Project Name:	Gray	**PIN:**	20471
Stream Name:	Sucker Brook	**Town:**	Gray
Bridge Name:		**Bridge No.**	
Route No.	Egypt Rd	**USGS Quad:**	
Analysis by:	CSH	**Date:**	7/31/2013

Peak Flow Calculations by USGS Regression Equations (Hodgkins, 1999)

Enter data in blue cells only!

	km^2	mi^2	ac	
A	7.82	3.02	1932.4	***Enter data in [mi^2]*** Watershed Area
W	0.83	0.32	205.1	Wetlands area (by NWI)
P_c	387696	4867628		watershed centroid (E, N; UTM 19N; meters)
County	Cumberland SE			*choose county from drop-down menu*
pptA	44.4			mean annual precipitation (inches; by look-up)
SG	0.00			sand & gravel aquifer as decimal fraction of watershed A

A (km^2)	7.82	**Conf Lvl**	0.67
W (%)	10.61		

Worksheet prepared by:
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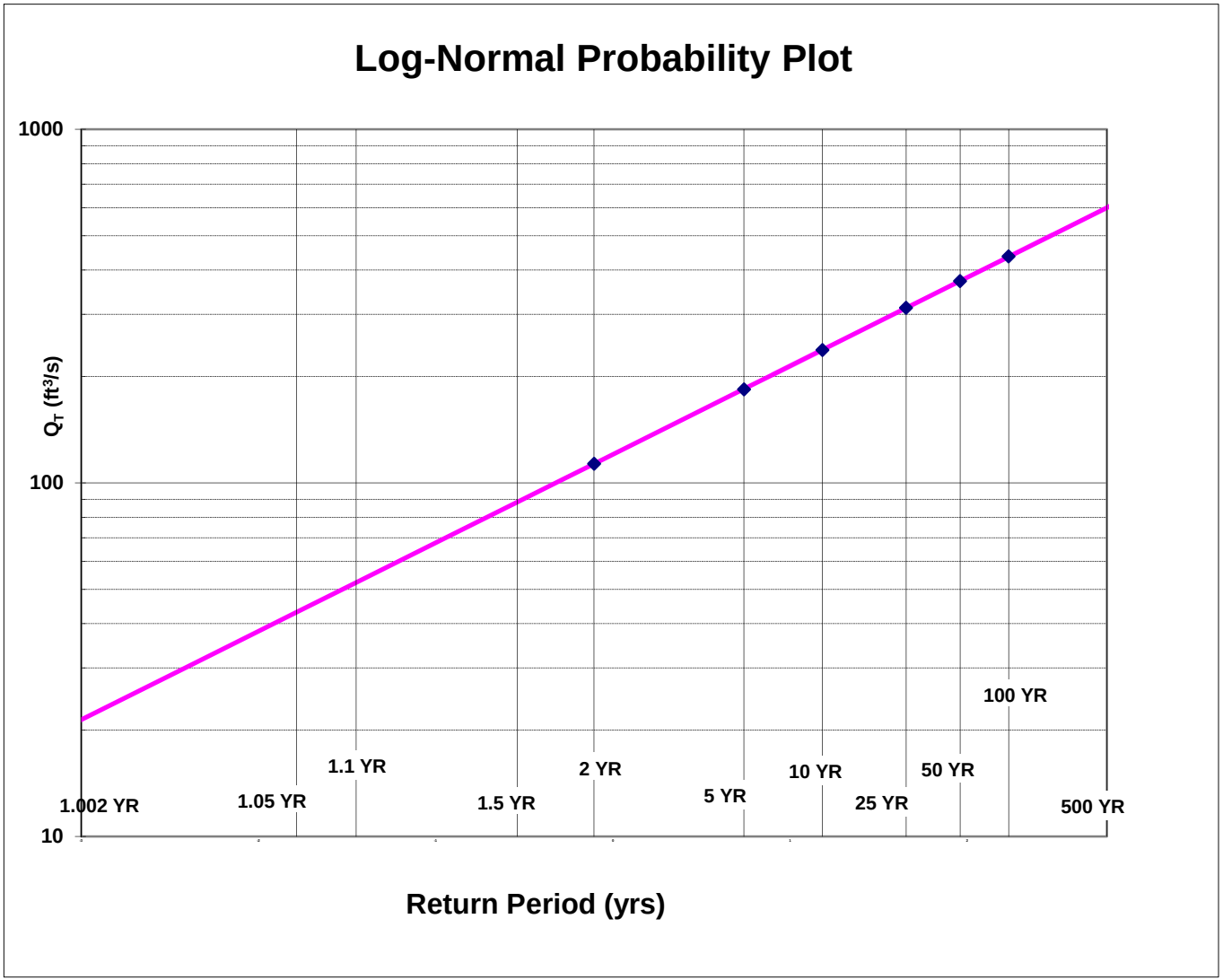
Ret Pd T (yr)	Peak Flow Estimate Lower	Q_T (m^3/s)	Upper	Q_T (ft^3/s)
1.1		1.48		52.3
2	2.28	3.21	4.52	113.3
5	3.69	5.21	7.38	184.1
10	4.71	6.74	9.65	238.0
25	6.09	8.86	12.88	312.8
50	7.17	10.55	15.54	372.6
100	8.30	12.39	18.49	437.5
500	11.02	17.01	26.27	600.7

Reference:

Hodgkins, G., 1999.
Estimating the magnitude of peak flows for streams in Maine for selected recurrence intervals
Water-Resources Investigations Report 99-4008
US Geological Survey, Augusta, Maine

$Q_T = b \times A^a \times 10^{-wW}$


Log-Normal Probability Plot
1000
100
10
Q_T (ft³/s)
1.002 YR
1.05 YR
1.1 YR
1.5 YR
2 YR
5 YR
10 YR
25 YR
50 YR
100 YR
500 YR
Return Period (yrs)

Project Name:	Gray	**PIN:**	20471
Stream Name:	Sucker Brook	**Town:**	Gray
Bridge Name:	0	**Bridge No.**	0
Route No.	Egypt Rd	**USGS Quad:**	0
Analysis by:	CSH	**Date:**	7/31/2013

DO NOT ENTER ANY DATA ON THIS PAGE; EVERYTHING IS CALCULATED

MAINE MONTHLY MEDIAN FLOWS BY USGS REGRESSION EQUATIONS (2004)

	Value	Variable	Explanation
	3.019	*A*	Area (mi^2)
387696	4867628	P_c	Watershed centroid (E,N; UTM; Zone 19; meters)
	55.03	*DIST*	Distance from Coastal reference line (mi)
	44.4	*pptA*	Mean Annual Precipitation (inches)
	0.00	*SG*	Sand & Gravel Aquifer (decimal fraction of watershed area)

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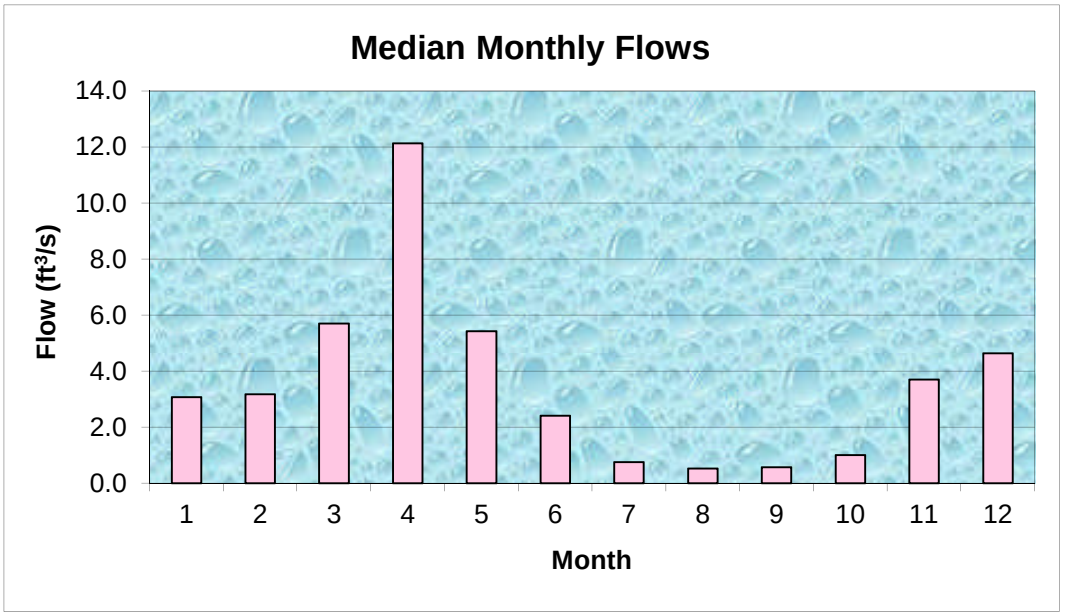
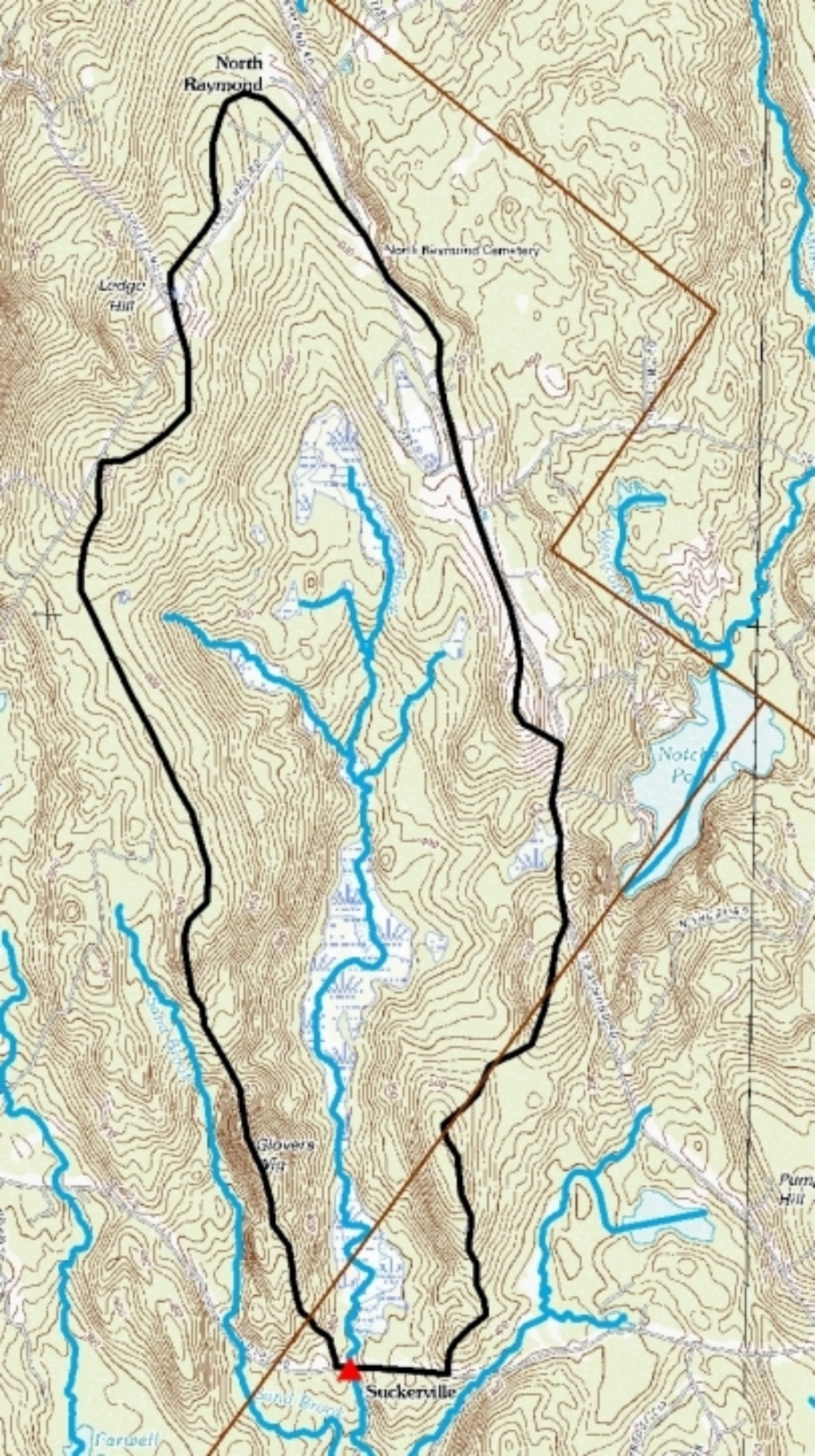
Month	Q_{median} (ft3/s)	(m^3/s)
Jan	**3.07**	0.0870
Feb	**3.17**	0.0900
Mar	**5.70**	0.1615
Apr	**12.13**	0.3438
May	**5.42**	0.1537
Jun	**2.41**	0.0683
Jul	**0.75**	0.0212
Aug	**0.52**	0.0148
Sep	**0.57**	0.0160
Oct	**1.01**	0.0285
Nov	**3.71**	0.1050
Dec	**4.64**	0.1314

Q_{bf}	**16.6**
ann avg	**6.2**
ann med	**3.1**
$Q_{1.002}$	**21.4**
$Q_{1.01}$	29.4
$Q_{1.05}$	43.1

W_{bf}	13.5	
d_{bf}	1.1	
Q_{bf}	57.1	assume v = 4ft/s




North Raymond
North Raymond Cemetery
Ledge Hill
Glovers Hill
Suckerville
Farwell