

WIN: 27224.00
 Town: Industry
 Route No. ME43 / Industry Rd
 Asset ID: 1068804
 Lat: 44.10318 Long: -69.59794

Project Name:
 Stream Name: trib to Muddy Brook
 Bridge Name: u/n
 Analysis by: csh
 Date: 6/11/2025

Peak Flow Calculations by USGS Regression Equations (Lombard/Hodgkins, 2021; Hodgkins, 1999 & Lombard/Hodgkins, 2015)

Enter data in blue cells only!

	km ²	mi ²	ac
A	2.67	1.03	659.2
W	0.25	0.10	63.0
P _c	412875	4951696	
County	Franklin		

Enter data in [mi²]

Watershed Area DRNAREA
 Wetlands area (by NWI)

watershed centroid (E, N; UTM 19N; meters)
 choose county from drop-down menu

ver. 2024 Oct 21

Worksheet prepared by:

Charles S. Hebson, PE
 Environmental Office
 Maine Dept. Transportation
 Augusta, ME 04333-0016
 207-557-1052

Charles.Hebson@maine.gov

Watershed Characteristics from StreamStats

BSLDEM10M	11	mean basin slope (%)
COASTDIST	93.50	distance from the coast (mi)
ELEV	748.7	mean basin elevation (ft)
ELEVMAX	1111.2	maximum basin elevation (ft)
LC06WATER	0	percent of drainage basin land cover as open water
PRECIP	44.5	mean annual precipitation
SANDGRAVF	0.00	sand & gravel aquifer as decimal fraction of watershed A
STATSGOA	2	mean basin percentage of hydrological soil group A
STORAGE	10.20	% Storage
STORNWI	9.55	NWI Wetlands %

References:

Hodgkins, G.A., 1999.
 Estimating the magnitude of peak flows for streams in Maine
 for Selected Recurrence Intervals
 WRIR 99-4008, USGS Augusta, ME

Lombard, P.J. & G.A. Hodgkins, 2015.
 Peak flow regression equations for small, ungaged streams:
 in Maine: Comparing Map-Based to Field-Based Variables
 SIR 2015-4059, USGS, Augusta, ME

Lombard, P.J. & G.A. Hodgkins, 2020.
 Estimating Flood Magnitude and Frequency on Gaged and
 Ungaged Streams in Maine
 SIR 2020-5092, USGS, Augusta, ME.

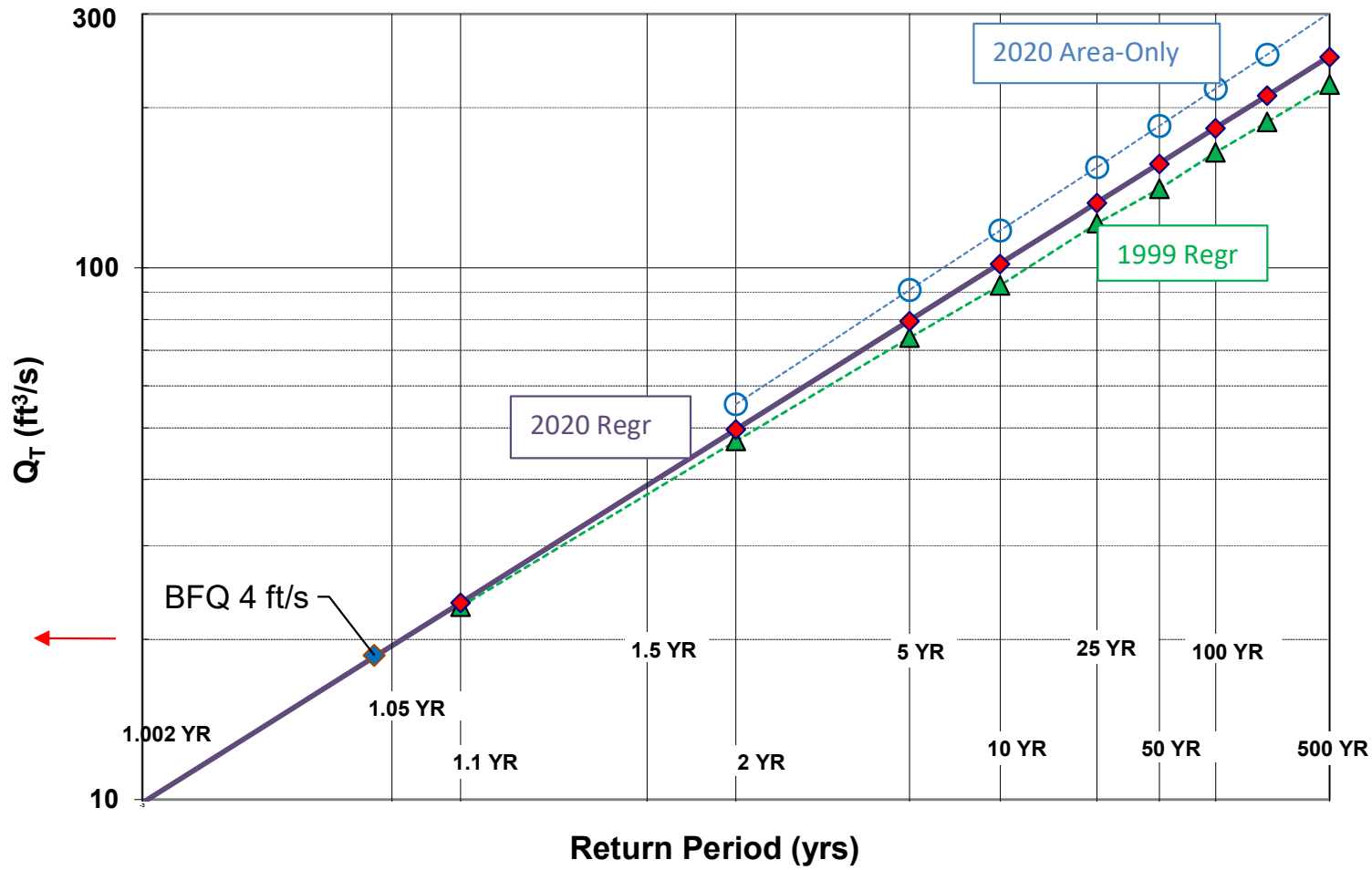
Ret Pd T (yr)	I24	Q _T (ft ³ /s)		Q _T (ft ³ /s) Design
		1999 / 2015	2020	
1.1			23	25
2	2.96	47	50	50
5	3.65	74	79	80
10	4.23	93	101	100
25	5.03	121	132	130
50	5.63	141	157	155
100	6.26	165	183	185
200	6.95	188	211	210
500	7.95	221	249	250

Calculated Bankfull Width: 10.7 ft

Instructions:

Enter values in blue cells only, watershed data from StreamStats
 Copy I24 values from Stream Stats
 Use results under "Design"
 Check against gage data and FEMA studies if available
 Questions? Check with ENV / Hydrology Section

Log-Normal Probability Plot



WIN:	27224.00		
Town:	Industry		
Route No.:	ME43 / Industry Rd		
Asset ID:	1068804		
Lat:	44.10318	Long:	-69.59794

Project Name:	0
Stream Name:	trib to Muddy Brook
Bridge Name:	u/n
Analysis by:	csh
Date:	6/11/2025

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

MAINE MONTHLY MEDIAN FLOWS and HYDRAULIC GEOMETRY BY USGS REGRESSION EQUATIONS (2004, 2013, 2015)

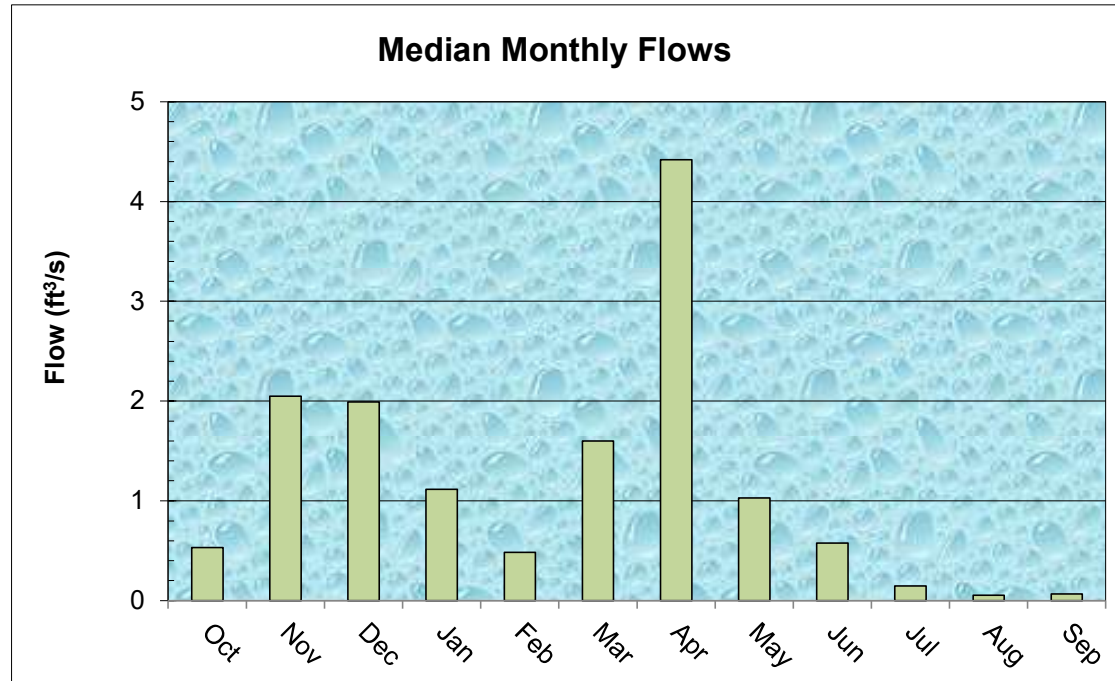
Value	Variable	Explanation
1.03	A	Area (mi ²)
412875	4951696	P_c Watershed centroid (E,N; UTM; Zone 19; meters)
93.50	DIST	Distance from Coastal reference line (mi)
44.5	pptA	Mean Annual Precipitation (inches)
0.00	SG	Sand & Gravel Aquifer (decimal fraction of watershed area)

Month	Q_{median} (ft ³ /s)	(m ³ /s)
Jan	1.12	0.0316
Feb	0.48	0.0137
Mar	1.60	0.0453
Apr	4.42	0.1253
May	1.03	0.0292
Jun	0.58	0.0163
Jul	0.15	0.0042
Aug	0.05	0.0015
Sep	0.07	0.0019
Oct	0.53	0.0151
Nov	2.05	0.0581
Dec	1.99	0.0565

Q_{bf}	5.4
ann avg	2.5
ann med	1.0
$Q_{1.002}$	9.9
$Q_{1.01}$	13.4
$Q_{1.05}$	19.4
$Q_{1.1}$	23.4
Q_{bf}	18.7

assume v = 4ft/s

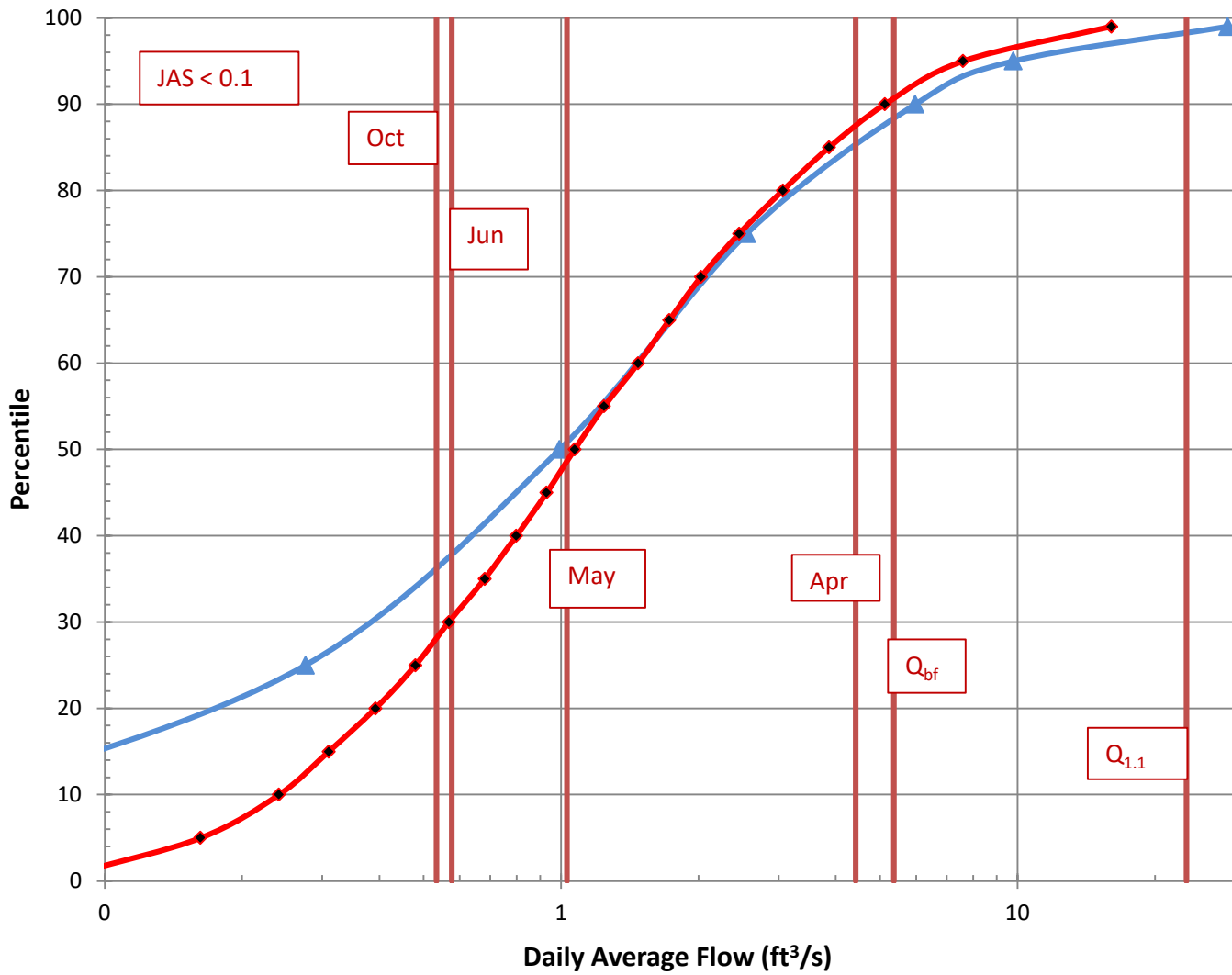
W_{bf}	10.7	estimated bankfull width (ft)
d_{bf}	0.6	estimated bankfull depth (ft)
A_{bf}	4.7	estimated bankfull flow area (ft ²)



References

- Dudley, 2013. FY2013 Progress Report - Phase 1 ..., USFWS QRP Project
- Dudley, 2004. Estimating Monthly Streamflows ..., SIR 2004-5026
- Dudley, 2015. Regression Equations for Monthly & Annual Mean..., USGS SIR 2015-5151

Daily Average Flow Distribution

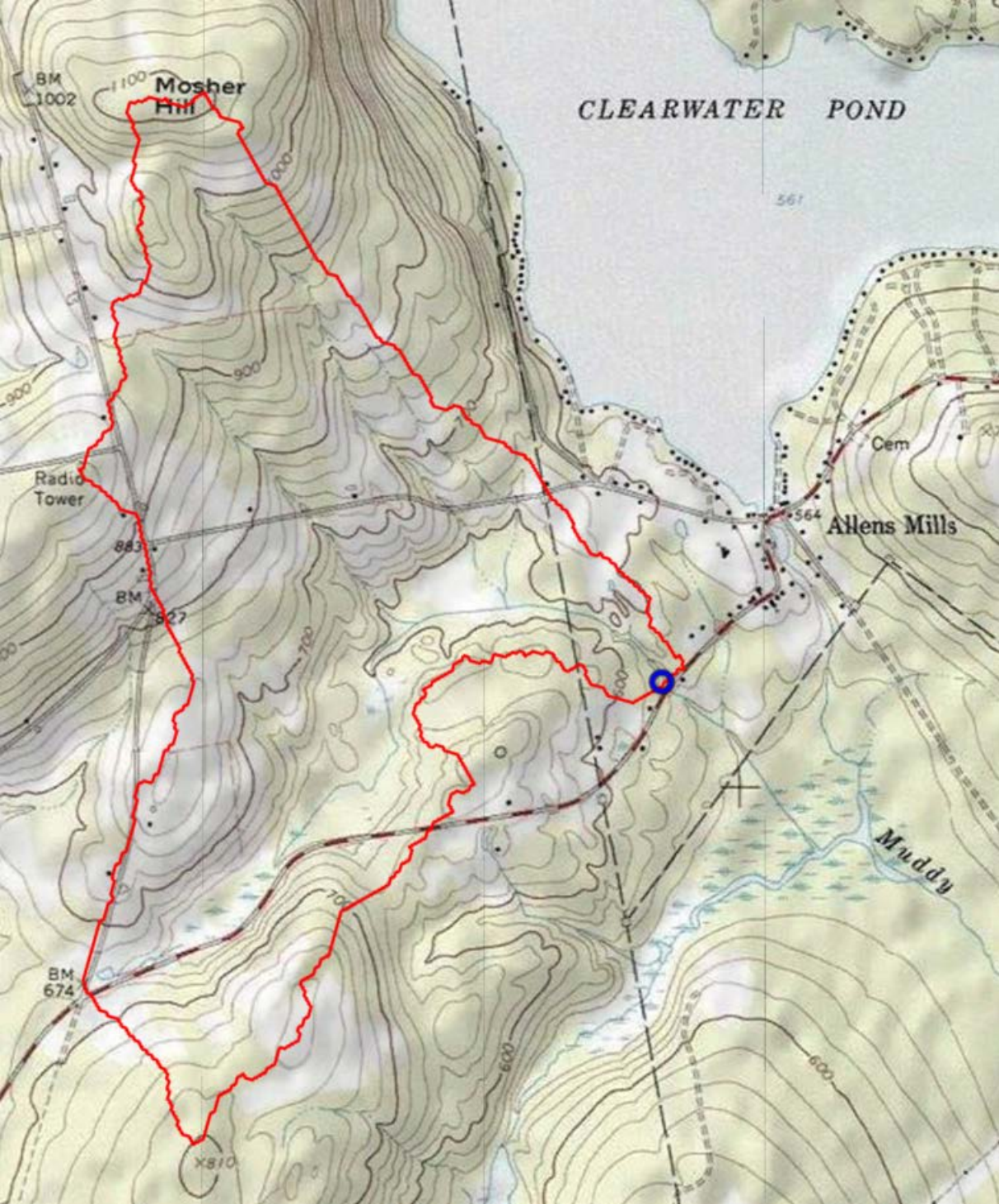


Daily Avg Flow Dist

$A_{ws} = (mi^2)$ 1.0

$Q (ft^3/s)$

Pctl	Median	84 th pctl
1.00E-06	0.00	0.00
1	0.09	0.16
5	0.16	0.26
10	0.24	0.36
15	0.31	0.45
20	0.39	0.55
25	0.48	0.64
30	0.57	0.73
35	0.68	0.84
40	0.80	0.96
45	0.93	1.09
50	1.07	1.28
55	1.24	1.49
60	1.48	1.75
65	1.73	2.04
70	2.02	2.39
75	2.45	2.87
80	3.06	3.42
85	3.86	4.39
90	5.12	5.89
95	7.59	9.16
99	16.06	21.14
Q_{bf}	5.4	
$Q_{1.002}$	9.9	
$Q_{1.1}$	23.4	
Q_2	49.6	



Mosher Hill

CLEARWATER POND

Allens Mills

Muddy

BM 1002

Radio Tower

BM 827

BM 674

X810

Cem

561

564

JOINS 03

CLEARWATER POND

ZONE A

ZONE C

ZONE C

CORPORATE LIMITS

CORPORATE LIMITS

RT 118



This is an official FIRMette showing a portion of the above-referenced flood map created from the MSC FIRMette Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, please see the Flood Hazard Mapping Updates Overview Fact Sheet available on the FEMA Flood Map Service Center home page at <https://msc.fema.gov>.

federal emergency management agency

TOWN OF INDUSTRY, ME
FRANKLIN COUNTY

2000 0 2000 4000 6000 FEET

APPROXIMATE SCALE

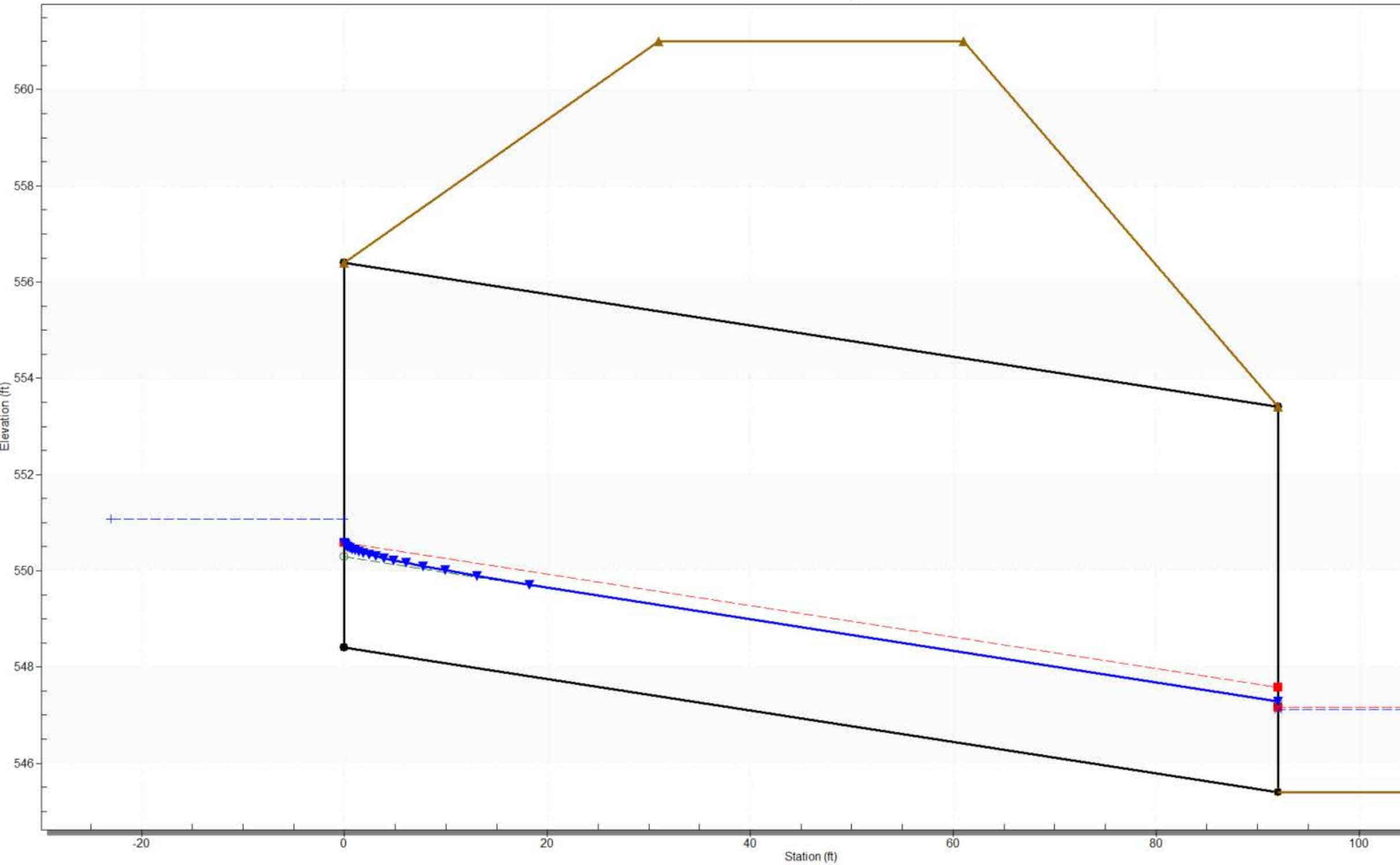
FLOOD INSURANCE RATE MAP
COMMUNITY NUMBER 230348 A

EFFECTIVE DATE
AUGUST 19, 1985

70

Crossing - Industry 27224, Design Discharge - 185.0 cfs

Culvert - Culvert 1, Culvert Discharge - 185.0 cfs



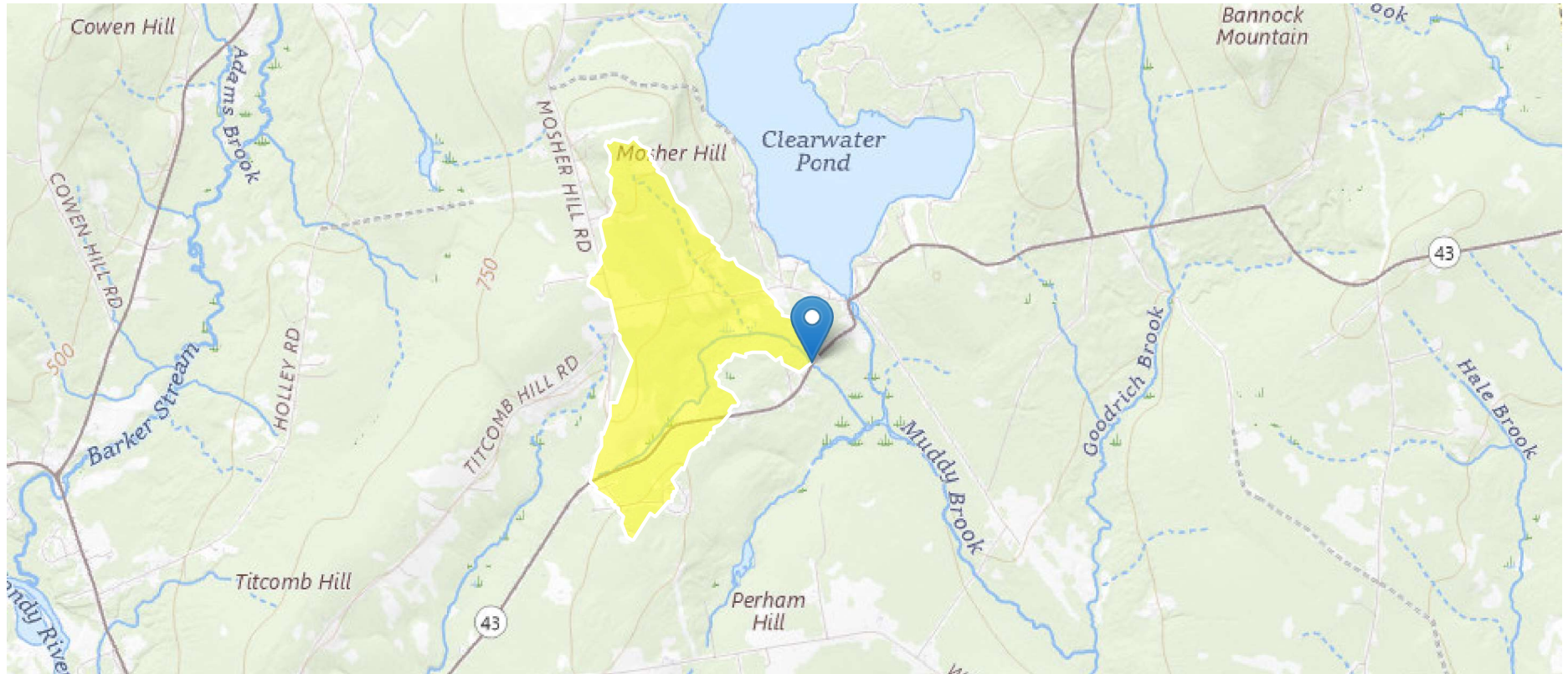
Industry 27224 ME43/Industry Rd LC-1068804

Region ID: ME

Workspace ID: ME20250611125307033000

Clicked Point (Latitude, Longitude): 44.71123, -70.08578

Time: 2025-06-11 08:53:39 -0400



Existing 5D x 80L CMP

➤ Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLDEM10M	Mean basin slope computed from 10 m DEM	11	percent
CENTROIDX	Basin centroid horizontal (x) location in state plane coordinates	412875.1	meters
CENTROIDY	Basin centroid vertical (y) location in state plane units	4951696.15	meters
COASTDIST	Shortest distance from the coastline to the basin centroid	93.5	miles
DRNAREA	Area that drains to a point on a stream	1.03	square miles
ELEV	Mean Basin Elevation	748.7	feet
ELEVMAX	Maximum basin elevation	1111.2	feet
I24H100Y	Maximum 24-hour precipitation that occurs on average once in 100 years	6.26	inches
I24H10Y	Maximum 24-hour precipitation that occurs on average once in 10 years	4.23	inches
I24H200Y	Maximum 24-hour precipitation that occurs on average once in 200 years	6.95	inches
I24H25Y	Maximum 24-hour precipitation that occurs on average once in 25 years	5.03	inches
I24H2Y	Maximum 24-hour precipitation that occurs on average once in 2 years - Equivalent to precipitation intensity index	2.96	inches
I24H500Y	Maximum 24-hour precipitation that occurs on average once in 500 years	7.95	inches
I24H50Y	Maximum 24-hour precipitation that occurs on average once in 50 years	5.63	inches
I24H5Y	Maximum 24-hour precipitation that occurs on average once in 5 years	3.65	inches
JULAVPRE	Mean July Precipitation	3.67	inches
LC06WATER	Percent of open water, class 11, from NLCD 2006	0	percent
PCTSNDGRV	Percentage of land surface underlain by sand and gravel deposits	0	percent

Parameter Code	Parameter Description	Value	Unit
PRDEC FEB90	Basin average mean precipitation for December to February from PRISM 1961-1990	10.7	inches
PRECIP	Mean Annual Precipitation	46.6	inches
SANDGRAVAF	Fraction of land surface underlain by sand and gravel aquifers	0	dimensionless
SANDGRAVAP	Percentage of land surface underlain by sand and gravel aquifers	0	percent
STATSGOA	Percentage of area of Hydrologic Soil Type A from STATSGO	2	percent
STORAGE	Percentage of area of storage (lakes ponds reservoirs wetlands)	10.2	percent
STORNWI	Percentage of storage (combined water bodies and wetlands) from the National Wetlands Inventory	9.55	percent

➤ Peak-Flow Statistics

Peak-Flow Statistics Parameters [Statewide multiparameter peakflows SIR 2020 5092]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.03	square miles	0.26	5680
I24H100Y	24 Hour 100 Year Precipitation	6.26	inches	3.99	9.88
I24H10Y	24 Hour 10 Year Precipitation	4.23	inches	2.84	6.38
I24H200Y	24 Hour 200 Year Precipitation	6.95	inches	5.26	11.1
I24H25Y	24 Hour 25 Year Precipitation	5.03	inches	3.3	7.75
I24H2Y	24 Hour 2 Year Precipitation	2.96	inches	1.92	4.17
I24H500Y	24 Hour 500 Year Precipitation	7.95	inches	5.95	13.1

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
I24H50Y	24 Hour 50 Year Precipitation	5.63	inches	3.65	8.79
I24H5Y	24 Hour 5 Year Precipitation	3.65	inches	2.48	5.38
STORAGE	Percent Storage	10.2	percent	0	29.4

Peak-Flow Statistics Flow Report [Statewide multiparameter peakflows SIR 2020 5092]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	PIL	PIU	ASEp
50-percent AEP flood	49.6	ft^3/s	26.5	92.8	39.1
20-percent AEP flood	79.3	ft^3/s	43	146	38.1
10-percent AEP flood	101	ft^3/s	54	189	38.9
4-percent AEP flood	132	ft^3/s	69.6	250	39.9
2-percent AEP flood	157	ft^3/s	81.4	303	39.7
1-percent AEP flood	183	ft^3/s	95.4	351	40.7
0.5-percent AEP flood	211	ft^3/s	106	419	42.8
0.2-percent AEP flood	249	ft^3/s	124	501	43.8

Peak-Flow Statistics Citations

Lombard, P.J., and Hodgkins, G.A., 2020, Estimating flood magnitude and frequency on gaged and ungaged streams in Maine: U.S. Geological Survey Scientific Investigations Report 2020-5092, 56 p. (<https://doi.org/10.3133/sir20205092>)

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Application Version: 4.29.1

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1