	19	22
RWT295	3.87	19	36	54	110	140	180
RWT296	4.13	22	42	64	120	160	200
RWT312	0.10	1	3	3	6	7	8
RWT314	5.88	44	86	120	220	280	350
RWT320	6.25	48	94	140	240	310	370
RWT344	0.33	3	6	9	15	19	23
RWT352	6.46	50	99	140	250	320	390
RWT354	9.69	83	170	250	430	540	650
RWT372	10.30	89	180	270	460	580	700
RWT374	0.07	1	2	2	4	4	5
RWT376	10.36	90	190	270	460	580	700
The Meadows Pond #1	0.06	1	2	2	3	4	5
The Meadows Pond #2	0.29	1	5	7	14	18	22
Woodmen Hills Pond #1 North	0.71	15	25	34	52	63	73
Woodmen Hills Pond #1 South	0.71	13	24	32	50	60	70
Woodmen Hills Pond #2	0.83	8	19	28	49	61	73
Woodmen Hills Pond #3	1.11	12	27	40	67	83	99
Woodmen Hills Pond #4	1.66	16	40	58	100	120	150
Woodmen Hills Pond #5	0.04	2	3	4	5	6	7
Woodmen Hills Pond H	0.56	8	15	21	34	41	48
WT010	0.14	1	3	4	6	8	9
WT020	0.07	1	1	2	3	4	5
WT030	0.08	1	2	2	4	5	6
WT040	0.19	2	4	5	9	11	13
WT050	0.19	2	5	7	11	13	15
WT060	0.20	2	5	6	10	13	15

Hydrologic Element	Area (sq mi)	Future Peak Flow Volume (ac ft)					
		2-year	5-year	10-year	25-year	50-year	100-year
RMT070	1.16	19	37	50	79	95	110
RMT080	1.36	23	43	58	93	110	130
RMT090	0.04	2	3	4	5	6	7
RMT102	1.42	24	45	61	98	120	140
RMT104	0.04	2	3	4	5	6	7
RMT106	1.46	27	49	65	100	120	150
RMT112	1.52	28	50	68	110	130	150
RMT114	1.64	30	54	73	110	140	160
RWT030	0.07	1	1	2	3	4	5
RWT042	0.14	2	3	4	7	9	10
RWT044	0.14	1	3	4	6	8	9
RWT046	0.28	3	6	8	13	16	20
RWT054	0.46	5	9	13	22	27	32
RWT080	0.17	2	3	5	8	10	12
RWT092	0.85	9	18	26	43	53	63
RWT094	1.09	12	23	33	55	67	80
RWT122	1.43	18	34	47	77	94	110
RWT124	1.63	20	39	54	88	110	130
RWT150	0.13	3	5	6	10	12	14
RWT160	0.36	9	15	20	30	35	41
RWT172	1.77	23	44	61	99	120	140
RWT174	0.47	11	19	24	37	44	51
RWT176	2.24	34	63	85	140	160	190
RWT180	2.36	36	66	89	140	170	200
RWT202	2.46	37	68	92	150	180	210
RWT204	0.06	1	2	2	3	4	5
RWT210	2.82	42	78	110	170	200	240
RWT232	3.09	47	87	120	190	230	270
RWT234	0.19	5	8	10	15	18	21
RWT236	3.28	52	95	130	200	250	290
RWT240	3.47	57	100	140	220	270	310
RWT240_Diversion Reach	0.00	24	32	35	40	42	44
RWT250	3.55	57	100	140	220	270	320
RWT260	3.70	61	110	150	230	280	330
RWT291	3.84	63	110	150	240	290	340
RWT292	0.03	1	1	2	3	3	4
RWT294	0.27	4	7	10	15	19	22
RWT295	3.87	63	110	150	240	290	350
RWT296	4.13	67	120	160	260	310	370
RWT312	0.10	1	3	3	6	7	8
RWT314	5.88	97	180	240	380	460	540
RWT320	6.25	100	190	250	400	480	570
RWT344	0.33	5	9	12	19	23	27
RWT352	6.46	100	190	260	410	500	580
RWT354	9.69	140	270	380	610	740	870
RWT372	10.30	150	290	400	640	780	920
RWT374	0.07	1	2	2	4	4	5
RWT376	10.36	150	290	400	640	780	920
The Meadows Pond #1	0.06	1	2	2	3	4	5
The Meadows Pond #2	0.29	1	5	7	14	18	22
Woodmen Hills Pond #1 North	0.71	17	29	38	57	68	79
Woodmen Hills Pond #1 South	0.71	15	27	35	55	65	76
Woodmen Hills Pond #2	0.83	10	22	32	54	66	78
Woodmen Hills Pond #3	1.11	14	30	43	72	88	100
Woodmen Hills Pond #4	1.66	18	43	62	110	130	150
Woodmen Hills Pond #5	0.04	2	3	4	5	6	7
Woodmen Hills Pond H	0.56	13	23	29	45	53	62
WT010	0.14	1	3	4	6	8	9
WT020	0.07	1	1	2	3	4	5
WT030	0.08	1	2	2	4	5	6
WT040	0.19	2	4	5	9	11	13
WT050	0.19	2	5	7	11	13	15
WT060	0.20	2	5	6	10	13	15
WT070	0.17	2	3	5	8	10	12
WT080	0.07	1	2	2	4	5	6

Falcon DBPS

Peak Flow Volume Results

Hydrologic Element	Area (sq mi)	Historical Peak Flow Volume (ac ft)					
		2-year	5-year	10-year	25-year	50-year	100-year
WT280	0.27	3	6	9	14	17	21
WT290	0.10	1	1	2	3	4	5
WT300	0.10	1	2	3	5	6	7
WT310	0.28	1	2	3	7	9	11
WT320	0.21	0	1	2	3	5	6
WT330	0.33	0	1	2	5	7	9
WT340	0.28	0	1	2	5	7	8
WT350	0.30	1	3	4	8	11	13
WT360	0.07	0	1	1	2	2	3
WT370	0.21	0	1	1	3	4	6

Sig Figs (<10cfs)	1
Sig Figs (>10cfs)	2

Hydrologic Element	Area (sq mi)	Existing Peak Flow Volume (ac ft)					
		2-year	5-year	10-year	25-year	50-year	100-year
WT070	0.17	2	3	5	8	10	12
WT080	0.07	1	2	2	4	5	6
WT090	0.15	2	4	5	9	10	12
WT100	0.19	2	5	6	11	13	15
WT110	0.19	2	5	6	10	13	15
WT120	0.05	0	1	1	2	2	3
WT130	0.10	2	4	5	8	10	11
WT140	0.13	2	3	4	7	9	10
WT150	0.23	4	7	9	15	18	21
WT160	0.11	2	4	5	8	9	11
WT170	0.12	1	2	3	6	7	8
WT180	0.10	0	0	1	2	2	3
WT190	0.06	1	2	2	4	4	5
WT200	0.30	3	6	8	13	17	20
WT210	0.27	2	5	6	11	14	17
WT220	0.19	2	4	6	10	12	15
WT230	0.20	4	7	10	15	18	21
WT240	0.08	2	3	4	6	7	8
WT250	0.15	3	5	6	10	12	14
WT260	0.14	2	4	5	8	10	12
WT270	0.03	1	1	1	2	3	3
WT280	0.27	4	7	10	15	19	22
WT290	0.10	1	3	4	6	7	9
WT300	0.10	1	3	4	6	7	8
WT310	0.28	3	6	9	14	17	21
WT320	0.21	3	5	7	11	13	16
WT330	0.33	3	6	9	15	19	23
WT340	0.28	4	7	10	16	20	23
WT350	0.30	4	8	10	17	21	24
WT360	0.07	1	2	2	4	5	5
WT370	0.21	1	2	2	5	6	8

Hydrologic Element	Area (sq mi)	Future Peak Flow Volume (ac ft)					
		2-year	5-year	10-year	25-year	50-year	100-year
WT090	0.15	2	4	6	9	11	13
WT100	0.19	4	7	9	14	17	19
WT110	0.19	3	5	7	11	14	16
WT120	0.05	1	1	2	3	3	4
WT130	0.10	2	4	5	8	10	11
WT140	0.13	3	5	6	10	12	14
WT150	0.23	6	10	14	20	24	28
WT160	0.11	2	4	5	8	9	11
WT170	0.12	2	3	5	7	9	11
WT180	0.10	1	2	3	5	6	8
WT190	0.06	1	2	2	4	4	5
WT200	0.30	4	8	11	18	22	26
WT210	0.27	6	10	13	20	24	28
WT220	0.19	5	8	10	16	18	21
WT230	0.20	5	9	11	17	20	23
WT240	0.08	2	3	5	7	8	9
WT250	0.15	4	6	8	13	15	17
WT260	0.14	2	4	5	8	10	12
WT270	0.03	1	1	2	3	3	4
WT280	0.27	4	7	10	15	19	22
WT290	0.10	1	3	4	6	7	9
WT300	0.10	1	3	4	6	7	8
WT310	0.28	4	7	10	15	19	22
WT320	0.21	3	5	7	12	15	17
WT330	0.33	5	9	12	19	23	27
WT340	0.28	4	7	10	16	20	23
WT350	0.30	5	8	11	18	22	26
WT360	0.07	1	2	2	4	5	5
WT370	0.21	1	3	4	7	9	12

Falcon DBPS

Peak Flows at Points of Interest

Location	HEC-HMS Element	Area	Historical Flows (cfs)				Existing Flows (cfs)				Future Flows (cfs)			
		(sq mi)	2-year	5-year	10-year	100-year	2-year	5-year	10-year	100-year	2-year	5-year	10-year	100-year
West Tributary														
Raygor Rd.	JWT030	0.14	6	15	23	75	9	20	30	85	9	20	30	85
Stapleton Rd.	JWT120	1.77	58	150	230	750	84	190	300	910	85	190	300	920
Woodmen Rd.	JWT210	3.09	80	200	320	1,000	21	50	170	950	120	250	400	1,300
HWY 24	JWT250	3.70	84	210	330	1,100	39	75	100	890	85	210	390	1,100
Falcon Hwy.	JWT260	3.84	86	220	340	1,100	47	92	130	910	86	210	390	1,100
Garrett Rd.	JWT320	6.46	110	290	430	1,500	120	250	370	1,300	160	410	630	1,700
East Blaney Rd.	JWT354	10.30	110	310	470	1,700	190	400	590	1,900	230	560	870	2,500
Upstream of Bennett Ranch Tributary	JWT374_Outlet	10.58	110	310	470	1,700	190	400	600	1,900	230	560	860	2,500
Middle Tributary														
Woodmen Hills Dr.	JMT010	0.29	1	7	13	57	1	11	25	160	1	11	25	160
Woodmen Rd.	JMT070	1.36	24	67	110	350	61	180	280	760	150	350	490	1,200
Hwy. 24	JMT106	1.52	24	68	110	360	45	120	260	800	92	320	490	1,200
Falcon Hwy.	JMT110	1.64	22	63	120	360	46	120	260	820	94	320	500	1,200
Confluence with West Tributary	RMT114	1.64	22	63	110	360	46	120	260	820	94	320	500	1,200
East Tributary														
Stapleton Dr.	JET020	0.36	20	45	67	200	44	85	120	280	74	130	170	390
Woodmen Hills Dr.	JET040	0.71	19	48	74	240	23	59	110	480	27	85	140	570
Eastonville Rd.	JET060	1.11	19	48	77	260	13	28	45	340	13	32	68	430
Hwy. 24	JET090	1.78	17	47	75	260	15	39	64	370	26	47	81	390
Pinto Pony Rd.	JET100	1.83	17	47	75	260	15	40	65	380	27	49	83	390
Falcon Hwy.	JET120	2.16	17	47	77	270	17	48	84	430	49	110	160	450
Garrett Rd.	JET160	2.93	18	48	81	300	32	96	150	620	66	150	230	710
Confluence with West Tributary	RET164	2.93	18	48	81	300	32	96	150	620	66	150	230	710

Falcon DBPS

Peak Flow Volumes at Points of Interest

Location	HEC-HMS Element	Area	Historical Flows (ac ft)				Existing Flows (ac ft)				Future Flows (ac ft)			
		(sq mi)	2-year	5-year	10-year	100-year	2-year	5-year	10-year	100-year	2-year	5-year	10-year	100-year
West Tributary														
Raygor Rd.	JWT030	0.14	1	3	4	9	2	3	4	10	2	3	4	10
Stapleton Rd.	JWT120	1.77	17	35	50	120	21	41	57	140	23	44	61	140
Woodmen Rd.	JWT210	3.09	24	49	71	180	6	12	23	110	47	87	120	270
HWY 24	JWT250	3.70	27	57	82	210	16	31	48	160	61	110	150	330
Falcon Hwy.	JWT260	3.84	28	59	85	220	18	35	53	180	63	110	150	340
Garrett Rd.	JWT320	6.46	38	85	120	340	51	99	140	390	100	190	260	580
East Blaney Rd.	JWT354	10.30	45	110	160	460	90	180	270	700	150	290	400	920
Upstream of Bennett Ranch Tributary	JWT374_Outlet	10.58	45	110	160	470	90	190	270	710	150	290	400	930
Middle Tributary														
Woodmen Hills Dr.	JMT010	0.29	1	2	3	11	1	5	7	22	1	5	7	22
Woodmen Rd.	JMT070	1.36	5	13	19	58	15	31	43	110	23	43	58	130
Hwy. 24	JMT106	1.52	5	14	21	63	19	38	53	130	28	51	68	150
Falcon Hwy.	JMT110	1.64	5	14	22	66	21	41	58	140	30	54	73	160
Confluence with West Tributary	RMT114	1.64	5	14	21	66	21	41	57	140	30	54	73	160
East Tributary														
Stapleton Dr.	JET020	0.36	4	8	12	28	7	12	16	36	9	15	20	41
Woodmen Hills Dr.	JET040	0.71	5	10	14	38	13	24	32	70	15	27	35	76
Eastonville Rd.	JET060	1.11	5	11	17	48	12	27	40	99	14	30	43	100
Hwy. 24	JET090	1.78	5	13	20	63	17	42	62	160	21	48	69	170
Pinto Pony Rd.	JET100	1.83	5	13	20	64	17	43	63	160	22	50	71	170
Falcon Hwy.	JET120	2.16	5	14	22	73	20	48	70	180	25	57	81	200
Garrett Rd.	JET160	2.93	5	16	27	92	29	65	95	240	35	76	110	260
Confluence with West Tributary	RET164	2.93	5	16	27	92	29	65	94	240	35	75	110	260

Falcon DBPS

Flood Summary for the Falcon Watershed Outlet

Annual Percent Chance Flood Event	Recurrence Interval	Peak Flow (cfs)					
		Matrix HEC-HMS[1]		URS DBPS[2]		USGS Regression Analysis[3]	CWCB Regression Analysis[4]
		Existing	Future	Existing	Future		
50%	2-year	190	230	--	--	100	--
20%	5-year	400	560	222	458	500	--
10%	10-year	600	860	--	--	900	--
4%	25-year	1,200	1,500	--	--	1,800	--
2%	50-year	1,500	2,000	--	--	2,800	--
1%	100-year	1,900	2,500	2,935	3,303	4,100	5,300

Notes:

[1] Existing and Future peak flows from the Matrix HEC-HMS model prepared as a part of the Falcon DBPS

[2] Existing and Future peak flows from the 2000 Falcon DBPS prepared by URS

[3] USGS Regression Analysis equations are from "Analysis of the Magnitude and Frequency of Floods in Colorado" Water-Resources Investigations Report 99-4190. The Plains Region covers the entire portion of the Falcon Watershed. Drainage areas for the study ranged from 5 to 1,000 mi2. $Q2=39.0(A)^{0.486}$, $Q5=195.8(A)^{0.399}$, $Q10=364.6(A)^{0.400}$, $Q25=725.3(A)^{0.395}$, $Q50=1116(A)^{0.392}$, $Q100=1640(A)^{0.388}$

[4] CWCB Regression Analysis equations are from the "Guidelines for Determining 100-Year Flood Flows for Approximated Floodplains in Colorado" by the Department of Natural Resources Colorado Water Conservation Board, June 2004. ARK-5 includes tributaries east of Monument Creek, including the Black Squirrel Creek based east of Colorado Springs, for tributaries between 4 and 75 mi2. Q=1343.4(A)0.578. Where A=Drainage Area (mi2).

Flood Summary at LOMR Locations

Annual Percent Chance Flood Event	Recurrence Interval	Peak Flow (cfs)		
		Matrix HEC-HMS[1]		LOMR
		Existing	Future	
Middle Tributary Confluence with West Tributary[1]				
50%	2-year	46	94	--
20%	5-year	120	320	--
10%	10-year	260	500	--
4%	25-year	540	830	--
2%	50-year	670	1,000	--
1%	100-year	820	1,200	675
West Tributary at Woodmen Road[2]				
50%	2-year	21	120	--
20%	5-year	50	250	--
10%	10-year	170	400	--
4%	25-year	510	760	--
2%	50-year	720	990	--
1%	100-year	950	1,300	1,482
West Tributary at HWY 24[3]				
50%	2-year	39	85	--
20%	5-year	75	210	--
10%	10-year	100	390	--
4%	25-year	420	780	--
2%	50-year	680	950	--
1%	100-year	890	1,100	1,225

Notes:

[1] FEMA LOMR 01-08-226P-080059

[2] FEMA LOMR 03-08-0385P-080059

[3] FEMA LOMR 07-08-0324P-080059