

Montague, MA

Montague, MA

October 2022 Report Submitted to **Montague, MA**
November 10, 2022



ADS ENVIRONMENTAL SERVICES

340 The Bridge Street, Suite 204
Huntsville, AL 35806

800-633-7246
www.adsenv.com



November 10, 2022

Chelsey Little, BSBS MPH
Superintendent
Montague WPCF

SUBJECT: Montague, MA

Dear Mrs. Little,

ADS is pleased to submit the report for the Montague, MA completed on behalf of Montague, MA. The metering was conducted at four (4) locations. The study was conducted during the period of Saturday, 01 October 2022 to Monday, 31 October 2022.

The report contains depth, velocity, and quantity hydrographs as well as daily long tables for the metering period. An Excel file containing depth, quantity, and velocity entities for the monitoring location in 5-minute format was provided previously.

In addition, we would be happy to further explain any details about the report that may seem unclear. Should you have any questions or comments, you may contact the Project Manager, Michael Armes at 603-625-1212.

It has been our pleasure to be of service to you in the performance of this project. Thank you for choosing ADS products and services to meet your flow monitoring needs.

Sincerely,

ADS ENVIRONMENTAL SERVICES

Melissa Hygom
Senior Data Analyst, Congers, NY

Saturday, 01 October 2022 to Monday, 31 October 2022



Montague, MA

Prepared For:

Chelsey Little, BSBS MPH
Superintendent
Montague WPCF

Prepared By:



ADS, LLC
340 The Bridge Street, Suite 204
Huntsville, AL 35806

7th_L_CSO

Site Commentary

SITE INFORMATION

Pipe	Round (14.25 in H)
Silt	0.00 (in)

OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Saturday, 01 October 2022 to Monday, 31 October 2022**, along with observed minimum and maximum data, are provided in the following table.

Three (3) overflows recorded during the October reporting period.

Observed Flow Conditions		
Item	DFINAL (in)	VFINAL (ft/s)
Average	1.58	0.66
Minimum	1.19	0.06
Maximum	16.06	12.04
Min Time	10/27/2022 4:35:00 AM	10/04/2022 2:25:00 AM
Max Time	10/05/2022 8:55:00 AM	10/05/2022 8:55:00 AM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the none average.

DATA UPTIME

Data uptime observed during **Saturday, 01 October 2022 to Monday, 31 October 2022** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100

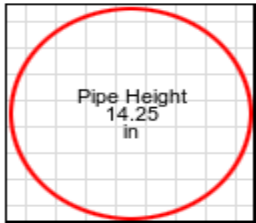
7th_L_CSO	Total	Duration	Start	Stop	Rain
W1	10,561	0:25:00	10/5/22 8:50	10/5/22 9:15	0.85
W2	463	0:15:00	10/13/22 20:20	10/13/22 20:35	0.69
W3	45	0:05:00	10/17/22 21:40	10/17/22 21:45	0.32

	Gals.	Hrs.	Rain
Total	11,069	0:45:00	1.86

Hydrograph Report

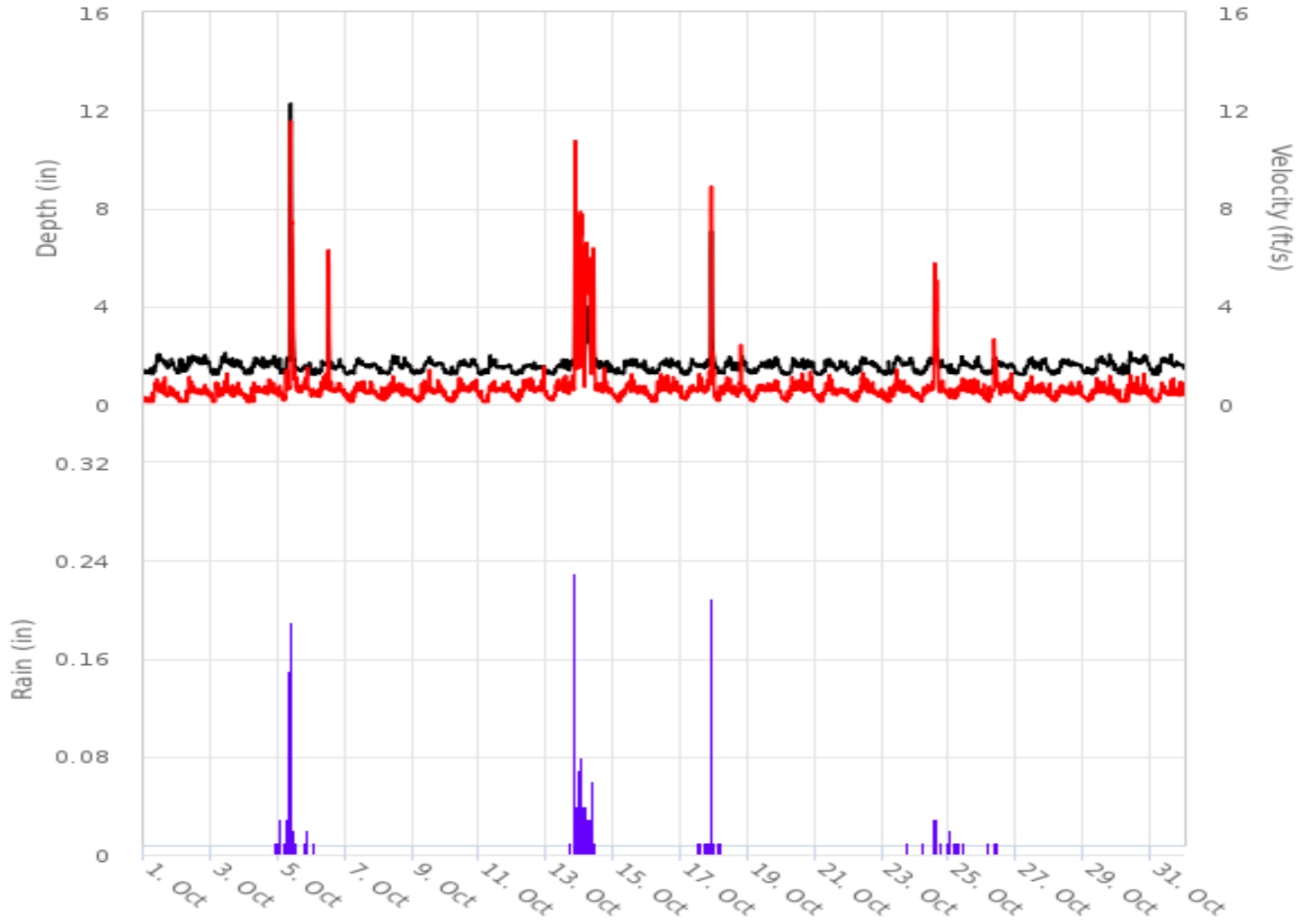
7th_L_CSO

Flow Monitor
7th_L_CSO



Report Period
10/01/2022
To
10/31/2022

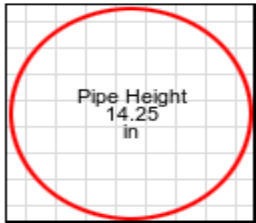
Legend
— DFINAL
— RAIN FINAL
— VFINAL



Scattergraph Report

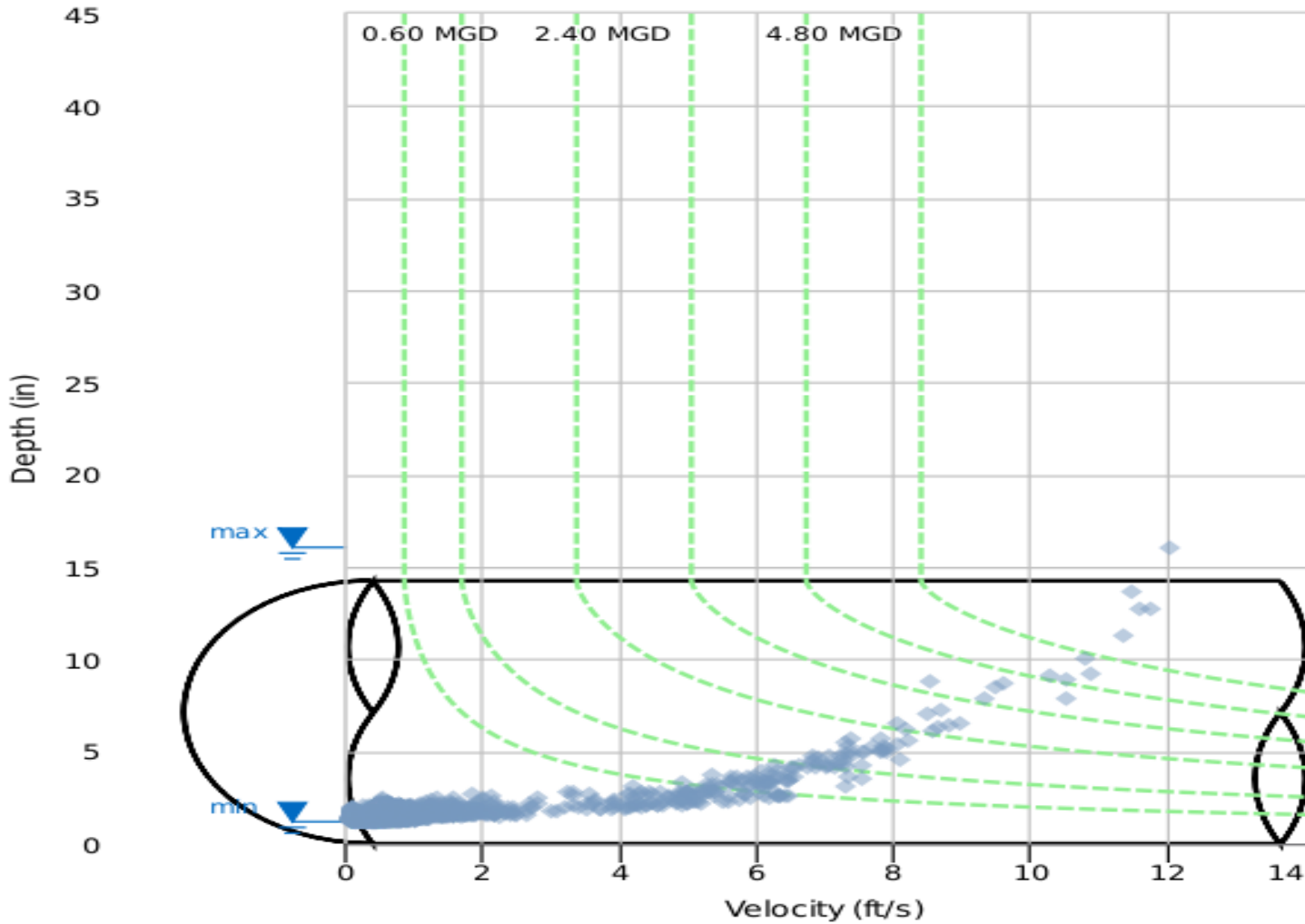
7th_L_CSO

Flow Monitor
7th_L_CSO



Report Period
10/01/2022
To
10/31/2022

Legend
○ DFINAL - VFINAL
--- Iso-Q™
▼ Min-Max Depth



Daily Tabular Report

10/01/2022 00:00 - 10/31/2022 23:59

7th_L_CSOPipe: Round (14.25 in H), Silt0.00 in

Date	DFINAL (in)					VFINAL (ft/s)					RAIN FINAL (in)
	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total
10/01/2022	01:30	1.21	10:05	2.20	1.55	06:15	0.09	13:40	1.50	0.43	-
10/02/2022	01:00	1.25	19:40	2.34	1.67	00:45	0.10	10:20	1.45	0.44	-
10/03/2022	04:55	1.20	10:15	2.29	1.56	01:35	0.08	19:25	1.68	0.49	-
10/04/2022	01:00	1.21	21:00	2.18	1.58	02:25	0.06	17:15	1.49	0.48	0.06
10/05/2022	23:50	1.22	08:55	16.06	1.96	03:35	0.10	08:55	12.04	1.34	0.85
10/06/2022	02:35	1.19	12:10	3.63	1.52	05:55	0.23	12:15	7.55	0.73	0.01
10/07/2022	02:05	1.21	09:35	2.17	1.52	04:20	0.08	13:00	1.58	0.48	-
10/08/2022	06:35	1.20	10:15	2.22	1.52	01:30	0.10	10:10	1.92	0.52	-
10/09/2022	01:35	1.20	12:15	2.14	1.53	05:05	0.07	12:30	1.86	0.49	-
10/10/2022	07:20	1.20	13:05	2.06	1.51	05:15	0.08	21:40	1.87	0.51	-
10/11/2022	01:25	1.20	07:50	2.13	1.48	03:50	0.07	17:10	1.69	0.51	-
10/12/2022	02:50	1.20	15:05	1.93	1.45	03:55	0.07	21:50	2.24	0.59	-
10/13/2022	05:00	1.20	20:30	9.99	1.87	03:15	0.10	20:35	10.90	1.35	0.69
10/14/2022	20:35	1.28	01:10	5.39	2.15	23:45	0.27	01:10	8.04	2.45	1.02
10/15/2022	02:45	1.21	13:45	2.06	1.51	03:00	0.07	12:45	1.59	0.54	-
10/16/2022	05:30	1.22	13:30	2.11	1.52	06:00	0.09	10:10	2.35	0.56	-
10/17/2022	02:15	1.19	21:40	8.77	1.72	03:45	0.16	21:45	9.50	0.92	0.32
10/18/2022	06:50	1.21	20:05	2.07	1.54	01:40	0.10	18:45	2.66	0.57	0.02
10/19/2022	02:20	1.24	20:10	2.11	1.51	04:15	0.08	19:40	1.64	0.53	-
10/20/2022	04:25	1.21	18:30	2.02	1.48	02:50	0.10	21:25	2.10	0.56	-
10/21/2022	03:25	1.20	18:40	2.06	1.49	04:55	0.07	10:15	2.35	0.50	-
10/22/2022	03:10	1.20	09:50	2.13	1.52	06:10	0.08	10:10	2.33	0.50	-
10/23/2022	01:25	1.20	11:05	2.09	1.55	03:40	0.08	10:15	2.43	0.51	0.01
10/24/2022	02:40	1.20	13:40	2.71	1.58	04:45	0.08	13:35	5.83	0.95	0.23
10/25/2022	04:30	1.22	09:10	2.11	1.52	05:30	0.10	09:30	1.78	0.57	0.08
10/26/2022	03:30	1.20	08:45	2.10	1.51	04:20	0.08	08:05	3.89	0.61	0.06
10/27/2022	04:35	1.19	20:45	2.07	1.50	03:10	0.10	10:40	2.15	0.51	-
10/28/2022	03:15	1.20	09:10	2.01	1.53	04:00	0.07	21:10	1.27	0.49	-
10/29/2022	06:45	1.22	18:30	2.16	1.54	03:25	0.07	18:35	1.83	0.51	-
10/30/2022	03:25	1.21	09:20	2.23	1.62	01:45	0.10	19:20	2.01	0.46	-
10/31/2022	05:05	1.20	14:45	2.22	1.58	03:05	0.08	14:20	1.27	0.45	-

10/01/2022 00:00 - 10/31/2022 23:59

	DFINAL (in)	VFINAL (ft/s)	RAIN FINAL (in)
Total			3.35
Average	1.58	0.66	

Ave_A_CSO

Site Commentary

SITE INFORMATION

Pipe	Round (21 in H)
Silt	0.00 (in)

OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Saturday, 01 October 2022 to Monday, 31 October 2022**, along with observed minimum and maximum data, are provided in the following table.

Four (4) overflows recorded during the October reporting period.

Observed Flow Conditions	
Item	DFINAL (in)
Average	2.71
Minimum	1.48
Maximum	36.09
Min Time	10/09/2022 7:15:00 AM
Max Time	10/05/2022 8:55:00 AM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the none average.

DATA UPTIME

Data uptime observed during **Saturday, 01 October 2022 to Monday, 31 October 2022** is provided in the following table:

Percent Uptime	
DFINAL (in)	
	100

7th_L_CSO	Total	Duration	Start	Stop	Rain
W1	49,049	0:35:00	10/5/22 8:45	10/5/22 9:20	0.85
W2	8,747	0:05:00	10/5/22 12:15	10/5/22 12:20	
W3	21,443	0:30:00	10/13/22 20:10	10/13/22 20:40	0.69
W4	7,009	0:20:00	10/17/22 21:30	10/17/22 21:50	0.32

	Gals.	Hrs.	Rain
Total	86,248	1:30:00	1.86

Hydrograph Report

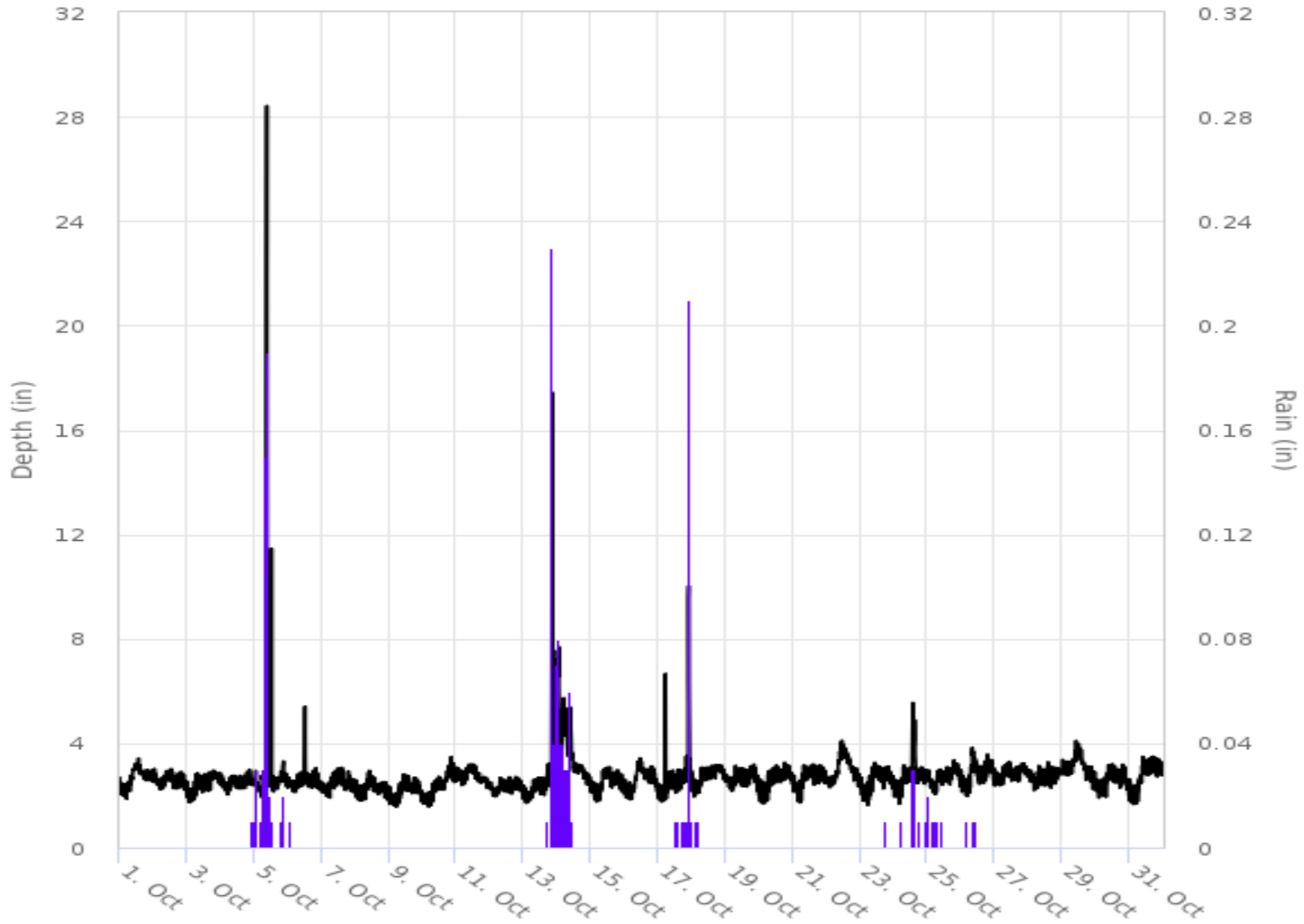
Ave_A_CSO

Flow Monitor
Ave_A_CSO

Pipe Height
21.00
in

Report Period
10/01/2022
To
10/31/2022

Legend
— DFINAL
— RAIN FINAL
— VFINAL



Daily Tabular Report

10/01/2022 00:00 - 10/31/2022 23:59

Ave_A_CSOPipe: Round (21 in H), Silt0.00 in

Date	DFINAL (in)					RAIN FINAL (in)
	Time	Min	Time	Max	Avg	Total
10/01/2022	03:15	1.71	12:45	3.97	2.68	-
10/02/2022	05:10	1.82	12:50	3.77	2.58	-
10/03/2022	01:25	1.68	16:40	3.91	2.47	-
10/04/2022	04:35	1.67	20:35	3.76	2.51	0.06
10/05/2022	05:10	1.69	08:55	36.09	3.39	0.85
10/06/2022	06:00	1.80	12:15	7.13	2.60	0.01
10/07/2022	04:20	1.75	12:05	3.70	2.46	-
10/08/2022	05:55	1.66	09:40	3.46	2.28	-
10/09/2022	07:15	1.48	13:00	3.42	2.18	-
10/10/2022	04:25	1.52	20:30	3.98	2.39	-
10/11/2022	23:25	1.74	12:20	3.76	2.73	-
10/12/2022	03:55	1.58	19:50	3.38	2.35	-
10/13/2022	04:40	1.58	20:30	23.46	2.98	0.69
10/14/2022	23:55	1.94	01:05	7.98	3.72	1.02
10/15/2022	04:10	1.63	11:05	3.79	2.54	-
10/16/2022	03:20	1.60	19:45	3.91	2.64	-
10/17/2022	03:20	1.74	05:15	16.07	2.79	0.32
10/18/2022	03:20	1.73	17:15	4.12	2.74	0.02
10/19/2022	05:35	1.73	13:05	4.01	2.67	-
10/20/2022	02:10	1.58	09:45	3.87	2.61	-
10/21/2022	03:35	1.55	18:20	3.98	2.68	-
10/22/2022	02:25	1.72	10:15	4.70	3.00	-
10/23/2022	05:40	1.51	17:55	3.88	2.61	0.01
10/24/2022	04:05	1.57	13:30	5.80	2.81	0.23
10/25/2022	04:25	1.70	21:25	3.96	2.74	0.08
10/26/2022	02:45	1.88	08:05	4.32	2.85	0.06
10/27/2022	03:05	1.87	10:40	3.99	2.86	-
10/28/2022	05:05	1.78	14:00	3.94	2.77	-
10/29/2022	21:55	2.05	10:00	4.66	3.11	-
10/30/2022	02:45	1.71	11:25	4.16	2.60	-
10/31/2022	04:50	1.60	17:10	4.18	2.78	-

10/01/2022 00:00 - 10/31/2022 23:59

	DFINAL (in)	RAIN FINAL (in)
Total		3.35
Average	2.71	

Greenfield_M1

Site Commentary

SITE INFORMATION

Pipe	Round (36 in H)
Silt	0.00 (in)

OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Saturday, 01 October 2022 to Monday, 31 October 2022**, along with observed minimum and maximum data, are provided in the following table.

One (1) overflow recorded during the October reporting period.

Observed Flow Conditions		
Item	DFINAL (in)	VFINAL (ft/s)
Average	3.18	2.14
Minimum	1.38	0.67
Maximum	42.87	3.70
Min Time	10/03/2022 3:50:00 AM	10/13/2022 9:20:00 PM
Max Time	10/05/2022 9:45:00 AM	10/17/2022 10:10:00 PM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the none average.

DATA UPTIME

Data uptime observed during **Saturday, 01 October 2022 to Monday, 31 October 2022** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100

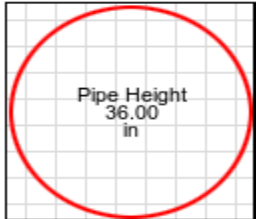
GFLD_CSO	Total	Duration	Start	Stop	Rain
W1	91	0:10:00	10/5/22 9:40	10/5/22 9:50	0.6

Total	Gals.	Hrs.	Rain
	91	0:10:00	0.6

Hydrograph Report

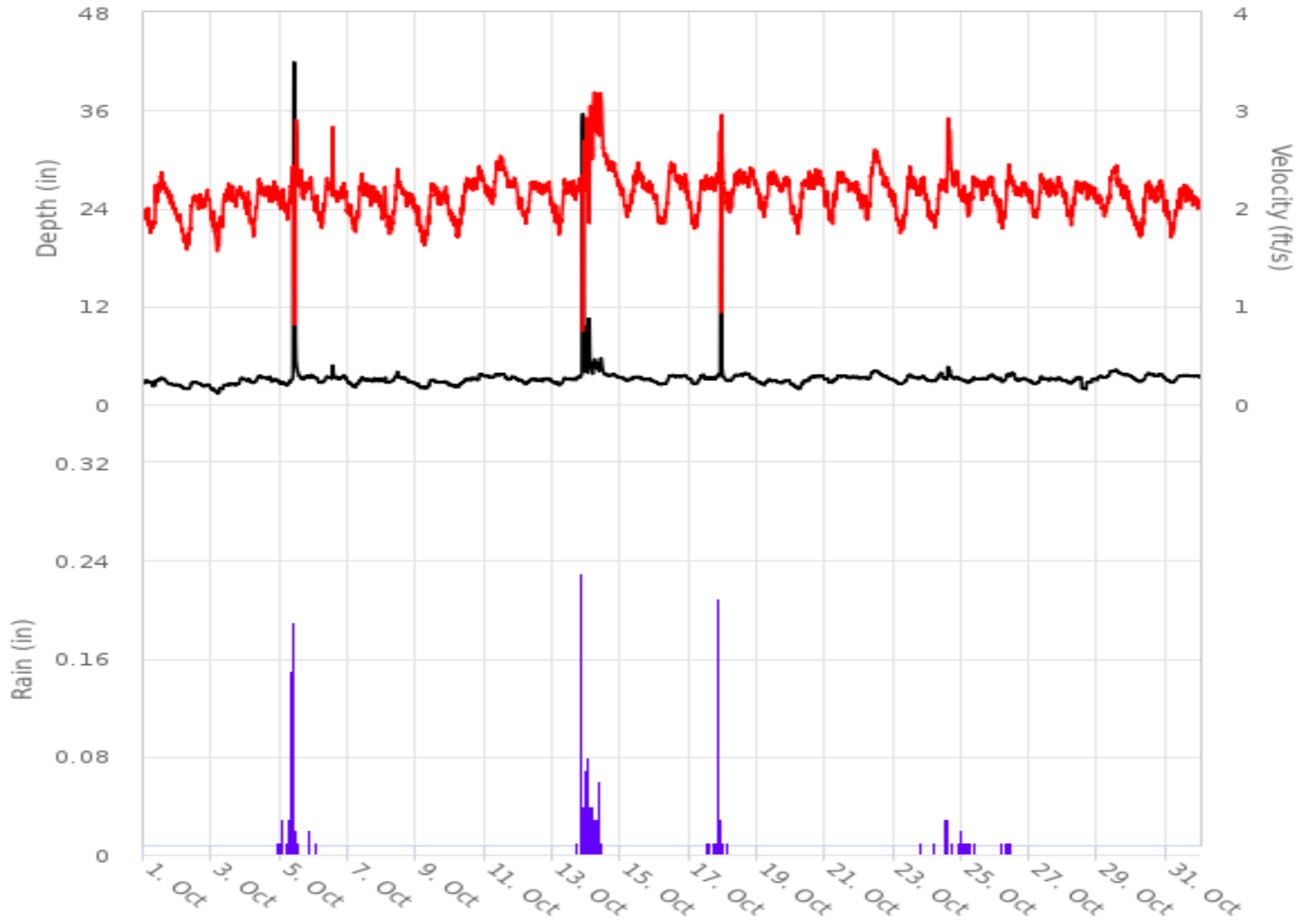
Greenfield_M1

Flow Monitor
Greenfield_M1



Report Period
10/01/2022
To
10/31/2022

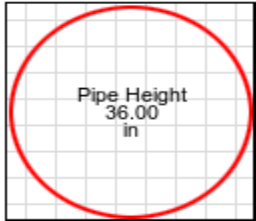
Legend
— DFINAL
— RAIN FINAL
— VFINAL



Scattergraph Report

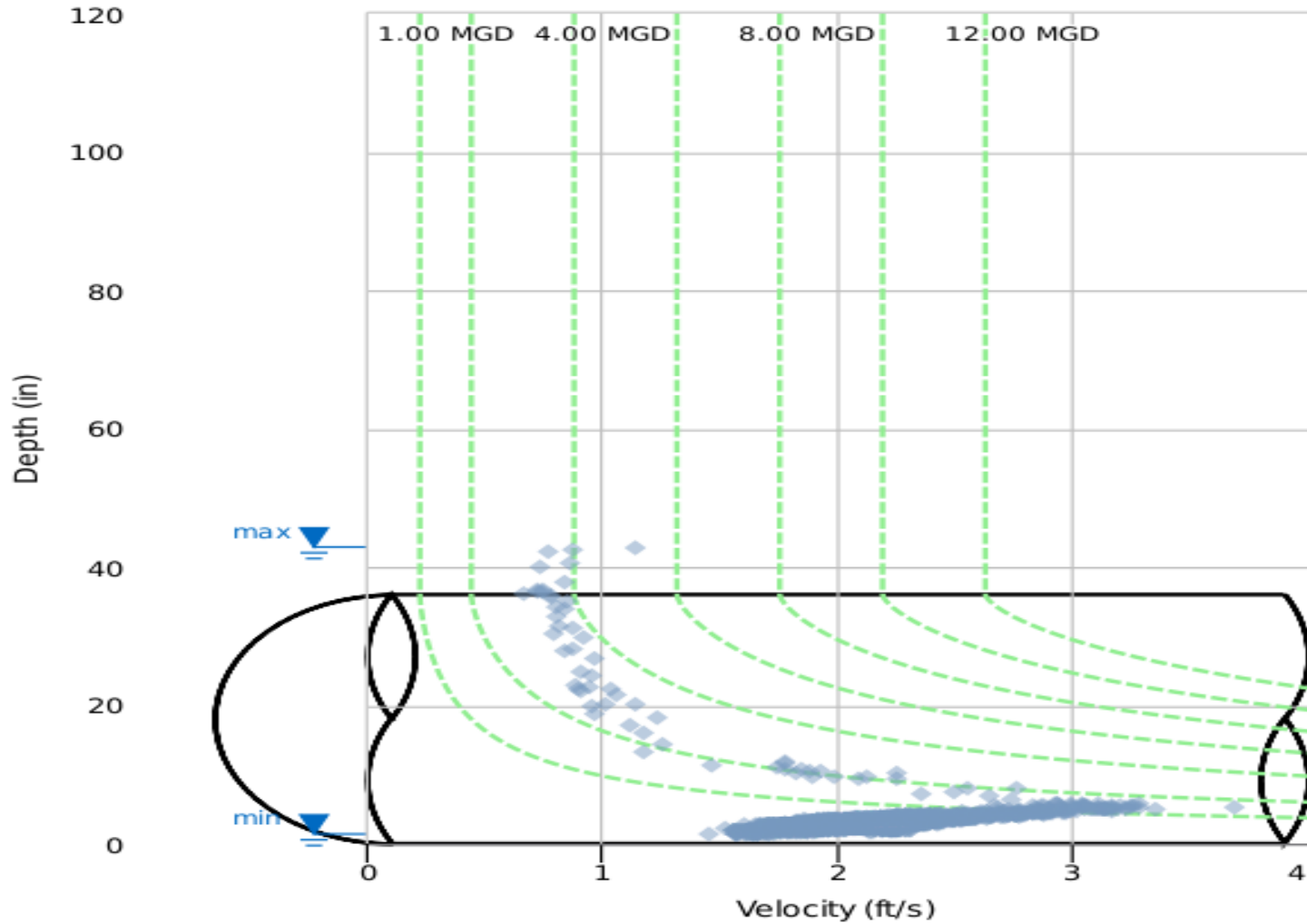
Greenfield_M1

Flow Monitor
Greenfield_M1



Report Period
10/01/2022
To
10/31/2022

Legend
○ DFINAL - VFINAL
--- Iso-Q™
▼ Min-Max Depth



Daily Tabular Report

10/01/2022 00:00 - 10/31/2022 23:59

Greenfield_M1Pipe: Round (36 in H), Silt0.00 in

Date	DFINAL (in)					VFINAL (ft/s)					RAIN FINAL (in)
	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total
10/01/2022	06:25	2.15	11:50	3.25	2.67	04:40	1.72	12:25	2.40	2.05	-
10/02/2022	23:50	1.77	10:15	2.78	2.27	06:15	1.56	20:45	2.27	1.95	-
10/03/2022	03:50	1.38	20:55	3.31	2.31	03:35	1.46	11:40	2.31	2.01	-
10/04/2022	23:55	2.51	09:05	3.52	3.00	05:10	1.69	09:00	2.34	2.09	0.06
10/05/2022	04:05	2.28	09:45	42.87	4.88	09:35	0.73	11:05	3.00	2.12	0.85
10/06/2022	23:40	2.59	13:05	4.82	3.16	05:20	1.77	13:05	2.88	2.11	0.01
10/07/2022	05:20	2.01	09:35	3.35	2.79	05:10	1.68	09:35	2.49	2.07	-
10/08/2022	23:55	2.39	10:30	4.02	2.98	05:10	1.67	10:40	2.47	2.05	-
10/09/2022	05:00	1.94	11:50	3.06	2.51	03:45	1.53	10:45	2.30	2.00	-
10/10/2022	03:05	2.10	20:35	3.74	2.86	05:10	1.67	20:15	2.47	2.11	-
10/11/2022	23:35	2.90	07:55	3.74	3.36	23:40	2.00	10:55	2.59	2.27	-
10/12/2022	05:05	2.39	19:30	3.24	2.91	04:40	1.83	13:35	2.36	2.13	-
10/13/2022	04:40	2.29	21:14	36.58	4.36	21:20	0.67	20:45	3.35	2.10	0.69
10/14/2022	23:55	3.20	01:05	10.98	4.28	01:05	1.75	09:55	3.28	2.59	1.02
10/15/2022	23:55	2.66	12:25	3.40	3.08	04:50	1.88	12:15	2.50	2.19	-
10/16/2022	04:40	2.38	20:55	3.64	3.08	03:50	1.73	10:55	2.57	2.16	-
10/17/2022	04:15	2.44	22:30	22.84	3.64	22:30	0.89	22:10	3.70	2.14	0.32
10/18/2022	23:55	2.76	15:15	3.87	3.32	04:35	1.92	19:15	2.53	2.24	0.02
10/19/2022	05:00	2.28	08:20	3.13	2.74	04:45	1.88	08:50	2.46	2.19	-
10/20/2022	05:20	1.81	20:10	3.65	2.86	04:45	1.65	17:25	2.55	2.16	-
10/21/2022	04:55	2.59	13:05	3.53	3.18	05:15	1.71	11:50	2.41	2.18	-
10/22/2022	23:55	2.93	10:55	4.20	3.44	05:05	1.82	11:20	2.67	2.24	-
10/23/2022	04:50	2.45	11:45	3.71	3.05	05:25	1.71	11:35	2.48	2.10	0.01
10/24/2022	03:15	2.75	14:25	4.70	3.26	05:20	1.75	14:35	2.96	2.19	0.23
10/25/2022	04:40	2.56	22:00	3.71	3.09	04:45	1.88	10:30	2.42	2.18	0.08
10/26/2022	04:45	2.68	12:05	3.84	3.17	04:40	1.74	09:10	2.48	2.14	0.06
10/27/2022	03:15	2.46	08:20	3.49	2.95	05:15	1.83	08:15	2.38	2.16	-
10/28/2022	15:55	1.78	11:15	3.38	2.75	05:20	1.74	09:00	2.33	2.13	-
10/29/2022	05:05	3.22	12:35	4.28	3.65	22:05	1.86	13:20	2.47	2.16	-
10/30/2022	06:15	2.76	11:30	3.86	3.31	05:30	1.60	20:35	2.31	2.04	-
10/31/2022	04:40	2.68	13:05	3.66	3.26	03:40	1.68	12:40	2.31	2.04	-

10/01/2022 00:00 - 10/31/2022 23:59

	DFINAL (in)	VFINAL (ft/s)	RAIN FINAL (in)
Total			3.35
Average	3.17	2.14	

RG1

Site Commentary

DATA UPTIME

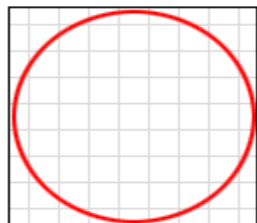
Data uptime observed during **Saturday, 01 October 2022 to Monday, 31 October 2022** is provided in the following table:

Percent Uptime	
RAINFINAL (in)	100

Hydrograph Report

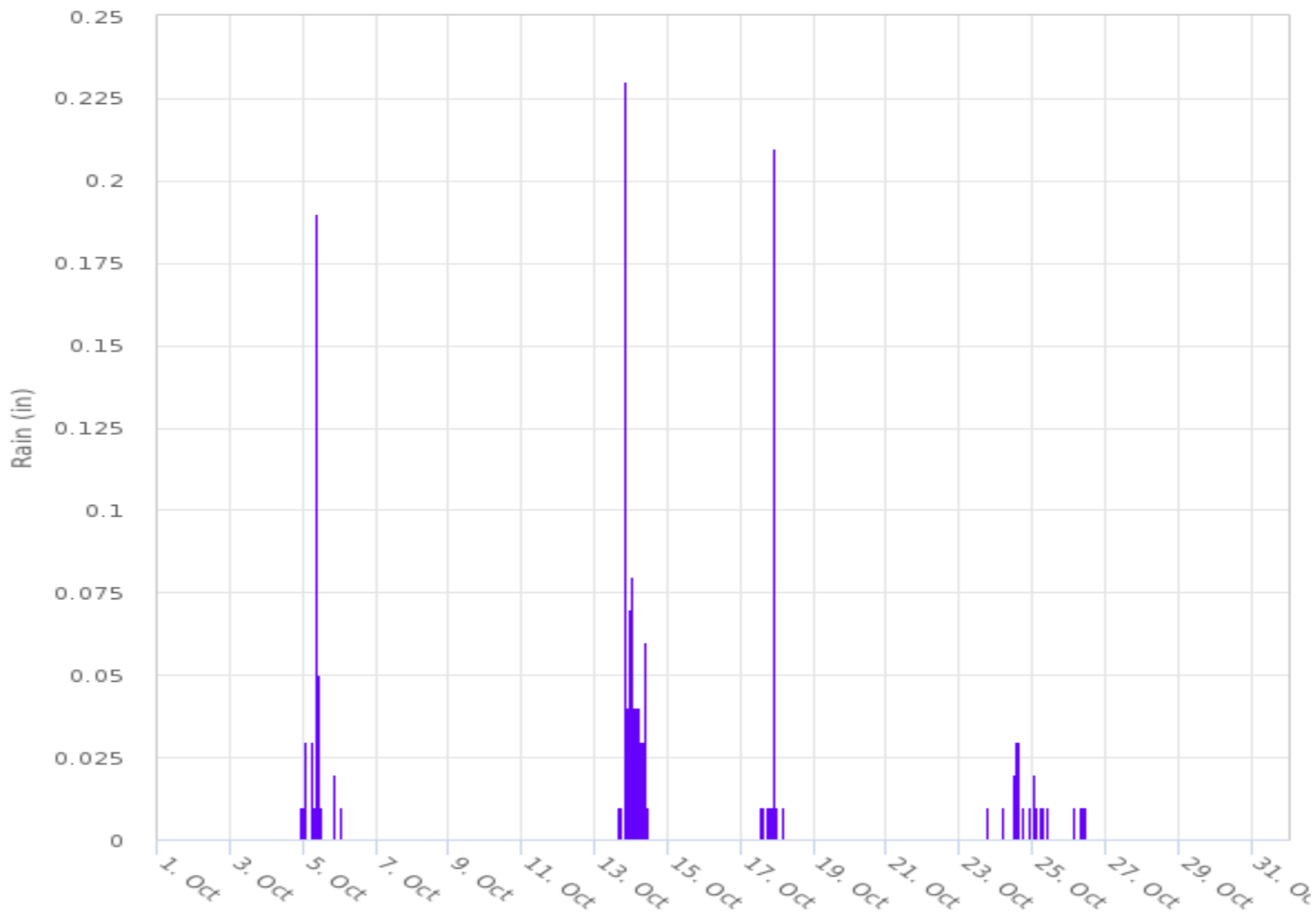
RG1

Rain Gauge
RG1



Report Period
10/01/2022
To
10/31/2022

Legend
— DFINAL
— RAIN FINAL
— VFINAL



Daily Tabular Report

10/01/2022 00:00 - 10/31/2022 23:59

RG1RainGauge: Unknown (0 H x 0 W), Silt0.00

Date	RAIN FINAL (in) Total
10/01/2022	-
10/02/2022	-
10/03/2022	-
10/04/2022	0.06
10/05/2022	0.85
10/06/2022	0.01
10/07/2022	-
10/08/2022	-
10/09/2022	-
10/10/2022	-
10/11/2022	-
10/12/2022	-
10/13/2022	0.69
10/14/2022	1.02
10/15/2022	-
10/16/2022	-
10/17/2022	0.32
10/18/2022	0.02
10/19/2022	-
10/20/2022	-
10/21/2022	-
10/22/2022	-
10/23/2022	0.01
10/24/2022	0.23
10/25/2022	0.08
10/26/2022	0.06
10/27/2022	-
10/28/2022	-
10/29/2022	-
10/30/2022	-
10/31/2022	-

10/01/2022 00:00 - 10/31/2022 23:59

	RAIN FINAL (in)
Total	3.35