Enprotec / Hibbs & Todd

July 10, 2025

City of Midland, Texas
Airport Lift Station Replacement

Addendum No. 1

Attention is called to the following modifications to the referenced Plans, Specifications and Contract Documents (collectively Bid Documents) for the above referenced project. The City of Midland will receive sealed bids for the Airport Lift Station Replacement Project at the City Secretary's office, located at 300 N. Loraine, Suite 330 Midland, Texas 79701, until **2:00 p.m. local time on Wednesday, July 23, 2025**. Bids received will be publicly opened and read aloud.

The Bid Documents are hereby modified as follows:

CLARIFICATIONS:

1. The attached flow monitoring report is intended to provide clarification of existing site conditions.

This addendum consists of thirteen (13) page(s). This addendum becomes a part of the referenced Bid Documents and **SHALL BE ACKNOWLEDGED** by the bidder on the Bid Form submitted.

By Sage Diller, P.E. #96645
Vice President

7/10/2025

PE Firm Registration No. 1151
PG Firm Registration No. 50103
RPLS Firm Registration No. 10011900

Airport Lift Station
Sanitary Sewer Wastewater
Flow Monitoring Final Report

MIDLAND

eHT
Enprotec / Hibbs & Todd

April 18, 2019

PIPELINE ANALYSIS LLC
WASTEWATER COLLECTION ENGINEERS

Airport Lift Station Sanitary Sewer Wastewater Flow Monitoring Final Report

MIDLAND

Enprotec / Hibbs & Todd

STATE OF TEXAS
MATTIE A. ENGELS
107277
LICENSED
PROFESSIONAL ENGINEER

I certify that this report was prepared under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Texas.

Mattie A. Engels P.E. 4-18-19

Mattie A. Engels, P.E.
Registration No. 107277

Pipeline Analysis LLC
Texas Registered Engineering Firm
F-006538

April 18, 2019

PIPELINE ANALYSIS LLC
WASTEWATER COLLECTION ENGINEERS

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I. Background

Enprotec, Hibbs & Todd, Inc (eHT) contracted with Pipeline Analysis, LLC to perform temporary flow monitoring at one location at the Midland International Airport. In order to establish the existing wastewater flow, a temporary flow meter was installed to record liquid level, depth and time. The monitoring period ranged from February 21 – April 14, 2019. From this collected data, the wastewater flows were calculated. Information obtained during the monitoring period was used to determine the following for each site:

- Average daily flow
- Peak flow rate
- Minimum flow rate
- Liquid levels
- Flow velocities

The 18-inch monitoring site was identified by eHT and was located in the outgoing line of manhole PT#1015. No debris was observed at the meter site. Figure 1 presents a location map and Figure 2 present site photographs. The flow meter recorded flow depth and velocity to obtain the necessary hydraulic information for subsequent analysis. Flows were calculated using the continuity equation where:

Flow (Q) = Velocity (V) x Cross-sectional Area (A)

II. Flow Data Summary

Data from the week March 18-25, 2019 was used to establish baseline dry weather flows. Table 1 presents a summary of the daily wastewater flows, liquid levels and velocity recorded during the monitoring period. Dry weather wastewater daily average flow ranged from 0 mgd to 0.105 mgd. The average daily flow rate for the entire metering period is 0.036 mgd. It is important to note that a 5-minute peak flow rate of 1.071 mgd was recorded on April 13, 2019 at 4:30 am which was a wet weather day (rainfall recorded was approximately 1.6 inches). A surcharge level of 32.5 inches was recorded during the April 13th wet weather event.

The dry weather peaking factor (Peak 5-minute Flow Rate to Average Daily Flow Rate) was 2.9 (0.105/0.036 = 2.9). Site flow data and summary hydrograph are located in the Appendix.

Figure 1

Meter Site Location Map

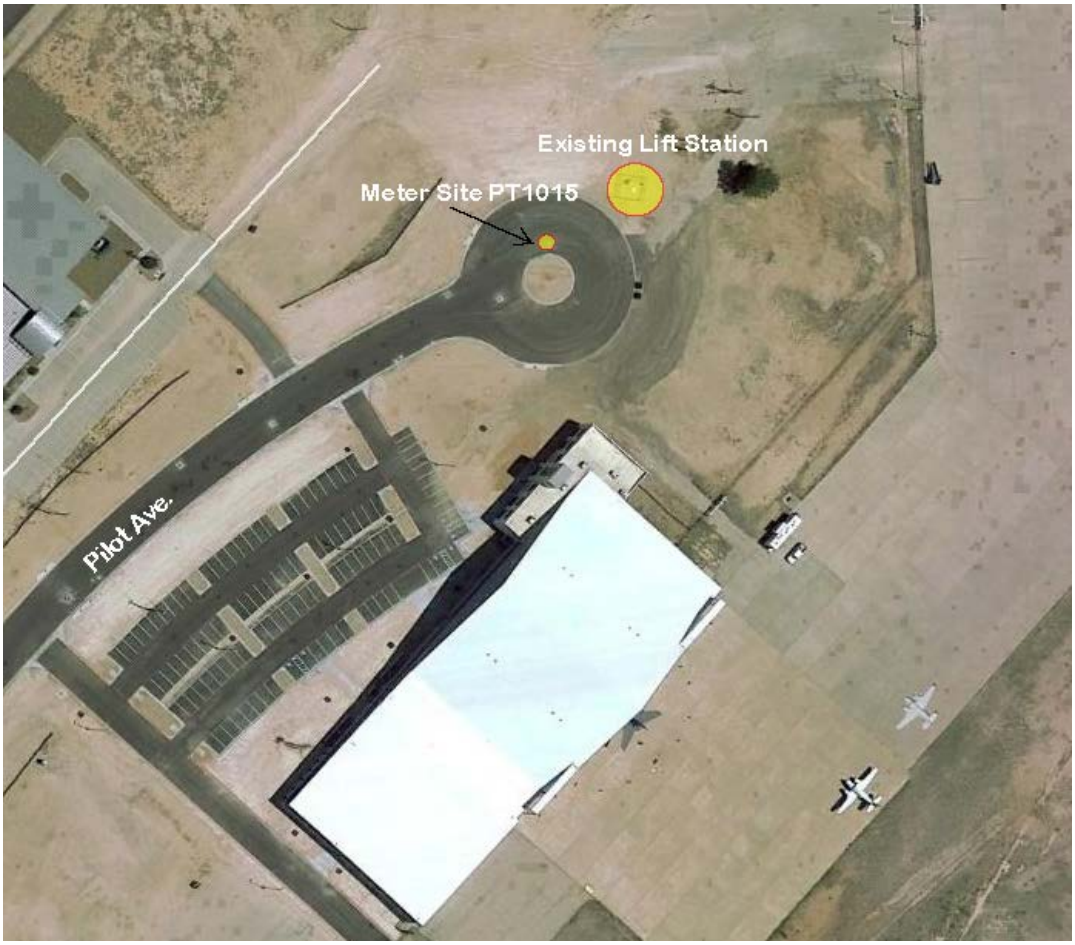
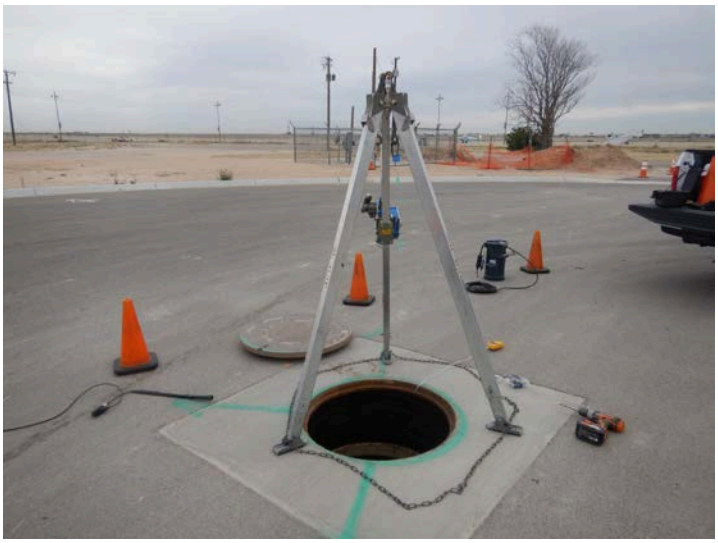


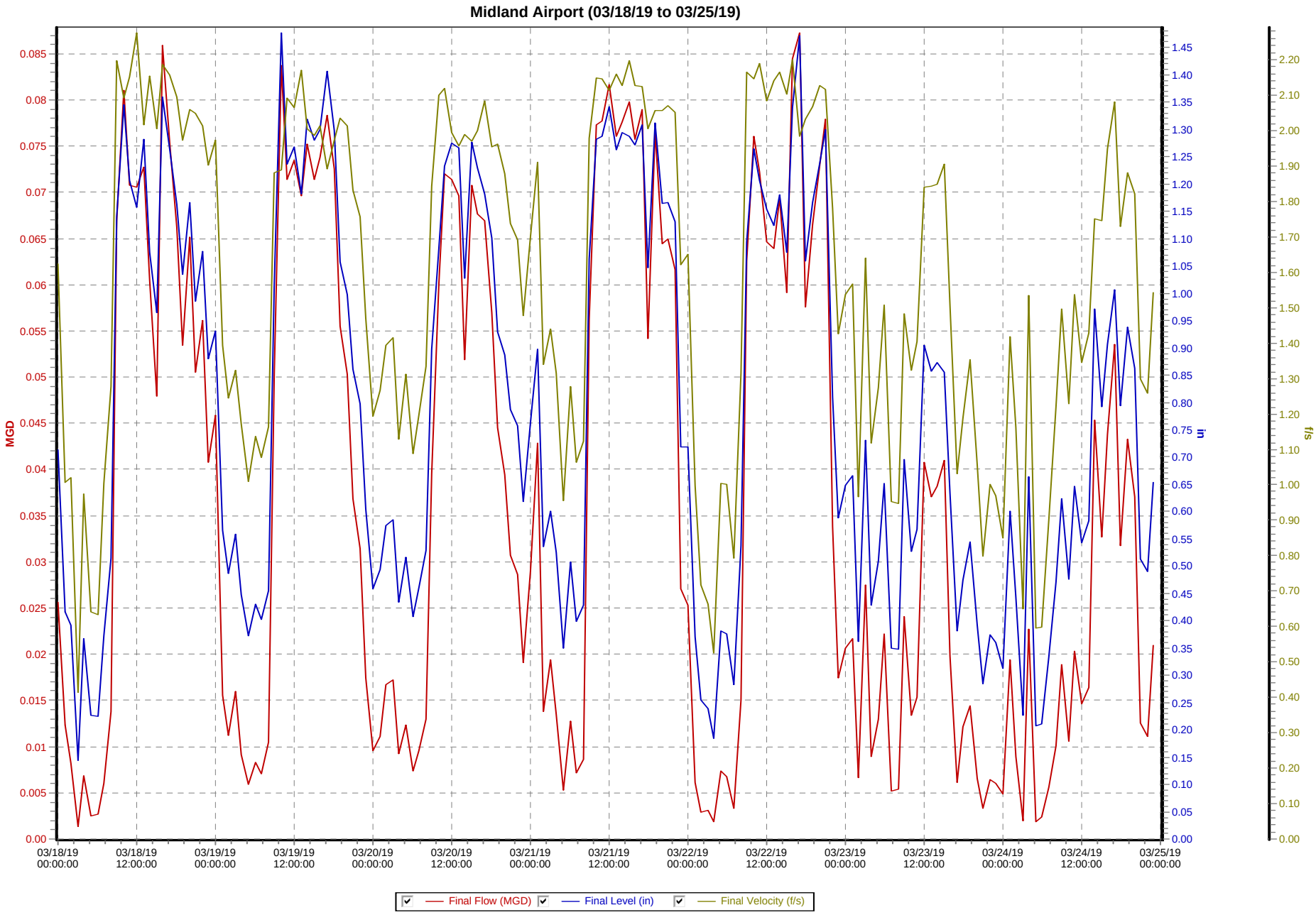
Table 1
Dry Weather Hydraulic Data Summary

	Meter Site 1
Average Daily Flow	0.036 mgd
Minimum 5 min. Flow Rate	0.000 mgd
Maximum 5 min. Flow Rate	0.105 mgd
Average Daily Level	0.79 in
Minimum 5 min. Level	0.01 in
Maximum 5 min. Level	1.63 in
Average Daily Velocity	1.60 fps
Minimum 5 min. Velocity	0.02 fps
Maximum 5 min. Velocity	2.46 fps
Full Pipe Capacity	7.761 mgd
Peak Capacity Used	1.4%

Figure 2 – Site Photographs



Appendix
Flow Metering Data Summary


Midland Airport (03/18/19 to 03/25/19)
MGD
in
f/s
0.00
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04
0.045
0.05
0.055
0.06
0.065
0.07
0.075
0.08
0.085
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
0.45
0.50
0.55
0.60
0.65
0.70
0.75
0.80
0.85
0.90
0.95
1.00
1.05
1.10
1.15
1.20
1.25
1.30
1.35
1.40
1.45
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
0.90
1.00
1.10
1.20
1.30
1.40
1.50
1.60
1.70
1.80
1.90
2.00
2.10
2.20
03/18/19 00:00:00
03/18/19 12:00:00
03/19/19 00:00:00
03/19/19 12:00:00
03/20/19 00:00:00
03/20/19 12:00:00
03/21/19 00:00:00
03/21/19 12:00:00
03/22/19 00:00:00
03/22/19 12:00:00
03/23/19 00:00:00
03/23/19 12:00:00
03/24/19 00:00:00
03/24/19 12:00:00
03/25/19 00:00:00
Final Flow (MGD)
Final Level (in)
Final Velocity (f/s)

Time	Final Flow (MGD)	Final Level (in)	Final Velocity (f/s)
03/18/19 00:00:00	0.026	0.713	1.624
03/18/19 01:00:00	0.012	0.416	1.007
03/18/19 02:00:00	0.008	0.392	1.021
03/18/19 03:00:00	0.001	0.144	0.415
03/18/19 04:00:00	0.007	0.367	0.974
03/18/19 05:00:00	0.002	0.227	0.641
03/18/19 06:00:00	0.003	0.226	0.633
03/18/19 07:00:00	0.006	0.372	1.005
03/18/19 08:00:00	0.014	0.515	1.278
03/18/19 09:00:00	0.067	1.140	2.198
03/18/19 10:00:00	0.081	1.346	2.093
03/18/19 11:00:00	0.071	1.206	2.151
03/18/19 12:00:00	0.071	1.158	2.276
03/18/19 13:00:00	0.073	1.283	2.015
03/18/19 14:00:00	0.061	1.075	2.155
03/18/19 15:00:00	0.048	0.965	2.005
03/18/19 16:00:00	0.086	1.360	2.187
03/18/19 17:00:00	0.075	1.264	2.156
03/18/19 18:00:00	0.066	1.163	2.094
03/18/19 19:00:00	0.053	1.035	1.974
03/18/19 20:00:00	0.065	1.167	2.058
03/18/19 21:00:00	0.051	0.985	2.049
03/18/19 22:00:00	0.056	1.077	2.014
03/18/19 23:00:00	0.041	0.879	1.904
03/19/19 00:00:00	0.046	0.931	1.974
03/19/19 01:00:00	0.016	0.566	1.393
03/19/19 02:00:00	0.011	0.487	1.244
03/19/19 03:00:00	0.016	0.558	1.324
03/19/19 04:00:00	0.009	0.448	1.171
03/19/19 05:00:00	0.006	0.373	1.010
03/19/19 06:00:00	0.008	0.431	1.138
03/19/19 07:00:00	0.007	0.403	1.077
03/19/19 08:00:00	0.011	0.455	1.163
03/19/19 09:00:00	0.050	1.012	1.881
03/19/19 10:00:00	0.084	1.477	1.889
03/19/19 11:00:00	0.071	1.237	2.091
03/19/19 12:00:00	0.073	1.269	2.064
03/19/19 13:00:00	0.070	1.182	2.170
03/19/19 14:00:00	0.075	1.318	2.006
03/19/19 15:00:00	0.071	1.281	1.985
03/19/19 16:00:00	0.074	1.300	2.013
03/19/19 17:00:00	0.078	1.408	1.893
03/19/19 18:00:00	0.073	1.298	1.973
03/19/19 19:00:00	0.056	1.057	2.035
03/19/19 20:00:00	0.050	0.998	2.012

Time	Final Flow (MGD)	Final Level (in)	Final Velocity (f/s)
03/19/19 21:00:00	0.037	0.861	1.832
03/19/19 22:00:00	0.031	0.797	1.757
03/19/19 23:00:00	0.017	0.604	1.469
03/20/19 00:00:00	0.010	0.458	1.194
03/20/19 01:00:00	0.011	0.493	1.266
03/20/19 02:00:00	0.017	0.574	1.393
03/20/19 03:00:00	0.017	0.585	1.416
03/20/19 04:00:00	0.009	0.434	1.128
03/20/19 05:00:00	0.012	0.517	1.313
03/20/19 06:00:00	0.007	0.408	1.088
03/20/19 07:00:00	0.010	0.459	1.197
03/20/19 08:00:00	0.013	0.528	1.335
03/20/19 09:00:00	0.040	0.897	1.843
03/20/19 10:00:00	0.060	1.081	2.100
03/20/19 11:00:00	0.072	1.233	2.119
03/20/19 12:00:00	0.071	1.276	1.993
03/20/19 13:00:00	0.070	1.267	1.956
03/20/19 14:00:00	0.052	1.027	1.988
03/20/19 15:00:00	0.071	1.277	1.970
03/20/19 16:00:00	0.068	1.229	2.001
03/20/19 17:00:00	0.067	1.183	2.085
03/20/19 18:00:00	0.057	1.102	1.954
03/20/19 19:00:00	0.045	0.929	1.961
03/20/19 20:00:00	0.039	0.888	1.878
03/20/19 21:00:00	0.031	0.787	1.738
03/20/19 22:00:00	0.029	0.757	1.692
03/20/19 23:00:00	0.019	0.618	1.477
03/21/19 00:00:00	0.029	0.762	1.699
03/21/19 01:00:00	0.043	0.897	1.911
03/21/19 02:00:00	0.014	0.536	1.340
03/21/19 03:00:00	0.019	0.601	1.439
03/21/19 04:00:00	0.013	0.525	1.314
03/21/19 05:00:00	0.005	0.350	0.955
03/21/19 06:00:00	0.013	0.508	1.277
03/21/19 07:00:00	0.007	0.399	1.064
03/21/19 08:00:00	0.009	0.428	1.123
03/21/19 09:00:00	0.056	1.062	1.978
03/21/19 10:00:00	0.077	1.282	2.149
03/21/19 11:00:00	0.078	1.287	2.146
03/21/19 12:00:00	0.082	1.343	2.114
03/21/19 13:00:00	0.076	1.263	2.158
03/21/19 14:00:00	0.078	1.294	2.127
03/21/19 15:00:00	0.080	1.288	2.199
03/21/19 16:00:00	0.076	1.272	2.127
03/21/19 17:00:00	0.079	1.309	2.125

Time	Final Flow (MGD)	Final Level (in)	Final Velocity (f/s)
03/21/19 18:00:00	0.054	1.046	2.005
03/21/19 19:00:00	0.077	1.312	2.056
03/21/19 20:00:00	0.064	1.164	2.057
03/21/19 21:00:00	0.065	1.166	2.071
03/21/19 22:00:00	0.062	1.131	2.050
03/21/19 23:00:00	0.027	0.718	1.620
03/22/19 00:00:00	0.025	0.718	1.650
03/22/19 01:00:00	0.006	0.370	0.999
03/22/19 02:00:00	0.003	0.255	0.717
03/22/19 03:00:00	0.003	0.239	0.663
03/22/19 04:00:00	0.002	0.185	0.526
03/22/19 05:00:00	0.007	0.381	1.005
03/22/19 06:00:00	0.007	0.376	1.002
03/22/19 07:00:00	0.003	0.283	0.793
03/22/19 08:00:00	0.015	0.537	1.315
03/22/19 09:00:00	0.063	1.094	2.164
03/22/19 10:00:00	0.076	1.265	2.146
03/22/19 11:00:00	0.072	1.206	2.191
03/22/19 12:00:00	0.065	1.154	2.084
03/22/19 13:00:00	0.064	1.125	2.142
03/22/19 14:00:00	0.069	1.179	2.166
03/22/19 15:00:00	0.059	1.075	2.104
03/22/19 16:00:00	0.084	1.339	2.199
03/22/19 17:00:00	0.087	1.471	1.983
03/22/19 18:00:00	0.058	1.059	2.033
03/22/19 19:00:00	0.066	1.167	2.068
03/22/19 20:00:00	0.073	1.238	2.126
03/22/19 21:00:00	0.078	1.299	2.117
03/22/19 22:00:00	0.034	0.809	1.779
03/22/19 23:00:00	0.017	0.589	1.426
03/23/19 00:00:00	0.021	0.648	1.536
03/23/19 01:00:00	0.022	0.666	1.566
03/23/19 02:00:00	0.007	0.362	0.965
03/23/19 03:00:00	0.028	0.731	1.639
03/23/19 04:00:00	0.009	0.429	1.117
03/23/19 05:00:00	0.013	0.509	1.275
03/23/19 06:00:00	0.022	0.652	1.509
03/23/19 07:00:00	0.005	0.349	0.954
03/23/19 08:00:00	0.005	0.348	0.946
03/23/19 09:00:00	0.024	0.696	1.483
03/23/19 10:00:00	0.013	0.527	1.322
03/23/19 11:00:00	0.015	0.567	1.404
03/23/19 12:00:00	0.041	0.904	1.841
03/23/19 13:00:00	0.037	0.857	1.842
03/23/19 14:00:00	0.038	0.872	1.847

Time	Final Flow (MGD)	Final Level (in)	Final Velocity (f/s)
03/23/19 15:00:00	0.041	0.856	1.906
03/23/19 16:00:00	0.020	0.634	1.508
03/23/19 17:00:00	0.006	0.381	1.030
03/23/19 18:00:00	0.012	0.474	1.187
03/23/19 19:00:00	0.014	0.544	1.353
03/23/19 20:00:00	0.007	0.392	1.055
03/23/19 21:00:00	0.003	0.284	0.798
03/23/19 22:00:00	0.006	0.374	1.002
03/23/19 23:00:00	0.006	0.360	0.970
03/24/19 00:00:00	0.005	0.313	0.850
03/24/19 01:00:00	0.019	0.601	1.418
03/24/19 02:00:00	0.009	0.443	1.161
03/24/19 03:00:00	0.002	0.226	0.650
03/24/19 04:00:00	0.023	0.663	1.535
03/24/19 05:00:00	0.002	0.207	0.594
03/24/19 06:00:00	0.002	0.212	0.598
03/24/19 07:00:00	0.006	0.334	0.900
03/24/19 08:00:00	0.010	0.471	1.220
03/24/19 09:00:00	0.019	0.623	1.498
03/24/19 10:00:00	0.011	0.476	1.228
03/24/19 11:00:00	0.020	0.646	1.537
03/24/19 12:00:00	0.015	0.543	1.344
03/24/19 13:00:00	0.016	0.583	1.429
03/24/19 14:00:00	0.045	0.972	1.751
03/24/19 15:00:00	0.033	0.792	1.747
03/24/19 16:00:00	0.044	0.906	1.949
03/24/19 17:00:00	0.054	1.007	2.082
03/24/19 18:00:00	0.032	0.793	1.730
03/24/19 19:00:00	0.043	0.938	1.880
03/24/19 20:00:00	0.037	0.862	1.821
03/24/19 21:00:00	0.013	0.514	1.300
03/24/19 22:00:00	0.011	0.491	1.259
03/24/19 23:00:00	0.021	0.653	1.544