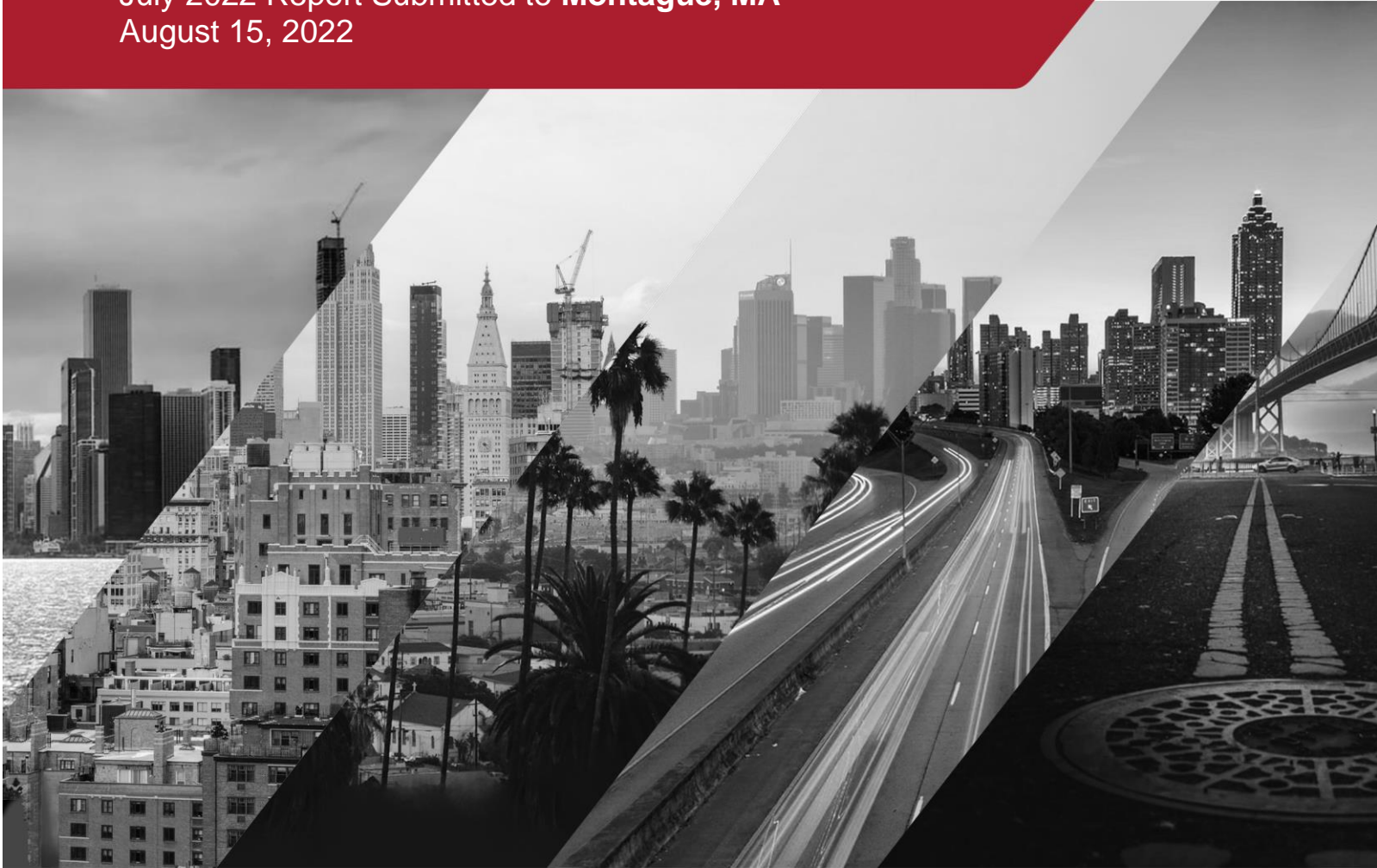


Montague, MA

Montague, MA

July 2022 Report Submitted to **Montague, MA**
August 15, 2022



ADS ENVIRONMENTAL SERVICES

340 The Bridge Street, Suite 204
Huntsville, AL 35806

800-633-7246
www.adsenv.com



August 15, 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 Friday, 01 July 2022 to Sunday, 31 July 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
Data Analyst III, Congers, NY

Friday, 01 July 2022 to Sunday, 31 July 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

Table of Contents

No table of contents entries found.

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 **Friday, 01 July 2022 to Sunday, 31 July 2022**, along with observed minimum and maximum data, are provided in the following table.

Zero (0) overflows recorded during the July monitoring period.

Observed Flow Conditions		
Item	DFINAL (in)	VFINAL (ft/s)
Average	1.64	1.63
Minimum	1.18	0.00
Maximum	6.83	12.46
Min Time	07/13/2022 6:10:00 AM	07/17/2022 3:30:00 AM
Max Time	07/17/2022 3:30:00 AM	07/18/2022 11:35:00 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 **Friday, 01 July 2022 to Sunday, 31 July 2022** is provided in the following table:

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

Hydrograph Report

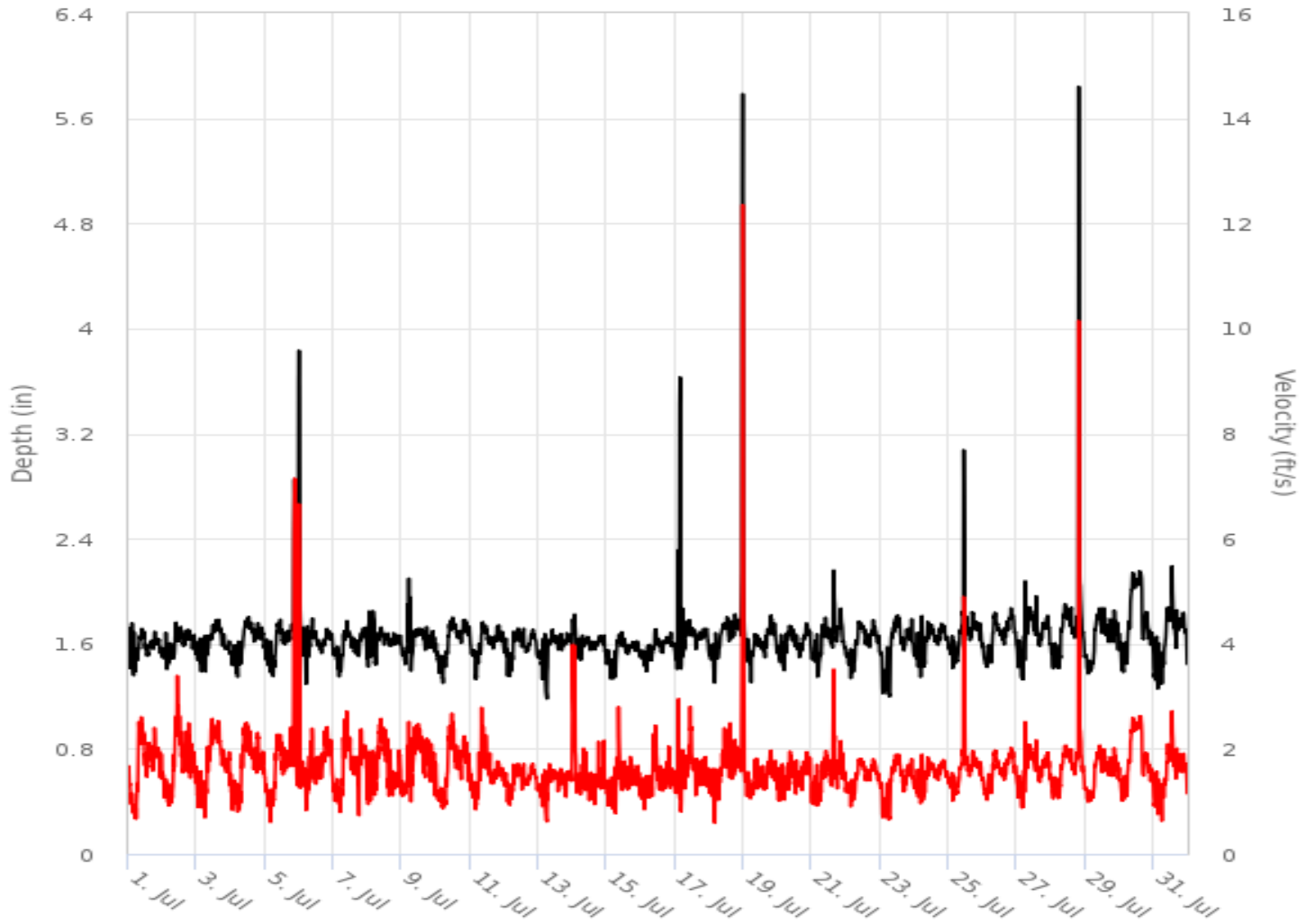
7th_L_CSO

Flow Monitor
7th_L_CSO

Pipe Height
14.25
in

Report Period
07/01/2022
To
07/31/2022

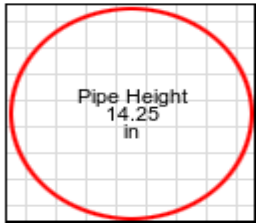
Legend
— DFINAL
— RAIN FINAL
— VFINAL



Scattergraph Report

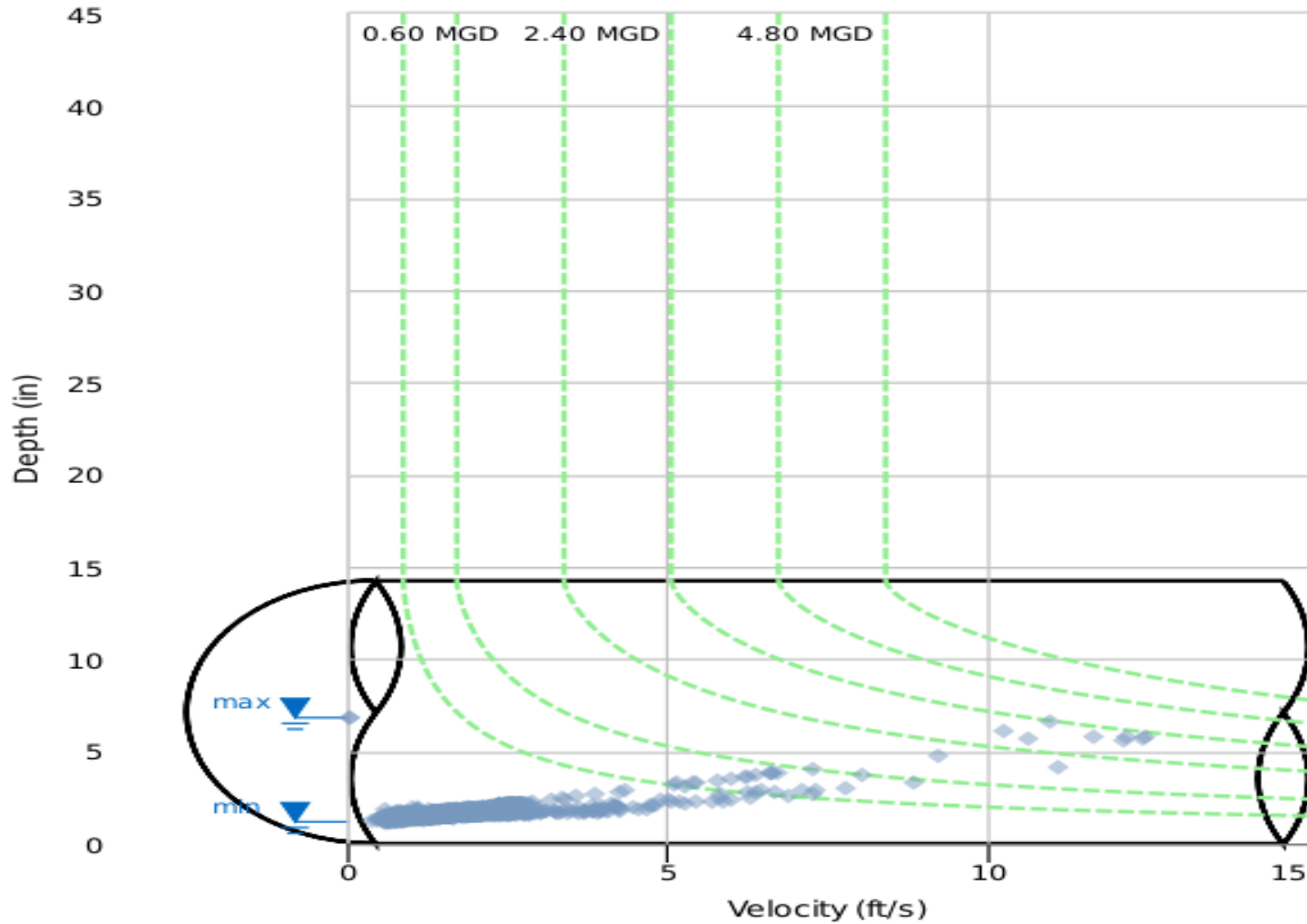
7th_L_CSO

Flow Monitor
7th_L_CSO



Report Period
07/01/2022
To
07/31/2022

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



Daily Tabular Report

07/01/2022 00:00 - 07/31/2022 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
07/01/2022	03:45	1.32	02:30	1.94	1.57	05:30	0.52	07:20	2.74	1.69	-
07/02/2022	03:50	1.34	05:10	1.81	1.60	04:10	0.77	10:15	3.92	1.74	-
07/03/2022	05:45	1.32	13:25	1.80	1.61	01:10	0.53	11:05	2.73	1.73	-
07/04/2022	04:50	1.30	12:30	1.81	1.63	02:55	0.63	09:15	2.57	1.71	-
07/05/2022	04:15	1.31	23:55	3.85	1.71	04:05	0.57	20:45	7.33	1.99	-
07/06/2022	04:50	1.28	00:00	3.79	1.66	02:50	0.75	00:00	6.56	1.81	-
07/07/2022	04:55	1.32	09:35	1.80	1.59	04:35	0.63	09:25	3.21	1.68	-
07/08/2022	02:50	1.39	03:15	1.91	1.64	00:30	0.84	09:35	2.67	1.69	-
07/09/2022	06:40	1.38	04:20	2.28	1.63	00:40	0.79	04:20	2.88	1.77	-
07/10/2022	04:40	1.28	11:45	1.81	1.62	03:20	0.77	11:20	2.84	1.67	-
07/11/2022	04:25	1.31	09:10	1.79	1.61	03:55	0.51	08:05	2.84	1.55	-
07/12/2022	02:35	1.30	13:40	1.76	1.59	04:10	0.86	13:40	1.86	1.42	-
07/13/2022	06:10	1.18	03:45	1.78	1.57	06:05	0.58	23:55	3.60	1.39	-
07/14/2022	05:40	1.36	01:25	1.87	1.61	12:45	0.84	01:25	4.53	1.61	-
07/15/2022	05:20	1.27	10:30	1.72	1.55	05:20	0.46	08:20	3.43	1.40	-
07/16/2022	04:10	1.32	10:45	1.77	1.57	02:35	0.74	10:15	2.62	1.45	-
07/17/2022	01:40	1.31	03:30	6.83	1.70	03:25	0.00	02:40	5.12	1.61	-
07/18/2022	03:30	1.29	23:30	5.84	1.76	04:00	0.46	23:35	12.46	1.95	-
07/19/2022	05:40	1.27	00:00	3.00	1.63	04:50	0.67	00:00	7.78	1.58	-
07/20/2022	04:55	1.31	05:00	1.81	1.62	04:10	0.74	20:30	2.18	1.49	-
07/21/2022	05:00	1.29	15:30	2.19	1.64	04:15	0.51	15:15	4.74	1.56	-
07/22/2022	03:40	1.29	09:25	1.79	1.62	03:40	0.74	09:30	1.90	1.49	-
07/23/2022	06:45	1.19	05:00	1.92	1.57	06:20	0.60	05:00	2.10	1.39	-
07/24/2022	07:05	1.30	05:35	2.05	1.62	06:25	0.85	05:35	2.49	1.49	-
07/25/2022	03:10	1.32	10:50	4.05	1.69	03:10	0.82	10:50	7.27	1.68	-
07/26/2022	03:30	1.42	20:00	1.89	1.66	03:25	1.02	20:00	2.12	1.58	-
07/27/2022	04:45	1.27	06:05	2.37	1.69	04:40	0.71	06:05	3.19	1.64	-
07/28/2022	19:20	1.35	19:30	6.64	1.76	04:25	0.95	19:30	10.99	1.79	-
07/29/2022	02:15	1.37	20:40	1.91	1.65	02:15	0.92	20:40	2.17	1.55	-
07/30/2022	03:10	1.36	14:15	2.17	1.78	04:55	0.93	15:15	2.76	1.82	-
07/31/2022	03:20	1.25	13:15	2.21	1.65	06:10	0.36	13:15	2.81	1.52	-

07/01/2022 00:00 - 07/31/2022 23:59

	DFINAL (in)	VFINAL (ft/s)	RAIN FINAL (in)
Total			0.00
Average	1.64	1.63	

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 **Friday, 01 July 2022 to Sunday, 31 July 2022**, along with observed minimum and maximum data, are provided in the following table.

Two (2) overflows recorded during the July monitoring period.

Observed Flow Conditions	
Item	DFINAL (in)
Average	3.66
Minimum	2.21
Maximum	31.86
Min Time	07/11/2022 3:40:00 AM
Max Time	07/28/2022 7:25:00 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 **Friday, 01 July 2022 to Sunday, 31 July 2022** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	0

Ave_A_CSO	Total	Duration	Start	Stop	Rain
W1	299	0:05:00	7/18/22 23:35	7/18/22 23:40	0.86
W2	2,948	0:10:00	7/28/22 19:25	7/28/22 19:35	0.29

	Gals.	Hrs.	Rain
Total	3,247	0:15:00	1.15

NOTE: Rainfall is from USGS rain gauge located in Florida, MA

Hydrograph Report

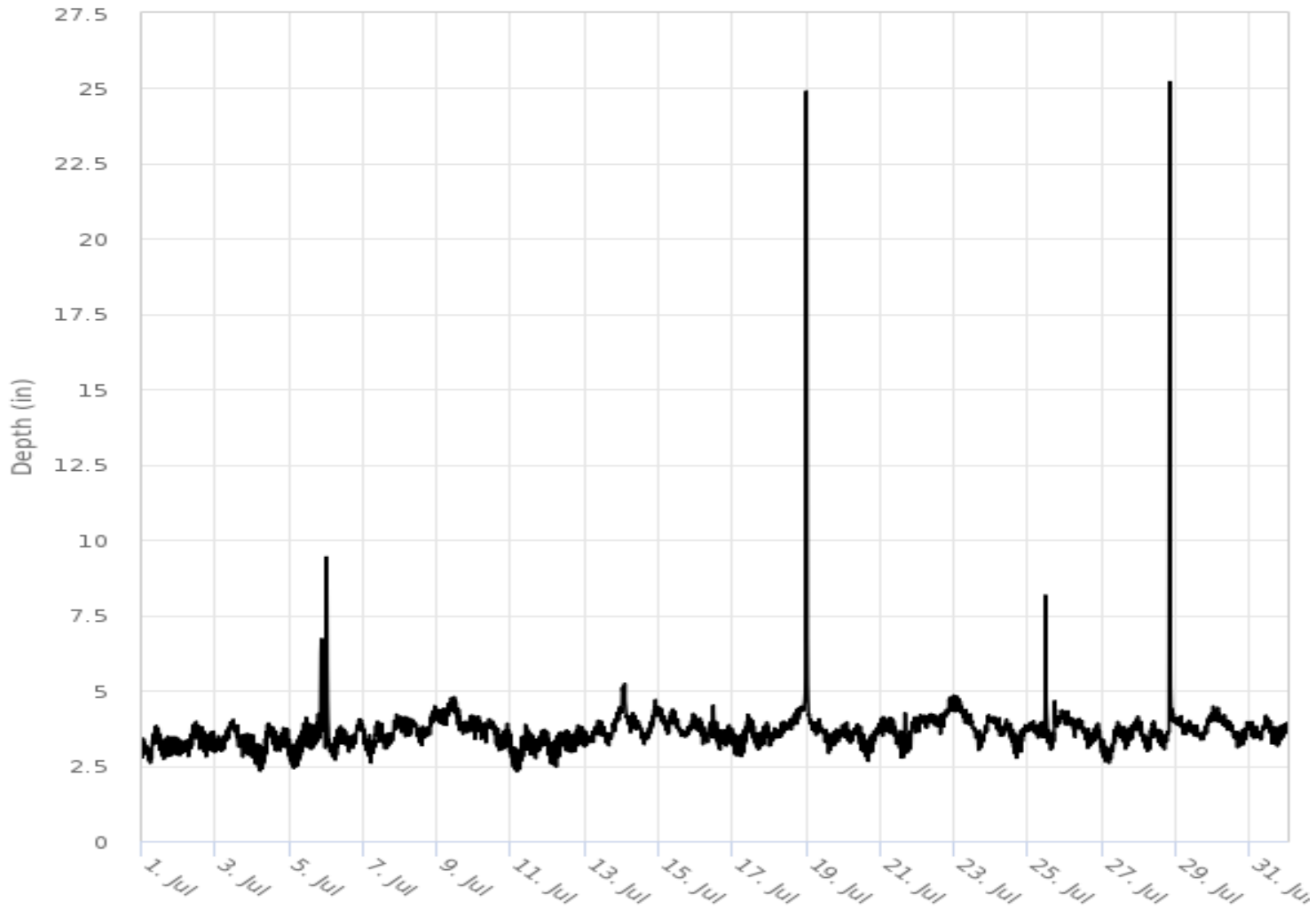
Ave_A_CSO

Flow Monitor
Ave_A_CSO

Pipe Height
21.00
in

Report Period
07/01/2022
To
07/31/2022

Legend
— DFINAL
— RAIN FINAL
— VFINAL



Daily Tabular Report

07/01/2022 00:00 - 07/31/2022 23:59

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

Date	DFINAL (in)					RAIN FINAL (in)
	Time	Min	Time	Max	Avg	Total
07/01/2022	04:40	2.41	08:35	4.48	3.20	-
07/02/2022	05:00	2.44	11:25	4.63	3.35	-
07/03/2022	02:35	2.44	09:25	4.70	3.40	-
07/04/2022	04:45	2.29	09:35	4.46	3.18	-
07/05/2022	04:30	2.35	23:50	11.00	3.57	-
07/06/2022	03:40	2.54	00:00	9.35	3.52	-
07/07/2022	03:05	2.28	23:35	4.63	3.45	-
07/08/2022	13:35	2.71	22:10	5.06	3.81	-
07/09/2022	16:20	2.99	09:10	5.34	4.11	-
07/10/2022	23:40	2.71	09:30	4.88	3.62	-
07/11/2022	03:40	2.21	10:55	4.43	3.15	-
07/12/2022	03:50	2.38	07:05	4.44	3.26	-
07/13/2022	01:05	2.66	23:50	5.21	3.68	-
07/14/2022	13:00	2.80	01:30	5.62	3.97	-
07/15/2022	14:45	2.80	22:50	4.93	3.87	-
07/16/2022	04:15	2.71	11:00	5.11	3.61	-
07/17/2022	04:25	2.54	10:55	4.95	3.47	-
07/18/2022	01:15	2.77	23:35	28.91	4.36	-
07/19/2022	14:45	2.67	00:00	7.53	3.69	-
07/20/2022	15:10	2.60	22:55	4.56	3.46	-
07/21/2022	13:30	2.66	06:45	4.75	3.64	-
07/22/2022	00:45	2.93	09:20	5.02	4.11	-
07/23/2022	17:10	2.63	05:55	4.95	3.92	-
07/24/2022	15:45	2.62	09:35	4.82	3.64	-
07/25/2022	04:55	2.71	10:55	9.08	3.88	-
07/26/2022	23:20	2.68	09:30	4.71	3.69	-
07/27/2022	03:15	2.32	22:15	4.72	3.44	-
07/28/2022	04:05	2.39	19:25	31.86	4.04	-
07/29/2022	16:50	2.85	23:50	4.70	3.77	-
07/30/2022	14:45	2.79	09:30	4.91	3.79	-
07/31/2022	06:30	2.64	09:55	4.95	3.68	-

07/01/2022 00:00 - 07/31/2022 23:59

	DFINAL (in)	VFINAL (ft/s)	RAIN FINAL (in)
Total			0.00
Average	3.66		

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 **Friday, 01 July 2022 to Sunday, 31 July 2022**, along with observed minimum and maximum data, are provided in the following table.

Zero (0) overflows recorded during the July monitoring period.

Observed Flow Conditions		
Item	DFINAL (in)	VFINAL (ft/s)
Average	3.15	2.18
Minimum	2.00	0.63
Maximum	41.76	2.91
Min Time	07/06/2022 5:10:00 AM	07/19/2022 12:55:00 AM
Max Time	07/19/2022 12:20:00 AM	07/05/2022 9:45:00 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 **Friday, 01 July 2022 to Sunday, 31 July 2022** is provided in the following table:

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

Hydrograph Report

Greenfield_M1

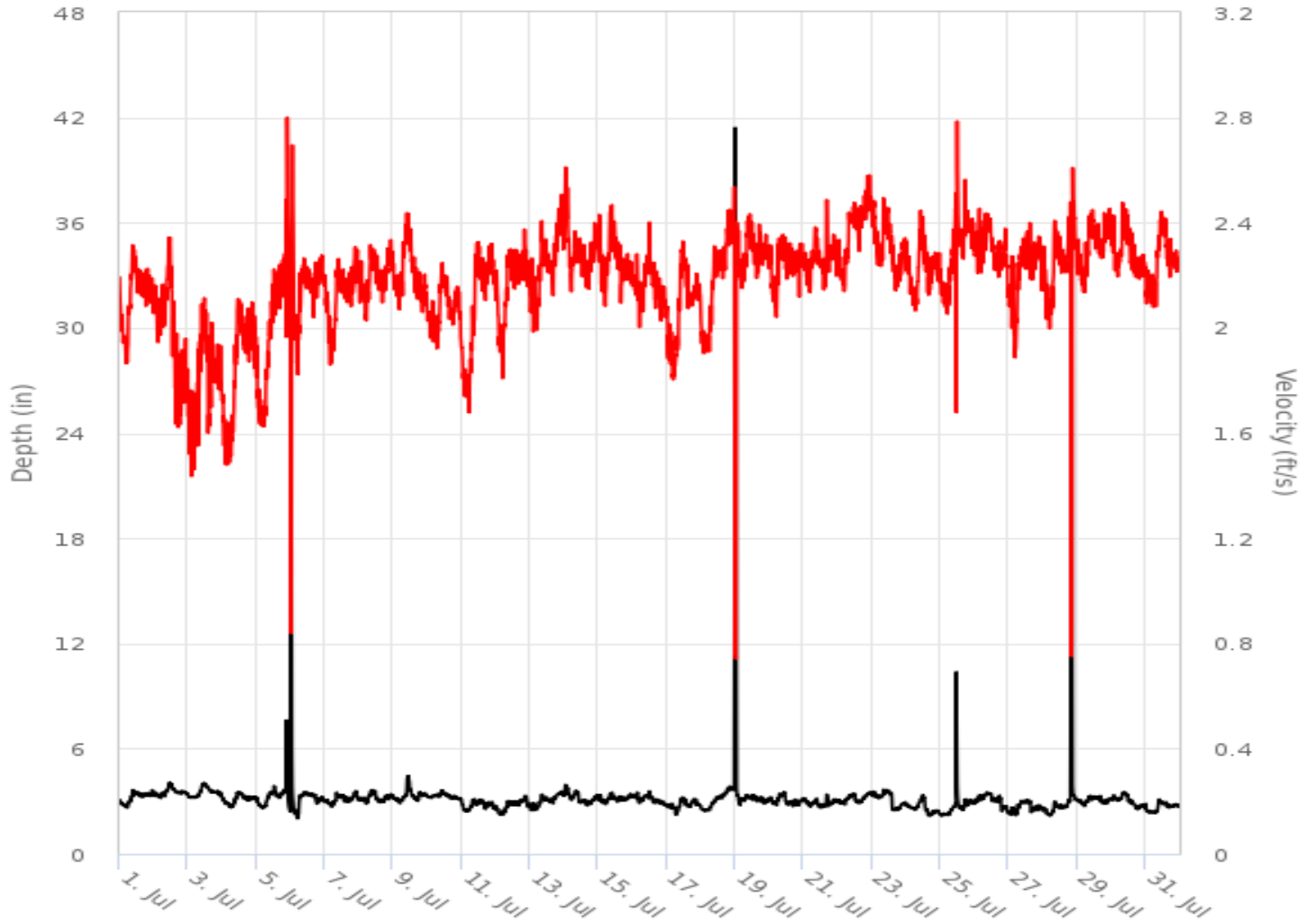
Flow Monitor
Greenfield_M1

Pipe Height
36.00
in

Report Period
07/01/2022
To
07/31/2022

Legend
— DFINAL
— RAIN FINAL
— VFINAL

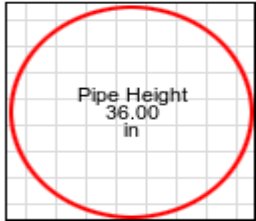
ADS ENVIRONMENTAL SERVICES



Scattergraph Report

Greenfield_M1

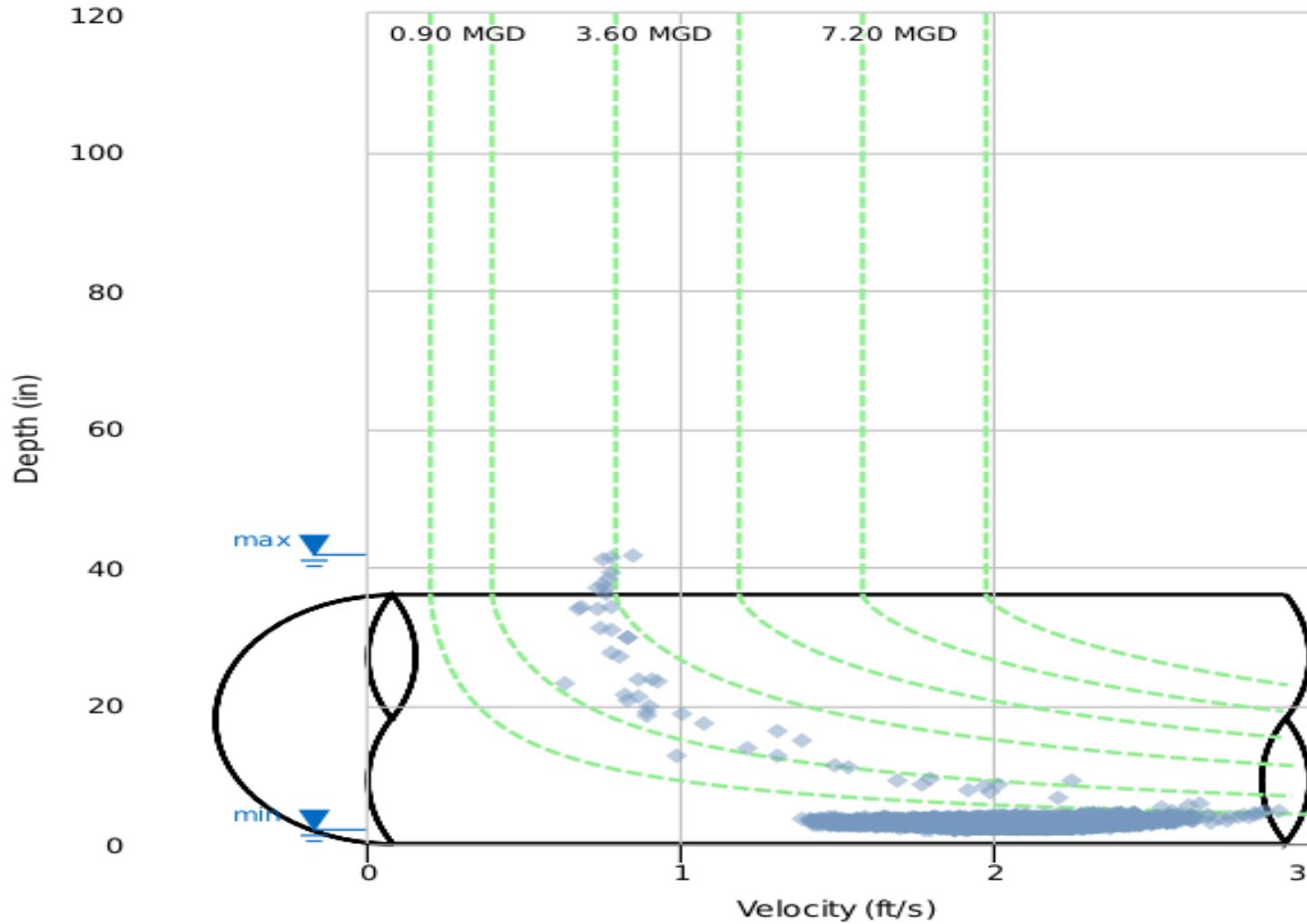
Flow Monitor
Greenfield_M1



Report Period
07/01/2022
To
07/31/2022

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

ABS ENVIRONMENTAL SERVICES



Daily Tabular Report

07/01/2022 00:00 - 07/31/2022 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
07/01/2022	05:20	2.61	23:00	3.71	3.21	05:20	1.81	10:20	2.36	2.12	-
07/02/2022	05:05	3.14	11:15	4.12	3.52	17:25	1.39	10:40	2.41	1.98	-
07/03/2022	02:30	3.17	11:30	4.10	3.51	04:55	1.41	12:25	2.24	1.79	-
07/04/2022	06:20	2.62	11:20	3.58	3.11	03:05	1.42	13:45	2.24	1.84	-
07/05/2022	23:55	2.39	21:25	8.44	3.29	03:55	1.50	21:45	2.91	2.01	-
07/06/2022	05:10	2.00	00:35	21.44	3.56	00:35	0.82	01:05	2.85	2.13	-
07/07/2022	04:40	2.71	22:05	3.62	3.11	04:05	1.81	21:35	2.35	2.13	-
07/08/2022	05:20	2.83	11:35	3.66	3.19	04:50	1.98	13:00	2.37	2.20	-
07/09/2022	05:00	2.88	10:45	4.51	3.32	17:40	2.02	09:35	2.45	2.20	-
07/10/2022	22:50	3.08	10:50	3.65	3.29	02:05	1.89	10:45	2.31	2.07	-
07/11/2022	03:45	2.41	13:10	3.20	2.78	05:35	1.57	11:00	2.42	2.08	-
07/12/2022	03:05	2.21	20:45	3.36	2.76	05:10	1.70	20:15	2.42	2.17	-
07/13/2022	00:50	2.45	22:35	3.58	3.06	04:50	1.95	22:40	2.55	2.24	-
07/14/2022	16:20	2.74	01:05	3.97	3.20	17:40	2.06	01:20	2.63	2.30	-
07/15/2022	05:20	2.81	09:55	3.55	3.15	16:05	1.97	00:50	2.55	2.26	-
07/16/2022	23:15	2.76	12:05	3.60	3.11	20:20	1.94	12:05	2.46	2.16	-
07/17/2022	06:40	2.21	19:25	3.28	2.80	04:50	1.72	11:40	2.34	2.08	-
07/18/2022	02:45	2.43	23:55	23.72	3.22	23:55	0.91	23:40	2.63	2.18	-
07/19/2022	03:50	2.76	00:20	41.76	4.54	00:55	0.63	10:30	2.49	2.22	-
07/20/2022	14:25	2.60	10:00	3.52	3.02	21:15	1.89	09:35	2.42	2.24	-
07/21/2022	13:30	2.60	16:35	3.40	2.90	04:55	2.04	16:25	2.54	2.27	-
07/22/2022	05:15	2.80	11:40	3.55	3.14	03:15	2.12	21:00	2.64	2.37	-
07/23/2022	16:10	2.46	08:30	3.70	3.11	17:10	2.06	00:45	2.57	2.32	-
07/24/2022	17:15	2.14	12:00	3.36	2.61	06:50	2.03	09:55	2.55	2.23	-
07/25/2022	04:40	2.15	11:35	11.40	2.76	11:35	1.49	11:55	2.87	2.29	-
07/26/2022	23:55	2.34	09:05	3.55	3.06	23:45	2.05	03:50	2.51	2.30	-
07/27/2022	05:20	2.18	13:05	3.13	2.66	04:50	1.83	18:15	2.43	2.22	-
07/28/2022	05:20	2.16	20:15	37.41	3.81	20:05	0.67	21:00	2.64	2.20	-
07/29/2022	05:15	2.70	16:30	3.37	3.05	03:25	2.09	19:25	2.52	2.31	-
07/30/2022	18:45	2.53	09:25	3.56	3.02	21:40	2.12	01:55	2.63	2.29	-
07/31/2022	07:40	2.32	10:00	3.14	2.67	01:00	2.03	14:30	2.51	2.25	-

07/01/2022 00:00 - 07/31/2022 23:59

	DFINAL (in)	VFINAL (ft/s)	RAIN FINAL (in)
Total			0.00
Average	3.15	2.18	

RG1

Site Commentary

SITE INFORMATION

RainGauge	Unknown (0 H x 0 W)
Silt	0.00 (in)

DATA UPTIME

Data uptime observed during **Friday, 01 July 2022 to Sunday, 31 July 2022** is provided in the following table:

Percent Uptime	
RAINFINAL (in)	0

Downtime comments from ADS field crew on 8/11/22:

“Funnel clogged with wasp detritus that was cleared and cleaned out. No wasps found living in RG, suspected they moved out.”

RGUSGS

Site Commentary

SITE INFORMATION

RainGauge	USGS Florida, MA Gauge.
-----------	-------------------------

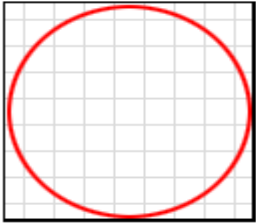
OBSERVATIONS

Imported USGS rain data to account for the downtime at Montague RG01.

Hydrograph Report

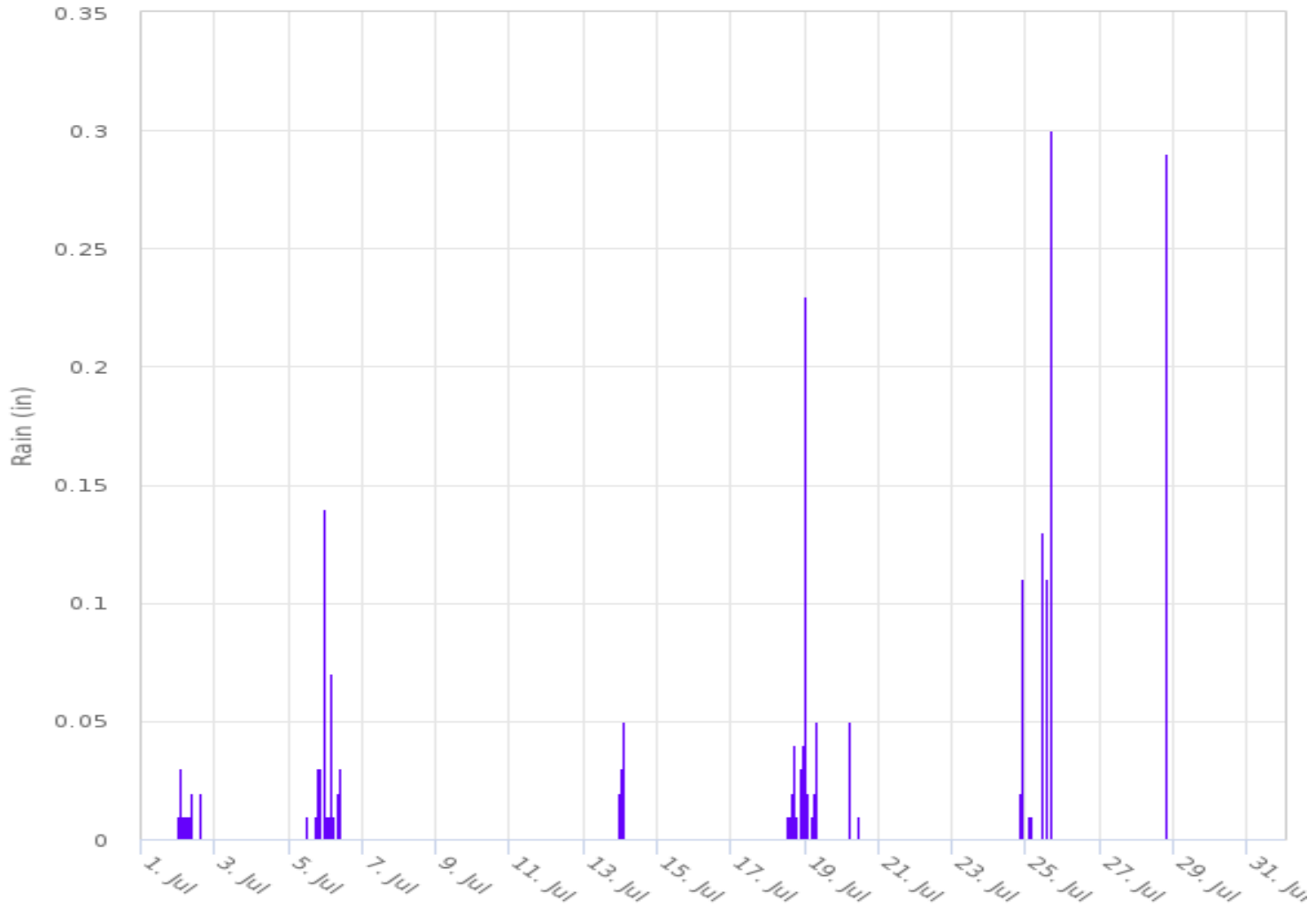
RGUSGS

Rain Gauge
RGUSGS



Report Period
07/01/2022
To
07/31/2022

Legend
— DFINAL
— RAIN FINAL
— VFINAL



Daily Tabular Report

07/01/2022 00:00 - 07/31/2022 23:59

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

Date	RAIN FINAL
	(in) Total
07/01/2022	0.01
07/02/2022	0.28
07/03/2022	-
07/04/2022	-
07/05/2022	0.48
07/06/2022	0.17
07/07/2022	-
07/08/2022	-
07/09/2022	-
07/10/2022	-
07/11/2022	-
07/12/2022	-
07/13/2022	0.05
07/14/2022	0.16
07/15/2022	-
07/16/2022	-
07/17/2022	-
07/18/2022	0.86
07/19/2022	0.36
07/20/2022	0.11
07/21/2022	-
07/22/2022	-
07/23/2022	-
07/24/2022	0.15
07/25/2022	0.68
07/26/2022	-
07/27/2022	-
07/28/2022	0.29
07/29/2022	-
07/30/2022	-
07/31/2022	-

07/01/2022 00:00 - 07/31/2022 23:59

	DFINAL	VFINAL	RAIN
	(in)	(ft/s)	FINAL (in)
Total			3.60