ETC Engineers & Architects, Inc.

ENGINEERS ▪ ARCHITECTS ▪ PLANNERS

▪ 1510 SOUTH BROADWAY, LITTLE ROCK, AR 72202 ▪ PHONE 501-375-1786 ▪ FAX 501-375-1277 ▪

June 28, 2019

RECEIVED
JUN 28 2019
by 4:00

Mr. Layne Pemberton
Enforcement Analyst
Enforcement Branch
ADEQ Office of Water Quality
5301 Northshore Drive
North Little Rock, AR 72118

Ref: City of Forrest City; Permit No.: AR0020087
Comprehensive CAP Report per Item 11, 16 & 17 of the CAO

Dear Mr. Pemberton,

In accordance with the Consent Administrative Order (CAO) signed by the City of Forrest City dated October 23, 2017, the City of Forrest City (COFC) is required to submit to ADEQ a comprehensive Corrective Action Plan (CAP) to correct the violations described in paragraph 11, 16 and 17 of the CAO for review and approval. The CAP is to be based on a Sewer System Evaluation Study of the sewer collection system performed with an "overall goal of eliminating capacity and non-capacity related SSO's" referred in the CAO. The plan is to be developed by a P.E. licensed in the State of Arkansas.

In accordance with the agreement, we prepared a two phase work plan to develop the required CAP. The plan was submitted to the ADEQ on March 7, 2018 for review and acceptance. An Inflow Infiltration study of the Forrest City wastewater collection system is to be performed in the first phase of the plan. The study started in April 2018. The final report was completed earlier this month. A copy of the final report is submitted herewith for your review and acceptance.

Based on the results of the I/I report a second phase work plan is developed to perform follow up studies to locate specific location of inflows within the system and to perform corrective measures to eliminate those sources. The work plan is attached herewith for your review and acceptance. We also prepared a milestone schedule for the second phase workplan. The schedule is also attached herewith for your review and acceptance

We will continue to submit reports as outlined in the CAO. Please feel free to contact me if you need additional clarifications. I can be contacted at 501-375-178

Sincerely,

Mizan Rahman, P.E.
Principal

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4223
MIZANUR RAHMAN

CC: Mayor Cedric Williams, City of Forrest City
Mr. Calvin Murdock, Manager, Forrest City Water Utility

SSES - PHASE 2
WASTEWATER COLLECTION SYSTEM EVALUATION

IDENTIFICATION OF INFLOW LOCATION FOR DEVELOPING CORRECTIVE ACTION PLANS

CITY OF FORREST CITY

BACKGROUND

City of Forrest City (COFC) entered into a Consent Administrative Order (CAO) with the Arkansas Department of Environmental Quality (ADEQ) on October 23, 2017. The CAO requires that COFC submit a Corrective Action Plans (CAP) to remedy all Sanitary Sewer Overflow (SSO) incidents reported to ADEQ by the City of Forrest City Water Utility (FCWU) between March 1, 2014 and July 20, 2016 (Ref. Paragraph 10 and 16 of the Consent Administrative Order).

PLAN REQUIREMENTS

The CAO stipulates that the COFC submit to ADEQ a CAP that is based on a Sewer System Evaluation Study. The CAO lists the following items to be included in the SSES plan.

1. Perform smoke testing in all areas of the collection system, beginning with the highest priority area;
2. Perform televising of lines in areas deemed necessary based on smoke testing in order to locate leaks and to determine method of repair;
3. Develop a plan to address deficiencies through rehabilitation, repair, or replacement;
4. Develop a manhole inspection program, beginning in the highest priority area; and
5. Recommend a method of repair and develop a cost estimate for such.

These criteria were included in the CAO as a means to identify portions of the sewer system where field investigations are warranted. These field investigations are intended to evaluate the condition of sewer assets that may contribute to the Sanitary Sewer Overflows in the Forrest City waste water collection system. Therefore, it is clear that SSES planning involves the identification and prioritization of service areas which will require SSES field activities and subsequent analysis.

CORRECTIVE ACTION PLAN

Forrest City Wastewater collection system provides services to 3219 households and 8 industrial clients. It has approximately 480,000 linear feet of various size sewer gravity lines, 19 sewer pump station and 1600 manholes.

COFC proposed a two-step investigative process to develop CAP. In the first step a system wide Infiltration Inflow study is to be undertaken. The infiltration/inflow analysis is performed to determine the extent of the existence/non-existence of excessive infiltration/inflow in each sewer tributary of the Forrest City wastewater collection systems. Through a systematic investigation of the wastewater subsystem, we will identify the flow rate, and type of infiltration/inflow conditions which exist in the wastewater system. A detail scope of work for the I/I study was submitted earlier.

Following the flow monitoring result, the subsystems will be ranked/prioritized based on the result of the I/I study. If infiltration/inflow analysis results indicate presence of excessive I&I in these sub-system groups a SSES may be proposed to determine

remedial action. A plan will be developed for the SSES. The plan will outline the tasks to be performed in the study and their estimated costs. SSES will be performed as a follow up to the I/I analysis to locate and identify specific Infiltration & Inflow sources in the sewer system within the specific basin. By identifying the type of each I/I source and the flow from that source during the SSES, appropriate CAP (rehabilitation methods) can be developed. Subsequently, a study will be undertaken to determine the cost effectiveness of the removal of the I/I source. The data collected during the SSES will also be used to confirm the findings of the Infiltration/Inflow analysis and, in particular, the extent of additional investigation needed to develop appropriate rehabilitation, and/or system improvements required in the areas investigated during the SSES.

INFILTRATION/INFLOW STUDY

In April 2018, RJN Group, Inc. was retained by ETC Engineers and Architects on behalf of the City of Forrest City to initiate a wastewater collection system infiltration and inflow reduction survey in Forrest City, Arkansas. The study consisted of developing basin boundary areas and performing flow monitoring throughout the City. The purpose of the flow and rainfall monitoring was to quantify dry and wet-weather flows in the system, prioritizing the areas with excessive amounts of inflow and infiltration. Wet-weather flows were analyzed to determine which areas of the system contribute excessive infiltration/inflow (I/I) to the wastewater system. The flow monitoring and analysis were completed early this year. A final report on the study was submitted to the COFC on June 24, 2019. This report presents the findings of the yearlong study.

RJN Group, Inc. performed a flow monitoring program during late spring and early summer of 2018. The wastewater collection system of Forrest City, Arkansas was divided into sixteen basins to evaluate the individual flow characteristics of each basin. The table below provides a summary of each basin and associated, approximate footages that are contained within each basin.

The project scope consisted of monitoring sanitary sewer flow and rainfall from sixteen (16) flow meters and four (4) rain gauges that were installed between April 16th and April 20th. The beginning of the flow monitoring period started on April 21, 2018. All flow monitoring was completed on June 25, 2018. Infiltration may enter the system through pipe joints, sewer line defects (including main sewer lines and building sewer lines), and defective manhole walls, benches, and pipe seals. Peak infiltration is defined as the maximum, extraneous flow that enters the sanitary sewer system during high-groundwater conditions after the inflow effects of a rain event have ended.

BASINS

Basin	Linear Footage
FC-01	26,198
FC-02	47,278
FC-03	22,575
FC-04	23,191
FC-05	18,547
FC-06	25,504
FC-07	30,673
FC-08	25,185
FC-09	20,124
FC-10	29,949
FC-11	54,208
FC-12	40,099
FC-13	35,111
FC-14	28,872
FC-15	38,832
FC-16	34,383
Total Linear Footage: 500,729	

INFILTRATION CONDITIONS

Determining peak infiltration requires analysis of flow data obtained during dry-weather/high-groundwater conditions. Days that are too close to rainfall events were excluded to avoid including residual inflow (rainfall induced infiltration) that may lead to an over-estimation of peak infiltration. Generally, periods following significant rainfall, excluding the day immediately following a rain event, are used for determining peak infiltration.

Average dry-weather/high-ground water flow was determined using hourly flows during high-groundwater periods. Average peak monitored infiltration was determined by subtracting the average dry-weather/low-groundwater flow from the average dry-weather/high-groundwater flow. Peak infiltration during the study period was determined to be 0.645 mgd in the study area.

A summary of peak infiltration for each monitored basin is given in Table below. The peak basin unit infiltration rate expressed in gallons per day per inch diameter miles (gpd/idm), shown on the Table, is a method of expressing the magnitude of peak infiltration relative to other basins. **According to industry standards, excessive infiltration occurs when the basin peak infiltration is greater than 5,000 gpd/idm.**

The study shows that the Infiltration was found to be **negligible for basins 10 and 15. All other basins have less infiltration than the 5,000 gpd/idm standard.** The report did not recommend any additional infiltration related study. Therefore, COFC will not develop any CAP related to infiltration induced extraneous flow reduction in the collection system.

SUMMARY OF PEAK MONITORED INFILTRATION

Basin	Basin Footage (lf)	Basin Peak Infiltration (mgd)	Basin Peak Unit Infiltration (gpd/IDM)	Ranking
FC-01	26,198	0.042	925	6
FC-02	47,278	0.075	983	5
FC-03	22,575	0.065	2,406	2
FC-04	23,191	0.051	1,652	3
FC-05	18,547	0.010	450	14
FC-06	25,504	0.027	866	7
FC-07	30,673	0.030	773	8
FC-08	25,185	0.014	491	13
FC-09	20,124	0.106	3,206	1
FC-10	29,949	insignificant	insignificant	15
FC-11	54,208	0.065	599	10
FC-12	40,099	0.042	757	9
FC-13	35,111	0.041	513	12
FC-14	28,872	0.050	1,148	4
FC-15	38,832	insignificant	insignificant	16
FC-16	34,383	0.025	514	11
Total	**500,729**	**0.645**	**1,092** (Average)	

INFLOW CONDITIONS

Inflow in a sanitary sewer system is defined as extraneous flow that is a direct result of stormwater runoff. Inflow may enter the sanitary sewer system through directly connected downspouts, area drains, cleanouts, and building sewers. Stormwater may also enter the system through direct or indirect connections between the sanitary sewers and storm drains or ditches, sewer line defects, and through defective manhole covers, frame seals, corbels and manhole walls. The flow monitoring program was conducted during a season with multiple rain events with varying intensities. Based on the analysis performed on the remaining basins, it was concluded in the report that there is excessive inflow for approximately 73% of the monitored system. **The industry standard of acceptable inflow is 10,000 gpd/1,000 linear feet of sewer pipe. Twelve (12) out of the sixteen (16) basins experience excessive inflow.** A summary of peak inflow for each monitored basin is given in Table below.

SUMMARY OF PROJECTED INFLOW RATES

Basin No.	Basin Size (lf)	Basin Peak 1-Year/60Min Inflow Rate (mgd)	Basin Unit Inflow Ratio (gpd/1,000 lf)	Basin Peak 5-Year/60Min Inflow Rate (mgd)	Basin Unit Inflow Ratio (gpd/1,000 lf)	Basin Unit Inflow Ratio 1-Year Ranking
FC-01	26,198	0.475	18,123	0.282	10,764	8
FC-02	47,278	0.713	15,081	0.909	19,227	11
FC-03	22,575	0.501	22,193	0.699	30,964	4
FC-04	23,191	0.382	16,472	0.468	20,180	10
FC-05	18,547	0.353	19,032	0.404	21,782	7
FC-06	25,504	0.663	25,996	0.764	29,956	1
FC-07	30,673	0.152	4,955	0.213	6,944	15
FC-08	25,185	0.442	17,550	0.595	23,625	9
FC-09	20,124	0.142	7,056	0.151	7,504	13
FC-10	29,949	0.118	3,940	0.164	5,476	16
FC-11	54,208	0.362	6,678	1.243	22,930	14
FC-12	40,099	1.000	24,938	1.748	43,592	2
FC-13	35,111	0.671	19,111	1.223	34,833	6
FC-14	28,872	0.593	20,539	0.950	32,903	5
FC-15	38,832	0.948	24,413	5.195	133,780	3
FC-16	34,383	0.402	11,698	0.387	44,389	12
Total	**500,729**	**7.917**	**16,111** (Average)	**15.395**	**30,553** (Average)	

Note:
1/ Based on 1-year/60-minute rainfall of 1.49 in. and 5-year/60-minute of 2.00 in.

The report recommends that the City develop a plan to identify the sources of all potential inflows in the 12 basins that exhibited an above industry standard amount of acceptable inflow (inflow is greater than 10,000 gpd/1,000 linear feet of sewer pipe). The report also prioritizes the basins in accordance with the severity of inflow starting with basins with the highest inflow as Priority 1. A detailed ranking of the 12 basins sorted from highest priority to lowest priority is shown in the Table below. The report recommends that upon completion of the SSES and any subsequent rehabilitation a post rehab flow monitoring is be performed to evaluate the work and provide a score card on the reduction of inflow.

RECOMMENDED BASINS FOR ADDITIONAL SSES (Prioritized)

Basin	Number of Manholes[1] Ranking	Length[2] (lf)	Basin Unit Inflow Ratio (gpd/1,000 lf)	Ranking
FC-06	96	25,504	25,996	1
FC-12	171	40,099	24,938	2
FC-15	95	38,832	24,413	3
FC-03	85	22,575	22,193	4
FC-14	87	28,872	20,539	5
FC-13	129	35,111	19,111	6
FC-05	58	18,547	19,032	7
FC-01	75	26,198	18,123	8
FC-08	101	25,185	17,550	9
FC-04	85	23,191	16,472	10
FC-02	165	47,278	15,081	11
FC-16	112	34,383	11,698	12

PLAN REQUIREMENTS

The CAO stipulates that the City submit to ADEQ a Corrective Action Plan that is based on a Sewer System Evaluation Study. The CAO lists the following items to be included in the SSES plan.

1. Perform smoke testing in all areas of the collection system, beginning with the highest priority area;
2. Perform televising of lines in areas deemed necessary based on smoke testing in order to locate leaks and to determine method of repair;
3. Develop a plan to address deficiencies through rehabilitation, repair, or replacement;
4. Develop a manhole inspection program, beginning in the highest priority area; and
5. Recommend a method of repair and develop a cost estimate for such.

These criteria were included in the Consent Order as a means to identify portions of the sewer system where field investigations are warranted. These field investigations are intended to evaluate the condition of sewer assets that may contribute to the Sanitary Sewer Overflows in the Forrest City waste water collection system.

SSES WORK PLAN

Based on the recommendations of the I/I report COFC will undertake a multiyear SSES program to identify all locations of significant inflows within the 12 basins with greater than industry standard inflow. The tools to be included in the SSES program will be those that were specifically outlined in the CAO documents. No further investigations regarding infiltration into the collection system will be undertaken.

The proposed workplan is as follows:

Identify Inflow Sources -

The I/I report has established a ranking of all the basins based on severity of inflow quantity within the basin. COFC will initiate the following task to identify Inflow sources starting with the highest ranked basin first.

1. Smoke Testing

   The purpose of smoke testing is to find potential points of inflow and infiltration in the public portion of the sanitary sewer system that could lead to high flows during storms events. Smoke testing is the most efficient and cost effective method to locate and identify where unauthorized water is entering the public and private portion of the sewer system. The smoke is harmless and will disappear after only a few minutes. The testing is also a cost-effective way to find areas of the sewer system that need improvement. Smoke testing will also help identify plumbing leaks in buildings.

   Smoke testing can also help locate the following:

   - Buildings that have downspout, cellar, yard or basement drains, and sump pumps
   - Points of groundwater or surface water intrusion into the sewer
   - Any cross connections between sanitary sewers and storm drains
   - Defective sewer connections that could allow sewer gases into a building
   - Cleanouts that are not capped

   During smoke testing, field crews will blow air and smoke into the sanitary sewer system in the street and monitor where smoke escapes the system. The smoke under pressure will fill the main line as well as any connections and then follow the path of any leak to the ground surface, quickly revealing the source of the problem.

2. TV Collection System

   Following Smoke Testing COFC will utilize its closed-circuit TV (CCTV) sewer line inspection system to further investigate the locations of smoke leaks along the collection line. TV inspection is utilized to pinpoint the exact location (s) of extraneous water entering the sewer system. This live inspection will provide valuable data which can be constructively used for analytical purposes. In addition, a permanent visual record can be made for subsequent review. Corrective measures to eliminate the entry points for extraneous flow will be developed and subsequently implemented.

Prior to conducting CCTV inspections, the gravity sewer pipes and manholes will be cleaned as required. Cleaning will consist of normal hydraulic jet cleaning or other appropriate means to facilitate the internal CCTV inspection. In general, gravity sewer lines and manholes undergoing CCTV inspections must be cleaned sufficiently to ensure that the CCTV equipment can easily pass through the gravity sewer system and record defects and observations. CCTV inspections will not be performed in sewer lines with flow depths that do not allow the CCTV equipment to freely pass through the gravity sewer system at the time of inspection.

Gravity main inspections will be identified and tracked by recording the upstream and downstream manholes using manhole identifiers. CCTV inspections will be conducted from an upstream manhole to a downstream manhole in the direction of gravity sewer flow to minimize splashing and to allow a smoother pass of the CCTV equipment. The entire length of sewer line undergoing inspection will be recorded in this direction unless site conditions make it necessary to stop the CCTV inspection, in which case a reverse-flow set-up may be attempted. During the CCTV inspection, the CCTV camera must be temporarily stopped at each observed defect or service lateral in order to obtain a clear still picture and video image, as well as a verbal description of the observation. To assist in prioritizing any warranted maintenance or repair of gravity sewer lines within the system, a condition assessment grading system will be used to weigh the gravity sewer line defects that are observed during CCTV inspections. Staff will assigns a distinct code (1-5) for each structural defect and operational and maintenance defect observed during the CCTV inspection.

3. Manhole Inspection

COFC will utilize industry standard to evaluate the overall condition of manholes and sewer line access points. A standard coding/grading system as standardized by the American Society of Civil Engineers (ASCE) will be utilized to record all visual information.

Manhole condition assessments will include the documentation of the various components of manhole construction, any structural or operations and maintenance defects, as well as identification of I/I. In addition, influent and effluent pipe assets and condition assessments will be collected. COFC will utilize an electronic database to record defect observations, defect descriptions, and a condition scoring system that is substantially consistent with the standardized systems.

Manhole inspections will be performed using a pole camera capable of recording digital video and digital still images (in electronic format) of the manhole and each pipeline entering or exiting the manhole. Sanitary sewer manholes are considered confined spaces. If a pole camera is not used, any personnel entering a manhole must adhere to OSHA and HRSD protocol for confined space entry at all times while within the structure.

Color photographs (in electronic format) will be taken of the manhole to show, at a minimum, the above ground location, looking down at the manhole invert, and looking into the incoming and outgoing pipelines. Manhole defects will be recorded using standardized observation codes as indicated on the standard Manhole Field Inspection Form.

Manhole inspections will normally be performed during daylight hours, however, when night time inspections are required they will only be conducted when site conditions are deemed safe. If a manhole is found to be surcharged at the time of inspection COFC personnel will work to mitigate the cause of the surcharge so that a re-inspection of the manhole can be conducted. If the surcharge cannot be mitigated, the surcharged manhole will be re-inspected during a lower flow period.

FIND AND FIX

The Find and Fix concept provides a process by which repairs of the inflow sources can be made as they are identified in a more timely and cost-effective fashion. Find and Fix methodology employs the concept that when deficiencies warranting prompt repair(s) are found during condition assessment activities, actions will be taken to correct the problem(s) either by COFC personnel or on-call contractors. It is the responsibility of the field personnel conducting the SSES field activities to determine if the defects identified may meet the prompt repair criteria, and to present the findings to COFC department hierarchy for approval. Department personnel will make a final evaluation and provide necessary directives.

REHABILITATION PLAN

The output of the final condition assessment report will be a detailed list of deficiencies, locations of potential inflow and identification of any assets in the system at material risk of failure. This information will be used to develop a Rehabilitation Plan which will include a prioritized list of improvements and implementation schedule. The Rehabilitation Plan will include a schedule for design and construction of repairs, rehabilitation, improvements or replacement, as applicable. Capital cost estimates for the improvements will be included with the Rehabilitation Plan.

REHABILITATION PLAN IMPLEMENTATION SCHEDULE

A detailed SSES rehabilitation plan implementation schedule can not be fully outlined until the field condition assessment process is completed and a Rehabilitation Plan is finalized.

POST REHAB FLOW MONITORING

At the conclusion of the rehabilitation activities, a post rehab flow monitoring of the 12 basins where rehabilitation was conducted will be undertaken. The purpose of the post rehab flow monitoring is to determine the effectiveness of the rehabilitation activities. The flow monitoring program will be similar to the one that was conducted during the I/I analysis.

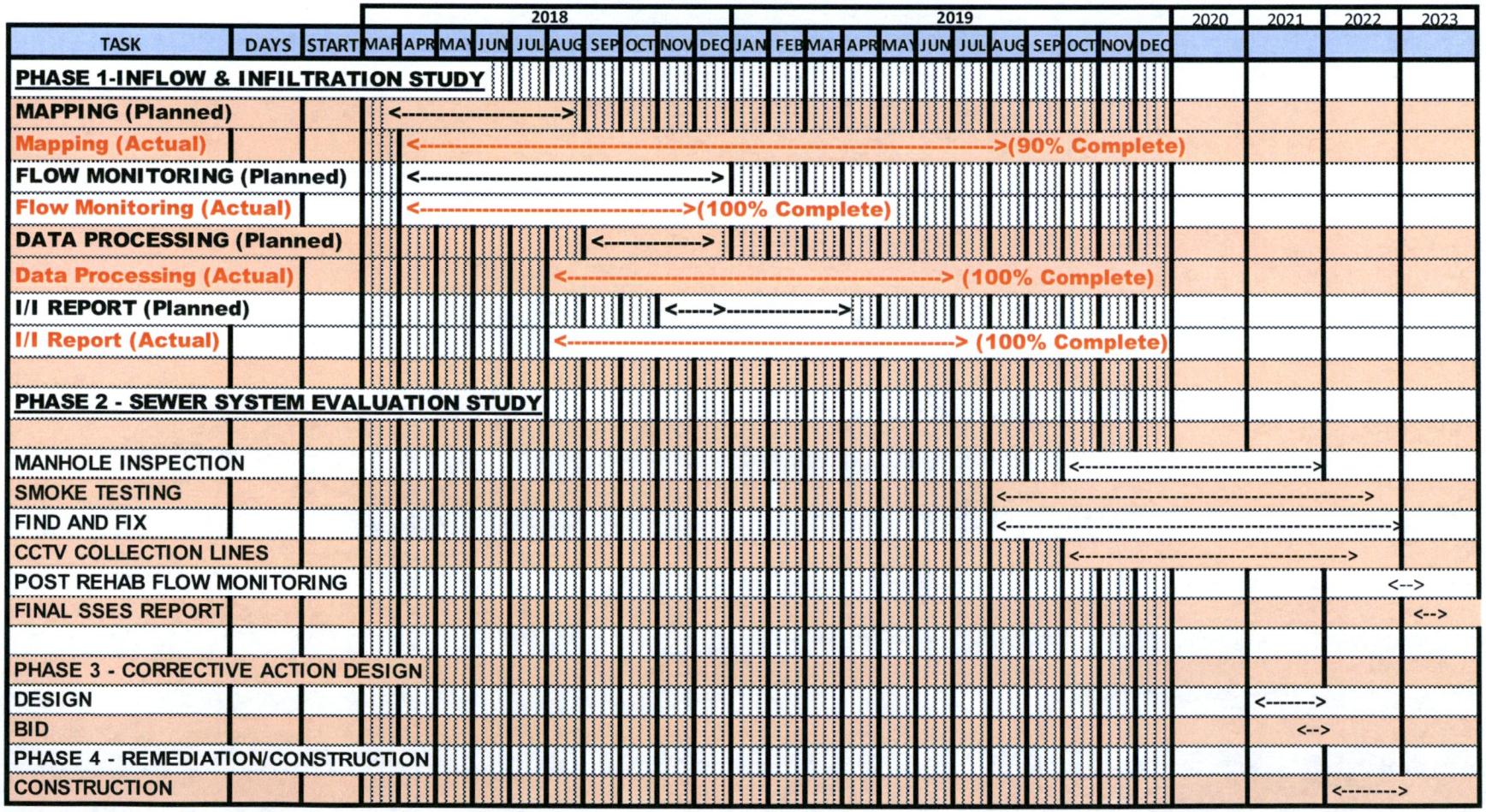
MILESTONE SCHEDULE

A milestone schedule is included in Attachment A

MILESTONE SCHEDULE

SANITARY SEWER OVERFLOW CORRECTIVE ACTION PLAN

FORREST CITY WATER UTILITY



June 2019

Forrest City, Arkansas

2018 WASTEWATER COLLECTION SYSTEM EVALUATION-FLOW MONITORING

Final
Technical Memorandum

prepared for
Forrest City Water Utility
ETC Engineers & Architects, Inc.

prepared by
RJN Group, Inc.
Little Rock, Arkansas 72209
501.224.2248

rjngroup
Engineering infrastructure for tomorrow

rjngroup
40 years of collection system solutions

June 19, 2019

Mizan Rahman, P.E.
ETC Engineers & Architects, Inc.
1510 Broadway
Little Rock, AR 72202

SUBJECT: City of Forrest City
2018 Wastewater Collection System Evaluation- Flow Monitoring
Draft Technical Memorandum

Dear Mr. Rahman:

In accordance with the April 2018 Engineering Agreement, RJN is pleased to present this Draft Technical Memorandum for the above referenced project. The activities include flow monitoring and data analysis. The following conclusions were based on the results of these activities:

- There is excessive inflow (greater than 10,000 gpd/1,000 linear feet) for approximately 73% of the monitored system, which includes twelve (12) basins out of sixteen (16).
- Infiltration is minor throughout the city, no excessive infiltration (greater than 5,000 gpd/idm) was observed.
- Recommended overall plan involves five (5) years and an estimated cost of $962,240 to perform an I/I study in the targeted areas in an effort to reduce I/I. The plan is further detailed in Chapter 5.
- Basins 6, 12, and 15 are recommended to be a part of the initial study and investigations begin immediately.

If you have any questions regarding this submittal or you require additional information, please do not hesitate to call us.

Sincerely,
RJN Group, Inc

Mac Compton

Mac Compton, P.E.
Project Manager

Derek T. Schwanke

Derek T. Schwanke, P.E.
Department Manager

DTS/MC/3119
Enclosure

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF EXHIBITS

LIST OF APPENDICES

1 INTRODUCTION

In April 2018, RJN Group, Inc. was retained by ETC Engineers and Architects to initiate a sanitary sewer infiltration and inflow reduction survey in Forrest City, Arkansas. The study consists of developing basin boundary areas and performing flow monitoring throughout the City.

The purpose of the flow and rainfall monitoring was to quantify dry and wet-weather flows in the system, prioritizing the areas with excessive amounts of inflow and infiltration. Wet-weather flows were analyzed to determine which areas of the system contribute excessive infiltration/inflow (I/I) to the sewer system.

This report addresses the results of the flow monitoring activities.

PROJECT APPROACH

RJN Group, Inc. performed a flow monitoring program during late spring and early summer of 2018. The sanitary sewer system of Forrest City, Arkansas was divided into sixteen basins to evaluate the individual flow characteristics of each basin. Table 1-A provides a summary of each basin and associated, approximate footages that are contained within each basin.

Table 1-A
SUMMARY OF METER BASINS

Meter Basin	Linear Footage[1/]
FC-01	26,198
FC-02	47,278
FC-03	22,575
FC-04	23,191
FC-05	18,547
FC-06	25,504
FC-07	30,673
FC-08	25,185
FC-09	20,124
FC-10	29,949
FC-11	54,208
FC-12	40,099
FC-13	35,111
FC-14	28,872
FC-15	38,832
FC-16	34,383
Total Linear Footage: 500,729	

1/ Linear footages are estimated from GIS.

The project scope consisted of monitoring sanitary sewer flow and rainfall from sixteen (16) flow meters and four (4) rain gauges that were installed between April 16th and April 20th. The beginning of the flow monitoring period started on April 21, 2018. Although the scope requested 60 days of flow monitoring, due to the need for additional data and were pulled after the 65 days. Data provided on this report includes the additional five days for a total of 65 days of flow monitoring data from April 21 to June 25, 2018.

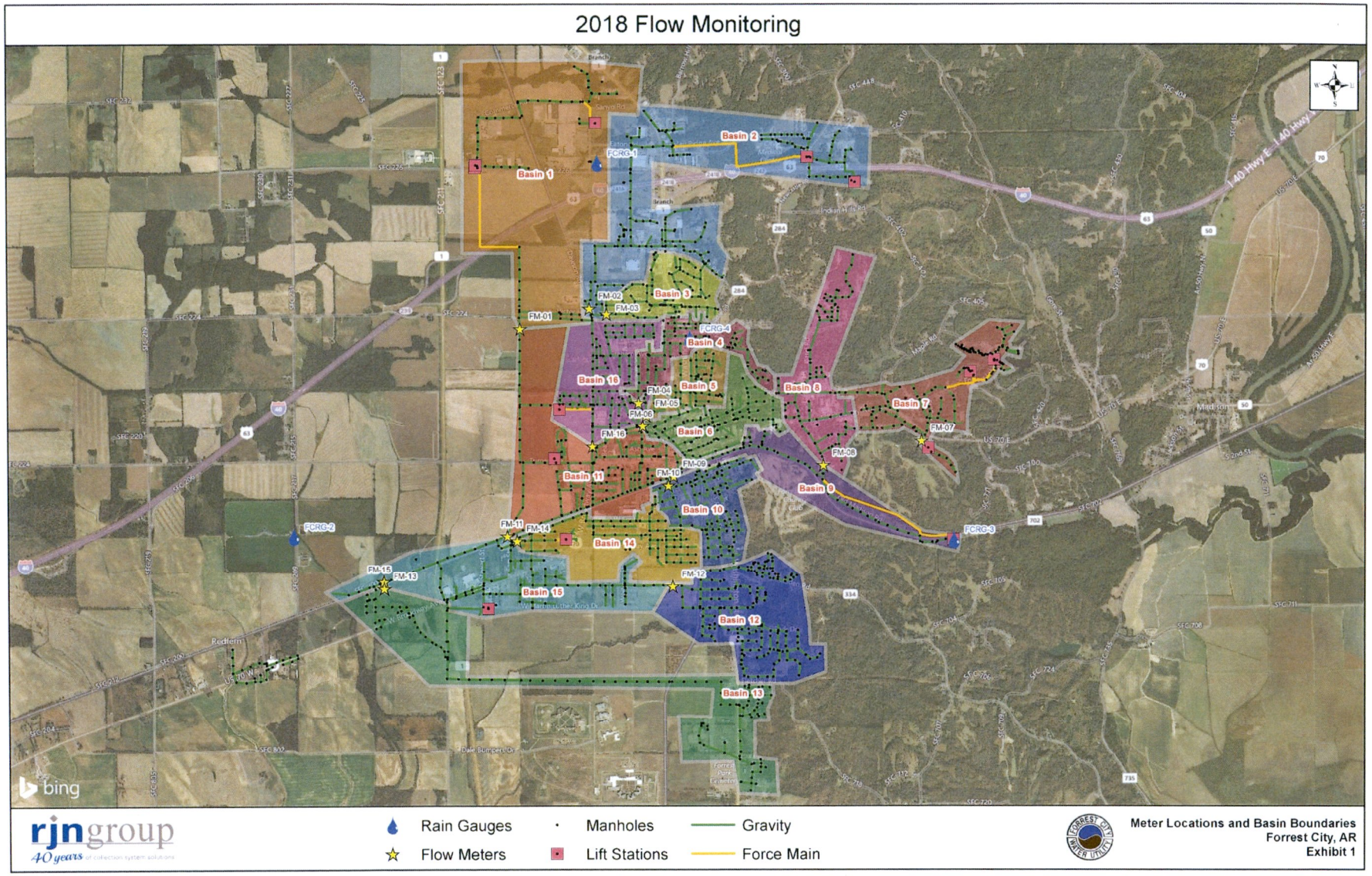
Table 1-B lists the meter locations by site name and pipe dimension. The height/width of opening, as indicated on the table, is the measured pipe dimension and does not reflect the nominal pipe size. This is due to deflections that occur at the mouth of a pipe during manhole installation. The measured pipe diameters/heights ranged from approximately 8-inches to 32-inches.

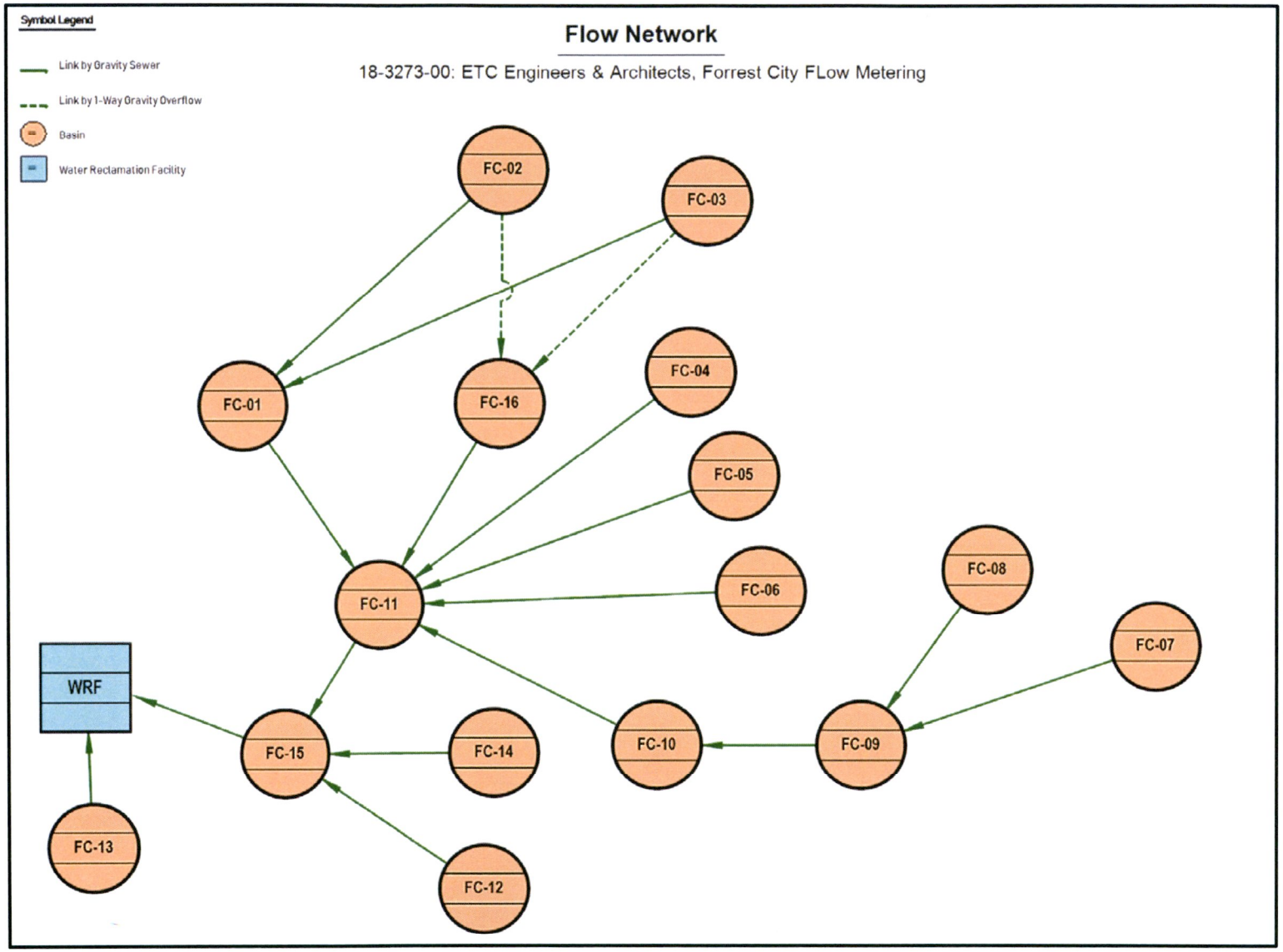
Table 1-B
FLOW MONITORING LOCATIONS

Meter Site Number	Manhole Number	Site Address	Pipe Height (in)	Pipe Width (in)
FC-01	229	982 Victor St	14.50	14.75
FC-02	245	1305 Dawson Rd	12.12	12.50
FC-03	24	272 Laney Dr	7.87	7.75
FC-04	760	332 West Cook Ave	10.25	10.25
FC-05	764	301 Poplar Ave	7.88	8.00
FC-06	764	370 Haven St	8.12	8.18
FC-07	931	2522 E Broadway Ave	7.31	7.69
FC-08	951	432 St Francis Co 702 Rd	7.81	7.81
FC-09	858	208S West St	7.94	7.88
FC-10	667	122 W Franklin Ave	9.81	9.87
FC-11	993	1058 St Francis Co 200 Rd	26.56	27.06
FC-12	1,107	198 C Lane	10.00	9.81
FC-13	1,006	1154 St Francis Co 200 Rd	31.73	30.18
FC-14	1,032	2150 Peevey Ave	15.12	15.06
FC-15	1,006	1154 St Francis 200 Rd	29.81	29.75
FC-16	627	305 Turner Ave	9.94	9.94

Exhibit 1 outlines the flow meter locations, rain gauge locations, and basin boundaries. A basin flow diagram indicating direction of flow from one basin to another is shown on page 1-4.

Flow meters were used to record depth and velocity of flow at five-minute intervals. Engineering review and input of additional calibration data was used to finalize the metered flow data. Manual depth and velocity readings (velocity profiles) were taken bi-weekly to verify and calibrate the metered data. Average flow rates for one-hour intervals were determined for each monitoring location. The average, hourly flow rates were used to determine daily dry-weather and wet-weather flow rates. Flow data collected during rainfall events was evaluated to determine peak, instantaneous inflow rates.


2018 Flow Monitoring
Basin 1
Basin 2
Basin 3
Basin 4
Basin 5
Basin 6
Basin 7
Basin 8
Basin 9
Basin 10
Basin 11
Basin 12
Basin 13
Basin 14
Basin 15
Basin 16
FM-01
FM-02
FM-03
FM-04
FM-05
FM-06
FM-07
FM-08
FM-09
FM-10
FM-11
FM-12
FM-13
FM-14
FM-15
FM-16
FCRG-1
FCRG-2
FCRG-3
FCRG-4
I-40 Hwy E
I-40 Hwy E
Redfern
Madison
bing
rjngroup
40 years of collection system solutions
Rain Gauges
Flow Meters
Manholes
Lift Stations
Gravity
Force Main
Meter Locations and Basin Boundaries
Forrest City, AR
Exhibit 1


Symbol Legend
Link by Gravity Sewer
Link by 1-Way Gravity Overflow
Basin
Water Reclamation Facility
Flow Network
18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering
FC-02
FC-03
FC-01
FC-16
FC-04
FC-05
FC-11
FC-06
FC-08
FC-07
WRF
FC-15
FC-14
FC-10
FC-09
FC-13
FC-12

2 DATA COLLECTION AND EQUIPMENT

SITE SELECTION

Once the preliminary location was identified a site investigation was performed to determine if the site had ideal hydraulic conditions for data collection. Generally, it is preferred to have a straight channel where flow is free of turbulence or backwater effects. At some locations it was necessary to install meters where optimum flow characteristics were not prevalent, but was necessary due to being the only location available to monitor the identified areas. Listed below are other considerations that were investigated:

• Installation constraints	• Manhole configuration	• Silt deposition
• Pipe dimensions	• Flow depth range	• Maintainability
• Site accessibility	• Velocity range	• Telemetry constraints
• Site specific concerns	• Employee safety	• Sensor survival
• Manhole accessibility	• Surcharging evidence	

A copy of the Meter Site Installation Forms complete with photos for each meter location, are provided in Appendix A. The photos of each meter site include the site location, inside manhole, and pipe before and after sensor placement.

FLOW METER TYPE INFORMATION

ADS meters were selected as the gravity flow meters to complete the flow monitoring program. The average accuracy of the meters for the depth measurement is ±0.15 inches and the average accuracy for velocity is ±0.04 fps.

There were eleven (11) locations where ADS FlowShark meters were installed and five (5) locations where ADS Triton Plus meters were installed.

Some information regarding the selected flow meters is included below and on the following pages:

METER PRINCIPLES:

The ADS FlowShark (Model 5000) is an open channel flow meter that utilizes Doppler ultra sound technology to sense the peak flow velocity, as well as a redundant depth sensor. The ADS FlowShark has five primary components: a logger unit that stores the collected data and houses the RTU, an ultrasonic sensor, pressure and velocity sensors, and the integrated

wireless modem. The pressure/depth sensor utilizes a pressure transducer which will record water level including full pipe and surcharge level.

The ultrasonic sensor is a non-instrusive, quad-redudant transciever sensor which will accurately record the depth to within one inch of the sensor's face. The sensors emit signals and receive returned signals from the flow to capture the characteristics of the flow velocity and depth. During surcharged conditions the ultrasonic depth sensors no longer functions, and the level is recorded through the pressure sensor.

The ADS Triton Plus meter works the same way as the ADS FlowShark meter with the only difference that it records two redundant depths instead of one. The ADS Triton Plus has four sensors: ultrasonic, pressure, updepth, and velocity. The updepth sensor records the depth of flow from the bottom of the pipe to the level of flow.

Figure 2.1: FlowShark

Figure 2.2: Triton Plus

Flows are calculated using the continuity equation, which is expressed as Q = AV, where Q is volumetric flow, A is the cross-sectional area, and V is the average velocity of the flow. The meter records velocity and depth at five-minute intervals.

Calibration and Installation:

Both ADS meters must be calibrated on site by entering physical offsets of the sensors and their positions in the meter as well as comparing the depth and velocity measurements recorded by the meter to manual measurements. Depth and velocity adjustments for the ADS meters are made directly to the meter as necessary.

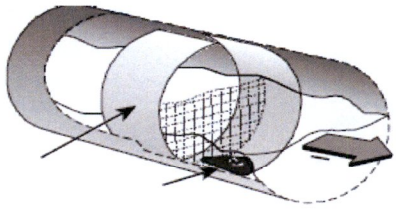


Figure 2.3: Flow is calculated using the Continuity Equation: Flow = Average Velocity x Area of Flow

The meter housing was secured with an eyebolt on the wall of the manhole. A stainless steel, expandable band secured the depth/velocity probe to the channel. The probes were positioned in the flow of the incoming pipe to minimize the effects of flow turbulence and debris buildup that may exist in the manhole.

TELEMETRY EQUIPMENT

Each Flow meter called into a central processing location during the project to perform a data release for collection and review. This process was performed through a Remote Transmission Unit (RTU) that collects data and sends the collected data by wireless telemetry to the central processing location. The data was then available for review on the website hosted by RJN.

Each RTU initiated a call into the central location once every 24 hours. The RTU's transmit all the 5-minute data points recorded during that day.

The antennas were typically located just outside the manhole because a cast-iron manhole cover would block the wireless signals otherwise. The antennas were buried just below the existing surface and covered with traffic approved material. A typical installation is shown in Figure 2.4.

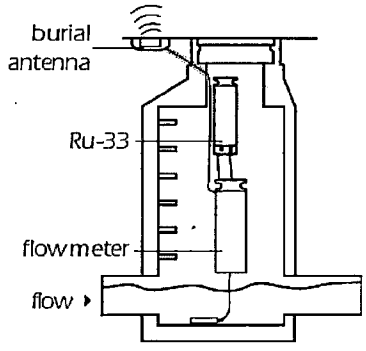


Figure 2.4: Typical meter installation

METER MAINTENANCE

During site visits, data stored in the meter was manually retrieved as a backup to the telemetry download and the meters were inspected to ensure proper operation. The meter depth and velocity readings were taken before and after maintenance/cleaning of the probes. Manual depth and velocity measurements were taken, silt deposit depths were recorded, and the batteries were changed, if necessary. Typically, six (6) six-volt batteries lasted an average of four weeks due to the power demands of the RTU . Offset adjustments were recorded in the site specific meter maintenance log shown in Appendix B.

Silt was observed at three (3) sites. The average silt depth was 0.41 inches and the maximum recorded silt depth was 1.0 inch. Site FC-11 experienced the most silt.

RAINFALL MONITORING

Four (4) temporary rain gauges maintained by RJN Group, Inc. were utilized to monitor rainfall during the April 21 through June 25, 2018 study period. Exhibit 1 shows the location of the temporary rain gauges. Rainfall was recorded with a continuously recording rain gauge with an accuracy of 0.01 inches. The rain gauge was equipped with a separate RTU and called in once per day to relay data to the central database.

RAINFALL RESULTS:

The rain gauges recorded four rainfall events of greater than 1-inch of rainfall, one of these events being greater than two inches, for a 24-hour period at three of the four rain gauges. The largest storm event occurred on April 22, 2018, where the total, average rainfall was 2.17 inches, with an average peak 1-hour intensity of 0.42 inches per hour. The average total rainfall measured from April 21 to June 25, 2018 was approximately 6.66 inches.

Rain gauge recorded totals and intensities are listed in Table 2-A. The 5-minute electronic Excel data is provided with this report.

Table 2-A
RAINFALL SUMMARY

	RG-01		RG-02		RG-03		RG-04	
	3116 Sanyo Rd		Sfc 209 Forrest City		1030 Old Madison Rd		1112 N Washington St	
	Water Treatment Plant		Treatment Plant		Pump Station		Delta Bar B Q	
Date	Total Daily Rainfall (in)	Peak 60-Minute Rainfall Intensity (in/hr)	Total Daily Rainfall (in)	Peak 60-Minute Rainfall Intensity (in/hr)	Total Daily Rainfall (in)	Peak 60-Minute Rainfall Intensity (in/hr)	Total Daily Rainfall (in)	Peak 60-Minute Rainfall Intensity (in/hr)
4/22/2018	2.25	0.50	1.81	0.30	2.12	0.40	2.51	0.47
4/25/2018	0.17	0.06	1/	1/	1/	1/	0.22	0.09
4/26/2018	0.39	0.16	1/	1/	1/	1/	0.38	0.16
5/16/2018	0.31	0.22	0.25	0.20	1/	1/	1/	1/
5/17/2018	0.45	0.27	1/	1/	0.36	0.20	0.33	0.33
5/21/2018	1.30	0.98	1.17	0.84	0.54	0.35	1.18	0.90
5/25/2018	1/	1/	1/	1/	0.29	0.27	1/	1/
5/28/2018	1/	1/	1/	1/	0.54	0.52	0.21	0.21
6/2/2018	0.62	0.62	0.63	0.63	1.29	1.29	1.07	1.07
6/15/2018	1/	1/	1/	1/	0.60	0.59	0.84	0.84
6/20/2018	1/	1/	1/	1/	0.32	0.26	0.37	0.27
6/21/2018	1/	1/	1.15	1.07	0.73	0.67	1.12	1.03
6/24/2018	1/	1/	0.18	0.18	0.32	0.25	0.57	0.56
Total	**5.49**	**2.81**	**5.19**	**3.22**	**7.11**	**4.80**	**8.80**	**5.93**

1/ Negligible rainfall recorded.

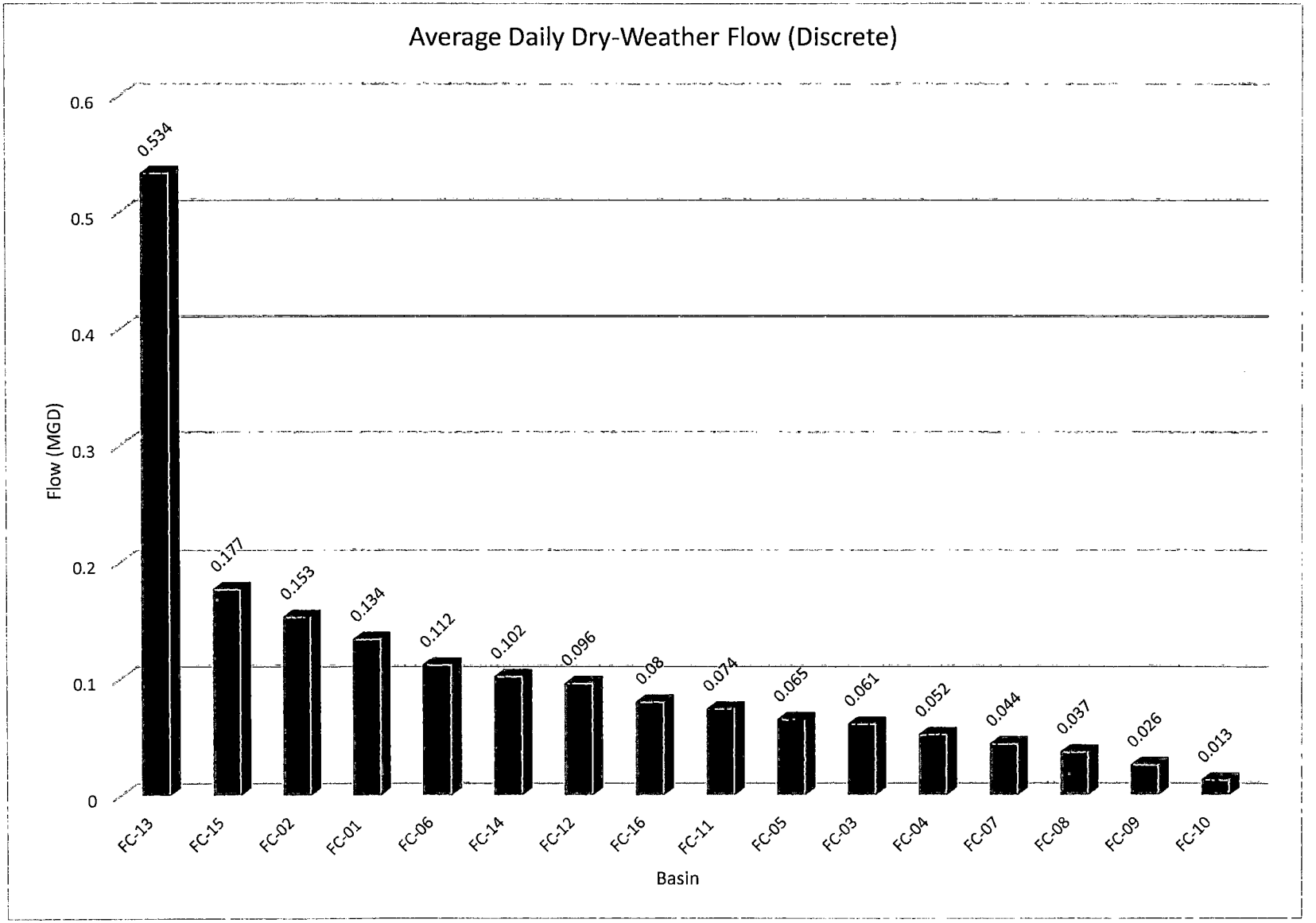
3 DRY-WEATHER FLOW AND INFILTRATION ANALYSIS

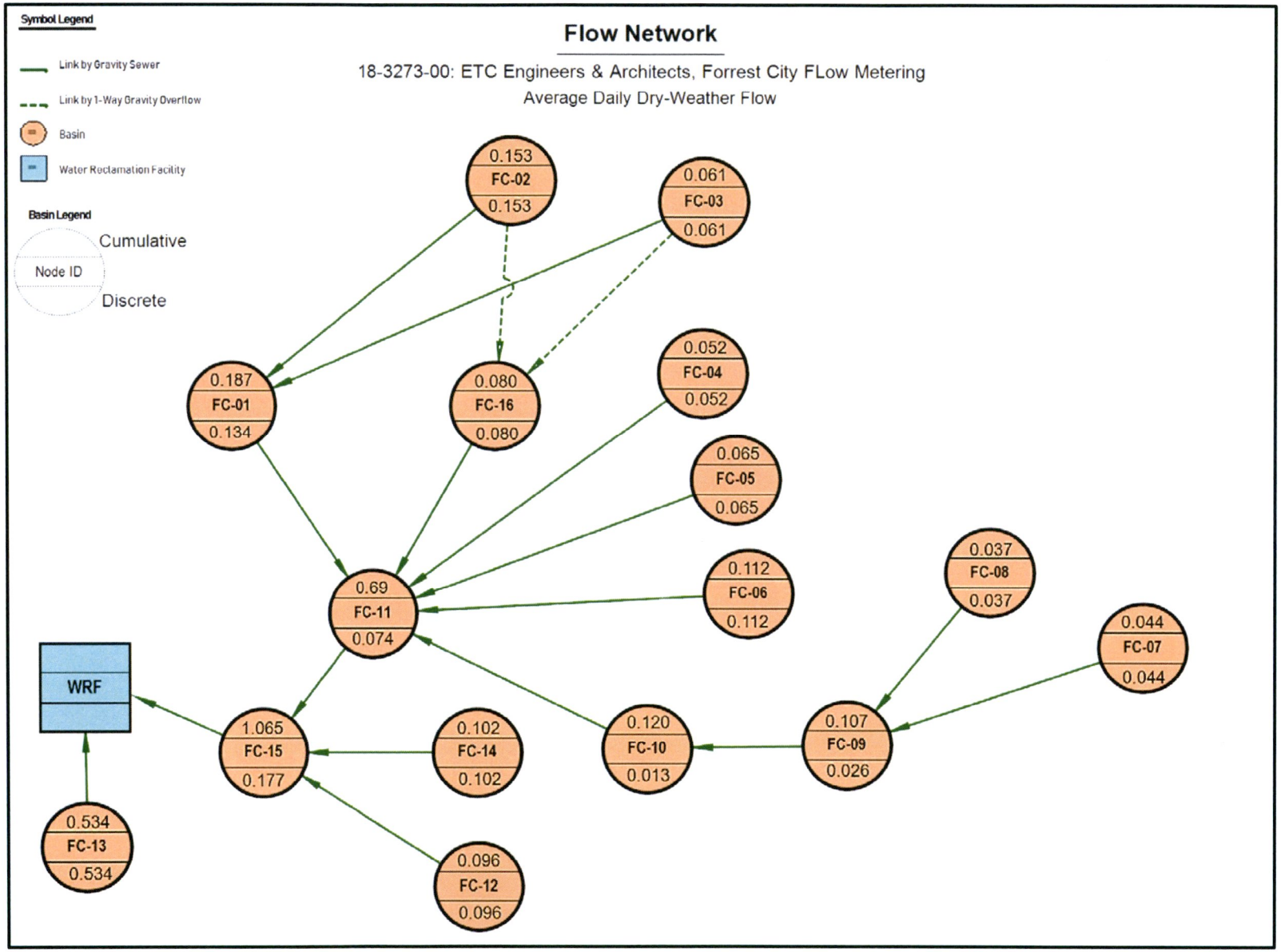
DETERMINATION OF AVERAGE DAILY DRY-WEATHER FLOW

Flow data collected during dry-weather/low-groundwater periods was analyzed to determine the average daily dry-weather flow for each basin. The dry period used for analysis is June 14th through June 21st. A summary of average daily dry-weather flow by basin is given in Table 3-A and shown graphically on page 3-2. A basin flow diagram indicating average daily dry-weather flow by basin is shown on page 3-3. Hydrographs and scattergraphs for each basin are included in Appendix B and Appendix C, respectively.

Table 3-A
AVERAGE DAILY DRY-WEATHER FLOW

Meter Basin	Cumulative Average Daily Dry-Weather Flow (mgd)	Basin/Discrete Average Daily Dry-Weather Flow (mgd)
FC-01	0.187	0.134
FC-02	0.153	0.153
FC-03	0.061	0.061
FC-04	0.052	0.052
FC-05	0.065	0.065
FC-06	0.112	0.112
FC-07	0.044	0.044
FC-08	0.037	0.037
FC-09	0.107	0.026
FC-10	0.120	0.013
FC-11	0.690	0.074
FC-12	0.096	0.096
FC-13	0.534	0.534
FC-14	0.102	0.102
FC-15	1.065	0.177
FC-16	0.080	0.080
Total		**1.760**


Average Daily Dry-Weather Flow (Discrete)
Flow (MGD)
0.6
0.5
0.4
0.3
0.2
0.1
0
0.534
0.177
0.153
0.134
0.112
0.102
0.096
0.08
0.074
0.065
0.061
0.052
0.044
0.037
0.026
0.013
FC-13
FC-15
FC-02
FC-01
FC-06
FC-14
FC-12
FC-16
FC-11
FC-05
FC-03
FC-04
FC-07
FC-08
FC-09
FC-10
Basin


Symbol Legend
Link by Gravity Sewer
Link by 1-Way Gravity Overflow
Basin
Water Reclamation Facility
Basin Legend
Cumulative
Node ID
Discrete
Flow Network
18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering
Average Daily Dry-Weather Flow
0.153
FC-02
0.153
0.061
FC-03
0.061
0.187
FC-01
0.134
0.080
FC-16
0.080
0.052
FC-04
0.052
0.065
FC-05
0.065
0.112
FC-06
0.112
0.69
FC-11
0.074
0.037
FC-08
0.037
0.044
FC-07
0.044
WRF
1.065
FC-15
0.177
0.102
FC-14
0.102
0.120
FC-10
0.013
0.107
FC-09
0.026
0.534
FC-13
0.534
0.096
FC-12
0.096

AVERAGE DAILY DRY-WEATHER FLOW PEAKING FACTOR

Wastewater flow during dry-weather periods will vary during the day in response to water consumption. By examining the diurnal curves for each monitored basin, a peaking factor was determined. The peaking factor is the ratio of the peak average daily flow rate and the average daily flow. Peaking factors varied from 1.25 to 3.00, with an average of 1.85 in the study area and are shown on Table 3-B. Peaking factors between 1.5 and 2.5 are typical for dry-weather.

Table 3-B
AVERAGE DAILY DRY-WEATHER FLOW PEAKING FACTORS

Meter Basin	Cumulative Average Daily Dry-Weather Flow (mgd)	Peak Average Daily Flow Rate (mgd)	Dry-Weather Flow Peaking Factor
FC-01	0.187	0.343	1.83
FC-02	0.153	0.367	2.40
FC-03	0.061	0.089	1.46
FC-04	0.052	0.078	1.50
FC-05	0.065	0.081	1.25
FC-06	0.112	0.163	1.46
FC-07	0.044	0.132	3.00
FC-08	0.037	0.076	2.05
FC-09	0.107	0.315	2.94
FC-10	0.12	0.298	2.48
FC-11	0.69	1.043	1.51
FC-12	0.096	0.134	1.40
FC-13	0.534	0.871	1.63
FC-14	0.102	0.138	1.35
FC-15	1.065	1.449	1.36
FC-16	0.08	0.154	1.93
Average			**1.85**

INFILTRATION CONDITIONS

Infiltration may enter the system through pipe joints, sewer line defects (including main sewer lines and building sewer lines), and defective manhole walls, benches, and pipe seals. Peak infiltration is defined as the maximum, extraneous flow that enters the sanitary sewer system during high-groundwater conditions after the inflow effects of a rain event have ended.

DETERMINATION OF PEAK INFILTRATION

Determining peak infiltration requires analysis of flow data obtained during dry-weather/high-groundwater conditions. Care must be exercised in the analysis to exclude days that are too close to rainfall events to avoid including residual inflow (rainfall induced infiltration) that may lead to an over-estimation of peak infiltration. Generally, periods following significant rainfall, excluding the day immediately following a rain event, are used for determining peak infiltration.

Average dry-weather/high-ground water flow was determined using hourly flows during high-groundwater periods. Average peak monitored infiltration was determined by subtracting the average dry-weather/low-groundwater flow from the average dry-weather/high-groundwater flow. Peak infiltration during the study period was determined to be 0.645 mgd in the study area.

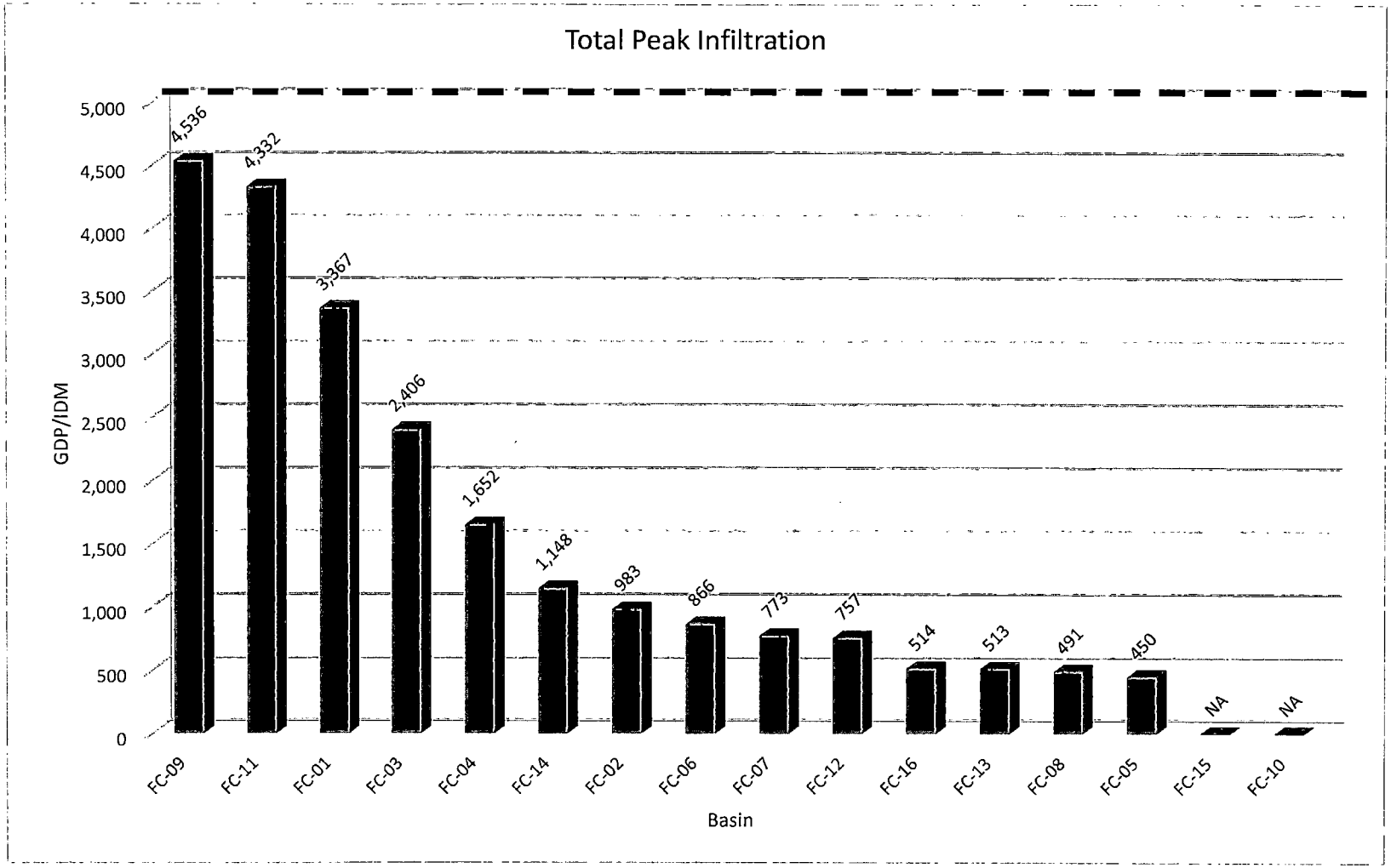
A summary of peak infiltration for each monitored basin is given in Table 3-C and shown graphically on page 3-6. The peak basin unit infiltration rate expressed in gallons per day per inch diameter miles, also given in Table 3-C, is a method of expressing the magnitude of peak infiltration relative to other basins. A basin flow diagram also giving peak monitored infiltration is shown on page 3-8.

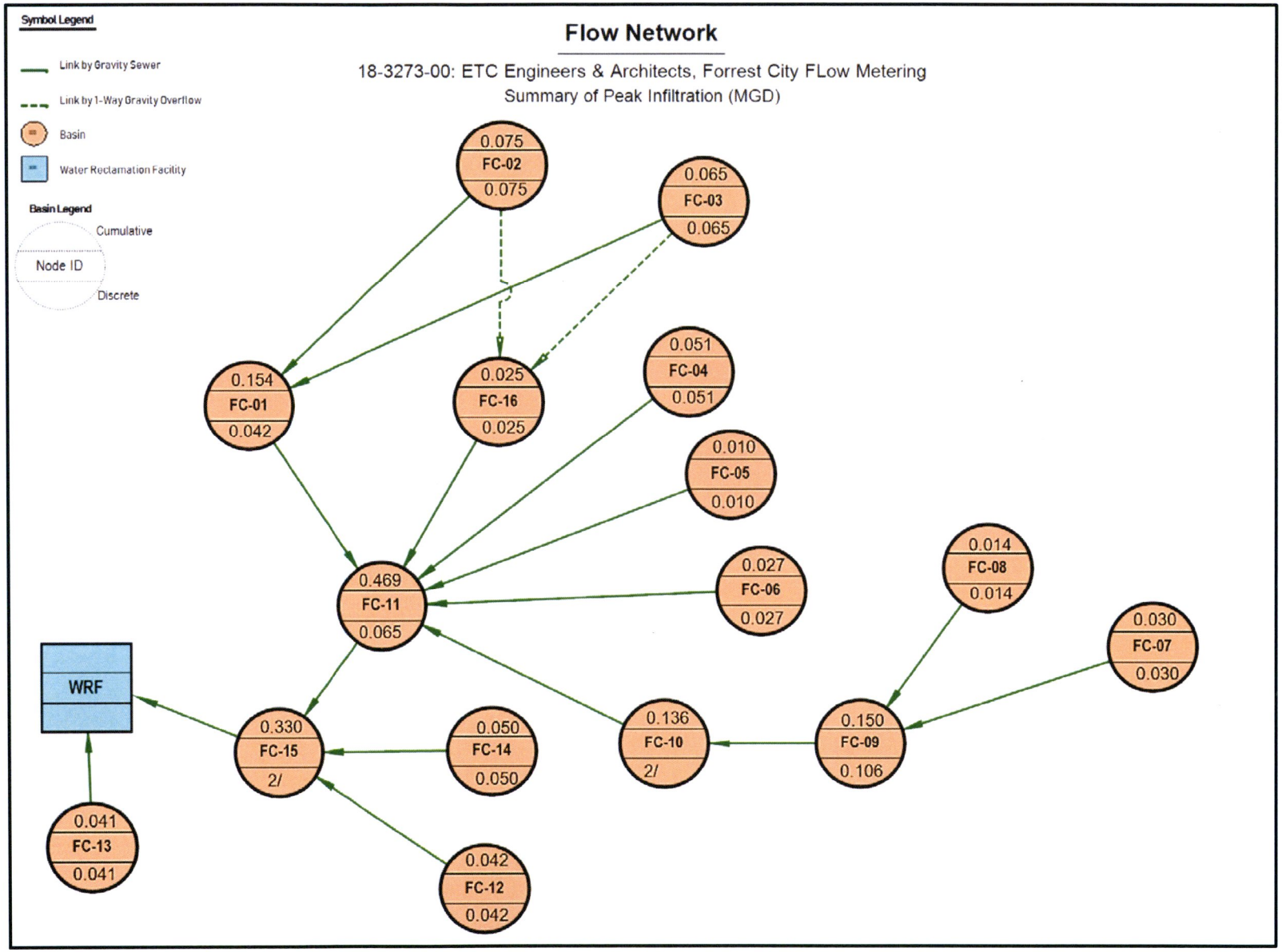
Basin peak infiltration was analyzed using inch diameter miles (idm). To determine gpd/idm, the total inch diameter-miles of pipe were calculated for each pipe size in their respective basin. The basin peak infiltration was then divided by the total inch miles. Excessive infiltration occurs when the basin peak infiltration is greater than 5,000 gpd/idm. Infiltration was found to be negligible for basins 10 and 15. All other basins have less infiltration than the 5,000 gpd/idm standard. Basins FC-09 and FC-11 are under the threshold for excessive infiltration but are close to being considered excessive if the systems in these areas further deteriorates.

Table 3-C SUMMARY OF PEAK MONITORED INFILTRATION				
Basin	**Basin Footage (lf)**	**Basin Peak Infiltration (mgd)**	**Basin Peak Unit Infiltration (gpd/IDM)**	**Ranking**
FC-01	26,198	0.042	925	6
FC-02	47,278	0.075	983	5
FC-03	22,575	0.065	2,406	2
FC-04	23,191	0.051	1,652	3
FC-05	18,547	0.010	450	14
FC-06	25,504	0.027	866	7
FC-07	30,673	0.030	773	8
FC-08 1/	25,185	0.014	491	13
FC-09	20,124	0.106	3,206	1
FC-10	29,949	2/	2/	15
FC-11	54,208	0.065	599	10
FC-12	40,099	0.042	757	9
FC-13	35,111	0.041	513	12
FC-14	28,872	0.050	1,148	4
FC-15	38,832	2/	2/	16
FC-16	34,383	0.025	514	11
Total	**500,729**	**0.645**	**1,092** (Average)	

1/ Alternative rain event used.

2/ Not a significant source of infiltration


Total Peak Infiltration
GDP/IDM
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
4,536
4,332
3,367
2,406
1,652
1,148
983
866
773
757
514
513
491
450
NA
NA
FC-09
FC-11
FC-01
FC-03
FC-04
FC-14
FC-02
FC-06
FC-07
FC-12
FC-16
FC-13
FC-08
FC-05
FC-15
FC-10
Basin


Symbol Legend
Link by Gravity Sewer
Link by 1-Way Gravity Overflow
Basin
Water Reclamation Facility
Basin Legend
Cumulative
Node ID
Discrete
Flow Network
18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering
Summary of Peak Infiltration (MGD)
0.075 FC-02 0.075
0.065 FC-03 0.065
0.154 FC-01 0.042
0.025 FC-16 0.025
0.051 FC-04 0.051
0.010 FC-05 0.010
0.469 FC-11 0.065
0.027 FC-06 0.027
0.014 FC-08 0.014
0.030 FC-07 0.030
WRF
0.330 FC-15 2/
0.050 FC-14 0.050
0.136 FC-10 2/
0.150 FC-09 0.106
0.041 FC-13 0.041
0.042 FC-12 0.042

4 WET-WEATHER FLOW AND INFLOW ANALYSIS

WET-WEATHER FLOW PEAKING FACTORS

Wet-weather peaking factor is a ratio between the peak hourly flow during a rain event and the average daily flow during dry-weather. Peaking factors ranged from 2.95 to 14.52 and are provided in Table 4-A below. A wet-weather peaking factor under 5.00 is typically considered acceptable. The wet-weather peaking factor was calculated based on the total flow rate observed for the April 22, 2018 storm at the peak hourly flow. June 10, 2018 was used as a dry day for calculation. Table 4-A shows the largest peaking factor was 14.52 and occurred at meter site FC-07.

Table 4-A
WET-WEATHER FLOW PEAKING FACTOR

Meter Site	Average Dry Flow 6/10/2018 (mgd)	Peak Hourly Wet Flow 2.17 in Rainfall 4/22/2018 (mgd)	Wet-Weather Peaking Factor
FC-01	0.171	1.112	6.50
FC-02	0.139	0.879	6.32
FC-03	0.06	0.525	8.75
FC-04	0.051	0.434	8.51
FC-05	0.068	0.465	6.84
FC-06	0.117	0.593	5.07
FC-07	0.046	0.668	14.52
FC-08	0.038	0.335	8.82
FC-09	0.095	0.745	7.84
FC-10	0.119	0.959	8.06
FC-11	0.687	4.802	6.99
FC-12	0.102	0.453	4.44
FC-13	0.545	1.608	2.95
FC-14	0.101	1.016	10.06
FC-15	1.075	6.591	6.13
FC-16	0.08	0.711	8.89

INFLOW CONDITIONS

Inflow in a sanitary sewer system is defined as extraneous flow that is a direct result of stormwater runoff. Inflow may enter the sanitary sewer system through directly connected downspouts, area drains, cleanouts, and building sewers. Stormwater may also enter the system through direct or indirect connections between the sanitary sewers and storm drains or ditches, sewer line defects, and through defective manhole covers, frame seals, corbels and manhole walls.

DETERMINATION OF INFLOW

The scope of services for this project included developing a relationship between inflow and rainfall intensity (Q vs I). This is generally performed by plotting peak inflow against the 60-minute rainfall intensity for the corresponding rain event and then using regression analysis to determine the "best fit" relationship between the various sets of data points. Several storm events of various intensities that do not surcharge the sewer system are required to establish the inflow/rainfall intensity relationship.

PEAK INFLOW REGRESSION ANALYSIS METHOD

Each of the significant rain events that occurred during the monitoring period was analyzed to determine the peak inflow rate and corresponding rainfall intensity. Regression analysis was used to project the average inflow rate for a 1-year/60-minute and 5-year/60-minute storm event for each of the metered locations. Each storm event during the monitoring period was analyzed to determine the peak 60-minute rainfall intensity. Historical rainfall intensities data for various storm recurrence intervals are given in Table 4-B.

Table 4-B

RAINFALL INTENSITIES FOR VARIOUS STORM RECURRENCE INTERVALS[1/]

Storm Recurrence Interval (Year)	Total Rainfall 60-Minute Duration Storm (in)
1	1.49
5	2.00

1/ Rainfall Intensity gathered from NOAA's Precipitation Frequency Data Server for Forrest City, AR

A summary listing of the estimated 1-year/60-minute inflow and 5-year/60-minute inflow for each basin is given in Table 4-C along with unit inflow expressed in gallons per day per 1,000 linear feet of sewer. The basin unit inflow ratio is a method of expressing the magnitude of peak inflow relative to other basins.

The analysis projected the peak 1-year storm inflow (1.49 inches/hour) rate to be approximately 7.917 mgd for the entire monitored area. The system overall exhibited high inflow rates with twelve (12) of sixteen (16) basins exceeding the industry standard for excessive I/I of 10,000 gpd/linear foot for the 1-year/60-minute inflow. A basin flow diagram giving 1-year storm inflow is shown on page 4-5 while 5-year storm inflow is shown on page 4-6.

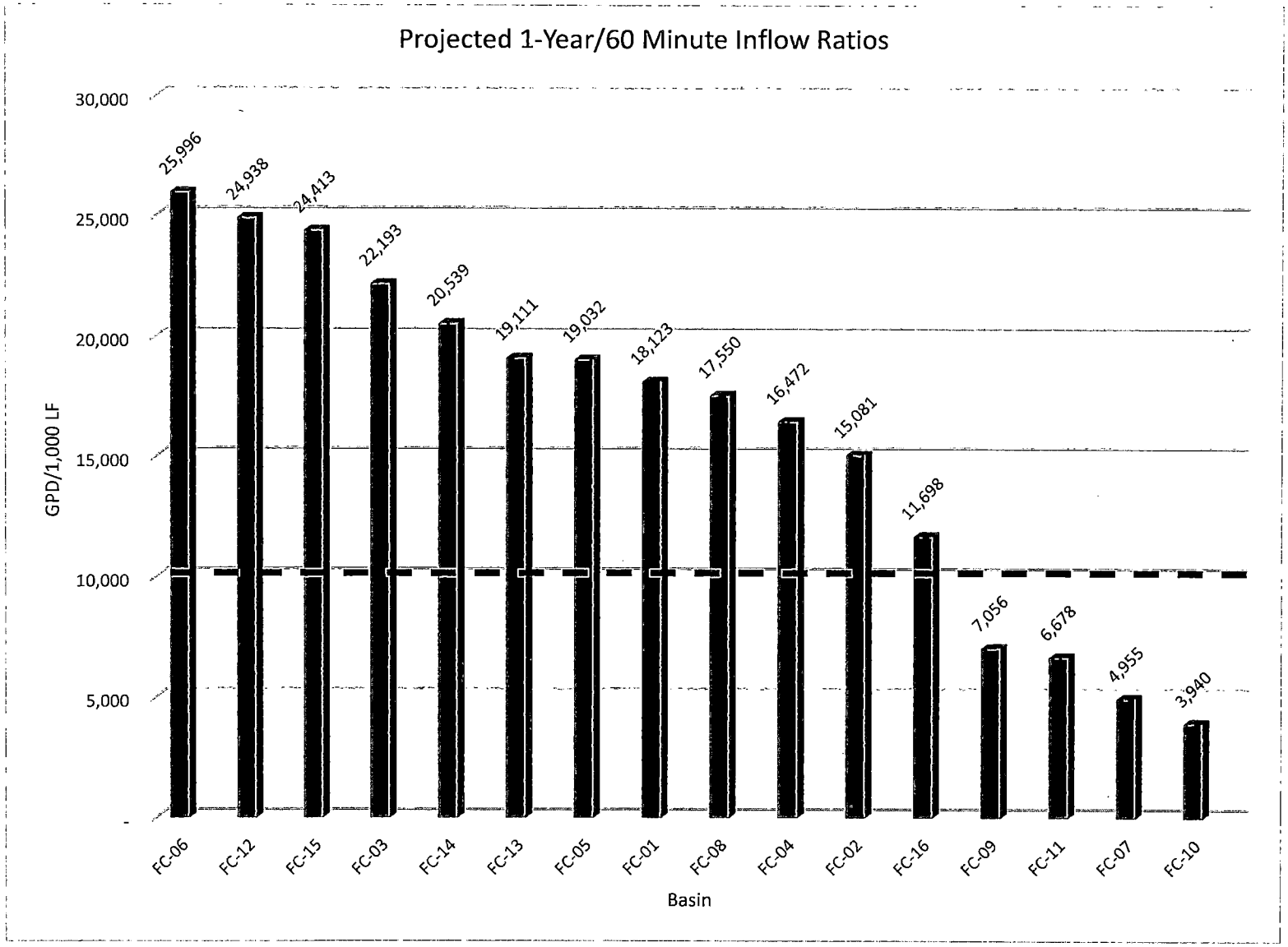
The peak 1-year/60-minute inflow for each basin is shown graphically on page 4-4. Dry vs Wet Flow hydrographs (Appendix D) for selected rain events are included.

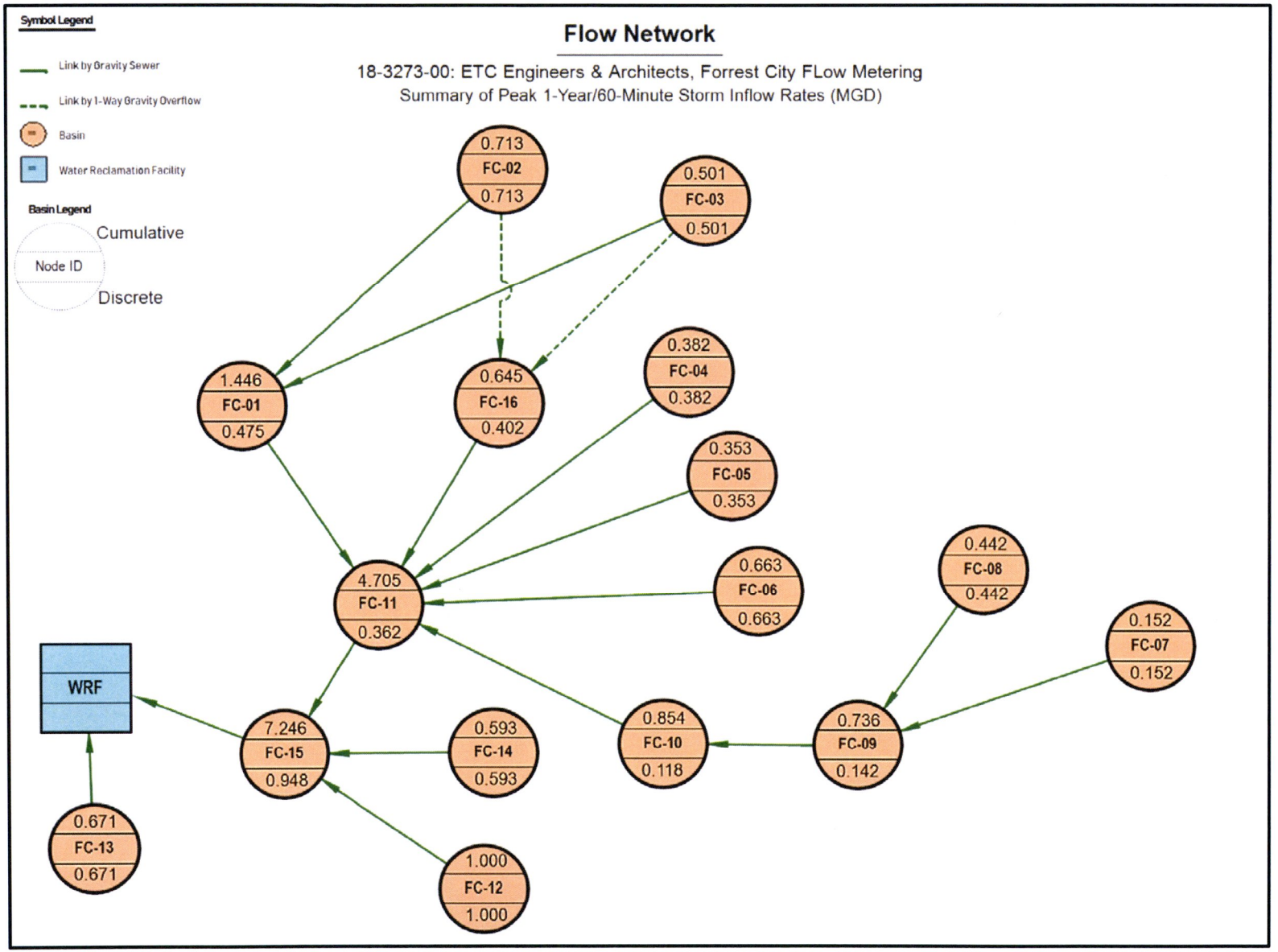
Table 4-C

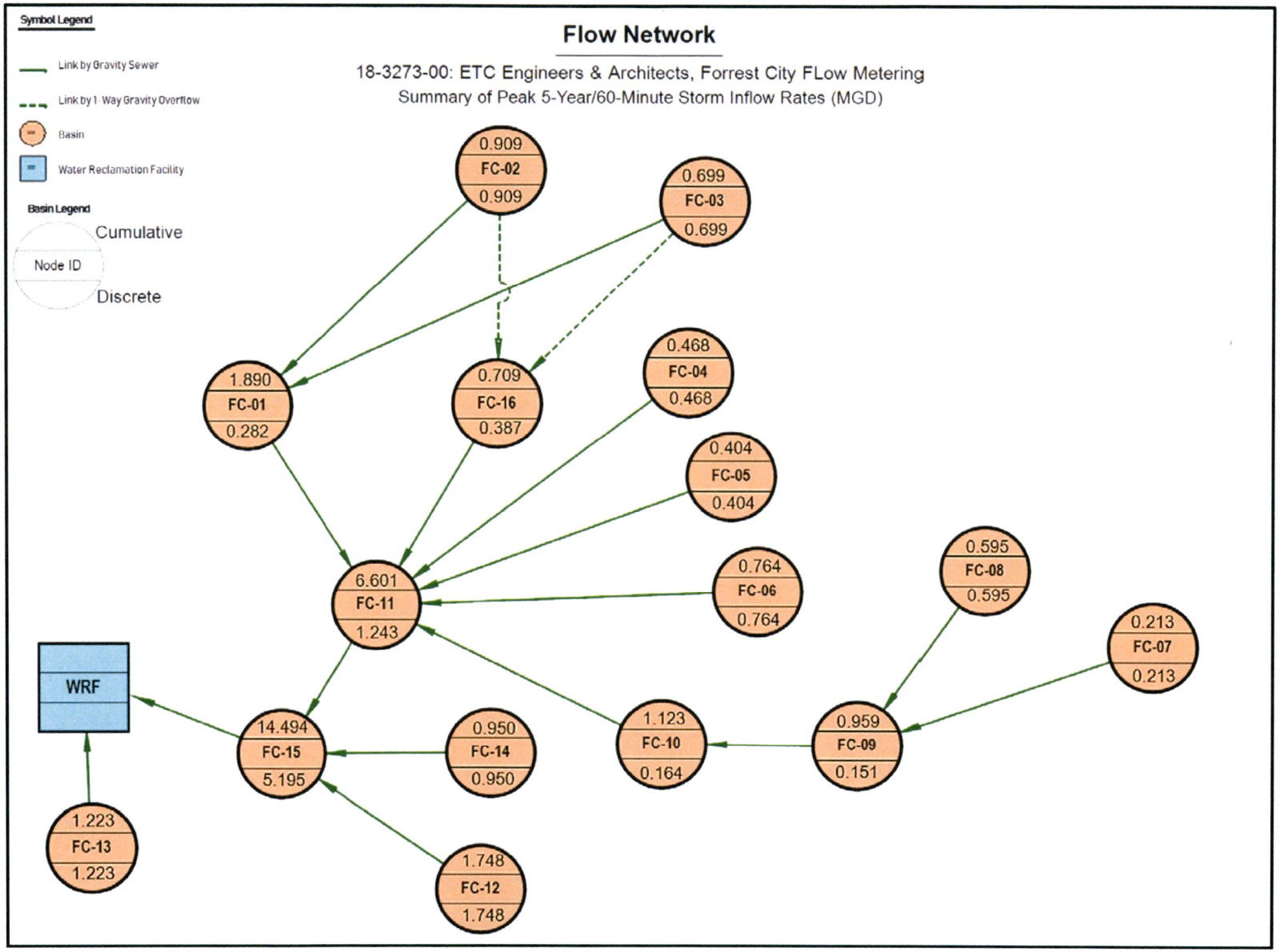
SUMMARY OF PROJECTED INFLOW RATES[1/]

Basin	Basin Size (lf)	Basin Peak 1-Year/60 Minute Inflow Rate (mgd)	Basin Unit Inflow Ratio (gpd/1,000 lf)	Basin Peak 5-Year/60 Minute Inflow Rate (mgd)	Basin Unit Inflow Ratio (gpd/1,000 lf)	Basin Unit Inflow Ratio 1-Year Ranking
FC-01	26,198	0.475	18,123	0.282	10,764	8
FC-02	47,278	0.713	15,081	0.909	19,227	11
FC-03	22,575	0.501	22,193	0.699	30,964	4
FC-04	23,191	0.382	16,472	0.468	20,180	10
FC-05	18,547	0.353	19,032	0.404	21,782	7
FC-06	25,504	0.663	25,996	0.764	29,956	1
FC-07	30,673	0.152	4,955	0.213	6,944	15
FC-08	25,185	0.442	17,550	0.595	23,625	9
FC-09	20,124	0.142	7,056	0.151	7,504	13
FC-10	29,949	0.118	3,940	0.164	5,476	16
FC-11	54,208	0.362	6,678	1.243	22,930	14
FC-12	40,099	1.000	24,938	1.748	43,592	2
FC-13	35,111	0.671	19,111	1.223	34,833	6
FC-14	28,872	0.593	20,539	0.950	32,903	5
FC-15	38,832	0.948	24,413	5.195	133,780	3
FC-16	34,383	0.402	11,698	0.387	44,389	12
Total	**500,729**	**7.917**	**16,111 (Average)**	**15.395**	**30,553 (Average)**	

1/ *Based on 1-year/60-minute rainfall of 1.49 in. and 5-year/60-minute of 2.00 in.*


Projected 1-Year/60 Minute Inflow Ratios
GPD/1,000 LF
30,000
25,000
20,000
15,000
10,000
5,000
-
25,996
24,938
24,413
22,193
20,539
19,111
19,032
18,123
17,550
16,472
15,081
11,698
7,056
6,678
4,955
3,940
FC-06
FC-12
FC-15
FC-03
FC-14
FC-13
FC-05
FC-01
FC-08
FC-04
FC-02
FC-16
FC-09
FC-11
FC-07
FC-10
Basin


Symbol Legend
Link by Gravity Sewer
Link by 1-Way Gravity Overflow
Basin
Water Reclamation Facility
Basin Legend
Cumulative
Node ID
Discrete
Flow Network
18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering
Summary of Peak 1-Year/60-Minute Storm Inflow Rates (MGD)
0.713
FC-02
0.713
0.501
FC-03
0.501
1.446
FC-01
0.475
0.645
FC-16
0.402
0.382
FC-04
0.382
0.353
FC-05
0.353
4.705
FC-11
0.362
0.663
FC-06
0.663
0.442
FC-08
0.442
0.152
FC-07
0.152
WRF
7.246
FC-15
0.948
0.593
FC-14
0.593
0.854
FC-10
0.118
0.736
FC-09
0.142
0.671
FC-13
0.671
1.000
FC-12
1.000


Symbol Legend
Link by Gravity Sewer
Link by 1 Way Gravity Overflow
Basin
Water Reclamation Facility
Basin Legend
Cumulative
Node ID
Discrete
Flow Network
18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering
Summary of Peak 5-Year/60-Minute Storm Inflow Rates (MGD)
0.909
FC-02
0.909
0.699
FC-03
0.699
1.890
FC-01
0.282
0.709
FC-16
0.387
0.468
FC-04
0.468
0.404
FC-05
0.404
6.601
FC-11
1.243
0.764
FC-06
0.764
0.595
FC-08
0.595
0.213
FC-07
0.213
WRF
14.494
FC-15
5.195
0.950
FC-14
0.950
1.123
FC-10
0.164
0.959
FC-09
0.151
1.223
FC-13
1.223
1.748
FC-12
1.748

5 SUMMARY AND POTENTIAL PLAN

SUMMARY

The flow monitoring program was conducted during a season with multiple rain events with varying intensities. Based on the analysis performed on the remaining basins, it is concluded there is excessive inflow for approximately 73% of the monitored system. Based upon the rainfall induced peak analysis, infiltration is minor throughout the city.

POTENTIAL PLAN

The potential plan consists of a more detailed Sanitary Sewer Evaluation Study (SSES) in meter basins that exhibited an above industry standard amount of acceptable inflow and infiltration in order to identify as many sources of I/I as possible. The industry standard of acceptable inflow is 10,000 gpd/1,000 linear feet of sewer pipe and 5,000 gpd/idm for infiltration. Twelve (12) out of the sixteen (16) basins experience excessive inflow. Basins 07, 09, 10, and 11 are included in the proposed plan because the CAO requires that all manholes be inspected and smoke-tested throughout the system.

Inspecting all recommended basins at one time may not be practical, in which case basins have been prioritized according to the severity of I/I, starting with basins with the highest inflow as Priority 1. A detailed breakdown of the twelve (12) basins can be found in Table 5-A and is sorted from highest priority to lowest priority. A summary of the recommended basins by priority can be found in Table 5-B listing the basins in order of priority for further investigation and graphically in Exhibit 2. Upon completion of the SSES and any subsequent rehabilitation, post rehab flow monitoring is recommended to be performed to evaluate the work and provide a score card on the reduction of inflow.

Table 5-A

RECOMMENDED BASINS FOR ADDITIONAL SSES (Prioritized)

Meter Basin	Number of Manholes[1/]	Length[2/] (lf)	Basin Peak 1-Year/60-Minute Inflow (mgd)	Basin Unit Inflow Ratio (gpd/1,000 lf)	Basin Peak Monitored Infiltration (mgd)	Basin Peak Unit Infiltration (gpd/IDM)
FC-06	96	25,504	0.663	25,996	0.027	866
FC-12	171	40,099	1.000	24,938	0.042	757
FC-15	95	38,832	0.948	24,413	2/	2/
FC-03	85	22,575	0.501	22,193	0.065	2,406
FC-14	87	28,872	0.593	20,539	0.050	1,148
FC-13	129	35,111	0.671	19,111	0.041	513
FC-05	58	18,547	0.353	19,032	0.010	450
FC-01	75	26,198	0.475	18,123	0.042	925
FC-08	101	25,185	0.442	17,550	0.014	491
FC-04	85	23,191	0.382	16,472	0.051	1,652
FC-02	165	47,278	0.713	15,081	0.075	983
FC-16	112	34,383	0.402	11,698	0.025	514
FC-09[3/]	58	20,124	0.142	7,056	0.150	4,536
FC-11[3/]	150	54,208	0.362	6,678	0.469	4,332
FC-07[3/]	134	30,673	0.152	4,955	0.030	773
FC-10[3/]	91	29,949	0.118	3,940	2/	2/
Total	**1,692**	**500,729**	**7.917**		**1.093**	

1/ Number of manholes and lengths are approximate.
2/ Not a significant source of infiltration.
3/ Basins are recommended due to CAO.

Table 5-B RECOMMENDED SSES PRIORITY BY BASIN		
Priority	**Basins**	**Total Length (lf)**
1	6 12 15	104,436
2	3 14 13	86,558
3	5 1 8 4	93,122
4	2 16	81,660
5 1/	9 11 7 10	134,954

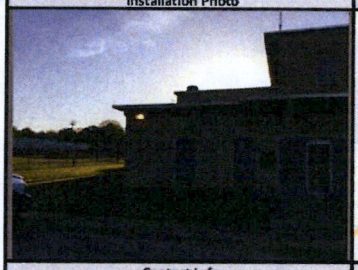
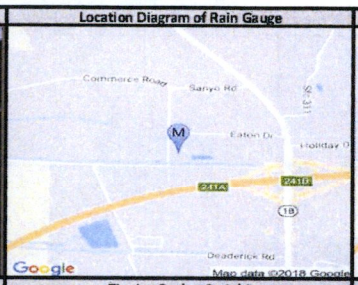
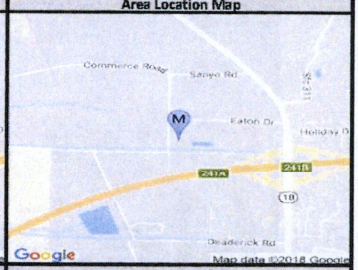
1/ Basins are recommended due to CAO

APPENDIX A

FLOW METER AND RAIN GAUGE SITE REPORTS

rjngroup	Etc Engineers & Architects Forrest City FLow Metering	RG Site Name FCRG-1

Project	Project No.	Inspection Date/Time	Facility Name
Forrest City FLow Metering	18-3273-00	4/17/2018 7:16 AM	Water Treatment Plant
		Inspected By	Ladder Required
		kbelk	
Site Address:	3116 Sanyo Rd		

Installation Photo	Location Diagram of Rain Gauge	Area Location Map
		

Contact Info		Tipping Bucket Serial #	Logger Model	
Name	City contact			
Title		Logger Serial #	Recommended for Installation	☐
Phone #				

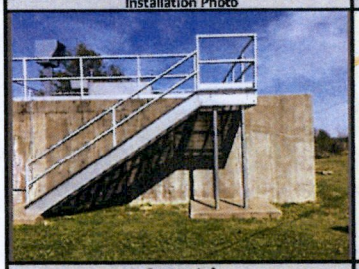
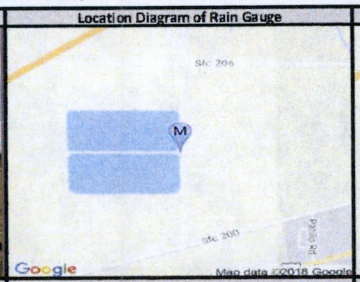
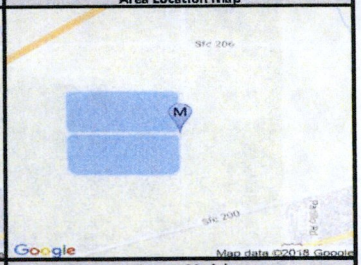
Access/Installation Instructions

Site Visits

Check By	Date/Time	Manual Depth (in)	Rain Depth (in)	Tip Test	Comments
kbelk	4/17/2018 11:33 AM			☑	
kbelk	4/20/2018 1:16 PM			☑	Came out to verify telog was calling into right port.
kbelk	5/1/2018 12:00 PM			☑	
kbelk	5/15/2018 7:15 AM			☑	
kbelk	6/26/2018 7:26 AM			☑	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	

rjngroup The Choice for Collection System Solutions	Etc Engineers & Architects Forrest City FLow Metering	RG Site Name FCRG-2

Project	Project No.	Inspection Date/Time	Facility Name
Forrest City FLow Metering	18-3273-00	4/17/2018 3:38 PM	Treatment Plant
		Inspected By kbelk	Ladder Required Follow dirt road back to holding ponds. Look for concrete structure between 2 tan buildings, located on t
Site Address:	Sfc 209 Forrest City		

Installation Photo	Location Diagram of Rain Gauge	Area Location Map
		

Contact Info		Tipping Bucket Serial #	Logger Model	
Name	Edward Gregory			
Title	City Contact	Logger Serial #	Recommended for Installation	☐
Phone #	8702701756			

Access/Installation Instructions

Site Visits

Check By	Date/Time	Manual Depth (in)	Rain Depth (in)	Tip Test	Comments
kbelk	4/17/2018 3:43 PM			☑	
kbelk	5/1/2018 11:03 AM			☑	
kbelk	5/15/2018 10:23 AM			☑	
kbelk	6/26/2018 1:44 PM			☑	
				☐	
				☐	
				☐	
				☐	
				☐	
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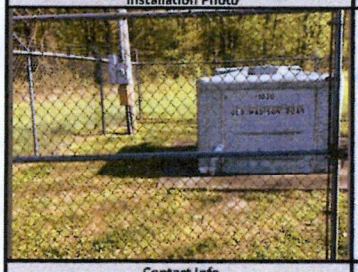
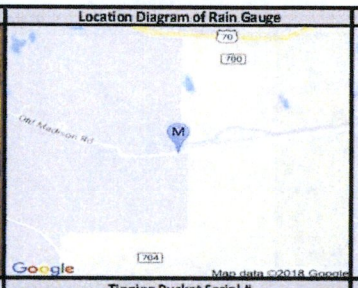
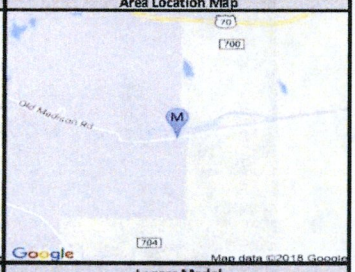
				☐	
				☐	

rjngroup	Etc Engineers & Architects Forrest City FLow Metering	RG Site Name FCRG-3

Project	Project No.	Inspection Date/Time	Facility Name
Forrest City FLow Metering	18-3273-00	4/17/2018 4:15 PM	Pump Station
		Inspected By	Ladder Required
		kbelk	Call to get gate unlocked
Site Address:	1030 Old Madison Rd		

Installation Photo	Location Diagram of Rain Gauge	Area Location Map
		

Contact Info		Tipping Bucket Serial #	Logger Model	
Name	Edward Gregory			
Title	City Contact	Logger Serial #	Recommended for Installation	☐
Phone #	8702701756			

Access/Installation Instructions

Back corner of concrete pad

Site Visits

Check By	Date/Time	Manual Depth (in)	Rain Depth (in)	Tip Test	Comments
kbelk	4/17/2018 4:17 PM			☑	
kbelk	5/1/2018 12:27 PM			☑	
kbelk	5/15/2018 12:16 PM			☑	
acastelan	5/31/2018 12:25 PM			☐	
kbelk	6/26/2018 2:43 PM			☑	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
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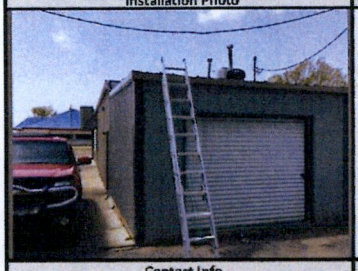
				☐	
				☐	
				☐	
				☐	

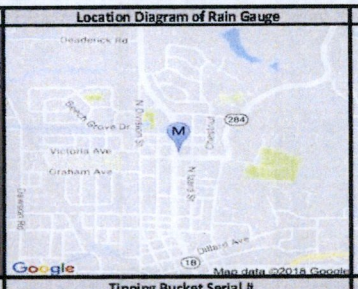
rjngroup	Etc Engineers & Architects Forrest City FLow Metering	RG Site Name FCRG-4

Project	Project No.	Inspection Date/Time	Facility Name
Forrest City FLow Metering	*18-3273-00*	*4/18/2018 1:29 PM*	*Delta Q Bar B Q*
		Inspected By	**Ladder Required**
		kbelk	*Small attached garage in back.*
Site Address:	*1112 N Washington St*		

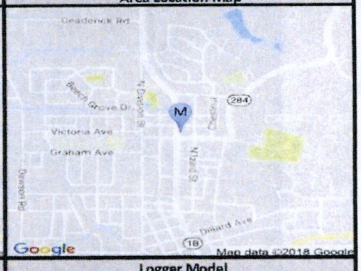
Installation Photo



Location Diagram of Rain Gauge



Area Location Map



Contact Info		Tipping Bucket Serial #	Logger Model	
Name	*Owner*			
Title		Logger Serial #	Recommended for Installation	☐
Phone #	*8706331234*			

Access/Installation Instructions

Site Visits

Check By	Date/Time	Manual Depth (in)	Rain Depth (in)	Tip Test	Comments
kbelk	4/18/2018 1:33 PM			☑	
kbelk	5/1/2018 7:11 AM			☑	
kbelk	5/14/2018 5:28 PM			☑	
kbelk	6/27/2018 10:03 AM			☑	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
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				☐	
				☐	
				☐	

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Etc Engineers & Architects	Site Name
Forrest City FLow Metering	FC-01

Inspected By	kbelk	Project No.	Site Code
Inspected Date/Time	4/12/2018 8:39 AM	18-3273-00	T

System Information

Target Pipe Dia. (in)	15.0
Municipality	
District	Forrest City
Assigned Rain Gauge	FCRG-1
Client Manhole #	229
U/S Connecting MH I.D	15
System Characteristics:	
Residential ☑ Commercial ☐ Industrial ☐	
P/S Influence	No
WWTP Influence	No

Location Information

Site Address	982 Victor St
Site Access	Off-Road
Longitude	-90.80740000
Latitude	35.02170000
MH Type	Poured Concrete
Manhole Depth (ft)	7.17
Manhole Width (ft)	48.0
Elevated MH	Yes
Height Elevated (ft)	0.8
Structural Integrity	Safe

Site Information

Pipe Height (in)	14.50		
Pipe Width (in)	14.75		
Pipe Type	Vitrified Clay		
Pipe Shape	Circular		
O2	20.9	LEL %	0.0
H2S	0.0	CO	0.0

Hydraulic Information

Flow Depth (in)	4.75
Instant Velocity (fps)	3.00
Surcharge Evidence (ft)	7.17
Silt Type	None
Silt Depth (in)	0.00
Needs Cleaning	No
Backwater	No
Flow Path	Straight
Drop Inlet	No
Hydraulic Rating	Fair

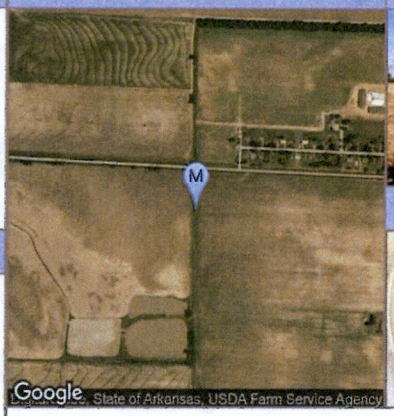
Installation Notes

Location in Pipe (ft)	1.5
Location from Manhole	
Sensors	Pressure, Velocity, and Ultra
Antenna Surface	[Default] Code: Structure Cover
Signal Strength	75

Post Installation Notes

Meter Type	ADS	Triton+
Telemetry Type		
Installation Date	4/16/2018	

Area Location Map

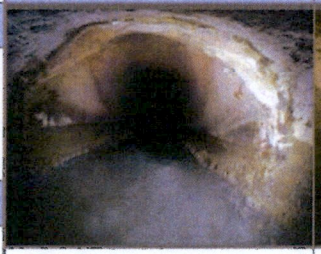


Area View Picture

Top View Picture

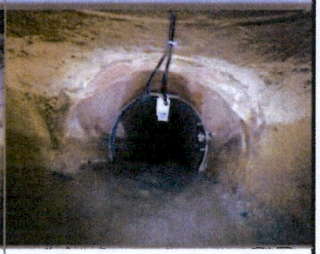
Access Notes In field across street from Lee Cv, dirt path runs along side manhole.

Investigation Photo



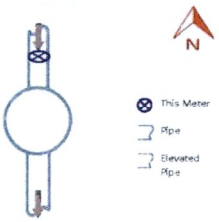
Hydraulic Characteristics Ripples at end of pipe, not very much up pipe.

Installation Photo

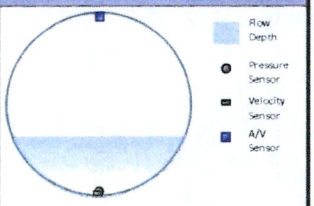


Installation Notes

Install Plan Sketch



Install Cross-Section Sketch



Pressure Clock Position: 6:00

Velocity Clock Position: 6:00

Approvals

Recommended by FSP	Client Approval

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Etc Engineers & Architects	Site Name
Forrest City FLow Metering	FC-02

Inspected By	kbelk	Project No.	Site Code
Inspected Date/Time	4/12/2018 9:21 AM	18-3273-00	T

System Information

Target Pipe Dia. (in)	12.0
Municipality	
District	Forrest City
Assigned Rain Gauge	FCRG-1
Client Manhole #	245
U/S Connecting MH I.D	246
System Characteristics:	
Residential ☑ Commercial ☐ Industrial ☐	
P/S Influence	No
WWTP Influence	No

Location Information

Site Address	1305 Dawson Rd
Site Access	Roadway, Low Traffic
Longitude	-90.79890000
Latitude	35.02350000
MH Type	Other
Manhole Depth (ft)	3.43
Manhole Width (ft)	48.0
Elevated MH	No
Height Elevated (ft)	
Structural Integrity	Safe

Site Information

Pipe Height (in)	12.12		
Pipe Width (in)	12.50		
Pipe Type	Concrete		
Pipe Shape	Circular		
O2	20.9	LEL %	0.0
H2S	0.0	CO	0.0

Hydraulic Information

Flow Depth (in)	5.18
Instant Velocity (fps)	1.75
Surcharge Evidence (ft)	2.00
Silt Type	None
Silt Depth (in)	0.00
Needs Cleaning	No
Backwater	No
Flow Path	Straight
Drop Inlet	No
Hydraulic Rating	Fair

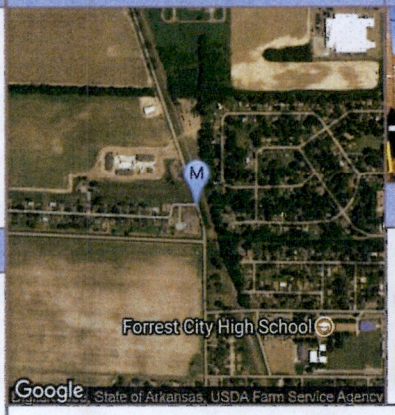
Installation Notes

Location in Pipe (ft)	1.5
Location from Manhole	
Sensors	Pressure, Velocity, and Ultra
Antenna Surface	Paved Surface
Signal Strength	75

Post Installation Notes

Meter Type	ADS	Triton+
Telemetry Type		
Installation Date	4/20/2018	

Area Location Map

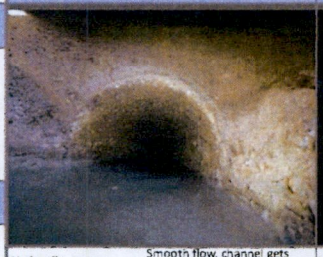


Area View Picture

Top View Picture

Access Notes Corner of victor st and Dawson Rd. Right next to curb. Basic sign and cone setup.

Investigation Photo

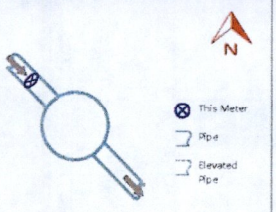


Installation Photo

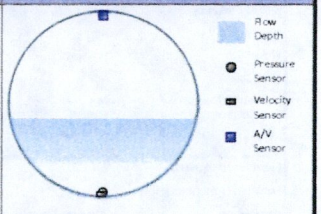
Hydraulic Characteristics Smooth flow, channel gets smaller midway thru, should have no affect on flow in pipe

Installation Notes

Install Plan Sketch



Install Cross-Section Sketch



Pressure Clock Position: 6:00

Velocity Clock Position: 6:00

Approvals

Recommended by FSP	Client Approval

rjngroup
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Etc Engineers & Architects	Site Name
Forrest City FLow Metering	FC-03

Inspected By	kbelk	Project No.	Site Code
Inspected Date/Time	4/12/2018 9:43 AM	18-3273-00	T

System Information

Target Pipe Dia. (in)	8.0
Municipality	
District	Forrest City
Assigned Rain Gauge	FCRG-1
Client Manhole #	24
U/S Connecting MH I.D	25
System Characteristics:	
Residential ☑ Commercial ☐ Industrial ☐	
P/S Influence	No
WWTP Influence	No

Location Information

Site Address	272 Laney Dr
Site Access	Roadway, Low Traffic
Longitude	-90.79690000
Latitude	35.02310000
MH Type	Other
Manhole Depth (ft)	4.97
Manhole Width (ft)	44.0
Elevated MH	No
Height Elevated (ft)	
Structural Integrity	Safe

Site Information

Pipe Height (in)	7.87		
Pipe Width (in)	7.75		
Pipe Type	Vitrified Clay		
Pipe Shape	Circular		
O2	20.9	LEL %	0.0
H2S	0.0	CO	0.0

Hydraulic Information

Flow Depth (in)	3.50
Instant Velocity (fps)	1.25
Surcharge Evidence (ft)	1.00
Silt Type	None
Silt Depth (in)	0.00
Needs Cleaning	No
Backwater	No
Flow Path	Straight
Drop Inlet	No
Hydraulic Rating	Fair

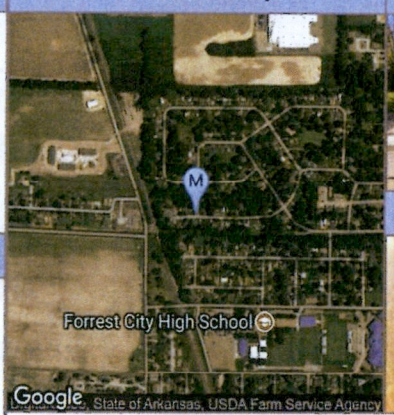
Installation Notes

Location in Pipe (ft)	2.0
Location from Manhole	
Sensors	Pressure, Velocity, and Ultra
Antenna Surface	Paved Surface
Signal Strength	75

Post Installation Notes

Meter Type	ADS	5000 AS
Telemetry Type		
Installation Date	4/17/2018	

Area Location Map



Area View Picture

Top View Picture

Access Notes: In middle of intersection of Laney Dr and Beech Grove Dr. Basic sign and cone setup.

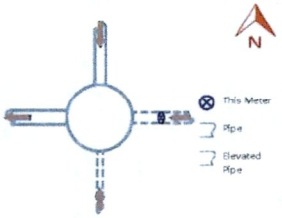
Investigation Photo

Installation Photo

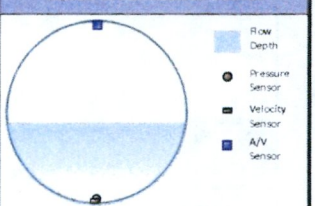
Hydraulic Characteristics: Smooth flow

Installation Notes:

Install Plan Sketch



Install Cross-Section Sketch



Pressure Clock Position: 6:00

Velocity Clock Position: 6:00

Approvals

Recommended by FSP	Client Approval

rjngroup
The Choice for Collection System Solutions

Etc Engineers & Architects	Site Name
Forrest City FLow Metering	FC-04

Inspected By	kbelk	Project No.	Site Code
Inspected Date/Time	4/12/2018 10:06 AM	18-3273-00	T

System Information

Target Pipe Dia. (in)	10.0
Municipality	
District	Forrest City
Assigned Rain Gauge	FCRG-4
Client Manhole #	760
U/S Connecting MH I.D	327
System Characteristics:	
Residential ☑ Commercial ☐ Industrial ☐	
P/S Influence	No
WWTP Influence	No

Location Information

Site Address	332 West Cook Ave
Site Access	Roadway, Low Traffic
Longitude	-90.79310000
Latitude	35.01420000
MH Type	Poured Concrete
Manhole Depth (ft)	7.54
Manhole Width (ft)	48.0
Elevated MH	No
Height Elevated (ft)	
Structural Integrity	Safe

Site Information

Pipe Height (in)	10.25		
Pipe Width (in)	10.25		
Pipe Type	Vitrified Clay		
Pipe Shape	Circular		
O2	20.9	LEL %	0.0
H2S	0.0	CO	0.0

Hydraulic Information

Flow Depth (in)	3.00
Instant Velocity (fps)	0.75
Surcharge Evidence (ft)	4.50
Silt Type	None
Silt Depth (in)	0.00
Needs Cleaning	No
Backwater	No
Flow Path	Straight
Drop Inlet	No
Hydraulic Rating	Fair

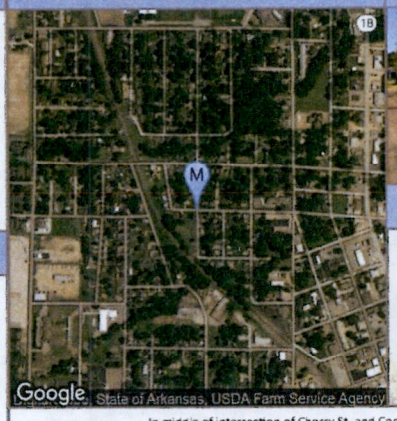
Installation Notes

Location in Pipe (ft)	1.5
Location from Manhole	
Sensors	Pressure, Velocity, and Ultra
Antenna Surface	Paved Surface
Signal Strength	75

Post Installation Notes

Meter Type	ADS	5000 AS
Telemetry Type		
Installation Date	4/19/2018	

Area Location Map



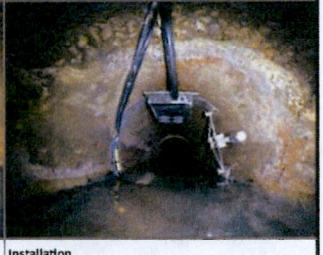
Area View Picture

Top View Picture

Access Notes	In middle of intersection of Cherry St, and Cook Ave. 5 cones around manhole, and signs.

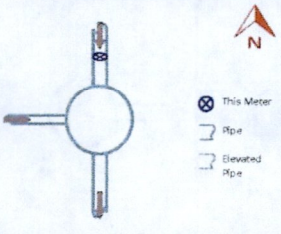
Investigation Photo

Installation Photo

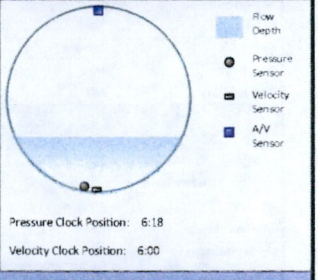


Hydraulic Characteristics	Smooth flow.
Installation Notes	

Install Plan Sketch



Install Cross-Section Sketch



Pressure Clock Position: 6:18

Velocity Clock Position: 6:00

Approvals

Recommended by FSP	Client Approval

rjngroup
The Choice for Collection System Solutions

Etc Engineers & Architects	Site Name
Forrest City FLow Metering	FC-05

Inspected By	kbelk	Project No.	Site Code
Inspected Date/Time	4/12/2018 10:26 AM	18-3273-00	T

System Information

Target Pipe Dia. (in)	8.0
Municipality	
District	Forrest City
Assigned Rain Gauge	FCRG-4
Client Manhole #	764
U/S Connecting MH I.D	767
System Characteristics:	
Residential ☑ Commercial ☐ Industrial ☐	
P/S Influence	No
WWTP Influence	No

Location Information

Site Address	301 Poplar Ave
Site Access	Roadway, Low Traffic
Longitude	-90.79220000
Latitude	35.01290000
MH Type	Brick
Manhole Depth (ft)	6.51
Manhole Width (ft)	44.0
Elevated MH	No
Height Elevated (ft)	
Structural Integrity	Safe

Site Information

Pipe Height (in)	7.88		
Pipe Width (in)	8.00		
Pipe Type	Vitrified Clay		
Pipe Shape	Circular		
O2	20.9	LEL %	0.0
H2S	0.0	CO	0.0

Hydraulic Information

Flow Depth (in)	5.06
Instant Velocity (fps)	0.50
Surcharge Evidence (ft)	
Silt Type	None
Silt Depth (in)	0.00
Needs Cleaning	No
Backwater	No
Flow Path	Straight
Drop Inlet	No
Hydraulic Rating	Fair

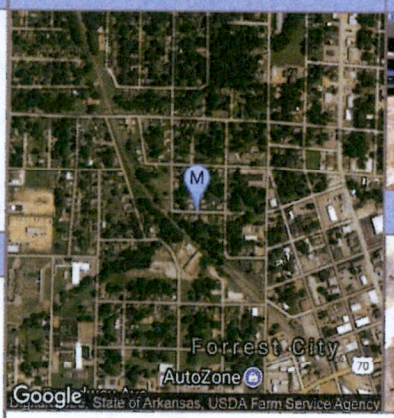
Installation Notes

Location in Pipe (ft)	1.5
Location from Manhole	
Sensors	Pressure, Velocity, and Ultra
Antenna Surface	Paved Surface
Signal Strength	75

Post Installation Notes

Meter Type	ADS	5000 AS
Telemetry Type		
Installation Date	4/17/2018	

Area Location Map



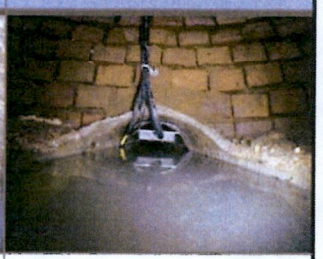
Area View Picture

Top View Picture

Access Notes: In road, next to driveway of address. Basic sign and cone setup.

Investigation Photo

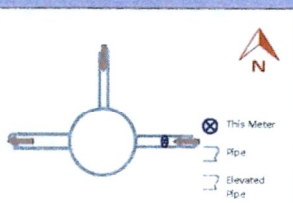
Installation Photo



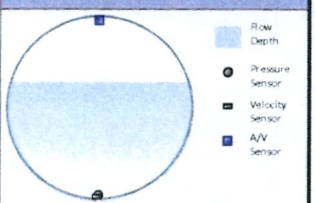
Hydraulic Characteristics: No silt up pipe, but silt in channel, round .50

Installation Notes:

Install Plan Sketch



Install Cross-Section Sketch



Pressure Clock Position: 6:00

Velocity Clock Position: 6:00

Approvals

Recommended by FSP	Client Approval

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Etc Engineers & Architects	Site Name
Forrest City FLow Metering	FC-06

Inspected By	kbelk	Project No.	Site Code
Inspected Date/Time	4/12/2018 11:32 AM	18-3273-00	T

System Information

Target Pipe Dia. (in)	8.0
Municipality	
District	Forrest City
Assigned Rain Gauge	FCRG-4
Client Manhole #	764
U/S Connecting MH I.D	771
System Characteristics:	
Residential ☑ Commercial ☐ Industrial ☐	
P/S Influence	No
WWTP Influence	No

Location Information

Site Address	370 Haven St
Site Access	Off-Road
Longitude	-90.79290000
Latitude	35.01170000
MH Type	Poured Concrete
Manhole Depth (ft)	4.11
Manhole Width (ft)	48.0
Elevated MH	No
Height Elevated (ft)	
Structural Integrity	Safe

Site Information

Pipe Height (in)	8.12		
Pipe Width (in)	8.18		
Pipe Type	Vitrified Clay		
Pipe Shape	Circular		
O2	20.9	LEL %	0.0
H2S	0.0	CO	0.0

Hydraulic Information

Flow Depth (in)	5.31
Instant Velocity (fps)	1.25
Surcharge Evidence (ft)	
Silt Type	None
Silt Depth (in)	0.00
Needs Cleaning	No
Backwater	No
Flow Path	Slight Bend
Drop Inlet	No
Hydraulic Rating	Fair

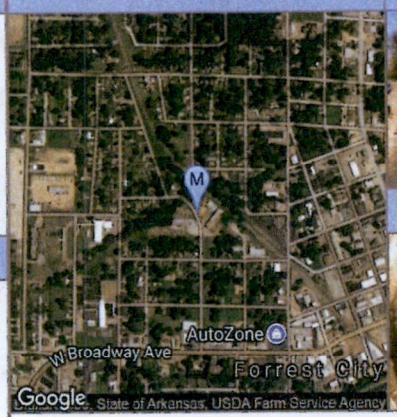
Installation Notes

Location in Pipe (ft)	1.5
Location from Manhole	
Sensors	Pressure, Velocity, and Ultra
Antenna Surface	Non-Paved Surface
Signal Strength	75

Post Installation Notes

Meter Type	ADS	5000 AS
Telemetry Type		
Installation Date	4/18/2018	

Area Location Map



Area View Picture

Top View Picture

Access Notes: Just off road pavement.

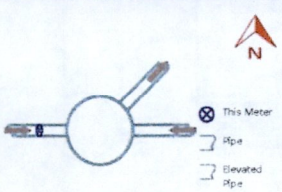
Investigation Photo

Hydraulic Characteristics: No silt up pipe, round one inch of silt in channel.

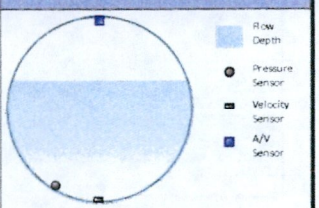
Installation Photo

Installation Notes:

Install Plan Sketch



Install Cross-Section Sketch



Pressure Clock Position: 7:00

Velocity Clock Position: 6:00

Approvals

Recommended by FSP	Client Approval

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Etc Engineers & Architects

Forrest City FLow Metering

Site Name	Project No.	Site Code
FC-07	18-3273-00	T

Inspected By	kbelk
Inspected Date/Time	4/12/2018 12:31 PM

System Information

Target Pipe Dia. (in)	8.0
Municipality	
District	Forrwst City
Assigned Rain Gauge	FCRG-3
Client Manhole #	931
U/S Connecting MH I.D	474
System Characteristics:	
Residential ☑ Commercial ☐ Industrial ☐	
P/S Influence	Yes
WWTP Influence	No

Location Information

Site Address	2522 E Broadway Ave
Site Access	Off-Road
Longitude	-90.75820000
Latitude	35.01050000
MH Type	Other
Manhole Depth (ft)	7.97
Manhole Width (ft)	48.0
Elevated MH	No
Height Elevated (ft)	
Structural Integrity	Safe

Site Information

Pipe Height (in)	7.31
Pipe Width (in)	7.69
Pipe Type	Vitrified Clay
Pipe Shape	Circular

O2	20.9	LEL %	0.0
H2S	0.0	CO	0.0

Hydraulic Information

Flow Depth (in)	4.00
Instant Velocity (fps)	0.00
Surcharge Evidence (ft)	6.50
Silt Type	None
Silt Depth (in)	0.00
Needs Cleaning	No
Backwater	No
Flow Path	Straight
Drop Inlet	No
Hydraulic Rating	Poor

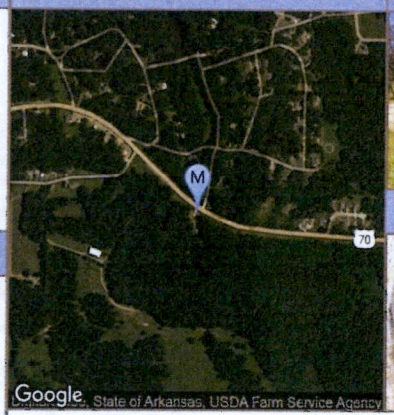
Installation Notes

Location in Pipe (ft)	1.0
Location from Manhole	
Sensors	Pressure, Velocity, and Ultra
Antenna Surface	[Default] Code: Structure Cover
Signal Strength	75

Post Installation Notes

Meter Type	ADS	5000 AS
Telemetry Type		
Installation Date	4/19/2018	

Area Location Map



Area View Picture

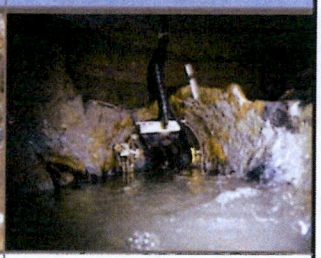
Top View Picture

Access Notes Pull on to pump station road, just up past address. In grass marked with green.

Investigation Photo

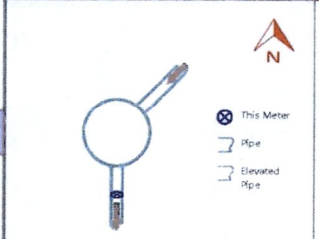
Hydraulic Characteristics Surcharged, approved for out going by Mac, and city contacts.

Installation Photo

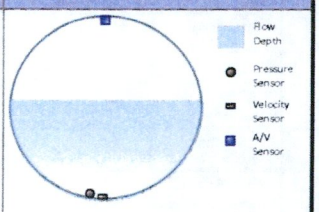


Installation Notes Outgoing install

Install Plan Sketch



Install Cross-Section Sketch



Pressure Clock Position: 6:18

Velocity Clock Position: 6:00

Approvals

Recommended by FSP	Client Approval

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Etc Engineers & Architects

Forrest City FLow Metering

Site Name	Project No.	Site Code
FC-08	18-3273-00	T

Inspected By	kbelk
Inspected Date/Time	4/13/2018 9:47 AM

System Information

Target Pipe Dia. (in)	8.0
Municipality	
District	Forrest City
Assigned Rain Gauge	FCRG-3
Client Manhole #	951
U/S Connecting MH I.D	952
System Characteristics:	
Residential ☑ Commercial ☐ Industrial ☐	
P/S Influence	No
WWTP Influence	No

Location Information

Site Address	432 St aFrancis 702 Rd
Site Access	Roadway, Low Traffic
Longitude	-90.77060000
Latitude	35.00770000
MH Type	Brick
Manhole Depth (ft)	5.81
Manhole Width (ft)	43.0
Elevated MH	No
Height Elevated (ft)	
Structural Integrity	Safe

Site Information

Pipe Height (in)	7.81		
Pipe Width (in)	7.81		
Pipe Type	Vitrified Clay		
Pipe Shape	Circular		
O2	20.9	LEL %	0.0
H2S	0.0	CO	0.0

Hydraulic Information

Flow Depth (in)	2.12
Instant Velocity (fps)	0.50
Surcharge Evidence (ft)	1.00
Silt Type	None
Silt Depth (in)	0.00
Needs Cleaning	No
Backwater	No
Flow Path	Straight
Drop Inlet	No
Hydraulic Rating	Fair

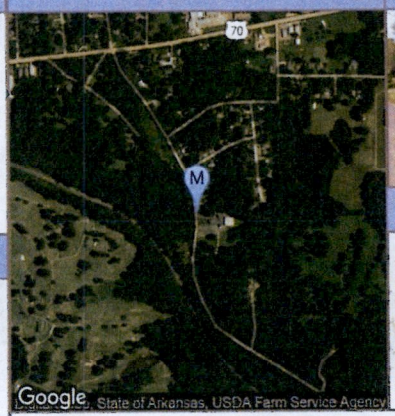
Installation Notes

Location in Pipe (ft)	1.5
Location from Manhole	
Sensors	Pressure, Velocity, and Ultra
Antenna Surface	Paved Surface
Signal Strength	75

Post Installation Notes

Meter Type	ADS	5000 AS
Telemetry Type		
Installation Date	4/19/2018	

Area Location Map

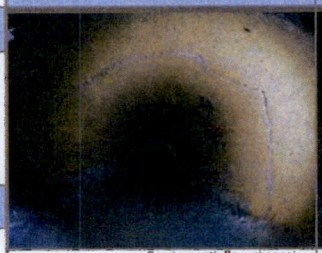


Area View Picture

Top View Picture

Access Notes In road marked with green, basic sign and cone setup. Lid may get wedged, contact city for access help, if that's the case.

Investigation Photo

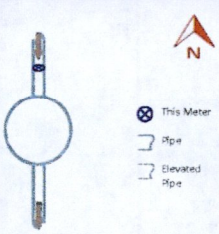


Hydraulic Characteristics Good smooth flow, channel itself has a foot drop going to pipe 1. Should have no affe

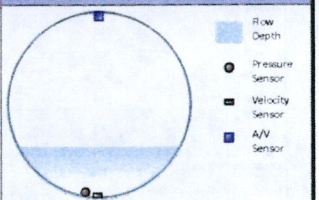
Installation Photo

Installation Notes

Install Plan Sketch



Install Cross-Section Sketch



Pressure Clock Position: 6:18

Velocity Clock Position: 6:00

Approvals

Recommended by FSP	Client Approval

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Etc Engineers & Architects	Site Name
Forrest City FLow Metering	FC-09

Inspected By	kbelk	Project No.	Site Code
Inspected Date/Time	4/13/2018 7:17 AM	18-3273-00	

System Information

Target Pipe Dia. (in)	8.0
Municipality	
District	Forrest City
Assigned Rain Gauge	FCRG-4
Client Manhole #	858
U/S Connecting MH I.D	859
System Characteristics:	
Residential ☑ Commercial ☐ Industrial ☐	
P/S Influence	No
WWTP Influence	No

Location Information

Site Address	2085 West St
Site Access	Off-Road
Longitude	-90.78800000
Latitude	35.00710000
MH Type	Brick
Manhole Depth (ft)	7.08
Manhole Width (ft)	43.0
Elevated MH	No
Height Elevated (ft)	
Structural Integrity	Safe

Site Information

Pipe Height (in)	7.94		
Pipe Width (in)	7.88		
Pipe Type	Vitrified Clay		
Pipe Shape	Circular		
O2	20.9	LEL %	0.0
H2S	0.0	CO	0.0

Hydraulic Information

Flow Depth (in)	2.06
Instant Velocity (fps)	2.00
Surcharge Evidence (ft)	4.50
Silt Type	None
Silt Depth (in)	0.00
Needs Cleaning	No
Backwater	No
Flow Path	Straight
Drop Inlet	No
Hydraulic Rating	Fair

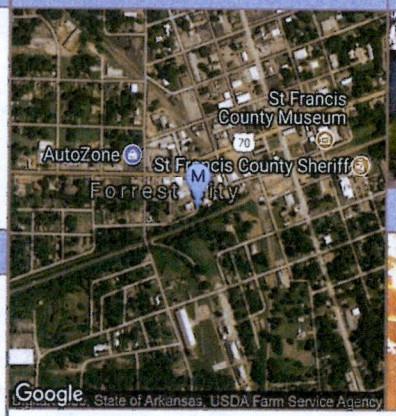
Installation Notes

Location in Pipe (ft)	1.5
Location from Manhole	
Sensors	Pressure, Velocity, and Ultra
Antenna Surface	[Default] Code: Structure Cover
Signal Strength	75

Post Installation Notes

Meter Type	ADS	5000 AS
Telemetry Type		
Installation Date	4/18/2018	

Area Location Map



Area View Picture

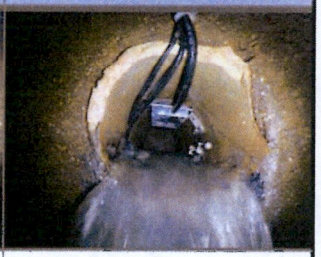
Top View Picture

Access Notes: In grassy just off road in corner, look for street sign. Basic sign and cone setup.

Investigation Photo

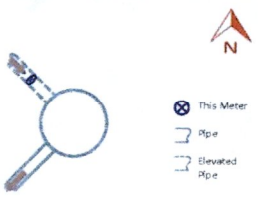
Hydraulic Characteristics

Installation Photo

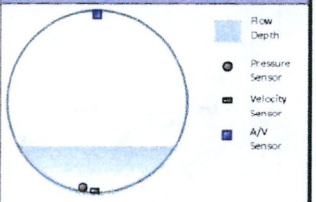


Installation Notes

Install Plan Sketch



Install Cross-Section Sketch



Pressure Clock Position: 6:18

Velocity Clock Position: 6:00

Approvals

Recommended by FSP	Client Approval

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Etc Engineers & Architects	Site Name
Forrest City FLow Metering	FC-10

Inspected By	kbelk	Project No.	Site Code
Inspected Date/Time	4/12/2018 1:57 PM	18-3273-00	T

System Information

Target Pipe Dia. (in)	10.0
Municipality	
District	Forrest City
Assigned Rain Gauge	FCRG-4
Client Manhole #	667
U/S Connecting MH I.D	668
System Characteristics:	
Residential ☑ Commercial ☐ Industrial ☐	
P/S Influence	No
WWTP Influence	No

Location Information

Site Address	122 W Franklin Ave
Site Access	Off-Road
Longitude	-90.79070000
Latitude	35.00670000
MH Type	Poured Concrete
Manhole Depth (ft)	10.99
Manhole Width (ft)	48.0
Elevated MH	No
Height Elevated (ft)	
Structural Integrity	Safe

Site Information

Pipe Height (in)	9.81		
Pipe Width (in)	9.87		
Pipe Type	Vitrified Clay		
Pipe Shape	Circular		
O2	20.9	LEL %	0.0
H2S	0.0	CO	0.0

Hydraulic Information

Flow Depth (in)	4.37
Instant Velocity (fps)	1.50
Surcharge Evidence (ft)	
Silt Type	None
Silt Depth (in)	0.00
Needs Cleaning	No
Backwater	No
Flow Path	Straight
Drop Inlet	No
Hydraulic Rating	No Flow

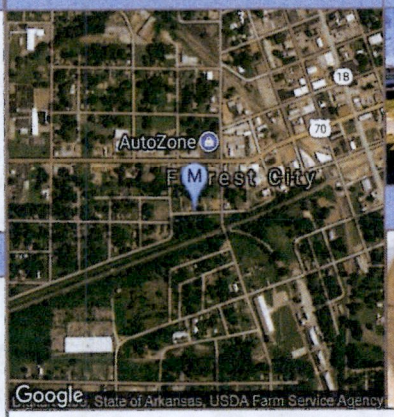
Installation Notes

Location in Pipe (ft)	1.5
Location from Manhole	
Sensors	Pressure, Velocity, and Ultra
Antenna Surface	Non-Paved Surface
Signal Strength	75

Post Installation Notes

Meter Type	ADS	5000 AS
Telemetry Type		
Installation Date	4/20/2018	

Area Location Map

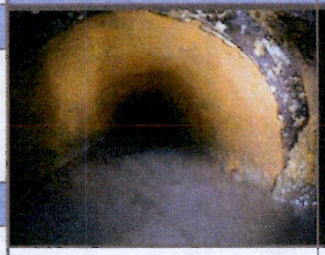


Area View Picture

Top View Picture

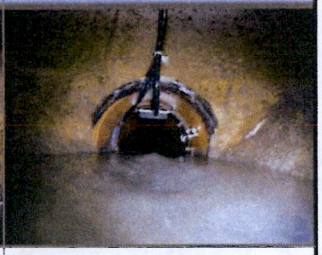
Access Notes: In grass in front of address.

Investigation Photo



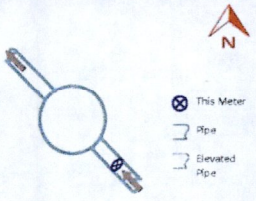
Hydraulic Characteristics

Installation Photo

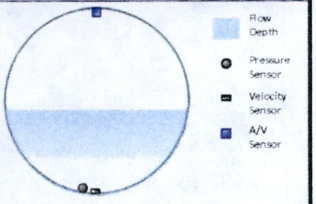


Installation Notes

Install Plan Sketch



Install Cross-Section Sketch



Pressure Clock Position: 6:18

Velocity Clock Position: 6:00

Approvals

Recommended by FSP	Client Approval

rjngroup
The Choice for Collection System Solutions

Etc Engineers & Architects	Site Name
Forrest City FLow Metering	FC-11

Inspected By	kbelk	Project No.	Site Code
Inspected Date/Time	4/13/2018 8:50 AM	18-3273-00	T

System Information

Target Pipe Dia. (in)	27.0
Municipality	
District	Forrest City
Assigned Rain Gauge	FCRG-4
Client Manhole #	993
U/S Connecting MH I.D	562
System Characteristics:	
Residential - ☑ Commercial - ☐ Industrial - ☐	
P/S Influence	No
WWTP Influence	No

Location Information

Site Address	1058 St Francis 200 Rd
Site Access	Off-Road
Longitude	-90.80850000
Latitude	35.00110000
MH Type	Poured Concrete
Manhole Depth (ft)	12.08
Manhole Width (ft)	60.0
Elevated MH	No
Height Elevated (ft)	
Structural Integrity	Safe

Site Information

Pipe Height (in)	26.56		
Pipe Width (in)	27.06		
Pipe Type	Lined		
Pipe Shape	Circular		
O2	20.9	LEL %	0.0
H2S	0.0	CO	0.0

Hydraulic Information

Flow Depth (in)	9.81
Instant Velocity (fps)	2.00
Surcharge Evidence (ft)	10.00
Silt Type	Coarse
Silt Depth (in)	1.00
Needs Cleaning	No
Backwater	No
Flow Path	Straight
Drop Inlet	No
Hydraulic Rating	Fair

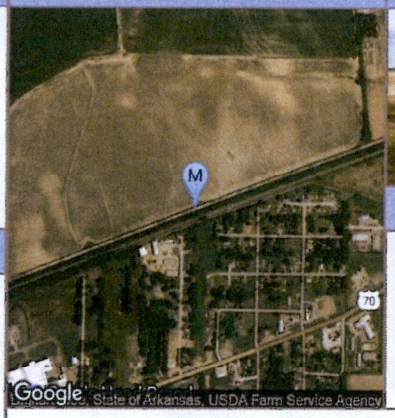
Installation Notes

Location in Pipe (ft)	2.2
Location from Manhole	
Sensors	Pressure, Velocity, and Ultra
Antenna Surface	[Default] Code: Structure Cover
Signal Strength	75

Post Installation Notes

Meter Type	ADS	Triton+
Telemetry Type		
Installation Date	4/16/2018	

Area Location Map



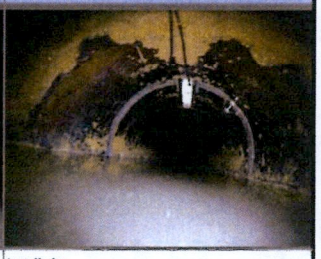
Area View Picture

Top View Picture

Access Notes Just off gravel road married with green before address given. Look for white pipe sticken outa ground. Slightly below grade.

Investigation Photo

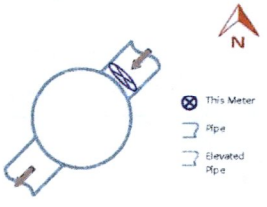
Installation Photo



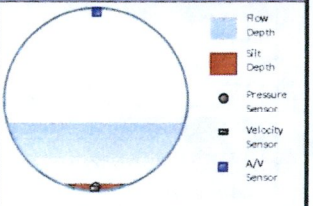
Hydraulic Characteristics

Installation Notes

Install Plan Sketch



Install Cross-Section Sketch



Pressure Clock Position: 6:00

Velocity Clock Position: 6:00

Approvals

Recommended by FSP	Client Approval

rjngroup
The Choice for Collection System Solutions

Etc Engineers & Architects	Site Name
Forrest City FLow Metering	FC-12

Inspected By	kbelk	Project No.	Site Code
Inspected Date/Time	4/13/2018 8:06 AM	18-3273-00	

System Information

Target Pipe Dia. (in)	10.0
Municipality	
District	Forrest City
Assigned Rain Gauge	FCRG-3
Client Manhole #	1107
U/S Connecting MH LD	1108
System Characteristics:	
Residential ☑ Commercial ☐ Industrial ☐	
P/S Influence	No
WWTP Influence	No

Location Information

Site Address	100-198 C Lane
Site Access	Roadway, Low Traffic
Longitude	-90.79390000
Latitude	34.99570000
MH Type	Brick
Manhole Depth (ft)	8.42
Manhole Width (ft)	48.0
Elevated MH	No
Height Elevated (ft)	
Structural Integrity	Safe

Site Information

Pipe Height (in)	10.00		
Pipe Width (in)	9.81		
Pipe Type	Concrete		
Pipe Shape	Circular		
O2	20.9	LEL %	0.0
H2S	0.0	CO	0.0

Hydraulic Information

Flow Depth (in)	2.34
Instant Velocity (fps)	1.25
Surcharge Evidence (ft)	8.42
Silt Type	None
Silt Depth (in)	0.00
Needs Cleaning	No
Backwater	Yes
Flow Path	Straight
Drop Inlet	No
Hydraulic Rating	Fair

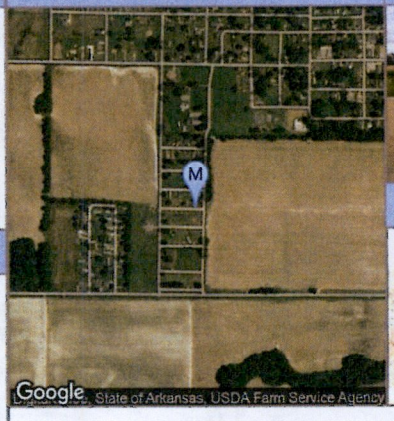
Installation Notes

Location in Pipe (ft)	1.5
Location from Manhole	
Sensors	Pressure, Velocity, and Ultra
Antenna Surface	Paved Surface
Signal Strength	75

Post Installation Notes

Meter Type	ADS	5000 AS
Telemetry Type		
Installation Date	4/18/2018	

Area Location Map



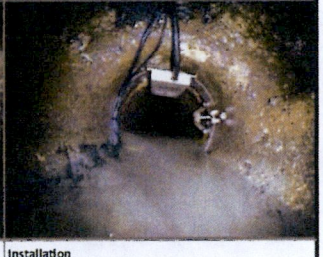
Area View Picture

Top View Picture

Access Notes: In roadway of c lane marked with green, no residential structures better address.

Investigation Photo

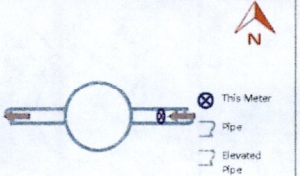
Installation Photo



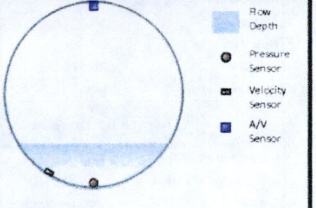
Hydraulic Characteristics

Installation Notes

Install Plan Sketch



Install Cross-Section Sketch



Pressure Clock Position: 6:00

Velocity Clock Position: 7:00

Approvals

Recommended by FSP	Client Approval

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Etc Engineers & Architects

Forrest City FLow Metering

Site Name	Site Code
FC-13	T

Inspected By	kbelk	Project No.	Site Code
Inspected Date/Time	4/12/2018 3:11 PM	18-3273-00	T

System Information

Target Pipe Dia. (in)	30.0
Municipality	
District	Forrest City
Assigned Rain Gauge	FCRG-2
Client Manhole #	1005
U/S Connecting MH I.D	1374
System Characteristics:	
Residential ☑ Commercial ☐ Industrial ☐	
P/S Influence	No
WWTP Influence	No

Location Information

Site Address	1154 St Francis 200 Rd
Site Access	Roadway, Low Traffic
Longitude	-90.82570000
Latitude	34.99610000
MH Type	Poured Concrete
Manhole Depth (ft)	13.81
Manhole Width (ft)	60.0
Elevated MH	No
Height Elevated (ft)	
Structural Integrity	Safe

Site Information

Pipe Height (in)	31.73		
Pipe Width (in)	30.18		
Pipe Type	Steel		
Pipe Shape	Circular		
O2	20.9	LEL %	0.0
H2S	0.0	CO	0.0

Hydraulic Information

Flow Depth (in)	4.00
Instant Velocity (fps)	5.00
Surcharge Evidence (ft)	
Silt Type	None
Silt Depth (in)	0.00
Needs Cleaning	No
Backwater	No
Flow Path	Straight
Drop Inlet	No
Hydraulic Rating	Fair

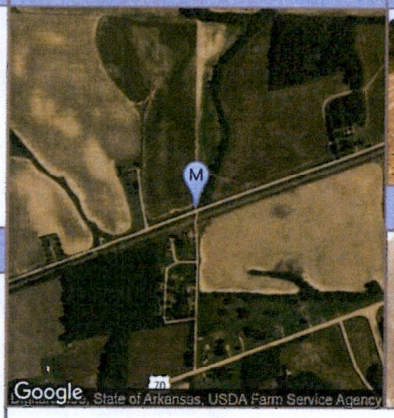
Installation Notes

Location in Pipe (ft)	3.0
Location from Manhole	
Sensors	Pressure, Velocity, and Ultra
Antenna Surface	[Default] Code: Structure Cover
Signal Strength	75

Post Installation Notes

Meter Type	ADS	Triton+
Telemetry Type		
Installation Date	4/17/2018	

Area Location Map



Area View Picture

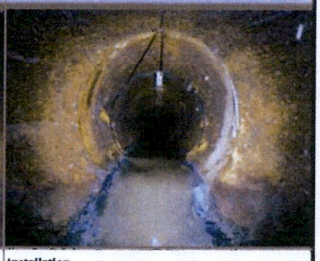
Top View Picture

Access Notes: Dirt road across from barricades.

Investigation Photo

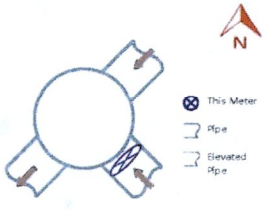
Hydraulic Characteristics

Installation Photo

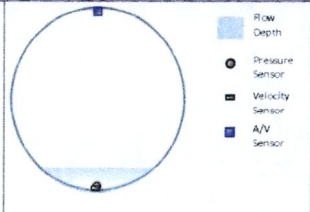


Installation Notes

Install Plan Sketch



Install Cross-Section Sketch



Pressure Clock Position: 6:00

Velocity Clock Position: 6:00

Approvals

Recommended by FSP	Client Approval

rjngroup The Choice for Collection System Solutions	Etc Engineers & Architects Forrest City FLow Metering	Site Name FC-14
Inspected By: kbelk	Project No.: 18-3273-00	Site Code: T
Inspected Date/Time: 4/12/2018 2:36 PM		

System Information

Target Pipe Dia. (in)	15.0
Municipality	
District	Forrest City
Assigned Rain Gauge	FCRG-4
Client Manhole #	1032
U/S Connecting MH I.D	1033
System Characteristics:	
Residential ☑ Commercial ☐ Industrial ☐	
P/S Influence	No
WWTP Influence	No

Location Information

Site Address	2150 Peevey Ave
Site Access	Off-Road
Longitude	-90.80820000
Latitude	35.00030000
MH Type	Brick
Manhole Depth (ft)	5.80
Manhole Width (ft)	44.3
Elevated MH	No
Height Elevated (ft)	
Structural Integrity	Safe

Site Information

Pipe Height (in)	15.12		
Pipe Width (in)	15.06		
Pipe Type	Vitrified Clay		
Pipe Shape	Circular		
O2	20.9	LEL %	0.0
H2S	0.0	CO	0.0

Hydraulic Information

Flow Depth (in)	2.36
Instant Velocity (fps)	1.25
Surcharge Evidence (ft)	
Silt Type	None
Silt Depth (in)	0.00
Needs Cleaning	No
Backwater	No
Flow Path	Straight
Drop Inlet	No
Hydraulic Rating	Fair

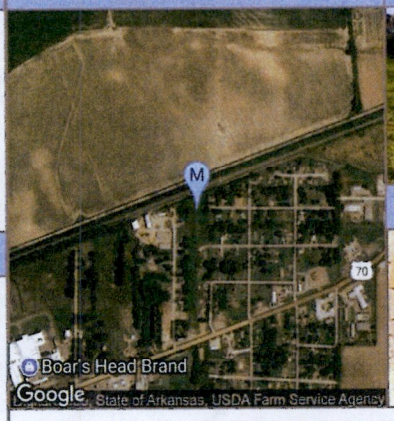
Installation Notes

Location in Pipe (ft)	1.5
Location from Manhole	
Sensors	Pressure, Velocity, and Ultra
Antenna Surface	[Default] Code: Structure Cover
Signal Strength	75

Post Installation Notes

Meter Type	ADS	5000 AS
Telemetry Type		
Installation Date	4/18/2018	

Area Location Map

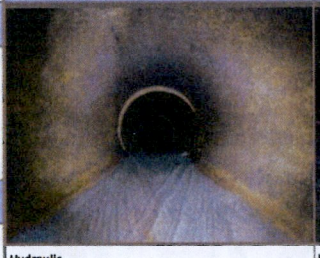


Area View Picture

Top View Picture

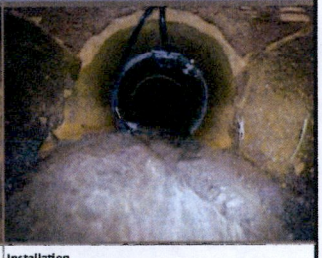
Access Notes: Access thru field across the address.

Investigation Photo



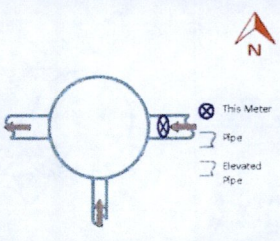
Hydraulic Characteristics

Installation Photo

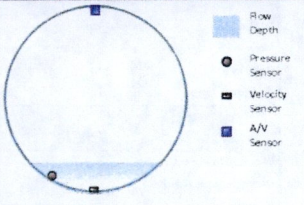


Installation Notes

Install Plan Sketch



Install Cross-Section Sketch



Pressure Clock Position: 7:00

Velocity Clock Position: 6:00

Approvals

Recommended by FSP	Client Approval

rjngroup
The Choice for Collection System Solutions

Etc Engineers & Architects	Site Name
Forrest City FLow Metering	FC-15

Inspected By	kbelk	Project No.	Site Code
Inspected Date/Time	4/12/2018 3:33 PM	18-3273-00	T

System Information

Target Pipe Dia. (in)	30.0
Municipality	
District	Forrest City
Assigned Rain Gauge	FCRG-2
Client Manhole #	1005
U/S Connecting MH I.D	1004
System Characteristics:	
Residential ☑ Commercial ☐ Industrial ☐	
P/S Influence	No
WWTP Influence	No

Location Information

Site Address	1154 St Francis 200 Rd
Site Access	Roadway, Low Traffic
Longitude	-90.82570000
Latitude	34.99610000
MH Type	Poured Concrete
Manhole Depth (ft)	13.81
Manhole Width (ft)	60.0
Elevated MH	No
Height Elevated (ft)	
Structural Integrity	Safe

Site Information

Pipe Height (in)	29.81		
Pipe Width (in)	29.75		
Pipe Type	Steel		
Pipe Shape	Circular		
O2	20.9	LEL %	0.0
H2S	0.0	CO	0.0

Hydraulic Information

Flow Depth (in)	13.75
Instant Velocity (fps)	0.75
Surcharge Evidence (ft)	
Silt Type	None
Silt Depth (in)	0.00
Needs Cleaning	No
Backwater	No
Flow Path	Straight
Drop Inlet	Yes
Hydraulic Rating	Fair

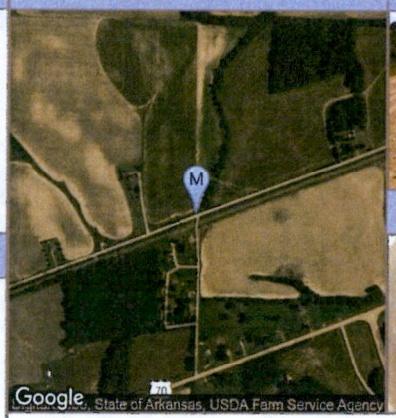
Installation Notes

Location in Pipe (ft)	2.5
Location from Manhole	
Sensors	Pressure, Velocity, and Ultra
Antenna Surface	[Default] Code: Structure Cover
Signal Strength	75

Post Installation Notes

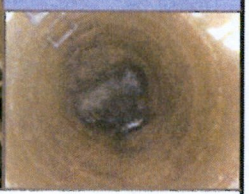
Meter Type	ADS	Triton+
Telemetry Type		
Installation Date	4/17/2018	

Area Location Map



Area View Picture

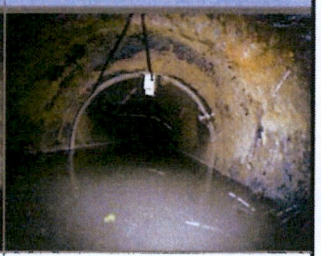
Top View Picture



Access Notes: Dirt road, across from barricade.

Investigation Photo

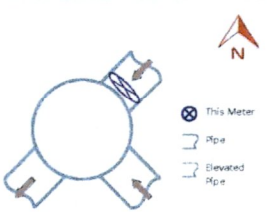
Installation Photo



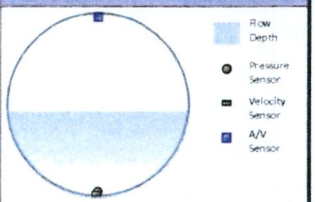
Hydraulic Characteristics: Some influence at end of pipe by elevated pipe. Up pipe smooth evening flow.

Installation Notes:

Install Plan Sketch



Install Cross-Section Sketch



Pressure Clock Position: 6:00

Velocity Clock Position: 6:00

Approvals

Recommended by FSP	Client Approval

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The Choice for Collection System Solutions

Etc Engineers & Architects	Site Name
Forrest City FLow Metering	FC-16

Inspected By	kbelk	Project No.	Site Code
Inspected Date/Time	4/13/2018 9:20 AM	18-3273-00	

System Information

Target Pipe Dia. (in)	10.0
Municipality	
District	Forrest City
Assigned Rain Gauge	FCRG-4
Client Manhole #	626
U/S Connecting MH I.D	625
System Characteristics:	
Residential ☐ Commercial ☑ Industrial ☐	
P/S Influence	No
WWTP Influence	No

Location Information

Site Address	305 Turner Ave
Site Access	Off-Road
Longitude	-90.79890000
Latitude	35.00830000
MH Type	Brick
Manhole Depth (ft)	4.22
Manhole Width (ft)	42.0
Elevated MH	No
Height Elevated (ft)	
Structural Integrity	Safe

Site Information

Pipe Height (in)	9.94		
Pipe Width (in)	9.94		
Pipe Type	Vitrified Clay		
Pipe Shape	Circular		
O2	20.9	LEL %	0.0
H2S	0.0	CO	0.0

Hydraulic Information

Flow Depth (in)	2.87
Instant Velocity (fps)	1.00
Surcharge Evidence (ft)	1.00
Silt Type	None
Silt Depth (in)	0.00
Needs Cleaning	No
Backwater	No
Flow Path	Slight Bend
Drop Inlet	No
Hydraulic Rating	Fair

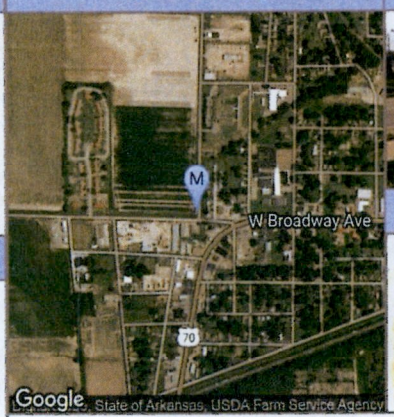
Installation Notes

Location in Pipe (ft)	1.0
Location from Manhole	
Sensors	Pressure, Velocity, and Ultra
Antenna Surface	Non-Paved Surface
Signal Strength	75

Post Installation Notes

Meter Type	ADS	5000 AS
Telemetry Type		
Installation Date	4/18/2018	

Area Location Map

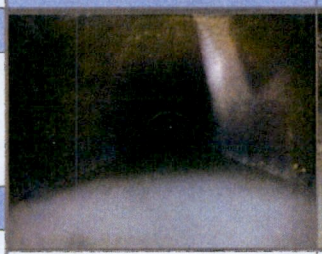


Area View Picture

Top View Picture

Access Notes: Br drainage ditch at the corner of Turner Rd and Dawson Rd, pull on sidewalk for access

Investigation Photo

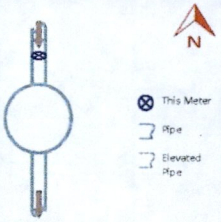


Installation Photo

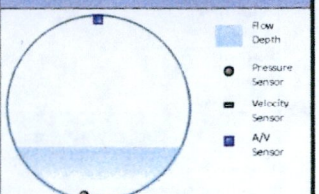
Hydraulic Characteristics

Installation Notes

Install Plan Sketch



Install Cross-Section Sketch



Pressure Clock Position: 6:18

Velocity Clock Position: 6:00

Approvals

Recommended by FSP	Client Approval

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Maintenance Log

Site ID: FC-01

Site Address: 982 Victor St

Manhole ID: 229 Pipe Size: 14.75" X "14.50

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Meter Installation

Date: 4/16/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 14:55 Computer: 14:56

Service
Adjust Band:
Collect Data: Yes
Scrub Probe:
Swap Desiccant:

Settings
Type: ADS
Set Time:
Adjust Level:
P Out of Flow: No
Activate:
Modify LIF:
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 11.90
Swap: No
Telemetry
Voltage: 11.90
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
	63499 - ADS - Triton+
	09222 - ADS - CS4
	31690 - ADS - CS5-D1
	09222 - ADS - CS4

Site Param.
Sensor Positions

	Current O/S	New O/S
Pressure		1.25
Ultrasonic		1.75

P Clock: 6.00 V Clock: 6.00

Telemetry
IP Address: 166.219.18.119
Signal Strength:
Telemetry Type: ADS
Telemetry Model: N/A

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	13:57	5.75	5.60	5.68	5.86	4.50	4.89		0.00
End	14:07	5.44	5.41	5.37	5.55	3.65	4.05		0.00

Profile

	L	C	R
80%	1.31	3.75	1.80
60%			
20%			

Service

Date: 4/30/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 16:21 Computer: 16:23

Service
Adjust Band: No
Collect Data: Yes
Scrub Probe: Yes
Swap Desiccant: No

Settings
Type: ADS
Set Time: No
Adjust Level: No
P Out of Flow: No
Activate: Yes
Modify LIF: No
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 10.90
Swap: No
Telemetry
Voltage: 10.90
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
63499 - ADS - Triton+	
09222 - ADS - CS4	
31690 - ADS - CS5-D1	
09222 - ADS - CS4	

Site Param.
Sensor Positions

	Current O/S	New O/S
Pressure	1.25	
Ultrasonic	1.75	

Comments
Activated meter after adjusting offsets. Reading an inch high all around.

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	15:21	4.00	4.07	4.02	4.10	3.00	3.21		0.00
End	15:31	4.00	4.04	4.02	4.19	3.04	3.36		0.00

Profile

	L	C	R
80%	1.33	2.94	1.96
60%			
20%			

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Maintenance Log

Site ID: FC-01

Site Address: 982 Victor St

Manhole ID: 229 Pipe Size: 14.75" X "14.50

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Service

Date: 5/14/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 11:49 Computer: 11:50

Service

Adjust Band:	No
Collect Data:	Yes
Scrub Probe:	Yes
Swap Desiccant:	No

Settings

Type:	ADS
Set Time:	No
Adjust Level:	No
P Out of Flow:	No
Activate:	Yes
Modify LIF:	No
MLI Auto-P Cal:	On

Battery

Monitor
Voltage: 10.60
Swap: No

Telemetry
Voltage: 10.60
Swap: No

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
63499 - ADS - Triton+	
09222 - ADS - CS4	
31690 - ADS - CS5-D1	
09222 - ADS - CS4	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure	1.25	
Ultrasonic	1.75	

Comments

Adjusted sensitivity on velocity, reading somewhat high.

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	10:50	4.00	3.58	3.99	3.59	3.50	3.95		0.00
End	11:00	3.75	3.89	3.87	3.72	2.90	3.81		0.00

Profile

	L	C	R
80%	2.70	2.75	1.85
60%			
20%			

Service

Date: 5/30/18 Crew: A. Castelan; C. Daniels Entrant: C. Daniels Monitor: 10:12 Computer: 11:11

Service

Adjust Band:	No
Collect Data:	Yes
Scrub Probe:	Yes
Swap Desiccant:	No

Settings

Type:	ADS
Set Time:	No
Adjust Level:	No
P Out of Flow:	No
Activate:	No
Modify LIF:	No
MLI Auto-P Cal:	On

Battery

Monitor
Voltage: 10.40
Swap: No

Telemetry
Voltage: 10.40
Swap: No

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
63499 - ADS - Triton+	
09222 - ADS - CS4	
31690 - ADS - CS5-D1	
09222 - ADS - CS4	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure	1.25	
Ultrasonic	1.75	

Comments

Scrub, cal ,collect

Field Confirmations

PVM S/N: 2356

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	9:15	4.25	3.42	4.00		3.15	2.45		0.00
End	9:20	4.00	3.55	3.99		3.13	2.64		0.00

Profile

	L	C	R
80%	2.38	3.15	2.27
60%			
20%			

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Maintenance Log

Site ID: FC-01

Site Address: 982 Victor St

Manhole ID: 229 Pipe Size: 14.75" X "14.50

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Meter Removal

Date: 6/27/18 Crew: K. Belk; M. Juarez; B. Kauppinen Entrant: M. Juarez Monitor: 7:58 Computer: 8:58

Service

Adjust Band: No
Collect Data: Yes
Scrub Probe:
Swap Desiccant:

Settings

Type: ADS
Set Time:
Adjust Level:
P Out of Flow: No
Activate:
Modify LIF:
MLI Auto-P Cal: On

Battery

Monitor
Voltage: 9.90
Swap: No

Telemetry
Voltage: 9.90
Swap: No

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure	1.25	
Ultrasonic	1.75	

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	8:02	4.25	3.35	4.05	3.64	3.00	3.27		0.00
End	8:05	4.00	3.41	4.20	3.73	2.26	2.77		0.00

Profile

	L	C	R
80%	2.55	2.69	1.84
60%			
20%			

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Maintenance Log

Site ID: FC-02

Site Address: 1305 Dawson Rd

Manhole ID: 245 Pipe Size: 12.50" X "12.12

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Meter Installation

Date: 4/20/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 11:46 Computer: 11:45

Service
Adjust Band:
Collect Data: Yes
Scrub Probe:
Swap Desiccant:

Settings
Type: ADS
Set Time:
Adjust Level:
P Out of Flow: No
Activate:
Modify LIF:
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 12.00
Swap: No
Telemetry
Voltage: 12.00
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
	63842 - ADS - Triton+
	28572 - ADS - CS4
	32264 - ADS - CS5-D1
	28572 - ADS - CS4

Site Param.
Sensor Positions

	Current O/S	New O/S
Pressure		0.25
Ultrasonic		1.75

P Clock: 6.00 V Clock: 6.00

Telemetry
IP Address: 107.84.28.76
Signal Strength:
Telemetry Type: ADS
Telemetry Model: N/A

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	11:03	4.94	4.80	4.88	4.68	2.00	1.79		0.00
End	11:13	4.75	4.86	4.79	4.60	1.78	1.81		0.00

Profile

	L	C	R
80%	1.20	1.75	1.39
60%			
20%			

Service

Date: 4/30/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 16:51 Computer: 16:52

Service
Adjust Band: No
Collect Data: Yes
Scrub Probe: Yes
Swap Desiccant: No

Settings
Type: ADS
Set Time: No
Adjust Level: No
P Out of Flow: No
Activate: No
Modify LIF: No
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 11.10
Swap: No
Telemetry
Voltage: 11.10
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
63842 - ADS - Triton+	
28572 - ADS - CS4	
32264 - ADS - CS5-D1	
28572 - ADS - CS4	

Site Param.
Sensor Positions

	Current O/S	New O/S
Pressure	0.25	
Ultrasonic	1.75	

Comments
Scrubbed sensors,small amount of debris on ultra, along with a grey film. Seemed to be reading correct at the moment.

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	15:52	4.50	4.47	4.41	4.49	1.50	1.68		0.00
End	16:02	4.25	4.31	4.23	4.48	1.67	1.68		0.00

Profile

	L	C	R
80%	1.75	1.66	1.53
60%			
20%			

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Maintenance Log

Site ID: FC-02

Site Address: 1305 Dawson Rd

Manhole ID: 245 Pipe Size: 12.50" X "12.12

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Equipment Swap

Date: 5/14/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 12:16 Computer: 12:18

Service

Adjust Band:	No
Collect Data:	Yes
Scrub Probe:	Yes
Swap Desiccant:	Yes

Settings

Type:	ADS
Set Time:	No
Adjust Level:	No
P Out of Flow:	No
Activate:	No
Modify LIF:	No
MLI Auto-P Cal:	On

Battery

Monitor
Voltage: 10.80
Swap: No

Telemetry
Voltage: 10.80
Swap: No

Equipment

Pre-Swap: 12:35 Post-Swap: 12:40

Current Item	New Item
63842 - ADS - Triton+	
28572 - ADS - CS4	
32264 - ADS - CS5-D1	32264 - ADS - CS5-D1
28572 - ADS - CS4	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure	0.25	
Ultrasonic	1.75	1.75

Comments

Very muddy water. Replaced Ultrasonic Sensor: Data was very erratic, fired sensor, and would range from.50 inches all the way up 9inches, while flow stayed the same in hole.;

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	11:17	4.12	4.03	4.10	4.09	1.50	1.47		0.25
End	11:27	3.94	3.64	4.56	3.87	1.44	1.47		0.25

Profile

	L	C	R
80%	1.01	1.35	0.55
60%			
20%			

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	11:43	3.88	3.86	3.84	4.01	1.50	1.56		0.25
End	11:53	3.75	3.87	3.70	4.11	1.41	1.56		0.25

Profile

	L	C	R
80%	1.03	1.37	0.79
60%			
20%			

Service

Date: 5/30/18 Crew: A. Castelan; C. Daniels Entrant: C. Daniels Monitor: 10:48 Computer: 11:48

Service

Adjust Band:	No
Collect Data:	Yes
Scrub Probe:	Yes
Swap Desiccant:	No

Settings

Type:	ADS
Set Time:	No
Adjust Level:	No
P Out of Flow:	No
Activate:	No
Modify LIF:	No
MLI Auto-P Cal:	On

Battery

Monitor
Voltage: 10.60
Swap: No

Telemetry
Voltage: 10.60
Swap: No

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
63842 - ADS - Triton+	
28572 - ADS - CS4	
32264 - ADS - CS5-D1	
28572 - ADS - CS4	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure	0.25	
Ultrasonic	1.75	

Comments

Scrub, collect , cal

Field Confirmations

PVM S/N: 2356

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	9:51	5.25	4.90	5.34		1.87	1.87		0.00
End	9:56	5.25	4.99	5.32		1.89	1.88		0.00

Profile

	L	C	R
80%	1.67	1.87	1.53
60%			
20%			

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Maintenance Log

Site ID: FC-02

Site Address: 1305 Dawson Rd

Manhole ID: 245 Pipe Size: 12.50" X "12.12

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Meter Removal

Date: 6/26/18 Crew: K. Belk; M. Juarez; B. Kauppinen Entrant: M. Juarez Monitor: 8:13 Computer: 8:15

Service

Adjust Band: No
Collect Data: Yes
Scrub Probe:
Swap Desiccant:

Settings

Type: ADS
Set Time:
Adjust Level:
P Out of Flow: No
Activate:
Modify LIF:
MLI Auto-P Cal: On

Battery

Monitor
Voltage: 10.00
Swap: No

Telemetry
Voltage: 10.00
Swap: No

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure	0.25	
Ultrasonic	1.75	

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	8:17	5.25	4.77	2.10	4.76	1.50	1.91		0.00
End	8:21	5.00	4.70	4.27	4.75	1.67	1.85		0.00

Profile

	L	C	R
80%	1.58	1.62	1.58
60%			
20%			

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Maintenance Log

Site ID: FC-03

Site Address: 272 Laney Dr

Manhole ID: 24 Pipe Size: 7.75" X "7.87

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Meter Installation

Date: 4/17/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 9:40 Computer: 9:37

Service
Adjust Band:
Collect Data: Yes
Scrub Probe:
Swap Desiccant:

Settings
Type: ADS
Set Time:
Adjust Level:
P Out of Flow: No
Activate:
Modify LIF:
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 12.30
Swap: No
Telemetry
Voltage: 12.30
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
	16216 - ADS - FlowShark
	56144 - ADS - 5000 Pressure Ser
	73050 - ADS - 5000 Ultrasonic S
	49741 - ADS - 5000 Velocity Sen

Site Param.
Sensor Positions

	Current O/S	New O/S
Pressure		0.00
Ultrasonic		1.75

P Clock: 6.00 V Clock: 6.00

Telemetry
IP Address: 4134
Signal Strength:
Telemetry Type: ADS
Telemetry Model: N/A

Comments
Data group cannot check for telemetry currrently, will troubleshoot if need be later.

Field Confirmations *PVM S/N: 3312*

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	8:12	3.31	3.32	3.29		1.50	1.78		0.00
End	8:22	3.31	3.31	3.35		1.60	1.75		0.00

Profile

	L	C	R
80%		1.48	
60%			
20%			

Service

Date: 4/18/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 15:54 Computer: 15:55

Service
Adjust Band: No
Collect Data: Yes
Scrub Probe: No
Swap Desiccant: No

Settings
Type: ADS
Set Time: No
Adjust Level: No
P Out of Flow: No
Activate: No
Modify LIF: No
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 12.10
Swap: No
Telemetry
Voltage: 12.10
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
16216 - ADS - FlowShark	
56144 - ADS - 5000 Pressure Ser	
73050 - ADS - 5000 Ultrasonic S	
49741 - ADS - 5000 Velocity Sen	

Site Param.
Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.75	

Comments
Programmed telog.

Service

Date: 5/1/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 7:32 Computer: 7:32

Service
Adjust Band: No
Collect Data: Yes
Scrub Probe: Yes
Swap Desiccant: No

Settings
Type: ADS
Set Time: No
Adjust Level: No
P Out of Flow: No
Activate: No
Modify LIF: No
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 11.30
Swap: No
Telemetry
Voltage: 11.30
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
16216 - ADS - FlowShark	
56144 - ADS - 5000 Pressure Ser	
73050 - ADS - 5000 Ultrasonic S	
49741 - ADS - 5000 Velocity Sen	

Site Param.
Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.75	

Comments

Field Confirmations *PVM S/N: 3312*

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Maintenance Log

Site ID: FC-03

Site Address: 272 Laney Dr

Manhole ID: 24 Pipe Size: 7.75" X "7.87

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	6:32	3.25	3.15	3.42		1.50	1.46		0.00
End	6:42	3.18	3.12	3.33		1.65	1.63		0.00

Profile

	L	C	R
80%		1.55	
60%			
20%			

Service

Date: 5/14/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 13:08 Computer: 13:10

Service

Adjust Band: No
Collect Data: **Yes**
Scrub Probe: **Yes**
Swap Desiccant: **Yes**

Settings

Type: ADS
Set Time: No
Adjust Level: No
P Out of Flow: **Yes**
Activate: No
Modify LIF: No
MLI Auto-P Cal: On

Battery

Monitor
Voltage: **11.00**
Swap: No

Telemetry
Voltage: **11.00**
Swap: No

Equipment

Pre-Swap: **0:00** Post-Swap: **0:00**

Current Item	New Item
16216 - ADS - FlowShark	
56144 - ADS - 5000 Pressure Ser	
73050 - ADS - 5000 Ultrasonic S	
49741 - ADS - 5000 Velocity Sen	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.75	

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	12:10	2.75	2.87	2.79		1.50	1.57		0.00
End	12:20	2.75	2.87	2.81		1.42	1.43		0.00

Profile

	L	C	R
80%		1.41	
60%			
20%			

Service

Date: 5/30/18 Crew: A. Castelan; C. Daniels Entrant: C. Daniels Monitor: 12:55 Computer: 11:55

Service

Adjust Band: No
Collect Data: **Yes**
Scrub Probe: **Yes**
Swap Desiccant: No

Settings

Type: ADS
Set Time: No
Adjust Level: No
P Out of Flow: No
Activate: No
Modify LIF: No
MLI Auto-P Cal: Off

Battery

Monitor
Voltage: **10.60**
Swap: No

Telemetry
Voltage: **10.60**
Swap: No

Equipment

Pre-Swap: **0:00** Post-Swap: **0:00**

Current Item	New Item
16216 - ADS - FlowShark	
56144 - ADS - 5000 Pressure Ser	
73050 - ADS - 5000 Ultrasonic S	
49741 - ADS - 5000 Velocity Sen	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.75	

Comments

Scrub collect cal

Field Confirmations

PVM S/N: 2356

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	11:05	3.00	2.91	3.11		1.97	1.20		0.00
End	11:10	2.75	2.65	2.63		1.86	1.57		0.00

Profile

	L	C	R
80%		1.92	
60%			
20%			

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Maintenance Log

Site ID: FC-03

Site Address: 272 Laney Dr

Manhole ID: 24 Pipe Size: 7.75" X "7.87

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Meter Removal

Date: 6/26/18 Crew: K. Belk; M. Juarez; B. Kauppinen Entrant: M. Juarez Monitor: 10:04 Computer: 10:04

Service

Adjust Band: No
Collect Data: Yes
Scrub Probe:
Swap Desiccant:

Settings

Type: ADS
Set Time:
Adjust Level:
P Out of Flow: No
Activate:
Modify LIF:
MLI Auto-P Cal: On

Battery

Monitor
Voltage: 10.10
Swap: No

Telemetry
Voltage: 10.10
Swap: No

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.75	

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	9:12	2.50	260.00	2.56		1.00	0.34		0.00
End	9:15	2.50	2.61	2.44		1.83	0.38		0.00

Profile

	L	C	R
80%		1.25	
60%			
20%			

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Maintenance Log

Site ID: FC-04

Site Address: 332 West Cook Ave

Manhole ID: 760 Pipe Size: 10.25" X "10.25

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Meter Installation

Date: 4/19/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 9:51 Computer: 10:02

Service
Adjust Band:
Collect Data: Yes
Scrub Probe:
Swap Desiccant:

Settings
Type: ADS
Set Time:
Adjust Level:
P Out of Flow: No
Activate:
Modify LIF:
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 12.30
Swap: No
Telemetry
Voltage: 12.30
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
	14088 - ADS - FlowShark
	50023 - ADS - 5000 Velocity Sen
	74535 - ADS - 5000 Ultrasonic S
	55972 - ADS - 5000 Pressure Ser

Site Param.
Sensor Positions

	Current O/S	New O/S
Pressure		0.00
Ultrasonic		1.50

P Clock: 6.30 V Clock: 6.00

Telemetry
IP Address: 206.019.221.277/4134
Signal Strength:
Telemetry Type: ADS
Telemetry Model: N/A

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	8:51	3.12	3.13		3.13	1.00	1.21		0.00
End	9:01	3.12	3.06		3.15	1.15	1.27		0.00

Profile

	L	C	R
80%		1.16	
60%			
20%			

Equipment Swap

Date: 5/1/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 8:03 Computer: 8:04

Service
Adjust Band: No
Collect Data: Yes
Scrub Probe: Yes
Swap Desiccant: Yes

Settings
Type: ADS
Set Time: No
Adjust Level: No
P Out of Flow: No
Activate: No
Modify LIF: No
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 11.00
Swap: No
Telemetry
Voltage: 11.00
Swap: No

Equipment
Pre-Swap: 8:24 Post-Swap: 8:33

Current Item	New Item
14088 - ADS - FlowShark	
50023 - ADS - 5000 Velocity Sen	
74535 - ADS - 5000 Ultrasonic S	
55972 - ADS - 5000 Pressure Ser	51306 - ADS - 5000 Velocity Sen

Site Param.
Sensor Positions

	Current O/S	New O/S
Pressure		0.00
Ultrasonic	1.50	1.75

Comments
Replaced Velocity Sensor: Reading zeroes ;

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	7:37	3.00	3.05	3.14		1.25	1.24		0.00
End	7:47	3.12	3.21	3.13		1.24	1.23		0.00

Profile

	L	C	R
80%		1.17	
60%			
20%			

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	7:04	3.12	3.09	3.25		1.00	0.00		0.00
End	7:14	3.18	3.05	3.31		1.17	0.00		0.00

Profile

	L	C	R
80%		1.20	
60%			
20%			

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Maintenance Log

Site ID: FC-04

Site Address: 332 West Cook Ave

Manhole ID: 760 Pipe Size: 10.25" X "10.25

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Service

Date: 5/14/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 13:40 Computer: 13:41

Service

Adjust Band:	No
Collect Data:	**Yes**
Scrub Probe:	**Yes**
Swap Desiccant:	**Yes**

Settings

Type:	ADS
Set Time:	No
Adjust Level:	No
P Out of Flow:	No
Activate:	No
Modify LIF:	No
MLI Auto-P Cal:	On

Battery

Monitor
Voltage: **10.90**
Swap: No

Telemetry
Voltage: **10.90**
Swap: No

Equipment

Pre-Swap: **0:00** Post-Swap: **0:00**

Current Item	New Item
14088 - ADS - FlowShark	
50023 - ADS - 5000 Velocity Sen	
74535 - ADS - 5000 Ultrasonic S	
51306 - ADS - 5000 Velocity Sen	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.75	

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	12:57	2.81	2.84	2.72		1.00	1.19		0.00
End	13:07	2.81	2.81	2.71		1.04	1.07		0.00

Profile

	L	C	R
80%		1.01	
60%			
20%			

Service

Date: 5/30/18 Crew: A. Castelan; C. Daniels Entrant: C. Daniels Monitor: 13:28 Computer: 12:28

Service

Adjust Band:	No
Collect Data:	**Yes**
Scrub Probe:	**Yes**
Swap Desiccant:	No

Settings

Type:	ADS
Set Time:	No
Adjust Level:	No
P Out of Flow:	No
Activate:	No
Modify LIF:	No
MLI Auto-P Cal:	Off

Battery

Monitor
Voltage: **10.60**
Swap: No

Telemetry
Voltage: **10.60**
Swap: No

Equipment

Pre-Swap: **0:00** Post-Swap: **0:00**

Current Item	New Item
14088 - ADS - FlowShark	
50023 - ADS - 5000 Velocity Sen	
74535 - ADS - 5000 Ultrasonic S	
51306 - ADS - 5000 Velocity Sen	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.75	

Comments

Scrub collect cal

Field Confirmations

PVM S/N: 2356

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	11:34	3.00	3.17	3.05		0.97	1.00		0.00
End	11:39	3.00	3.16	3.01		0.95	0.95		0.00

Profile

	L	C	R
80%		0.97	
60%			
20%			

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Maintenance Log

Site ID: FC-04

Site Address: 332 West Cook Ave

Manhole ID: 760 Pipe Size: 10.25" X "10.25

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Meter Removal

Date: 6/26/18 Crew: K. Belk; M. Juarez; B. Kauppinen Entrant: M. Juarez Monitor: 10:31 Computer: 10:32

Service

Adjust Band: No
Collect Data: Yes
Scrub Probe:
Swap Desiccant:

Settings

Type: ADS
Set Time:
Adjust Level:
P Out of Flow: No

Activate:
Modify LIF:
MLI Auto-P Cal: On

Battery

Monitor
Voltage: 9.34
Swap: No

Telemetry
Voltage: 9.34
Swap: No

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.75	

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	9:39	2.50	2.11	2.62		1.00	0.69		0.00
End	9:41	2.56	2.33	2.78		0.93	0.80		0.00

Profile

	L	C	R
80%		0.94	
60%			
20%			

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Maintenance Log

Site ID: FC-05

Site Address: 301 Poplar Ave

Manhole ID: 764 Pipe Size: 8.00" X "7.88

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Meter Installation

Date: 4/17/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 10:14 Computer: 10:20

Service
Adjust Band:
Collect Data: Yes
Scrub Probe:
Swap Desiccant:

Settings
Type: ADS
Set Time:
Adjust Level:
P Out of Flow: No
Activate:
Modify LIF:
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 12.20
Swap: No
Telemetry
Voltage: 12.20
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00
Current Item / New Item
14039 - ADS - FlowShark
55541 - ADS - 5000 Pressure Ser
74514 - ADS - 5000 Ultrasonic S
50982 - ADS - 5000 Velocity Sen

Site Param.
Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic		1.50

P Clock: 6.00 V Clock: 6.00

Telemetry
IP Address: 206.019.211.227/4031
Signal Strength:
Telemetry Type: ADS
Telemetry Model: N/A

Comments
Have it calling into port 4031 per Micheal Bray.

Field Confirmations *PVM S/N: 3212*

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	9:22	5.25	5.16	5.00		0.50	0.59		0.00
End	9:32	5.25	5.00	5.00		0.69	0.62		0.00

Profile

	L	C	R
80%		0.60	
60%			
20%			

Service

Date: 4/18/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 15:24 Computer: 15:25

Service
Adjust Band: No
Collect Data: Yes
Scrub Probe: No
Swap Desiccant: No

Settings
Type: ADS
Set Time: No
Adjust Level: No
P Out of Flow: No
Activate: No
Modify LIF: No
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 11.80
Swap: No
Telemetry
Voltage: 11.80
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00
Current Item / New Item
14039 - ADS - FlowShark
55541 - ADS - 5000 Pressure Ser
74514 - ADS - 5000 Ultrasonic S
50982 - ADS - 5000 Velocity Sen

Site Param.
Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.50	

Comments
Adjusted pressure offset:4.25. Put new port # in.

Service

Date: 5/1/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 9:01 Computer: 9:02

Service
Adjust Band: No
Collect Data: Yes
Scrub Probe: Yes
Swap Desiccant: No

Settings
Type: ADS
Set Time: No
Adjust Level: No
P Out of Flow: No
Activate: No
Modify LIF: No
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 10.70
Swap: No
Telemetry
Voltage: 10.70
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00
Current Item / New Item
14039 - ADS - FlowShark
55541 - ADS - 5000 Pressure Ser
74514 - ADS - 5000 Ultrasonic S
50982 - ADS - 5000 Velocity Sen

Site Param.
Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.50	

Comments

Field Confirmations *PVM S/N: 3312*

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Maintenance Log

Site ID: FC-05

Site Address: 301 Poplar Ave

Manhole ID: 764 Pipe Size: 8.00" X "7.88

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	8:01	4.94	4.76	4.90		0.50	0.49		0.00
End	8:11	5.00	4.77	5.09		0.60	0.58		0.00

Profile

	L	C	R
80%		0.57	
60%			
20%			

Service

Date: 5/14/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 14:10 Computer: 14:11

Service

Adjust Band: No
Collect Data: **Yes**
Scrub Probe: **Yes**
Swap Desiccant: No

Settings

Type: ADS
Set Time: No
Adjust Level: No
P Out of Flow: No
Activate: No
Modify LIF: No
MLI Auto-P Cal: On

Battery

Monitor
Voltage: **12.20**
Swap: **Yes**

Telemetry
Voltage: **12.00**
Swap: No

Equipment

Pre-Swap: **0:00** Post-Swap: **0:00**

Current Item	New Item
14039 - ADS - FlowShark	
55541 - ADS - 5000 Pressure Ser	
74514 - ADS - 5000 Ultrasonic S	
50982 - ADS - 5000 Velocity Sen	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.50	

Comments

Replaced antenna.

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	13:11	4.25	4.26	4.38		0.50	0.43		0.25
End	13:21	4.62	4.25	4.45		0.44	0.37		0.25

Profile

	L	C	R
80%		0.39	
60%			
20%			

Service

Date: 5/30/18 Crew: A. Castelan; C. Daniels Entrant: C. Daniels Monitor: 13:53 Computer: 12:52

Service

Adjust Band: No
Collect Data: **Yes**
Scrub Probe: **Yes**
Swap Desiccant: No

Settings

Type: ADS
Set Time: No
Adjust Level: No
P Out of Flow: No
Activate: No
Modify LIF: No
MLI Auto-P Cal: Off

Battery

Monitor
Voltage: **12.10**
Swap: No

Telemetry
Voltage: **12.10**
Swap: No

Equipment

Pre-Swap: **0:00** Post-Swap: **0:00**

Current Item	New Item
14039 - ADS - FlowShark	
55541 - ADS - 5000 Pressure Ser	
74514 - ADS - 5000 Ultrasonic S	
50982 - ADS - 5000 Velocity Sen	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.50	

Comments

Scrub collect cal

Field Confirmations

PVM S/N: 2356

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	12:00	4.50	4.47	4.32		0.56	0.48		0.00
End	12:05	4.50	4.44	4.35		0.63	0.45		0.00

Profile

	L	C	R
80%		0.59	
60%			
20%			

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Maintenance Log

Site ID: FC-05

Site Address: 301 Poplar Ave

Manhole ID: 764 Pipe Size: 8.00" X "7.88

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Meter Removal

Date: 6/26/18 Crew: K. Belk; M. Juarez; B. Kauppinen Entrant: M. Juarez Monitor: 9:54 Computer: 10:56

Service

Adjust Band: No
Collect Data: Yes
Scrub Probe:
Swap Desiccant:

Settings

Type: ADS
Set Time:
Adjust Level:
P Out of Flow: No
Activate:
Modify LIF:
MLI Auto-P Cal: On

Battery

Monitor
Voltage: 7.06
Swap: No

Telemetry
Voltage: 7.06
Swap: No

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.50	

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	10:11	4.50	4.93	4.82		0.50	0.39		0.00
End	10:16	4.50	4.93	4.94		0.49	0.47		0.00

Profile

	L	C	R
80%		0.44	
60%			
20%			

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Maintenance Log

Site ID: FC-06

Site Address: 370 Haven St

Manhole ID: 764 Pipe Size: 8.18" X "8.12

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Meter Installation

Date: 4/18/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 10:13 Computer: 10:13

Service
Adjust Band:
Collect Data: Yes
Scrub Probe:
Swap Desiccant:

Settings
Type: ADS
Set Time:
Adjust Level:
P Out of Flow: No
Activate:
Modify LIF:
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 12.30
Swap: No
Telemetry
Voltage: 12.30
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00
Current Item / New Item
14038 - ADS - FlowShark
56049 - ADS - 5000 Pressure Ser
73043 - ADS - 5000 Ultrasonic S
50032 - ADS - 5000 Velocity Sen

Site Param.
Sensor Positions

	Current O/S	New O/S
Pressure		0.00
Ultrasonic		1.25

P Clock: 7.00 V Clock: 6.00

Telemetry
IP Address: 206.019.211.227/4134
Signal Strength:
Telemetry Type: ADS
Telemetry Model: N/A

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	9:14	5.75	5.63	5.55		1.75	1.51		0.00
End	9:24	5.25	5.05	5.16		1.38	1.43		0.00

Profile

	L	C	R
80%		1.30	
60%			
20%			

Service

Date: 4/30/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 15:40 Computer: 15:41

Service
Adjust Band: No
Collect Data: Yes
Scrub Probe: Yes
Swap Desiccant: No

Settings
Type: ADS
Set Time: No
Adjust Level: No
P Out of Flow: No
Activate: No
Modify LIF: No
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 11.20
Swap: No
Telemetry
Voltage: 11.20
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00
Current Item / New Item
14038 - ADS - FlowShark
56049 - ADS - 5000 Pressure Ser
73043 - ADS - 5000 Ultrasonic S
50032 - ADS - 5000 Velocity Sen

Site Param.
Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.25	

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	14:52	4.75	5.11		4.75	1.00	1.07		0.00
End	15:02	4.88	5.12		4.95	1.05	1.29		0.00

Profile

	L	C	R
80%		1.09	
60%			
20%			

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Maintenance Log

Site ID: FC-06

Site Address: 370 Haven St

Manhole ID: 764 Pipe Size: 8.18" X "8.12

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Service

Date: 5/15/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 11:13 Computer: 11:14

Service

Adjust Band:	No
Collect Data:	**Yes**
Scrub Probe:	**Yes**
Swap Desiccant:	No

Settings

Type:	ADS
Set Time:	No
Adjust Level:	No
P Out of Flow:	No
Activate:	No
Modify LIF:	No
MLI Auto-P Cal:	On

Battery

Monitor
Voltage: **10.90**
Swap: No

Telemetry
Voltage: **10.90**
Swap: No

Equipment

Pre-Swap: **0:00** Post-Swap: **0:00**

Current Item	New Item
14038 - ADS - FlowShark	
56049 - ADS - 5000 Pressure Ser	
73043 - ADS - 5000 Ultrasonic S	
50032 - ADS - 5000 Velocity Sen	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.25	

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	10:13	5.12	5.20	5.04		1.25	1.09		0.00
End	10:23	5.25	5.40	5.16		1.57	1.32		0.00

Profile

	L	C	R
80%		1.48	
60%			
20%			

Service

Date: 5/30/18 Crew: A. Castelan; C. Daniels Entrant: C. Daniels Monitor: 15:24 Computer: 14:23

Service

Adjust Band:	No
Collect Data:	**Yes**
Scrub Probe:	**Yes**
Swap Desiccant:	No

Settings

Type:	ADS
Set Time:	No
Adjust Level:	No
P Out of Flow:	No
Activate:	No
Modify LIF:	No
MLI Auto-P Cal:	On

Battery

Monitor
Voltage: **10.40**
Swap: No

Telemetry
Voltage: **10.40**
Swap: No

Equipment

Pre-Swap: **0:00** Post-Swap: **0:00**

Current Item	New Item
14038 - ADS - FlowShark	
56049 - ADS - 5000 Pressure Ser	
73043 - ADS - 5000 Ultrasonic S	
50032 - ADS - 5000 Velocity Sen	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.25	

Comments

Scrub, cal, collect

Debris on ultra

Field Confirmations

PVM S/N: 2356

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	13:32	5.00	4.85	4.76		1.61	1.58		0.00
End	13:37	5.00	4.84	4.69		1.65	1.55		0.00

Profile

	L	C	R
80%		1.61	
60%			
20%			

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Maintenance Log

Site ID: FC-06

Site Address: 370 Haven St

Manhole ID: 764 Pipe Size: 8.18" X "8.12

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Meter Removal

Date: 6/26/18 Crew: K. Belk; M. Juarez; B. Kauppinen Entrant: M. Juarez Monitor: 10:26 Computer: 11:28

Service

Adjust Band: No
Collect Data: Yes
Scrub Probe:
Swap Desiccant:

Settings

Type: ADS
Set Time:
Adjust Level:
P Out of Flow: No
Activate:
Modify LIF:
MLI Auto-P Cal: On

Battery

Monitor
Voltage: 9.02
Swap: No

Telemetry
Voltage: 9.02
Swap: No

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.25	

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	10:42	4.75	4.21	4.66		1.25	1.10		0.00
End	10:48	5.12	4.21	5.01		1.36	1.26		0.00

Profile

	L	C	R
80%		1.31	
60%			
20%			

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Maintenance Log

Site ID: FC-07

Site Address: 2522 E Broadway Ave

Manhole ID: 931 Pipe Size: 7.69" X "7.31

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Meter Installation

Date: 4/19/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 11:12 Computer: 11:13

Service
Adjust Band:
Collect Data: Yes
Scrub Probe:
Swap Desiccant:

Settings
Type: ADS
Set Time:
Adjust Level:
P Out of Flow: No
Activate:
Modify LIF:
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 12.40
Swap: No
Telemetry
Voltage: 12.40
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00
Current Item / New Item
14070 - ADS - FlowShark
55475 - ADS - 5000 Pressure Ser
73163 - ADS - 5000 Ultrasonic S
41299 - ADS - 5000 Velocity Sen

Site Param.
Sensor Positions

	Current O/S	New O/S
Pressure		0.00
Ultrasonic		1.50

P Clock: 6.30 V Clock: 6.00

Telemetry
IP Address: 206.019.221.227/4134
Signal Strength:
Telemetry Type: ADS
Telemetry Model: N/A

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	10:23	2.50	2.70	2.42		1.00	1.05		0.00
End	10:33	2.36	2.14	2.25		0.99	1.02		0.00

Profile

	L	C	R
80%		1.04	
60%			
20%			

Service

Date: 5/1/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 14:41 Computer: 14:41

Service
Adjust Band: No
Collect Data: Yes
Scrub Probe: Yes
Swap Desiccant: No

Settings
Type: ADS
Set Time: No
Adjust Level: No
P Out of Flow: No
Activate: No
Modify LIF: No
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 11.30
Swap: No
Telemetry
Voltage: 11.30
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00
Current Item / New Item
14070 - ADS - FlowShark
55475 - ADS - 5000 Pressure Ser
73163 - ADS - 5000 Ultrasonic S
41299 - ADS - 5000 Velocity Sen

Site Param.
Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.50	

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	13:42	2.00	1.73		2.01	1.00	1.28		0.00
End	13:52	2.06	2.35		2.22	1.17	1.22		0.00

Profile

	L	C	R
80%		1.23	
60%			
20%			

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Maintenance Log

Site ID: FC-07

Site Address: 2522 E Broadway Ave

Manhole ID: 931 Pipe Size: 7.69" X "7.31

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Service

Date: 5/15/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 11:47 Computer: 11:48

Service

Adjust Band:	No
Collect Data:	**Yes**
Scrub Probe:	**Yes**
Swap Desiccant:	No

Settings

Type:	ADS
Set Time:	No
Adjust Level:	No
P Out of Flow:	No
Activate:	**Yes**
Modify LIF:	No
MLI Auto-P Cal:	On

Battery

Monitor
Voltage: **11.10**
Swap: No

Telemetry
Voltage: **11.10**
Swap: No

Equipment

Pre-Swap: **0:00** Post-Swap: **0:00**

Current Item	New Item
14070 - ADS - FlowShark	
55475 - ADS - 5000 Pressure Ser	
73163 - ADS - 5000 Ultrasonic S	
41299 - ADS - 5000 Velocity Sen	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.50	

Comments

Pressure was reading an inch high, took the one inch offset out. Pressure offset is now at 0.

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	10:48	2.12	2.77	2.01		1.00	1.26		0.00
End	10:58	2.12	1.91	2.00		1.08	1.22		0.00

Profile

	L	C	R
80%		1.19	
60%			
20%			

Service

Date: 5/31/18 Crew: A. Castelan; C. Daniels Entrant: C. Daniels Monitor: 12:16 Computer: 11:10

Service

Adjust Band:	No
Collect Data:	**Yes**
Scrub Probe:	**Yes**
Swap Desiccant:	No

Settings

Type:	ADS
Set Time:	No
Adjust Level:	No
P Out of Flow:	No
Activate:	No
Modify LIF:	No
MLI Auto-P Cal:	Off

Battery

Monitor
Voltage: **10.80**
Swap: No

Telemetry
Voltage: **10.80**
Swap: No

Equipment

Pre-Swap: **0:00** Post-Swap: **0:00**

Current Item	New Item
14070 - ADS - FlowShark	
55475 - ADS - 5000 Pressure Ser	
73163 - ADS - 5000 Ultrasonic S	
41299 - ADS - 5000 Velocity Sen	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.50	

Comments

Scrub collect cal
Pressure offset 0.90

Field Confirmations

PVM S/N: 2356

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	10:20	3.50	3.62	3.48		1.36	1.28		0.00
End	10:25	3.50	3.64	3.57		1.34	1.23		0.00

Profile

	L	C	R
80%		1.34	
60%			
20%			

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Maintenance Log

Site ID: FC-07

Site Address: 2522 E Broadway Ave

Manhole ID: 931 Pipe Size: 7.69" X "7.31

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Meter Removal

Date: 6/27/18 Crew: K. Belk; M. Juarez; B. Kauppinen Entrant: M. Juarez Monitor: 11:52 Computer: 11:53

Service

Adjust Band: No
Collect Data: Yes
Scrub Probe:
Swap Desiccant:

Settings

Type: ADS
Set Time:
Adjust Level:
P Out of Flow: No
Activate:
Modify LIF:
MLI Auto-P Cal: On

Battery

Monitor
Voltage: 10.19
Swap: No

Telemetry
Voltage: 10.19
Swap: No

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.50	

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	11:00	2.50	21.75	2.46		1.50	1.65		0.00
End	11:03	2.50	22.03	2.34		1.55	1.41		0.00

Profile

	L	C	R
80%		1.77	
60%			
20%			

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Maintenance Log

Site ID: FC-08

Site Address: 432 St aFrancis 702 Rd

Manhole ID: 951 Pipe Size: 7.81" X "7.81

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Meter Installation

Date: 4/19/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 7:41 Computer: 7:41

Service
Adjust Band:
Collect Data: Yes
Scrub Probe:
Swap Desiccant:

Settings
Type: ADS
Set Time:
Adjust Level:
P Out of Flow: No
Activate:
Modify LIF:
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 12.20
Swap: No
Telemetry
Voltage: 12.20
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
	20871 - ADS - FlowShark
	56042 - ADS - 5000 Pressure Ser
	51757 - ADS - 5000 Ultrasonic S
	50996 - ADS - 5000 Velocity Sen

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		0.00
Ultrasonic		1.50

P Clock: 6.30 V Clock: 6.00

Telemetry
IP Address: 206.019.221.277/4134
Signal Strength:
Telemetry Type: ADS
Telemetry Model: N/A

Comments
Keep,eye on velocity sensor

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	6:42	2.50	2.57	2.51		1.50	1.29		0.00
End	6:52	2.50	2.42	2.47		1.17	1.47		0.00

Profile

	L	C	R
80%		1.15	
60%			
20%			

Equipment Swap

Date: 5/1/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 12:48 Computer: 12:50

Service
Adjust Band: No
Collect Data: Yes
Scrub Probe: Yes
Swap Desiccant: No

Settings
Type: ADS
Set Time: No
Adjust Level: No
P Out of Flow: No
Activate: Yes
Modify LIF: No
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 11.00
Swap: No
Telemetry
Voltage: 11.00
Swap: No

Equipment
Pre-Swap: 13:31 Post-Swap: 13:48

Current Item	New Item
20871 - ADS - FlowShark	
56042 - ADS - 5000 Pressure Ser	
51757 - ADS - 5000 Ultrasonic S	
50996 - ADS - 5000 Velocity Sen	51460 - ADS - 5000 Velocity Sen

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		0.00
Ultrasonic	1.50	1.50

Comments
Replaced Velocity Sensor: Reading a foot low.;

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	11:50	2.50	2.19		2.70	1.00	0.58		0.00
End	12:00	2.44	2.39		2.54	1.42	0.51		0.00

Profile

	L	C	R
80%		1.34	
60%			
20%			

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	12:50	2.31	2.32	2.42		1.25	1.36		0.00
End	13:00	2.31	2.47	2.45		1.15	1.38		0.00

Profile

	L	C	R
80%		1.08	
60%			
20%			

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Maintenance Log

Site ID: FC-08

Site Address: 432 St aFrancis 702 Rd

Manhole ID: 951 Pipe Size: 7.81" X "7.81

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Service

Date: 5/15/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 12:32 Computer: 12:32

Service

Adjust Band:	No
Collect Data:	Yes
Scrub Probe:	Yes
Swap Desiccant:	Yes

Settings

Type:	ADS
Set Time:	No
Adjust Level:	No
P Out of Flow:	No
Activate:	Yes
Modify LIF:	No
MLI Auto-P Cal:	On

Battery

Monitor
Voltage: 10.60
Swap: No

Telemetry
Voltage: 10.60
Swap: No

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
20871 - ADS - FlowShark	
56042 - ADS - 5000 Pressure Ser	
51757 - ADS - 5000 Ultrasonic S	
51460 - ADS - 5000 Velocity Sen	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.50	

Comments

Large amount of debris on pressure, also adjusted pressure offset to .75. Activated meter.

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	11:32	2.00	2.06	2.08		1.00	1.15		0.00
End	11:42	2.06	2.04	2.18		1.01	1.21		0.00

Profile

	L	C	R
80%		0.95	
60%			
20%			

Service

Date: 5/31/18 Crew: A. Castelan; C. Daniels Entrant: C. Daniels Monitor: 11:01 Computer: 12:01

Service

Adjust Band:	No
Collect Data:	Yes
Scrub Probe:	Yes
Swap Desiccant:	No

Settings

Type:	ADS
Set Time:	No
Adjust Level:	No
P Out of Flow:	No
Activate:	No
Modify LIF:	No
MLI Auto-P Cal:	Off

Battery

Monitor
Voltage: 9.30
Swap: No

Telemetry
Voltage: 9.30
Swap: No

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
20871 - ADS - FlowShark	
56042 - ADS - 5000 Pressure Ser	
51757 - ADS - 5000 Ultrasonic S	
51460 - ADS - 5000 Velocity Sen	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.50	

Comments

Scrub collect cal

Field Confirmations

PVM S/N: 2356

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	10:10	2.12	2.00	2.32		0.99	0.86		0.00
End	10:15	2.12	2.02	2.33		1.03	0.85		0.00

Profile

	L	C	R
80%		0.99	
60%			
20%			

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Maintenance Log

Site ID: FC-08

Site Address: 432 St aFrancis 702 Rd

Manhole ID: 951 Pipe Size: 7.81" X "7.81

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Service

Date: 6/19/18 Crew: B. Emmerling; D. Emmerling Monitor: 13:18 Computer: 13:16

Service

Adjust Band:	No
Collect Data:	Yes
Scrub Probe:	No
Swap Desiccant:	No

Settings

Type:	ADS
Set Time:	No
Adjust Level:	No
P Out of Flow:	No
Activate:	No
Modify LIF:	No
MLI Auto-P Cal:	On

Battery

Monitor
Voltage: 12.08
Swap: Yes

Telemetry
Voltage: 12.08
Swap: Yes

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
20871 - ADS - FlowShark	
56042 - ADS - 5000 Pressure Ser	
51757 - ADS - 5000 Ultrasonic S	
51460 - ADS - 5000 Velocity Sen	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.50	

Comments

Meter Removal

Date: 6/27/18 Crew: K. Belk; M. Juarez; B. Kauppinen Entrant: M. Juarez Monitor: 10:29 Computer: 11:29

Service

Adjust Band:	No
Collect Data:	Yes
Scrub Probe:	
Swap Desiccant:	

Settings

Type:	ADS
Set Time:	
Adjust Level:	
P Out of Flow:	No
Activate:	
Modify LIF:	
MLI Auto-P Cal:	On

Battery

Monitor
Voltage: 10.51
Swap: No

Telemetry
Voltage: 10.51
Swap: No

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.50	

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	10:35	1.88	2.23	2.07		1.00	1.04		0.00
End	10:39	1.88	2.06	2.10		1.18	0.93		0.00

Profile

	L	C	R
80%		1.25	
60%			
20%			

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Maintenance Log

Site ID: FC-09

Site Address: 208S West St

Manhole ID: 858 Pipe Size: 7.88" X "7.94

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Meter Installation

Date: 4/18/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 14:23 Computer: 14:23

Service
Adjust Band:
Collect Data: Yes
Scrub Probe:
Swap Desiccant:

Settings
Type: ADS
Set Time:
Adjust Level:
P Out of Flow: No
Activate:
Modify LIF:
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 12.30
Swap: No
Telemetry
Voltage: 12.30
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00
Current Item / New Item
20885 - ADS - FlowShark
55520 - ADS - 5000 Pressure Ser
72014 - ADS - 5000 Ultrasonic S
51021 - ADS - 5000 Velocity Sen

Site Param.
Sensor Positions

	Current O/S	New O/S
Pressure		1.00
Ultrasonic		1.25

P Clock: 6.30 V Clock: 6.00

Telemetry
IP Address: 206.019.211.227/4134
Signal Strength:
Telemetry Type: ADS
Telemetry Model: N/A

Comments

Field Confirmations PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	13:24	3.75	3.69	3.65		4.50	4.37		0.00
End	13:34	3.62	3.10	3.48		4.59	4.17		0.00

Profile

	L	C	R
80%		4.39	
60%			
20%			

Service

Date: 5/1/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 9:30 Computer: 9:31

Service
Adjust Band: No
Collect Data: Yes
Scrub Probe: Yes
Swap Desiccant: Yes

Settings
Type: ADS
Set Time: No
Adjust Level: No
P Out of Flow: No
Activate: Yes
Modify LIF: No
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 10.00
Swap: No
Telemetry
Voltage: 10.00
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00
Current Item / New Item
20885 - ADS - FlowShark
55520 - ADS - 5000 Pressure Ser
72014 - ADS - 5000 Ultrasonic S
51021 - ADS - 5000 Velocity Sen

Site Param.
Sensor Positions

	Current O/S	New O/S
Pressure	1.00	
Ultrasonic	1.25	

Comments

Field Confirmations PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	8:32	2.50	2.80		2.64	3.50	3.62		0.00
End	8:42	2.81	2.77		2.91	3.25	3.55		0.00

Profile

	L	C	R
80%		3.38	
60%			
20%			

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Maintenance Log

Site ID: FC-09

Site Address: 208S West St

Manhole ID: 858 Pipe Size: 7.88" X "7.94

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Service

Date: 5/14/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 15:18 Computer: 15:19

Service

Adjust Band:	No
Collect Data:	Yes
Scrub Probe:	Yes
Swap Desiccant:	Yes

Settings

Type:	ADS
Set Time:	No
Adjust Level:	No
P Out of Flow:	No
Activate:	Yes
Modify LIF:	No
MLI Auto-P Cal:	On

Battery

Monitor
Voltage: 12.30
Swap: No

Telemetry
Voltage: 12.30
Swap: Yes

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
20885 - ADS - FlowShark	
55520 - ADS - 5000 Pressure Ser	
72014 - ADS - 5000 Ultrasonic S	
51021 - ADS - 5000 Velocity Sen	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure	1.00	
Ultrasonic	1.25	

Comments

Adjusted pressure offset to .25. Activated meter. Some debris on sensors.

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	14:18	1.75	1.50	1.62		1.50	1.82		0.00
End	14:28	1.75	1.73	1.83		1.63	1.87		0.00

Profile

	L	C	R
80%		1.62	
60%			
20%			

Service

Date: 5/30/18 Crew: A. Castelan; C. Daniels Entrant: C. Daniels Monitor: 13:43 Computer: 14:43

Service

Adjust Band:	No
Collect Data:	Yes
Scrub Probe:	Yes
Swap Desiccant:	No

Settings

Type:	ADS
Set Time:	No
Adjust Level:	No
P Out of Flow:	No
Activate:	No
Modify LIF:	No
MLI Auto-P Cal:	Off

Battery

Monitor
Voltage: 12.00
Swap: No

Telemetry
Voltage: 12.00
Swap: No

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
20885 - ADS - FlowShark	
55520 - ADS - 5000 Pressure Ser	
72014 - ADS - 5000 Ultrasonic S	
51021 - ADS - 5000 Velocity Sen	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure	1.00	
Ultrasonic	1.25	

Comments

Scrub collect cal

Field Confirmations

PVM S/N: 2356

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	13:00	2.50	3.00	2.37		2.95	3.17		0.00
End	13:05	2.50	3.01	2.44		2.99	3.19		0.00

Profile

	L	C	R
80%	2.89	2.95	2.83
60%			
20%			

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Maintenance Log

Site ID: FC-09

Site Address: 208S West St

Manhole ID: 858 Pipe Size: 7.88" X "7.94

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Service

Date: 6/12/18 Crew: D. Emmerling **Monitor: 12:43 Computer: 12:41**

Service

Adjust Band:	No
Collect Data:	**Yes**
Scrub Probe:	No
Swap Desiccant:	**Yes**

Settings

Type:	ADS
Set Time:	No
Adjust Level:	No
P Out of Flow:	No
Activate:	No
Modify LIF:	No
MLI Auto-P Cal:	On

Battery

Monitor
Voltage: **11.98**
Swap: **Yes**

Telemetry
Voltage: **11.98**
Swap: **Yes**

Equipment

Pre-Swap: **0:00** Post-Swap: **0:00**

Current Item	New Item
20885 - ADS - FlowShark	
55520 - ADS - 5000 Pressure Ser	
72014 - ADS - 5000 Ultrasonic S	
51021 - ADS - 5000 Velocity Sen	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure	1.00	
Ultrasonic	1.25	

Comments

Needs new telog

Meter Removal

Date: 6/27/18 Crew: K. Belk; M. Juarez; B. Kauppinen Entrant: M. Juarez Monitor: 9:20 Computer: 10:20

Service

Adjust Band:	No
Collect Data:	**Yes**
Scrub Probe:	
Swap Desiccant:	

Settings

Type:	ADS
Set Time:	
Adjust Level:	
P Out of Flow:	No
Activate:	
Modify LIF:	
MLI Auto-P Cal:	On

Battery

Monitor
Voltage: **12.35**
Swap: No

Telemetry
Voltage: **0.50**
Swap: No

Equipment

Pre-Swap: **0:00** Post-Swap: **0:00**

Current Item	New Item

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure	1.00	
Ultrasonic	1.25	

Comments

Gap in data, meter was unresponsive, swapped bottom battery, it was at .50.

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	9:26	2.50	2.86	2.46		2.00	2.34		0.00
End	9:30	2.50	2.85	2.47		2.56	2.52		0.00

Profile

	L	C	R
80%		2.35	
60%			
20%			

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Maintenance Log

Site ID: FC-10

Site Address: 122 W Franklin Ave

Manhole ID: 667 Pipe Size: 9.87" X "9.81

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Meter Installation

Date: 4/20/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 10:18 Computer: 10:22

Service
Adjust Band:
Collect Data: Yes
Scrub Probe:
Swap Desiccant:

Settings
Type: ADS
Set Time:
Adjust Level:
P Out of Flow: No
Activate:
Modify LIF:
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 12.30
Swap: No
Telemetry
Voltage: 12.30
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00
Current Item / New Item
16207 - ADS - FlowShark
55600 - ADS - 5000 Pressure Ser
75054 - Ultrasonic Sensor
50444 - ADS - 5000 Velocity Sen

Site Param.
Sensor Positions

	Current O/S	New O/S
Pressure		0.00
Ultrasonic		1.50

P Clock: 6.30 V Clock: 6.00

Telemetry
IP Address: 206.019.221.227/4134
Signal Strength:
Telemetry Type: ADS
Telemetry Model: N/A

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	9:18	5.25	5.20		5.27	2.50	2.90		0.00
End	9:28	5.00	5.19		5.10	2.65	2.91		0.00

Profile

	L	C	R
80%		2.61	
60%			
20%			

Service

Date: 5/1/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 10:02 Computer: 10:03

Service
Adjust Band: No
Collect Data: Yes
Scrub Probe: Yes
Swap Desiccant: No

Settings
Type: ADS
Set Time: No
Adjust Level: No
P Out of Flow: No
Activate: No
Modify LIF: No
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 11.30
Swap: No
Telemetry
Voltage: 11.30
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00
Current Item / New Item
16207 - ADS - FlowShark
55600 - ADS - 5000 Pressure Ser
75054 - Ultrasonic Sensor
50444 - ADS - 5000 Velocity Sen

Site Param.
Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.50	

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	9:03	7.50	7.23		7.29	2.00	1.98		0.00
End	9:13	7.81	7.69		7.64	2.05	1.89		0.00

Profile

	L	C	R
80%	1.75		1.99
60%			
20%	1.32		1.66

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Maintenance Log

Site ID: FC-10

Site Address: 122 W Franklin Ave

Manhole ID: 667 Pipe Size: 9.87" X "9.81

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Service

Date: 5/14/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 15:40 Computer: 15:42

Service

Adjust Band:	No
Collect Data:	Yes
Scrub Probe:	Yes
Swap Desiccant:	No

Settings

Type:	ADS
Set Time:	No
Adjust Level:	No
P Out of Flow:	No
Activate:	Yes
Modify LIF:	No
MLI Auto-P Cal:	On

Battery

Monitor
Voltage: 11.00
Swap: No

Telemetry
Voltage: 11.00
Swap: No

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
16207 - ADS - FlowShark	
55600 - ADS - 5000 Pressure Ser	
75054 - Ultrasonic Sensor	
50444 - ADS - 5000 Velocity Sen	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.50	

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	14:41	3.88	3.20	3.75		2.25	2.60		0.00
End	14:51	3.88	3.24	3.73		2.42	2.99		0.00

Profile

	L	C	R
80%		2.32	
60%			
20%			

Service

Date: 5/30/18 Crew: A. Castelan; C. Daniels Entrant: C. Daniels Monitor: 15:58 Computer: 14:58

Service

Adjust Band:	No
Collect Data:	Yes
Scrub Probe:	Yes
Swap Desiccant:	Yes

Settings

Type:	ADS
Set Time:	No
Adjust Level:	No
P Out of Flow:	No
Activate:	No
Modify LIF:	No
MLI Auto-P Cal:	On

Battery

Monitor
Voltage: 10.60
Swap: No

Telemetry
Voltage: 10.60
Swap: No

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
16207 - ADS - FlowShark	
55600 - ADS - 5000 Pressure Ser	
75054 - Ultrasonic Sensor	
50444 - ADS - 5000 Velocity Sen	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		0.00
Ultrasonic	1.50	0.00

Comments

Scrub, collect, cal

Debris on sensor

Field Confirmations

PVM S/N: 2356

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	14:05	4.00	4.04	3.82		1.92	2.09		0.00
End	14:10	4.00	4.44	3.79		1.89	2.13		0.00

Profile

	L	C	R
80%		1.92	
60%			
20%			

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Maintenance Log

Site ID: FC-10

Site Address: 122 W Franklin Ave

Manhole ID: 667 Pipe Size: 9.87" X "9.81

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Meter Removal

Date: 6/27/18 Crew: K. Belk; M. Juarez; B. Kauppinen Entrant: M. Juarez Monitor: 8:46 Computer: 9:47

Service

Adjust Band: No
Collect Data: Yes
Scrub Probe:
Swap Desiccant:

Settings

Type: ADS
Set Time:
Adjust Level:
P Out of Flow: No
Activate:
Modify LIF:
MLI Auto-P Cal: On

Battery

Monitor
Voltage: 10.05
Swap: No

Telemetry
Voltage: 10.05
Swap: No

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.50	

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	8:56	5.50	5.43	5.24		2.00	2.29		0.00
End	9:00	5.32	5.41	5.11		2.37	2.29		0.00

Profile

	L	C	R
80%		2.21	
60%			
20%			

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Maintenance Log

Site ID: FC-11

Site Address: 1058 St Francis 200 Rd

Manhole ID: 993 Pipe Size: 27.06" X "26.56

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Meter Installation

Date: 4/16/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 16:10 Computer: 16:10

Service
Adjust Band:
Collect Data: Yes
Scrub Probe:
Swap Desiccant:

Settings
Type: ADS
Set Time:
Adjust Level:
P Out of Flow: No
Activate:
Modify LIF:
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 12.00
Swap: No
Telemetry
Voltage: 12.00
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
	63844 - ADS - Triton+
	12418 - ADS - CS4
	31202 - ADS - CS5-D1
	12418 - ADS - CS4

Site Param.
Sensor Positions

	Current O/S	New O/S
Pressure		0.75
Ultrasonic		1.75

P Clock: 6.00 V Clock: 6.00

Telemetry
IP Address: 107.84.28.79
Signal Strength:
Telemetry Type: ADS
Telemetry Model: N/A

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	15:10	10.94	10.90	11.15	11.01	1.50	1.57		0.00
End	15:20	10.62	10.65	10.75	10.72	1.79	1.56		0.00

Profile

	L	C	R
80%	1.31	1.70	1.22
60%	0.94	1.81	1.41
20%		1.35	

Service

Date: 4/30/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 13:29 Computer: 13:30

Service
Adjust Band: No
Collect Data: Yes
Scrub Probe: Yes
Swap Desiccant: No

Settings
Type: ADS
Set Time: No
Adjust Level: No
P Out of Flow: No
Activate: No
Modify LIF: No
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 11.00
Swap: No
Telemetry
Voltage: 11.00
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
63844 - ADS - Triton+	
12418 - ADS - CS4	
31202 - ADS - CS5-D1	
12418 - ADS - CS4	

Site Param.
Sensor Positions

	Current O/S	New O/S
Pressure	0.75	
Ultrasonic	1.75	

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	12:29	11.18	11.17	11.11	11.18	1.50	1.56		0.50
End	12:39	11.18	11.27	11.14	11.24	1.79	1.56		0.50

Profile

	L	C	R
80%	1.44	1.69	1.32
60%	0.85	1.40	1.58
20%		1.06	

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Maintenance Log

Site ID: FC-11

Site Address: 1058 St Francis 200 Rd

Manhole ID: 993 Pipe Size: 27.06" X "26.56

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Service

Date: 5/15/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 7:44 Computer: 7:46

Service

Adjust Band:	No
Collect Data:	Yes
Scrub Probe:	Yes
Swap Desiccant:	No

Settings

Type:	ADS
Set Time:	No
Adjust Level:	No
P Out of Flow:	No
Activate:	No
Modify LIF:	No
MLI Auto-P Cal:	On

Battery

Monitor
Voltage: 10.70
Swap: No

Telemetry
Voltage: 10.70
Swap: No

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
63844 - ADS - Triton+	
12418 - ADS - CS4	
31202 - ADS - CS5-D1	
12418 - ADS - CS4	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure	0.75	
Ultrasonic	1.75	

Comments

Silt in channel, none up pipe.

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	6:44	8.50	8.84	8.76	8.54	1.25	1.29		0.00
End	6:54	8.50	8.75	8.74	8.56	1.07	1.29		0.00

Profile

	L	C	R
80%	0.99		1.04
60%			
20%	0.87		0.87

Service

Date: 5/30/18 Crew: A. Castelan; C. Daniels Entrant: C. Daniels Monitor: 16:57 Computer: 17:57

Service

Adjust Band:	No
Collect Data:	Yes
Scrub Probe:	Yes
Swap Desiccant:	Yes

Settings

Type:	ADS
Set Time:	No
Adjust Level:	No
P Out of Flow:	No
Activate:	No
Modify LIF:	No
MLI Auto-P Cal:	On

Battery

Monitor
Voltage: 10.50
Swap: No

Telemetry
Voltage: 10.50
Swap: No

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
63844 - ADS - Triton+	
12418 - ADS - CS4	
31202 - ADS - CS5-D1	
12418 - ADS - CS4	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure	0.75	
Ultrasonic	1.75	

Comments

Scrub , cal

Field Confirmations

PVM S/N: 2356

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	17:01	9.00	8.94	9.21		1.19	1.38		1.00
End	17:06	9.00	8.92	9.19		1.23	1.41		1.00

Profile

	L	C	R
80%	1.08	1.19	1.14
60%	0.99	1.03	0.87
20%		0.94	

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Maintenance Log

Site ID: FC-11

Site Address: 1058 St Francis 200 Rd

Manhole ID: 993 Pipe Size: 27.06" X "26.56

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Meter Removal

Date: 6/26/18 Crew: K. Belk; M. Juarez; B. Kauppinen Entrant: M. Juarez Monitor: 14:05 Computer: 15:07

Service

Adjust Band: No
Collect Data: Yes
Scrub Probe:
Swap Desiccant:

Settings

Type: ADS
Set Time:
Adjust Level:
P Out of Flow: No
Activate:
Modify LIF:
MLI Auto-P Cal: On

Battery

Monitor
Voltage: 10.00
Swap: No

Telemetry
Voltage: 10.00
Swap: No

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure	0.75	
Ultrasonic	1.75	

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	14:20	9.00	8.89	9.21	8.97	1.50	1.43		0.00
End	14:27	9.00	8.84	9.21	8.97	1.55	1.40		0.00

Profile

	L	C	R
80%	0.96	1.51	0.85
60%	1.14	1.45	1.26
20%		1.20	

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Maintenance Log

Site ID: FC-12

Site Address: 100-198 C Lane

Manhole ID: 1107 Pipe Size: 9.81" X "10.00

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Meter Installation

Date: 4/18/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 7:28 Computer: 7:29

Service
Adjust Band:
Collect Data: Yes
Scrub Probe:
Swap Desiccant:

Settings
Type: ADS
Set Time:
Adjust Level:
P Out of Flow: No
Activate:
Modify LIF:
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 12.20
Swap: No
Telemetry
Voltage: 12.20
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
	20894 - ADS - FlowShark
	83442 - ADS - 5000 Pressure Ser
	54030 - ADS - 5000 Ultrasonic S
	46452 - ADS - 5000 Velocity Sen

Site Param.
Sensor Positions

	Current O/S	New O/S
Pressure		0.00
Ultrasonic		1.50

P Clock: 6.00 V Clock: 7.00

Telemetry
IP Address: 206.019.211.227/4134
Signal Strength:
Telemetry Type: ADS
Telemetry Model: N/A

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	6:29	3.62	3.84		3.73	1.50	1.53		0.00
End	6:39	3.56	3.72		3.68	1.64	1.62		0.00

Profile

	L	C	R
80%		1.55	
60%			
20%			

Service

Date: 4/30/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 14:50 Computer: 14:51

Service
Adjust Band: No
Collect Data: Yes
Scrub Probe: Yes
Swap Desiccant: No

Settings
Type: ADS
Set Time: No
Adjust Level: No
P Out of Flow: No
Activate: No
Modify LIF: No
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 11.20
Swap: No
Telemetry
Voltage: 11.20
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
20894 - ADS - FlowShark	
83442 - ADS - 5000 Pressure Ser	
54030 - ADS - 5000 Ultrasonic S	
46452 - ADS - 5000 Velocity Sen	

Site Param.
Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.50	

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	13:51	3.00	3.18	3.24		1.50	1.48		0.00
End	14:01	3.12	3.17	3.24		1.53	1.51		0.00

Profile

	L	C	R
80%		1.38	
60%			
20%			

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Maintenance Log

Site ID: FC-12

Site Address: 100-198 C Lane

Manhole ID: 1107 Pipe Size: 9.81" X "10.00

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Service

Date: 5/14/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 16:10 Computer: 16:12

Service

Adjust Band:	No
Collect Data:	**Yes**
Scrub Probe:	**Yes**
Swap Desiccant:	No

Settings

Type:	ADS
Set Time:	No
Adjust Level:	No
P Out of Flow:	No
Activate:	No
Modify LIF:	No
MLI Auto-P Cal:	On

Battery

Monitor
Voltage: **10.90**
Swap: No

Telemetry
Voltage: **10.90**
Swap: No

Equipment

Pre-Swap: **0:00** Post-Swap: **0:00**

Current Item	New Item
20894 - ADS - FlowShark	
83442 - ADS - 5000 Pressure Ser	
54030 - ADS - 5000 Ultrasonic S	
46452 - ADS - 5000 Velocity Sen	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.50	

Comments

Debris on pressure. Swapped antenna, verified with data group telog was pushing data.

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	15:11	3.12	3.26	3.15		1.25	1.20		0.00
End	15:21	3.06	3.04	3.05		1.32	1.32		0.00

Profile

	L	C	R
80%		1.30	
60%			
20%			

Service

Date: 5/30/18 Crew: A. Castelan; C. Daniels Entrant: C. Daniels Monitor: 15:30 Computer: 16:31

Service

Adjust Band:	No
Collect Data:	**Yes**
Scrub Probe:	**Yes**
Swap Desiccant:	No

Settings

Type:	ADS
Set Time:	No
Adjust Level:	No
P Out of Flow:	No
Activate:	No
Modify LIF:	No
MLI Auto-P Cal:	Off

Battery

Monitor
Voltage: **10.40**
Swap: No

Telemetry
Voltage: **10.40**
Swap: No

Equipment

Pre-Swap: **0:00** Post-Swap: **0:00**

Current Item	New Item
20894 - ADS - FlowShark	
83442 - ADS - 5000 Pressure Ser	
54030 - ADS - 5000 Ultrasonic S	
46452 - ADS - 5000 Velocity Sen	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.50	

Comments

Scrub collect cal

Field Confirmations

PVM S/N: 2356

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	15:45	2.50	3.68	2.95		1.89	1.13		0.00
End	15:50	2.50	3.78	2.90		1.82	1.09		0.00

Profile

	L	C	R
80%	1.63	1.89	1.82
60%			
20%			

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Maintenance Log

Site ID: FC-12

Site Address: 100-198 C Lane

Manhole ID: 1107 Pipe Size: 9.81" X "10.00

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Meter Removal

Date: 6/26/18 Crew: K. Belk; M. Juarez; B. Kauppinen Entrant: M. Juarez Monitor: 11:54 Computer: 12:55

Service

Adjust Band: No
Collect Data: Yes
Scrub Probe:
Swap Desiccant:

Settings

Type: ADS
Set Time:
Adjust Level:
P Out of Flow: No
Activate:
Modify LIF:
MLI Auto-P Cal: On

Battery

Monitor
Voltage: 9.25
Swap: No

Telemetry
Voltage: 9.25
Swap: No

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.50	

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	12:04	2.75	3.32	3.08		1.50	1.30		0.00
End	12:08	2.81	3.35	2.95		0.92	1.17		0.00

Profile

	L	C	R
80%		1.00	
60%			
20%			

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The Choice for Collection System Solutions

Maintenance Log

Site ID: FC-13

Site Address: 1154 St Francis 200 Rd

Manhole ID: 1005 Pipe Size: 30.18" X "31.73

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Meter Installation

Date: 4/17/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 12:48 Computer: 12:54

Service
Adjust Band:
Collect Data: Yes
Scrub Probe:
Swap Desiccant:

Settings
Type: ADS
Set Time:
Adjust Level:
P Out of Flow: No
Activate:
Modify LIF:
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 11.90
Swap: No
Telemetry
Voltage: 11.90
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00
Current Item
New Item
63871 - ADS - Triton+
12415 - ADS - CS4
31189 - ADS - CS5-D1
12415 - ADS - CS4

Site Param.
Sensor Positions

	Current O/S	New O/S
Pressure		2.00
Ultrasonic		1.75

P Clock: 6.00 V Clock: 6.00

Telemetry
IP Address: 107.84.28.27
Signal Strength:
Telemetry Type: ADS
Telemetry Model: N/A

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	12:02	3.25	3.19	3.37	3.16	2.00	1.93		0.00
End	12:12	3.25	3.16	3.37	3.01	1.81	1.88		0.00

Profile

	L	C	R
80%	1.13	1.88	1.01
60%			
20%			

Service

Date: 4/30/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 11:34 Computer: 11:38

Service
Adjust Band: No
Collect Data: Yes
Scrub Probe: Yes
Swap Desiccant: Yes

Settings
Type: ADS
Set Time: No
Adjust Level: No
P Out of Flow: No
Activate: No
Modify LIF: No
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 11.10
Swap: No
Telemetry
Voltage: 11.10
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00
Current Item
New Item
63871 - ADS - Triton+
12415 - ADS - CS4
31189 - ADS - CS5-D1
12415 - ADS - CS4

Site Param.
Sensor Positions

	Current O/S	New O/S
Pressure	2.00	
Ultrasonic	1.75	

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	10:34	5.50	5.92	5.63	3.64	2.25	2.45		0.00
End	10:44	5.44	5.41	5.42	3.64	2.42	2.44		0.00

Profile

	L	C	R
80%	1.60	2.32	1.92
60%			
20%			

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The Choice for Collection System Solutions

Maintenance Log

Site ID: FC-13

Site Address: 1154 St Francis 200 Rd

Manhole ID: 1005 Pipe Size: 30.18" X "31.73

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Service

Date: 5/15/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 9:09 Computer: 9:11

Service

Adjust Band:	No
Collect Data:	**Yes**
Scrub Probe:	**Yes**
Swap Desiccant:	**Yes**

Settings

Type:	ADS
Set Time:	No
Adjust Level:	No
P Out of Flow:	No
Activate:	**Yes**
Modify LIF:	No
MLI Auto-P Cal:	On

Battery

Monitor
Voltage: **10.90**
Swap: No

Telemetry
Voltage: **10.90**
Swap: No

Equipment

Pre-Swap: **8:24** Post-Swap: **8:26**

Current Item	New Item
63871 - ADS - Triton+	
12415 - ADS - CS4	
31189 - ADS - CS5-D1	
12415 - ADS - CS4	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure	2.00	
Ultrasonic	1.75	

Comments

Meter was not responsive when arrived at site, swapped meters. Data group was trying to collect the old meter same time I was at site, after meter swap data group could not hook up wirelessly to new meter. Swapped back to old meter and was able to hook up wirelessly.

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	8:27	5.81	5.68	5.94	5.06	3.00	2.51		0.00
End	8:37	5.75	5.74	5.89	5.57	2.39	2.64		0.00

Profile

	L	C	R
80%	1.68	2.59	2.00
60%			
20%			

Service

Date: 5/31/18 Crew: A. Castelan; C. Daniels Entrant: C. Daniels Monitor: 10:05 Computer: 9:05

Service

Adjust Band:	No
Collect Data:	**Yes**
Scrub Probe:	**Yes**
Swap Desiccant:	No

Settings

Type:	ADS
Set Time:	**Yes**
Adjust Level:	No
P Out of Flow:	No
Activate:	No
Modify LIF:	No
MLI Auto-P Cal:	Off

Battery

Monitor
Voltage: **10.70**
Swap: No

Telemetry
Voltage: **10.70**
Swap: No

Equipment

Pre-Swap: **0:00** Post-Swap: **0:00**

Current Item	New Item
63871 - ADS - Triton+	
12415 - ADS - CS4	
31189 - ADS - CS5-D1	
12415 - ADS - CS4	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure	2.00	
Ultrasonic	1.75	

Comments

Scrub collect cal

Field Confirmations

PVM S/N: 2356

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	8:25	4.50	9.09	5.09		2.66	2.41		0.00
End	8:30	4.50	9.08	5.02		2.50	2.25		0.00

Profile

	L	C	R
80%	2.56	2.66	2.41
60%			
20%			

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The Choice for Collection System Solutions

Maintenance Log

Site ID: FC-13

Site Address: 1154 St Francis 200 Rd

Manhole ID: 1005 Pipe Size: 30.18" X "31.73

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Meter Removal

Date: 6/26/18 Crew: K. Belk; M. Juarez; B. Kauppinen Entrant: M. Juarez Monitor: 12:56 Computer: 13:57

Service

Adjust Band: No
Collect Data: Yes
Scrub Probe:
Swap Desiccant:

Settings

Type: ADS
Set Time:
Adjust Level:
P Out of Flow: No
Activate:
Modify LIF:
MLI Auto-P Cal: On

Battery

Monitor
Voltage: 10.10
Swap: No

Telemetry
Voltage: 10.10
Swap: No

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure	2.00	
Ultrasonic	1.75	

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	13:03	5.50	5.99	5.35	5.59	2.50	2.67		0.00
End	13:09	5.50	9.32	5.21	5.61	2.79	2.66		0.00

Profile

	L	C	R
80%	2.49	2.76	1.33
60%			
20%			

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Maintenance Log

Site ID: FC-13

Site Address: 1154 St Francis 200 Rd

Manhole ID: 1005 Pipe Size: 30.18" X "31.73

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Meter Installation

Date: 4/17/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 12:48 Computer: 12:54

Service
Adjust Band:
Collect Data: Yes
Scrub Probe:
Swap Desiccant:

Settings
Type: ADS
Set Time:
Adjust Level:
P Out of Flow: No
Activate:
Modify LIF:
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 11.90
Swap: No
Telemetry
Voltage: 11.90
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00
Current Item: 63871 - ADS - Triton+; 12415 - ADS - CS4; 31189 - ADS - CS5-D1; 12415 - ADS - CS4
New Item:

Site Param.
Sensor Positions

	Current O/S	New O/S
Pressure		2.00
Ultrasonic		1.75

P Clock: 6.00 V Clock: 6.00

Telemetry
IP Address: 107.84.28.27
Signal Strength:
Telemetry Type: ADS
Telemetry Model: N/A

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	12:02	3.25	3.19	3.37	3.16	2.00	1.93		0.00
End	12:12	3.25	3.16	3.37	3.01	1.81	1.88		0.00

Profile

	L	C	R
80%	1.13	1.88	1.01
60%			
20%			

Service

Date: 4/30/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 11:34 Computer: 11:38

Service
Adjust Band: No
Collect Data: Yes
Scrub Probe: Yes
Swap Desiccant: Yes

Settings
Type: ADS
Set Time: No
Adjust Level: No
P Out of Flow: No
Activate: No
Modify LIF: No
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 11.10
Swap: No
Telemetry
Voltage: 11.10
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00
Current Item: 63871 - ADS - Triton+; 12415 - ADS - CS4; 31189 - ADS - CS5-D1; 12415 - ADS - CS4
New Item:

Site Param.
Sensor Positions

	Current O/S	New O/S
Pressure	2.00	
Ultrasonic	1.75	

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	10:34	5.50	5.92	5.63	3.64	2.25	2.45		0.00
End	10:44	5.44	5.41	5.42	3.64	2.42	2.44		0.00

Profile

	L	C	R
80%	1.60	2.32	1.92
60%			
20%			

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Maintenance Log

Site ID: FC-13

Site Address: 1154 St Francis 200 Rd

Manhole ID: 1005 Pipe Size: 30.18" X "31.73

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Service

Date: 5/15/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 9:09 Computer: 9:11

Service

Adjust Band:	No
Collect Data:	Yes
Scrub Probe:	Yes
Swap Desiccant:	Yes

Settings

Type:	ADS
Set Time:	No
Adjust Level:	No
P Out of Flow:	No
Activate:	Yes
Modify LIF:	No
MLI Auto-P Cal:	On

Battery

Monitor
Voltage: 10.90
Swap: No

Telemetry
Voltage: 10.90
Swap: No

Equipment

Pre-Swap: 8:24 Post-Swap: 8:26

Current Item	New Item
63871 - ADS - Triton+	
12415 - ADS - CS4	
31189 - ADS - CS5-D1	
12415 - ADS - CS4	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure	2.00	
Ultrasonic	1.75	

Comments

Meter was not responsive when arrived at site, swapped meters. Data group was trying to collect the old meter same time I was at site, after meter swap data group could not hook up wirelessly to new meter. Swapped back to old meter and was able to hook up wirelessly.

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	8:27	5.81	5.68	5.94	5.06	3.00	2.51		0.00
End	8:37	5.75	5.74	5.89	5.57	2.39	2.64		0.00

Profile

	L	C	R
80%	1.68	2.59	2.00
60%			
20%			

Service

Date: 5/31/18 Crew: A. Castelan; C. Daniels Entrant: C. Daniels Monitor: 10:05 Computer: 9:05

Service

Adjust Band:	No
Collect Data:	Yes
Scrub Probe:	Yes
Swap Desiccant:	No

Settings

Type:	ADS
Set Time:	Yes
Adjust Level:	No
P Out of Flow:	No
Activate:	No
Modify LIF:	No
MLI Auto-P Cal:	Off

Battery

Monitor
Voltage: 10.70
Swap: No

Telemetry
Voltage: 10.70
Swap: No

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
63871 - ADS - Triton+	
12415 - ADS - CS4	
31189 - ADS - CS5-D1	
12415 - ADS - CS4	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure	2.00	
Ultrasonic	1.75	

Comments

Scrub collect cal

Field Confirmations

PVM S/N: 2356

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	8:25	4.50	9.09	5.09		2.66	2.41		0.00
End	8:30	4.50	9.08	5.02		2.50	2.25		0.00

Profile

	L	C	R
80%	2.56	2.66	2.41
60%			
20%			

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The Choice for Collection System Solutions

Maintenance Log

Site ID: FC-13

Site Address: 1154 St Francis 200 Rd

Manhole ID: 1005 Pipe Size: 30.18" X "31.73

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Meter Removal

Date: 6/26/18 Crew: K. Belk; M. Juarez; B. Kauppinen Entrant: M. Juarez Monitor: 12:56 Computer: 13:57

Service

Adjust Band: No
Collect Data: Yes
Scrub Probe:
Swap Desiccant:

Settings

Type: ADS
Set Time:
Adjust Level:
P Out of Flow: No
Activate:
Modify LIF:
MLI Auto-P Cal: On

Battery

Monitor
Voltage: 10.10
Swap: No

Telemetry
Voltage: 10.10
Swap: No

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure	2.00	
Ultrasonic	1.75	

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	13:03	5.50	5.99	5.35	5.59	2.50	2.67		0.00
End	13:09	5.50	9.32	5.21	5.61	2.79	2.66		0.00

Profile

	L	C	R
80%	2.49	2.76	1.33
60%			
20%			

rjngroup
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Maintenance Log

Site ID: FC-14

Site Address: 2150 Peevey Ave

Manhole ID: 1032 Pipe Size: 15.06" X "15.12

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Meter Installation

Date: 4/18/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 8:54 Computer: 9:00

Service
Adjust Band:
Collect Data: Yes
Scrub Probe:
Swap Desiccant:

Settings
Type: ADS
Set Time:
Adjust Level:
P Out of Flow: No
Activate:
Modify LIF:
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 12.30
Swap: No
Telemetry
Voltage: 12.30
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00
Current Item / New Item
20830 - ADS - FlowShark
55907 - ADS - 5000 Pressure Ser
73442 - ADS - 5000 Ultrasonic S
51481 - ADS - 5000 Velocity Sen

Site Param.
Sensor Positions

	Current O/S	New O/S
Pressure		0.00
Ultrasonic		1.25

P Clock: 7.00 V Clock: 6.00

Telemetry
IP Address: 206.019.211.227/4134
Signal Strength:
Telemetry Type: ADS
Telemetry Model: N/A

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	7:54	2.75	2.73	2.67		1.50	1.97		0.00
End	8:04	2.75	2.65	2.63		1.70	1.98		0.00

Profile

	L	C	R
80%	1.05	1.56	1.23
60%			
20%			

Service

Date: 4/30/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 14:01 Computer: 14:02

Service
Adjust Band: No
Collect Data: Yes
Scrub Probe: Yes
Swap Desiccant: No

Settings
Type: ADS
Set Time: No
Adjust Level: No
P Out of Flow: No
Activate: No
Modify LIF: No
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 11.10
Swap: No
Telemetry
Voltage: 11.10
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00
Current Item / New Item
20830 - ADS - FlowShark
55907 - ADS - 5000 Pressure Ser
73442 - ADS - 5000 Ultrasonic Si
51481 - ADS - 5000 Velocity Sen

Site Param.
Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.25	

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	13:03	2.94	2.88		2.72	1.50	1.84		0.00
End	13:13	2.81	2.64		2.60	1.90	1.69		0.00

Profile

	L	C	R
80%	1.49	1.87	1.47
60%			
20%			

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The Choice for Collection System Solutions

Maintenance Log

Site ID: FC-14

Site Address: 2150 Peevey Ave

Manhole ID: 1032 Pipe Size: 15.06" X "15.12

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Service

Date: 5/14/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 16:57 Computer: 16:58

Service

Adjust Band:	No
Collect Data:	Yes
Scrub Probe:	Yes
Swap Desiccant:	Yes

Settings

Type:	ADS
Set Time:	No
Adjust Level:	No
P Out of Flow:	No
Activate:	No
Modify LIF:	No
MLI Auto-P Cal:	On

Battery

Monitor
Voltage: 10.80
Swap: No

Telemetry
Voltage: 10.80
Swap: No

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
20830 - ADS - FlowShark	
55907 - ADS - 5000 Pressure Ser	
73442 - ADS - 5000 Ultrasonic S	
51481 - ADS - 5000 Velocity Sen	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.25	

Comments

Small amount of debris on velocity sensor.

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	16:04	2.50	2.83	2.49		1.50	1.72		0.00
End	16:14	2.50	2.86	2.31		1.55	1.43		0.00

Profile

	L	C	R
80%	1.21	1.27	1.15
60%			
20%			

Service

Date: 5/30/18 Crew: A. Castelan; C. Daniels Entrant: C. Daniels Monitor: 17:28 Computer: 18:28

Service

Adjust Band:	No
Collect Data:	Yes
Scrub Probe:	Yes
Swap Desiccant:	No

Settings

Type:	ADS
Set Time:	No
Adjust Level:	No
P Out of Flow:	No
Activate:	No
Modify LIF:	No
MLI Auto-P Cal:	On

Battery

Monitor
Voltage: 10.50
Swap: No

Telemetry
Voltage: 10.50
Swap: No

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
20830 - ADS - FlowShark	
55907 - ADS - 5000 Pressure Ser	
73442 - ADS - 5000 Ultrasonic S	
51481 - ADS - 5000 Velocity Sen	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.25	

Comments

Scrub, cal, collect

Field Confirmations

PVM S/N: 2356

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	16:34	2.50	2.56	2.55		1.39	1.52		0.00
End	16:39	2.50	2.53	2.51		1.43	1.59		0.00

Profile

	L	C	R
80%	1.33	1.39	1.25
60%			
20%			

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Maintenance Log

Site ID: FC-14

Site Address: 2150 Peevey Ave

Manhole ID: 1032 Pipe Size: 15.06" X "15.12

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Meter Removal

Date: 6/26/18 Crew: K. Belk; M. Juarez; B. Kauppinen Entrant: M. Juarez Monitor: 12:26 Computer: 13:27

Service

Adjust Band: No
Collect Data: Yes
Scrub Probe:
Swap Desiccant:

Settings

Type: ADS
Set Time:
Adjust Level:
P Out of Flow: No
Activate:
Modify LIF:
MLI Auto-P Cal: On

Battery

Monitor
Voltage: 9.23
Swap: No

Telemetry
Voltage: 9.23
Swap: No

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.25	

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	12:35	2.50	3.10	2.70		1.50	1.44		0.00
End	12:38	2.50	3.02	2.48		1.36	1.56		0.00

Profile

	L	C	R
80%		1.28	
60%			
20%			

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Maintenance Log

Site ID: FC-16

Site Address: 305 Turner Ave

Manhole ID: 626 Pipe Size: 9.94" X "9.94

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Meter Installation

Date: 4/18/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 11:17 Computer: 11:17

Service
Adjust Band:
Collect Data: Yes
Scrub Probe:
Swap Desiccant:

Settings
Type: ADS
Set Time:
Adjust Level:
P Out of Flow: No
Activate:
Modify LIF:
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 12.30
Swap: No
Telemetry
Voltage: 12.30
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
	16001 - ADS - FlowShark
	40160 - ADS - 5000 Pressure Ser
	74003 - ADS - 5000 Ultrasonic S
	51419 - ADS - 5000 Velocity Sen

Site Param.

Sensor Positions	Current O/S	New O/S
Pressure		0.00
Ultrasonic		1.50

P Clock: 6.30 V Clock: 6.00

Telemetry
IP Address: 206.019.211.227/4134
Signal Strength:
Telemetry Type: ADS
Telemetry Model: N/A

Comments
Had to make band adjustments accounts for time.

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	11:01	2.62	2.88	2.67		1.50	1.61		0.00
End	12:11	2.75	2.85	2.87		1.22	1.59		0.00

Profile

	L	C	R
80%	1.21	1.41	0.98
60%			
20%			

Service

Date: 5/1/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 10:30 Computer: 10:31

Service
Adjust Band: No
Collect Data: Yes
Scrub Probe: Yes
Swap Desiccant: Yes

Settings
Type: ADS
Set Time: No
Adjust Level: No
P Out of Flow: No
Activate: No
Modify LIF: No
MLI Auto-P Cal: On

Battery
Monitor
Voltage: 11.20
Swap: No
Telemetry
Voltage: 11.20
Swap: No

Equipment
Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
16001 - ADS - FlowShark	
40160 - ADS - 5000 Pressure Ser	
74003 - ADS - 5000 Ultrasonic S	
51419 - ADS - 5000 Velocity Sen	

Site Param.

Sensor Positions	Current O/S	New O/S
Pressure		
Ultrasonic	1.50	

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	9:31	2.62	2.87		2.79	1.50	1.56		0.00
End	9:41	2.68	2.87		2.84	1.57	1.56		0.00

Profile

	L	C	R
80%		1.33	
60%			
20%			

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Maintenance Log

Site ID: FC-16

Site Address: 305 Turner Ave

Manhole ID: 626 Pipe Size: 9.94" X "9.94

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Service

Date: 5/15/18 Crew: K. Belk; M. Juarez Entrant: M. Juarez Monitor: 10:46 Computer: 10:47

Service

Adjust Band:	No
Collect Data:	Yes
Scrub Probe:	Yes
Swap Desiccant:	Yes

Settings

Type:	ADS
Set Time:	No
Adjust Level:	No
P Out of Flow:	No
Activate:	No
Modify LIF:	No
MLI Auto-P Cal:	On

Battery

Monitor
Voltage: 10.80
Swap: No

Telemetry
Voltage: 10.80
Swap: No

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
16001 - ADS - FlowShark	
40160 - ADS - 5000 Pressure Ser	
74003 - ADS - 5000 Ultrasonic S	
51419 - ADS - 5000 Velocity Sen	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.50	

Comments

Field Confirmations

PVM S/N: 3312

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	9:48	2.75	2.85	2.84		1.50	1.55		0.00
End	9:58	2.68	2.96	2.77		1.47	1.61		0.00

Profile

	L	C	R
80%		1.48	
60%			
20%			

Service

Date: 5/31/18 Crew: A. Castelan; C. Daniels Entrant: C. Daniels Monitor: 7:24 Computer: 8:24

Service

Adjust Band:	No
Collect Data:	Yes
Scrub Probe:	Yes
Swap Desiccant:	No

Settings

Type:	ADS
Set Time:	No
Adjust Level:	No
P Out of Flow:	No
Activate:	No
Modify LIF:	No
MLI Auto-P Cal:	On

Battery

Monitor
Voltage: 10.10
Swap: No

Telemetry
Voltage: 10.10
Swap: No

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
16001 - ADS - FlowShark	
40160 - ADS - 5000 Pressure Ser	
74003 - ADS - 5000 Ultrasonic S	
51419 - ADS - 5000 Velocity Sen	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.50	

Comments

Scrub, cal

Field Confirmations

PVM S/N: 2356

	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	7:27	2.25	2.23	2.35		1.27	1.29		0.00
End	7:32	2.25	2.20	2.33		1.36	1.33		0.00

Profile

	L	C	R
80%		1.27	
60%			
20%			

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Maintenance Log

Site ID: FC-16

Site Address: 305 Turner Ave

Manhole ID: 626 Pipe Size: 9.94" X "9.94

Project: 18-3273-00: ETC Engineers & Architects, Forrest City FLow Metering

Service

Date: 6/19/18 Crew: B. Emmerling; D. Emmerling Monitor: 12:47 Computer: 12:45

Service

Adjust Band:	No
Collect Data:	Yes
Scrub Probe:	No
Swap Desiccant:	No

Settings

Type:	ADS
Set Time:	No
Adjust Level:	No
P Out of Flow:	No
Activate:	No
Modify LIF:	No
MLI Auto-P Cal:	On

Battery

Monitor
Voltage: 12.08
Swap: Yes

Telemetry
Voltage: 12.08
Swap: Yes

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item
16001 - ADS - FlowShark	
40160 - ADS - 5000 Pressure Ser	
74003 - ADS - 5000 Ultrasonic Si	
51419 - ADS - 5000 Velocity Sen	

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.50	

Comments

Meter Removal

Date: 6/27/18 Crew: K. Belk; M. Juarez; B. Kauppinen Entrant: M. Juarez Monitor: 8:22 Computer: 9:23

Service

Adjust Band:	No
Collect Data:	Yes
Scrub Probe:	
Swap Desiccant:	

Settings

Type:	ADS
Set Time:	
Adjust Level:	
P Out of Flow:	No
Activate:	
Modify LIF:	
MLI Auto-P Cal:	On

Battery

Monitor
Voltage: 10.55
Swap: No

Telemetry
Voltage: 10.55
Swap: No

Equipment

Pre-Swap: 0:00 Post-Swap: 0:00

Current Item	New Item

Site Param.

Sensor Positions

	Current O/S	New O/S
Pressure		
Ultrasonic	1.50	

Comments

Field Confirmations

PVM S/N: 3312

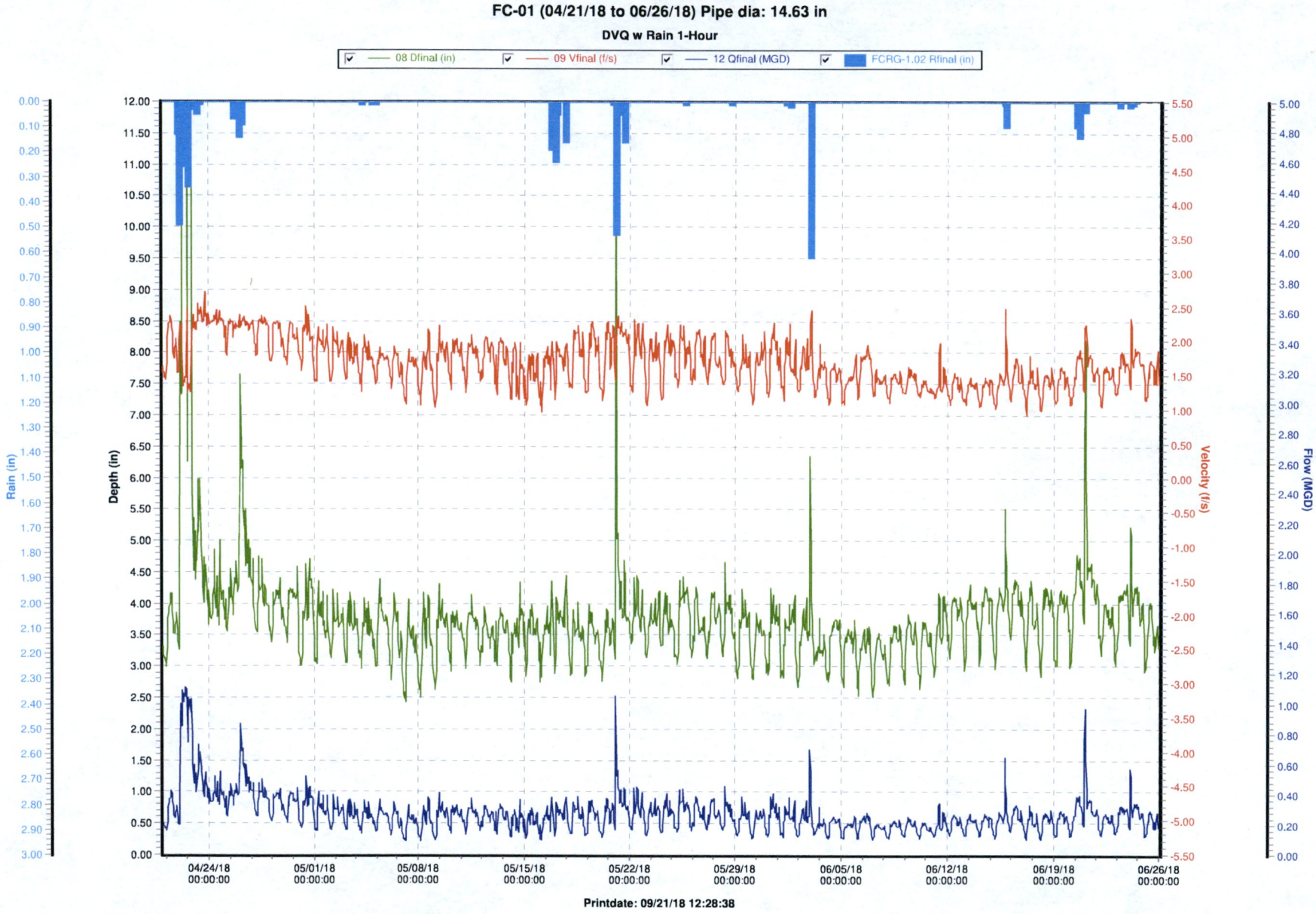
	Time	Manual D (in.)	Pressure D (in.)	Ultra D (in.)	Up Ultra D (in.)	Manual V (fps)	Subm. V (fps)	Surface V (fps)	Silt (in.)
Start	8:29	3.00	2.68	2.92		1.50	1.64		0.00
End	8:32	3.00	2.73	2.96		1.29	1.58		0.00

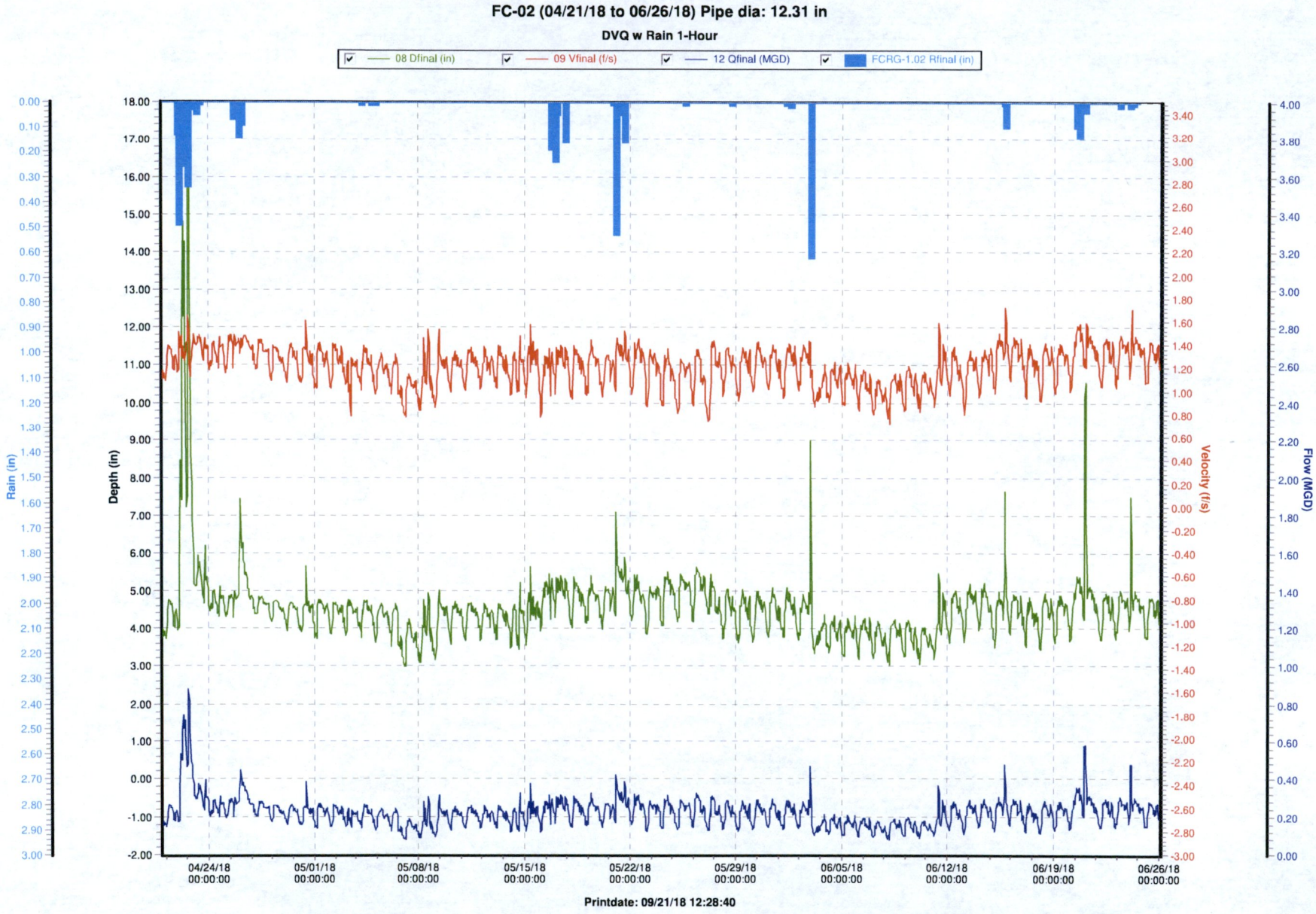
Profile

	L	C	R
80%		1.11	
60%			
20%			

APPENDIX B

HYDROGRAPHS


FC-01 (04/21/18 to 06/26/18) Pipe dia: 14.63 in
DVQ w Rain 1-Hour
08 Dfinal (in)
09 Vfinal (f/s)
12 Qfinal (MGD)
FCRG-1.02 Rfinal (in)
Rain (in)
Depth (in)
Velocity (f/s)
Flow (MGD)
04/24/18 00:00:00
05/01/18 00:00:00
05/08/18 00:00:00
05/15/18 00:00:00
05/22/18 00:00:00
05/29/18 00:00:00
06/05/18 00:00:00
06/12/18 00:00:00
06/19/18 00:00:00
06/26/18 00:00:00
Printdate: 09/21/18 12:28:38


FC-02 (04/21/18 to 06/26/18) Pipe dia: 12.31 in
DVQ w Rain 1-Hour
08 Dfinal (in)
09 Vfinal (f/s)
12 Qfinal (MGD)
FCRG-1.02 Rfinal (in)
Rain (in)
Depth (in)
Velocity (f/s)
Flow (MGD)
04/24/18 00:00:00
05/01/18 00:00:00
05/08/18 00:00:00
05/15/18 00:00:00
05/22/18 00:00:00
05/29/18 00:00:00
06/05/18 00:00:00
06/12/18 00:00:00
06/19/18 00:00:00
06/26/18 00:00:00
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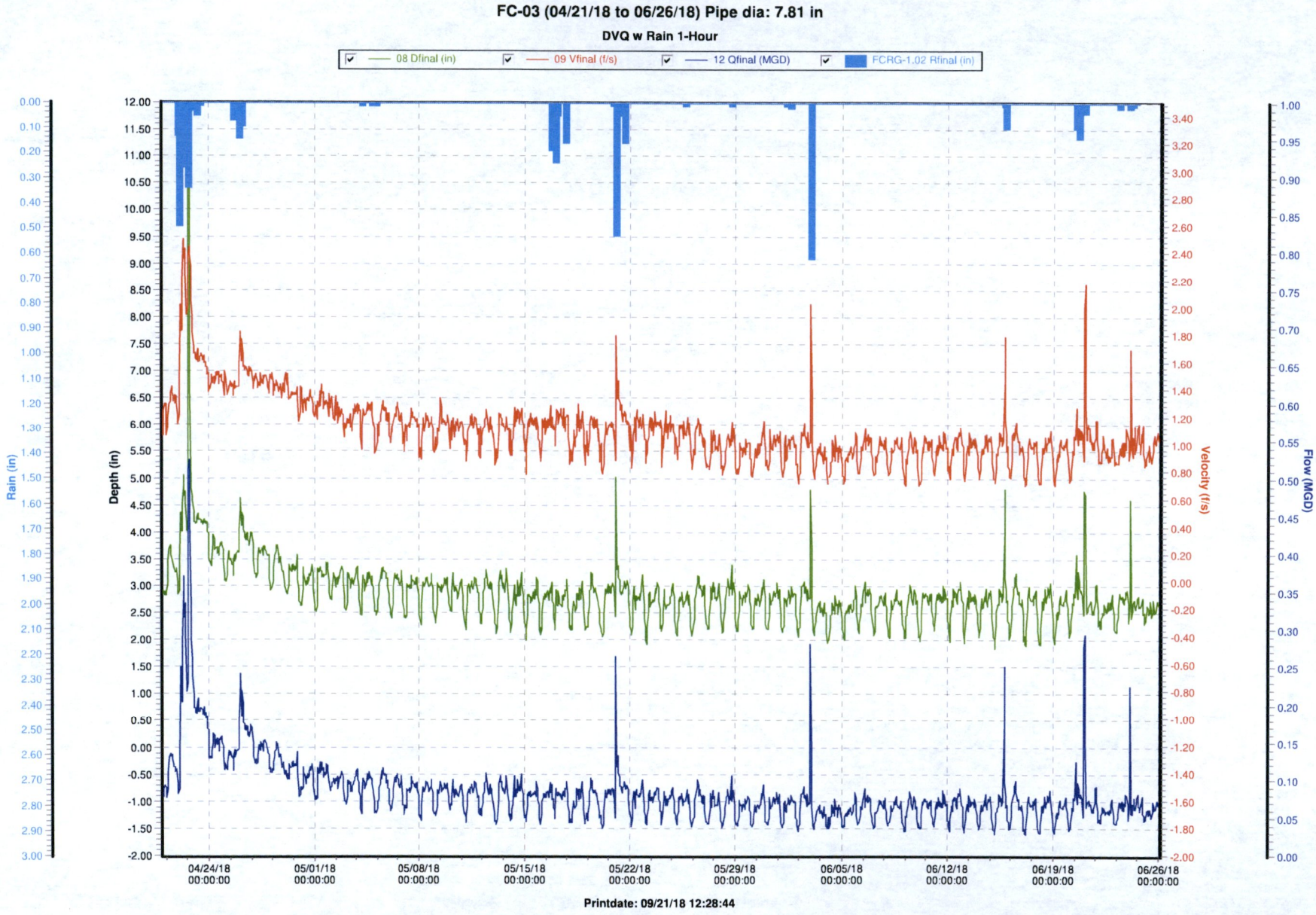
FC-03 (04/21/18 to 06/26/18) Pipe dia: 7.81 in
DVQ w Rain 1-Hour
08 Dfinal (in)
09 Vfinal (f/s)
12 Qfinal (MGD)
FCRG-1.02 Rfinal (in)
Rain (in)
Depth (in)
Velocity (f/s)
Flow (MGD)
04/24/18 00:00:00
05/01/18 00:00:00
05/08/18 00:00:00
05/15/18 00:00:00
05/22/18 00:00:00
05/29/18 00:00:00
06/05/18 00:00:00
06/12/18 00:00:00
06/19/18 00:00:00
06/26/18 00:00:00
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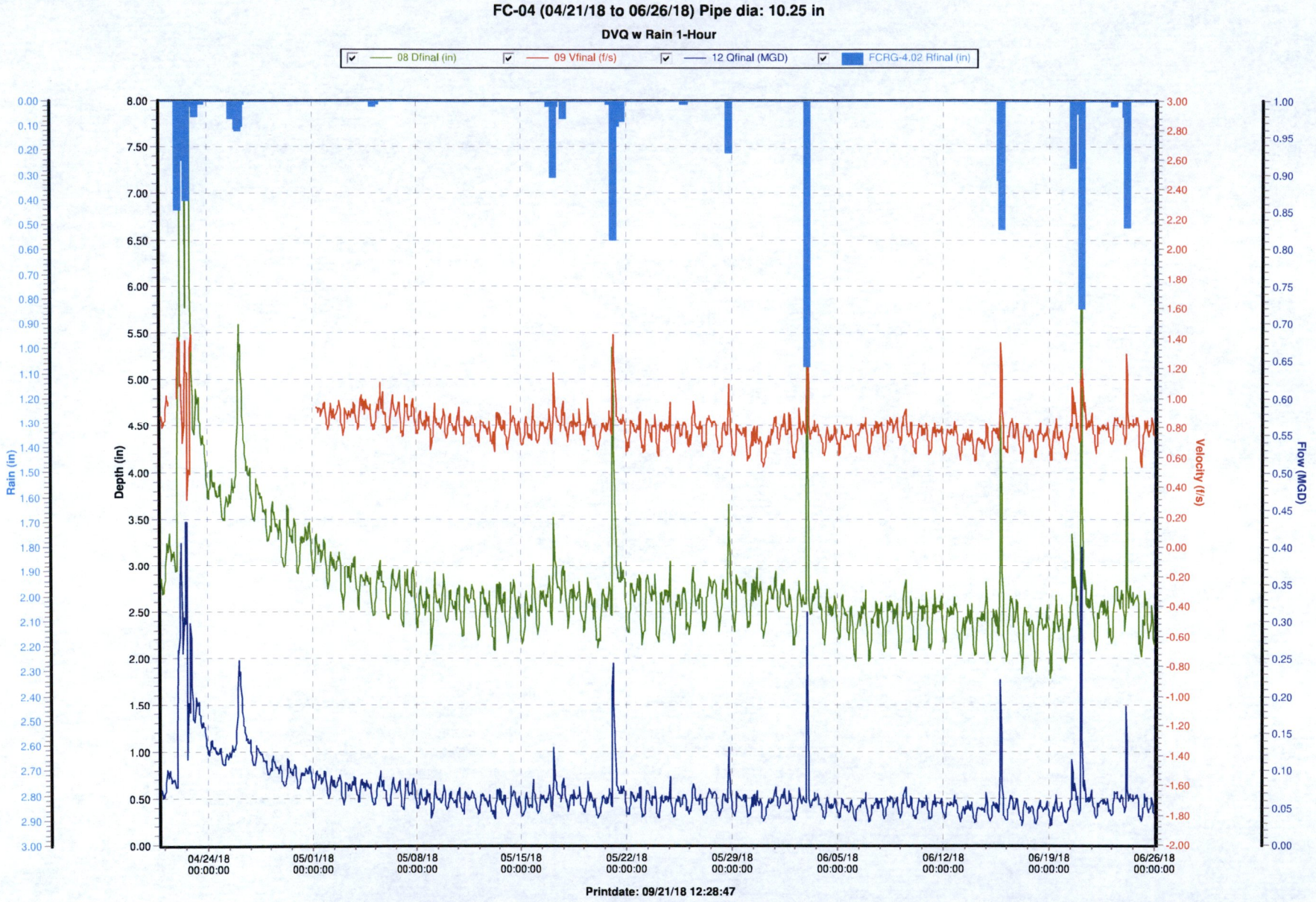
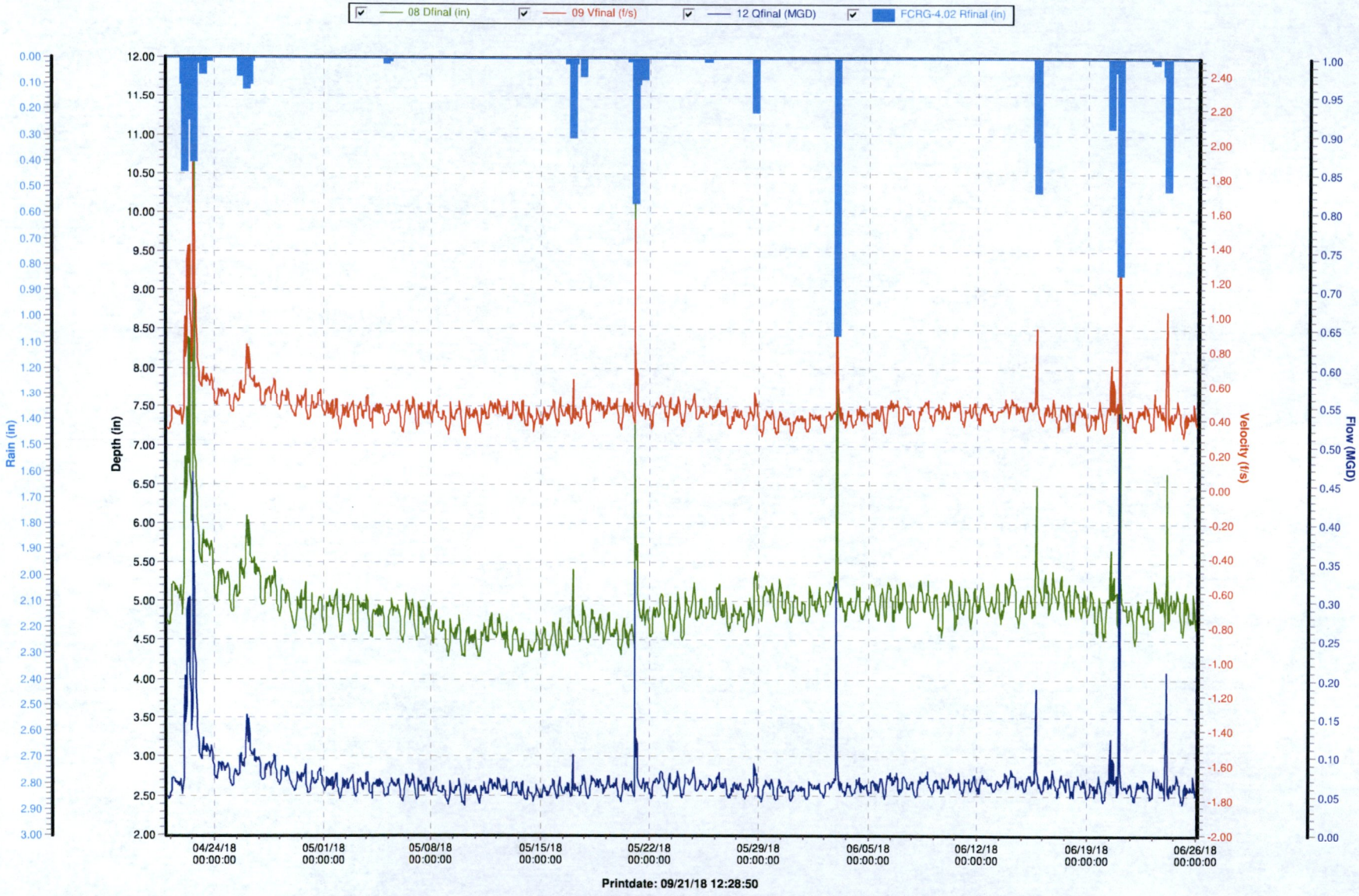

FC-04 (04/21/18 to 06/26/18) Pipe dia: 10.25 in
DVQ w Rain 1-Hour
08 Dfinal (in)
09 Vfinal (f/s)
12 Qfinal (MGD)
FCRG-4.02 Rfinal (in)
Rain (in)
Depth (in)
Velocity (f/s)
Flow (MGD)
04/24/18 00:00:00
05/01/18 00:00:00
05/08/18 00:00:00
05/15/18 00:00:00
05/22/18 00:00:00
05/29/18 00:00:00
06/05/18 00:00:00
06/12/18 00:00:00
06/19/18 00:00:00
06/26/18 00:00:00
Printdate: 09/21/18 12:28:47

FC-05 (04/21/18 to 06/26/18) Pipe dia: 7.94 in

DVQ w Rain 1-Hour




FC-06 (04/21/18 to 06/26/18) Pipe dia: 8.15 in
DVQ w Rain 1-Hour
08 Dfinal (in)
09 Vfinal (f/s)
12 Qfinal (MGD)
FCRG-4.02 Rfinal (in)
Rain (in)
Depth (in)
Velocity (f/s)
Flow (MGD)
04/24/18 00:00:00
05/01/18 00:00:00
05/08/18 00:00:00
05/15/18 00:00:00
05/22/18 00:00:00
05/29/18 00:00:00
06/05/18 00:00:00
06/12/18 00:00:00
06/19/18 00:00:00
06/26/18 00:00:00
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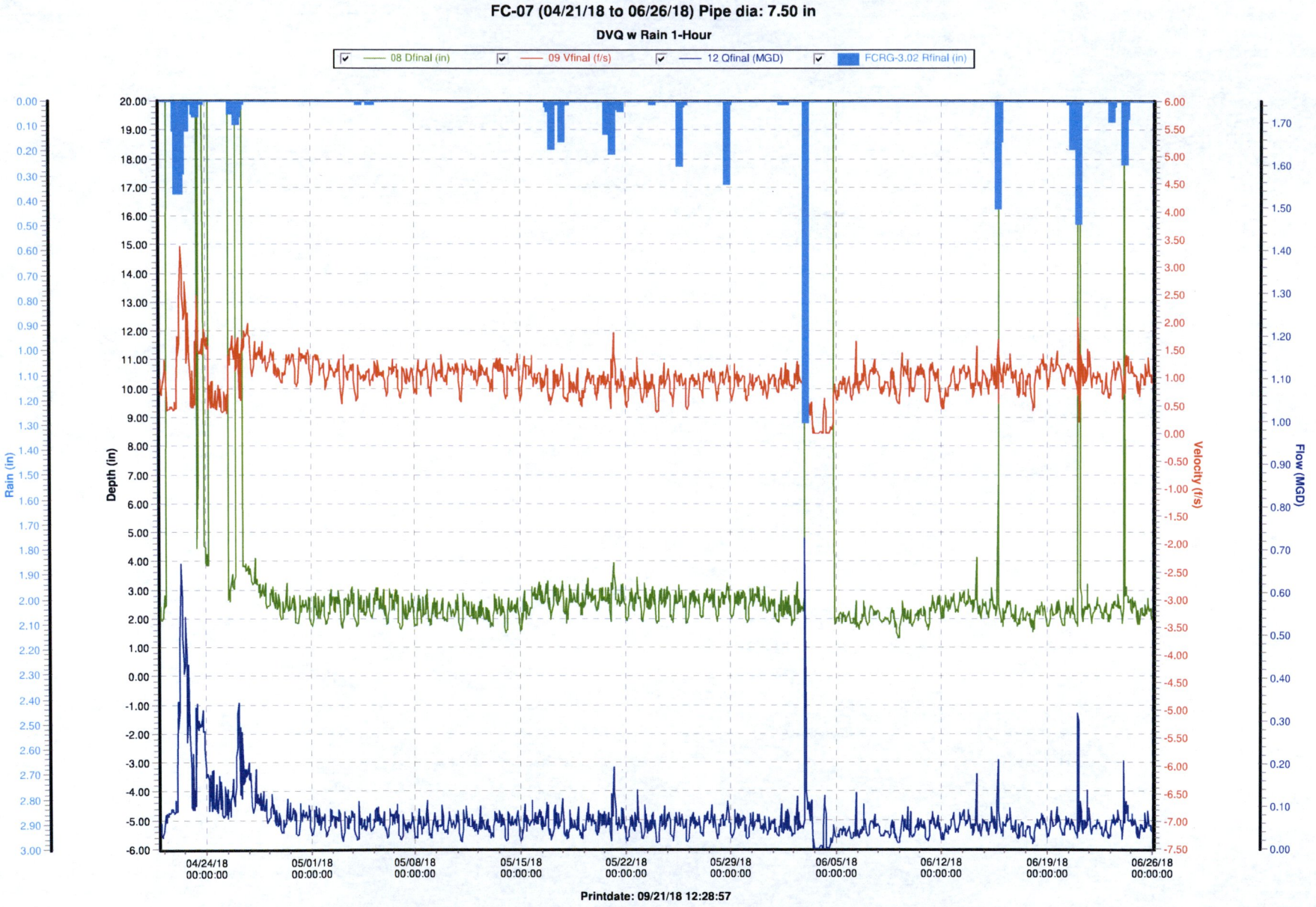
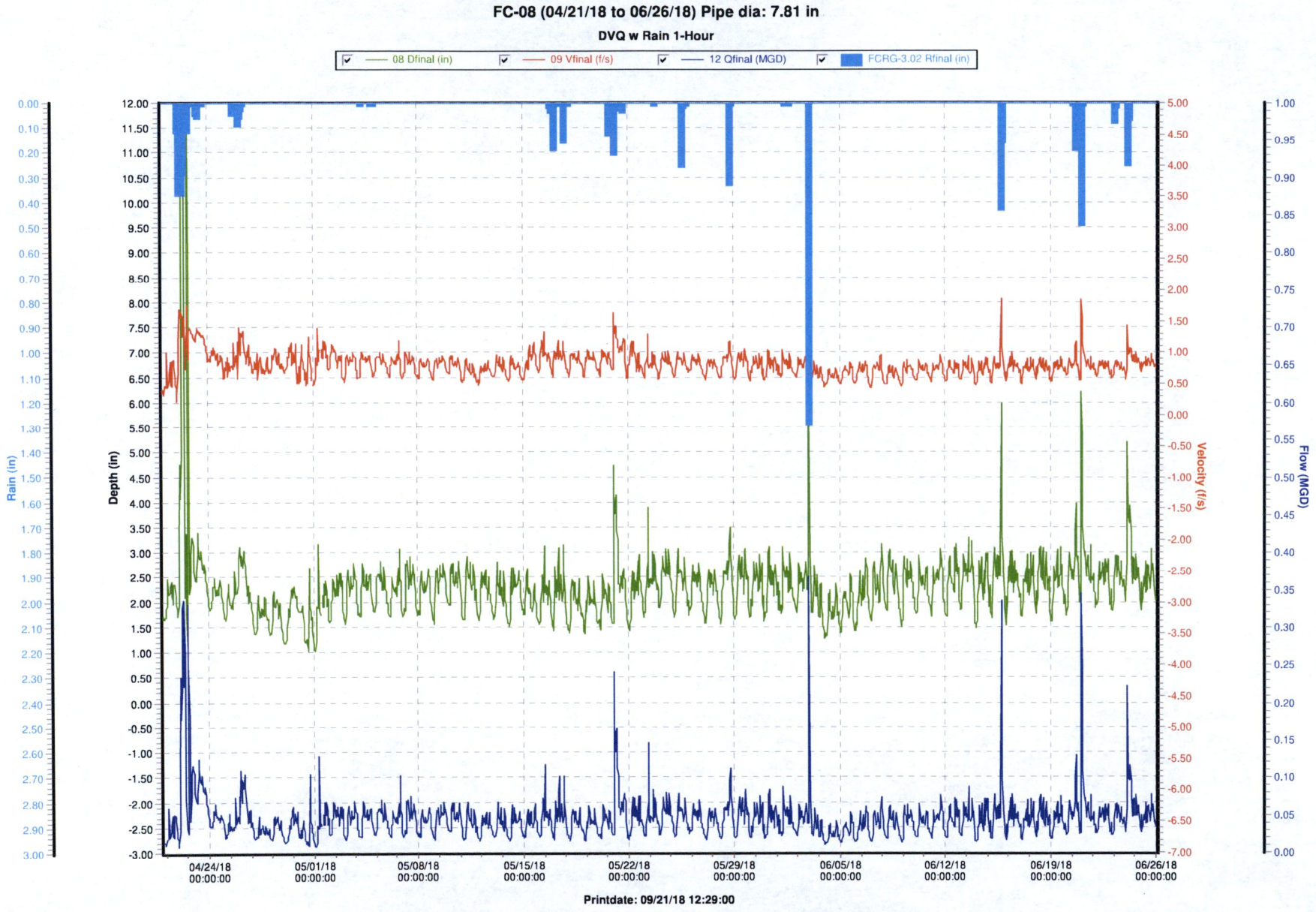
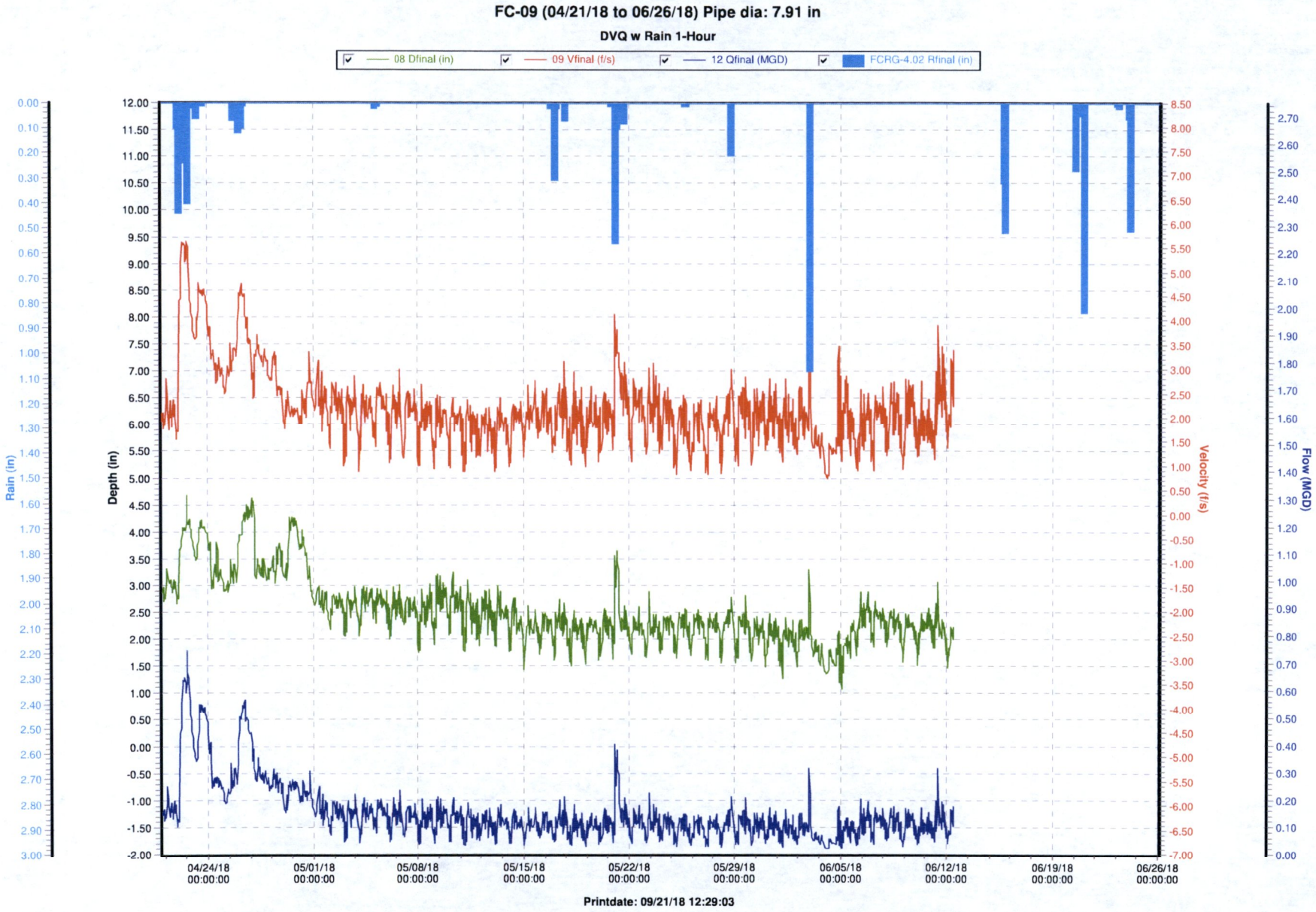
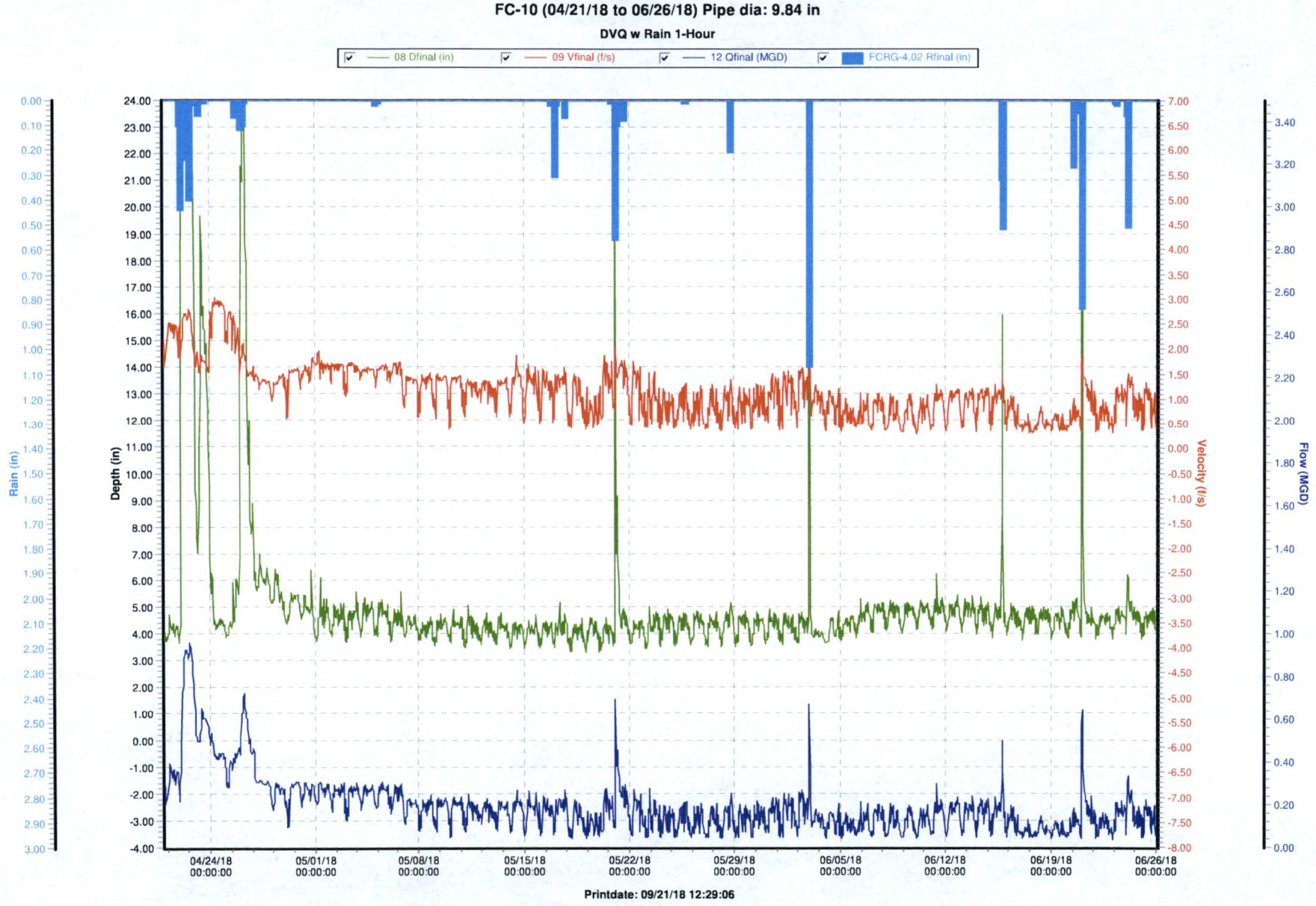
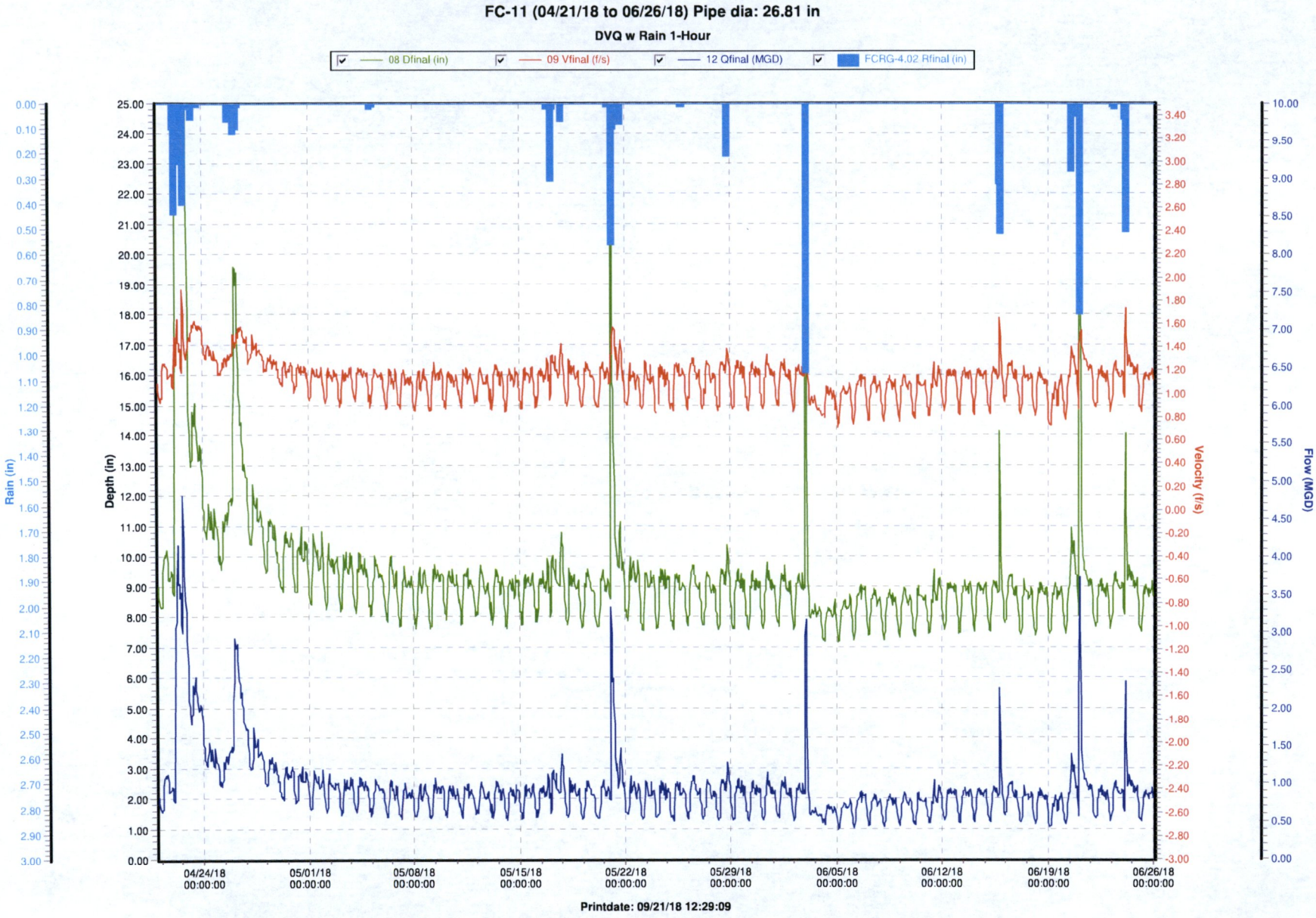
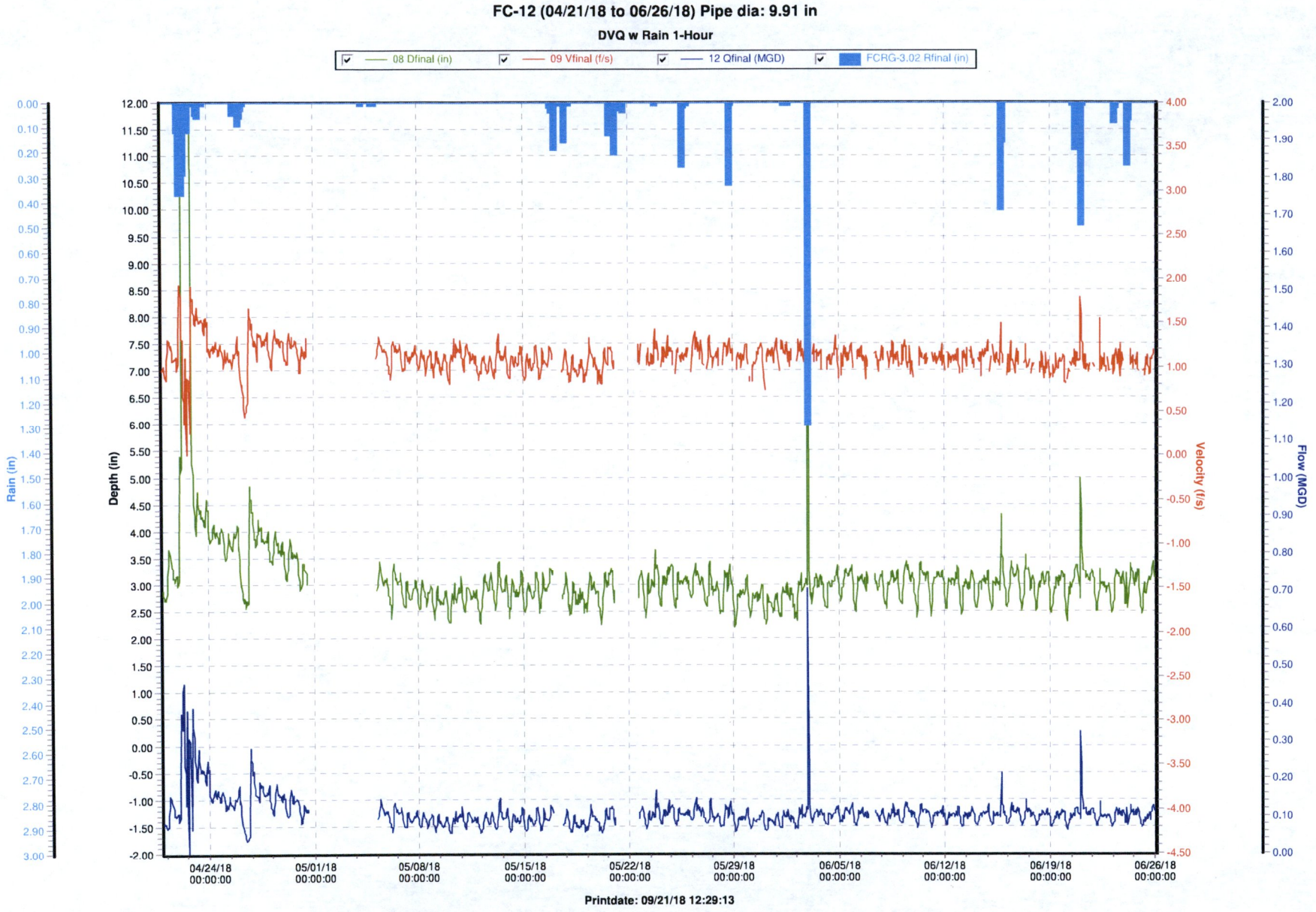

FC-07 (04/21/18 to 06/26/18) Pipe dia: 7.50 in
DVQ w Rain 1-Hour
08 Dfinal (in)
09 Vfinal (f/s)
12 Qfinal (MGD)
FCRG-3.02 Rfinal (in)
Rain (in)
Depth (in)
Velocity (f/s)
Flow (MGD)
04/24/18 00:00:00
05/01/18 00:00:00
05/08/18 00:00:00
05/15/18 00:00:00
05/22/18 00:00:00
05/29/18 00:00:00
06/05/18 00:00:00
06/12/18 00:00:00
06/19/18 00:00:00
06/26/18 00:00:00
Printdate: 09/21/18 12:28:57

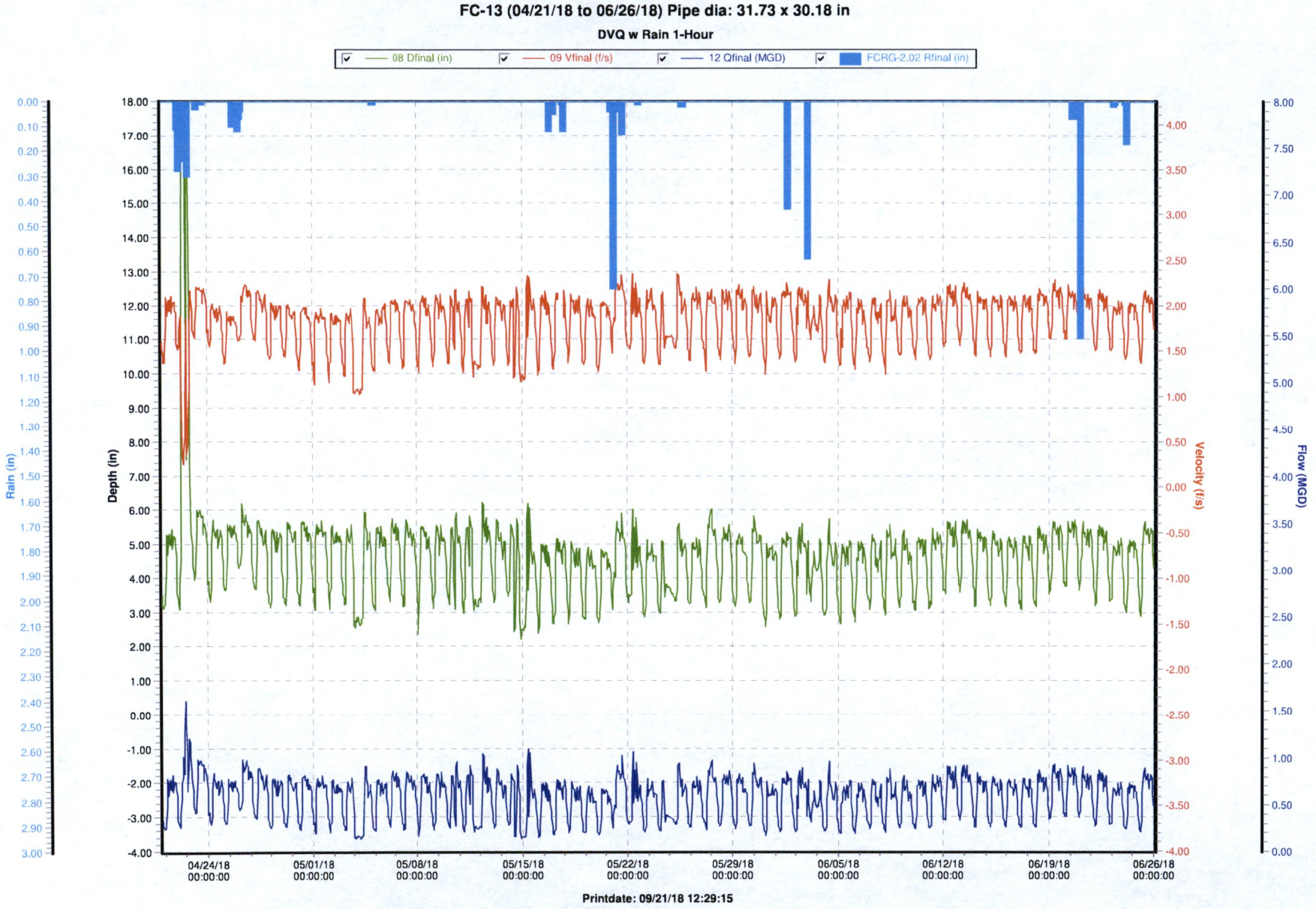

FC-08 (04/21/18 to 06/26/18) Pipe dia: 7.81 in
DVQ w Rain 1-Hour
08 Dfinal (in)
09 Vfinal (f/s)
12 Qfinal (MGD)
FCRG-3.02 Rfinal (in)
Rain (in)
Depth (in)
Velocity (f/s)
Flow (MGD)
04/24/18 00:00:00
05/01/18 00:00:00
05/08/18 00:00:00
05/15/18 00:00:00
05/22/18 00:00:00
05/29/18 00:00:00
06/05/18 00:00:00
06/12/18 00:00:00
06/19/18 00:00:00
06/26/18 00:00:00
Printdate: 09/21/18 12:29:00

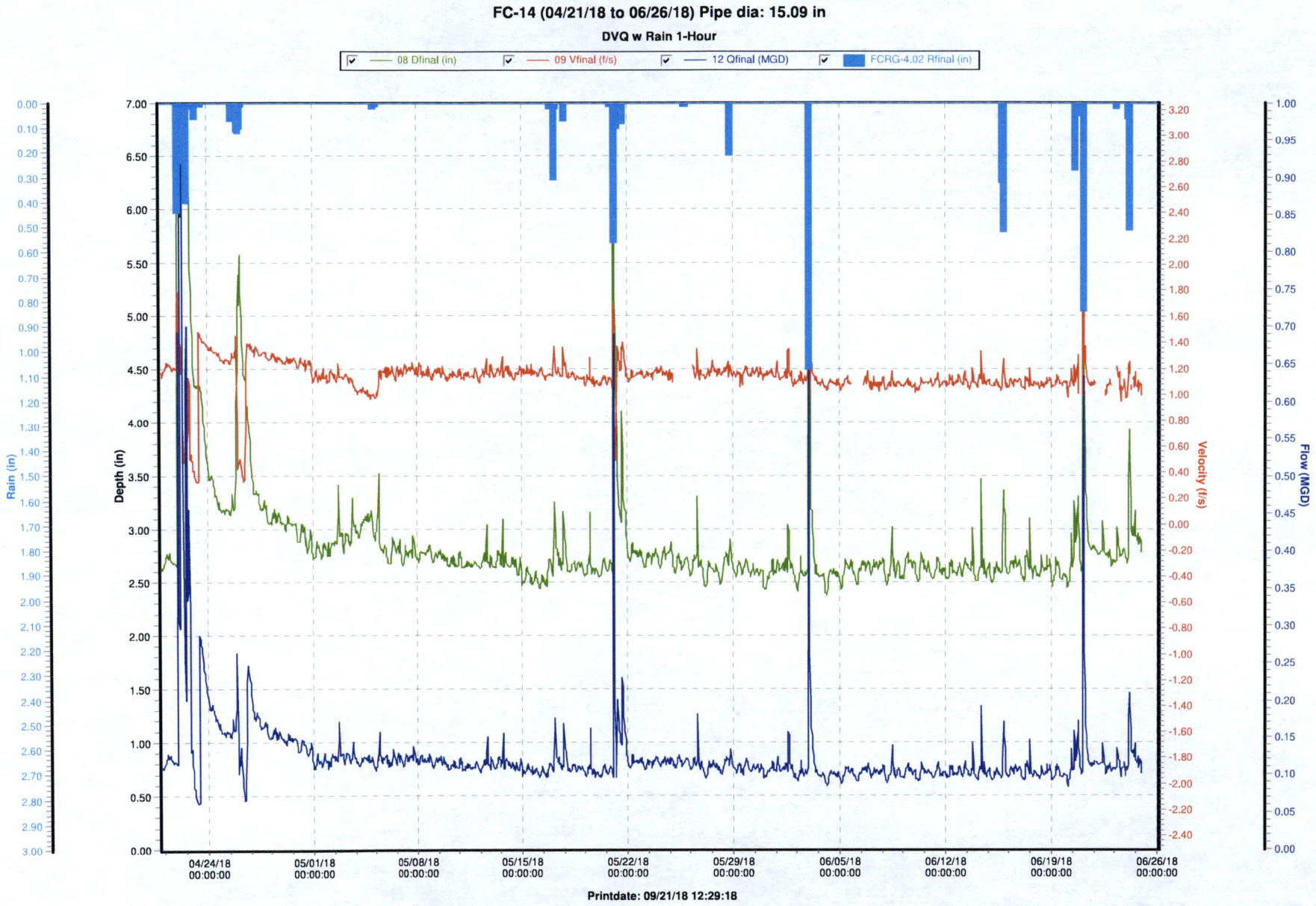

FC-09 (04/21/18 to 06/26/18) Pipe dia: 7.91 in
DVQ w Rain 1-Hour
08 Dfinal (in)
09 Vfinal (f/s)
12 Qfinal (MGD)
FCRG-4.02 Rfinal (in)
Rain (in)
Depth (in)
Velocity (f/s)
Flow (MGD)
04/24/18 00:00:00
05/01/18 00:00:00
05/08/18 00:00:00
05/15/18 00:00:00
05/22/18 00:00:00
05/29/18 00:00:00
06/05/18 00:00:00
06/12/18 00:00:00
06/19/18 00:00:00
06/26/18 00:00:00
Printdate: 09/21/18 12:29:03

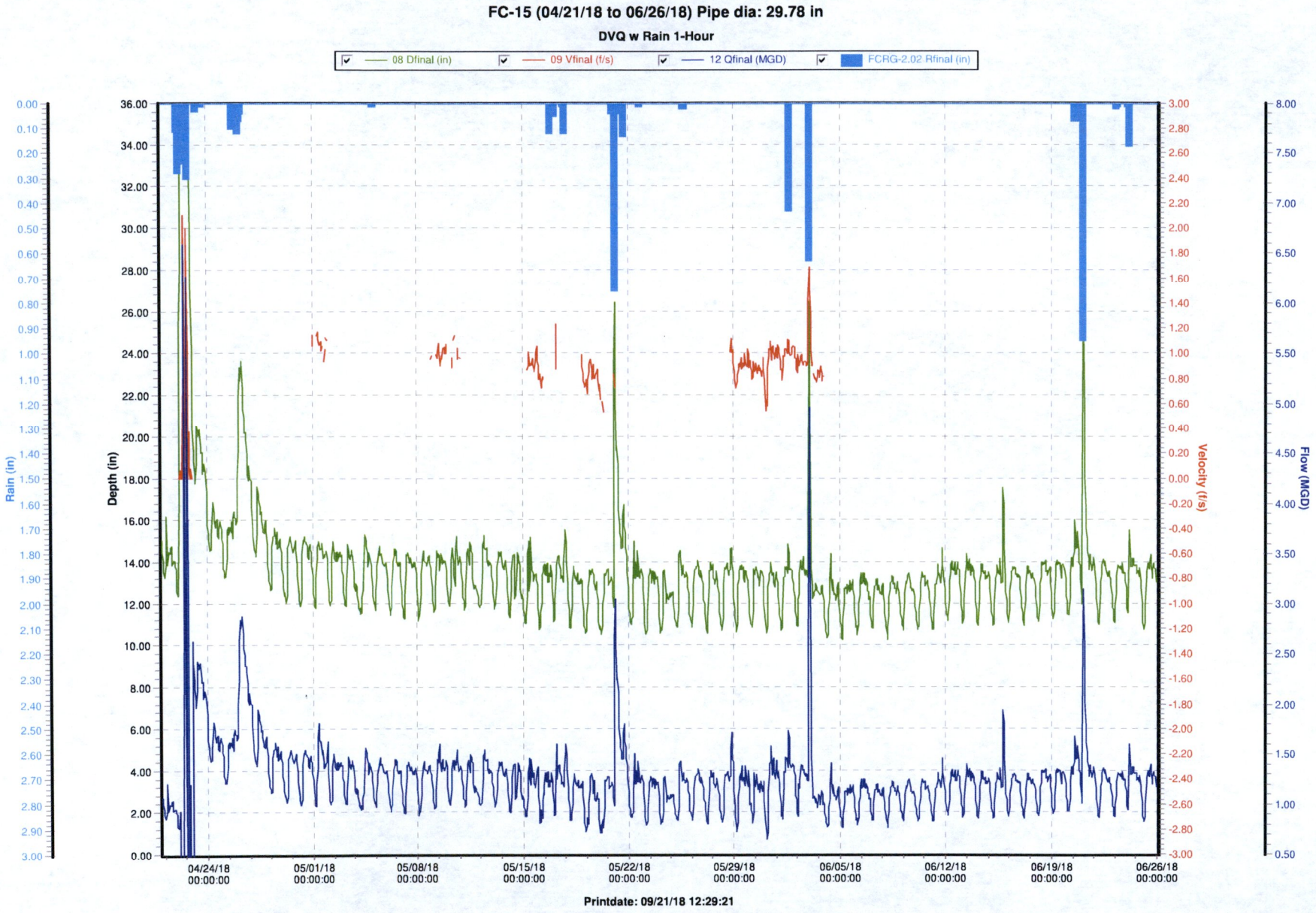

FC-10 (04/21/18 to 06/26/18) Pipe dia: 9.84 in
DVQ w Rain 1-Hour
08 Dfinal (in)
09 Vfinal (f/s)
12 Qfinal (MGD)
FCRG-4.02 Rfinal (in)
Rain (in)
Depth (in)
Velocity (f/s)
Flow (MGD)
04/24/18 00:00:00
05/01/18 00:00:00
05/08/18 00:00:00
05/15/18 00:00:00
05/22/18 00:00:00
05/29/18 00:00:00
06/05/18 00:00:00
06/12/18 00:00:00
06/19/18 00:00:00
06/26/18 00:00:00
Printdate: 09/21/18 12:29:06

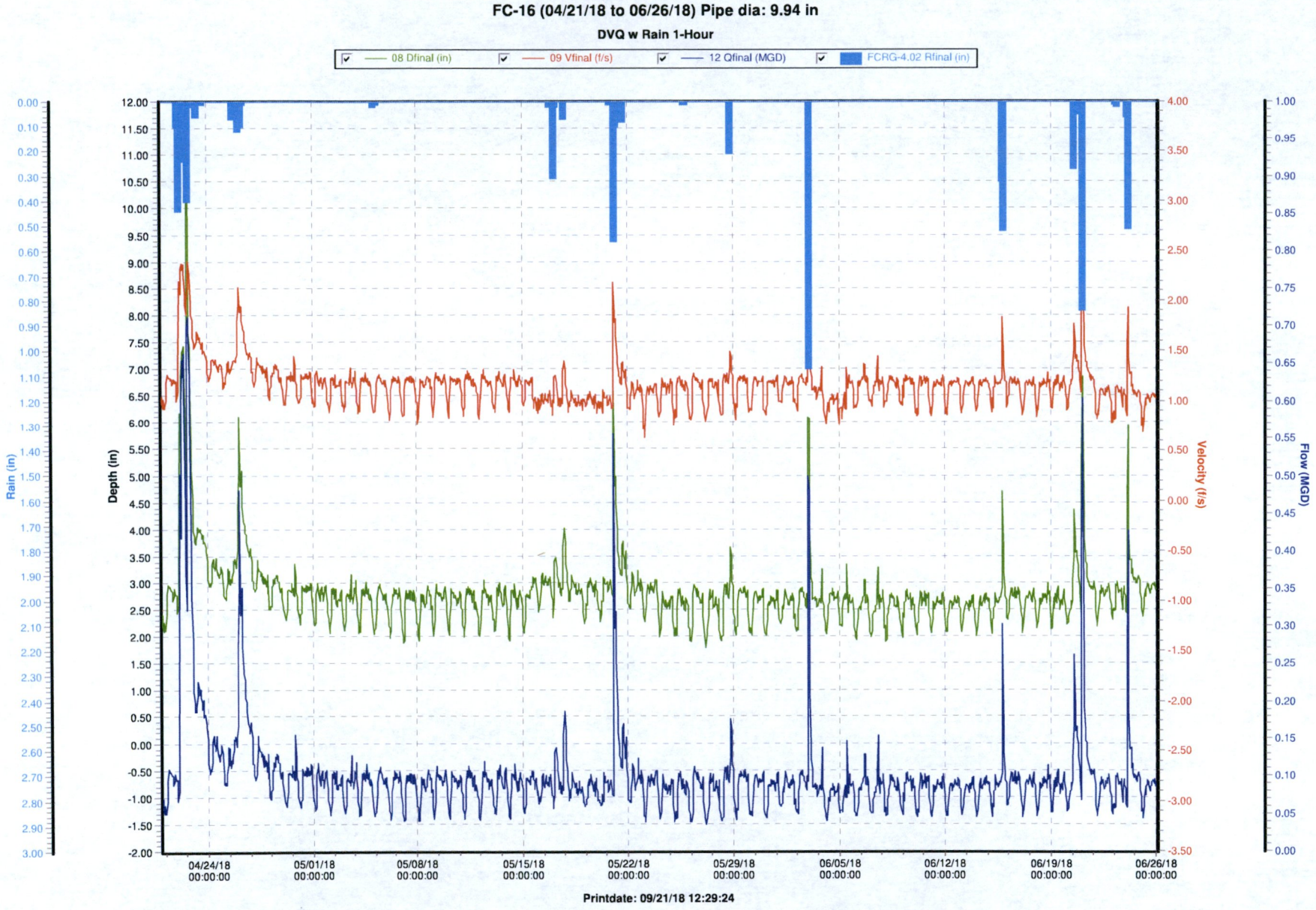

FC-11 (04/21/18 to 06/26/18) Pipe dia: 26.81 in
DVQ w Rain 1-Hour
08 Dfinal (in)
09 Vfinal (f/s)
12 Qfinal (MGD)
FCRG-4.02 Rfinal (in)
Rain (in)
Depth (in)
Velocity (f/s)
Flow (MGD)
04/24/18 00:00:00
05/01/18 00:00:00
05/08/18 00:00:00
05/15/18 00:00:00
05/22/18 00:00:00
05/29/18 00:00:00
06/05/18 00:00:00
06/12/18 00:00:00
06/19/18 00:00:00
06/26/18 00:00:00
Printdate: 09/21/18 12:29:09


FC-12 (04/21/18 to 06/26/18) Pipe dia: 9.91 in
DVQ w Rain 1-Hour
08 Dfinal (in)
09 Vfinal (f/s)
12 Qfinal (MGD)
FCRG-3.02 Rfinal (in)
Rain (in)
Depth (in)
Velocity (f/s)
Flow (MGD)
04/24/18 00:00:00
05/01/18 00:00:00
05/08/18 00:00:00
05/15/18 00:00:00
05/22/18 00:00:00
05/29/18 00:00:00
06/05/18 00:00:00
06/12/18 00:00:00
06/19/18 00:00:00
06/26/18 00:00:00
Printdate: 09/21/18 12:29:13


FC-13 (04/21/18 to 06/26/18) Pipe dia: 31.73 x 30.18 in
DVQ w Rain 1-Hour
08 Dfinal (in)
09 Vfinal (f/s)
12 Qfinal (MGD)
FCRG-2.02 Rfinal (in)
Rain (in)
Depth (in)
Velocity (f/s)
Flow (MGD)
04/24/18 00:00:00
05/01/18 00:00:00
05/08/18 00:00:00
05/15/18 00:00:00
05/22/18 00:00:00
05/29/18 00:00:00
06/05/18 00:00:00
06/12/18 00:00:00
06/19/18 00:00:00
06/26/18 00:00:00
Printdate: 09/21/18 12:29:15


FC-14 (04/21/18 to 06/26/18) Pipe dia: 15.09 in
DVQ w Rain 1-Hour
08 Dfinal (in)
09 Vfinal (f/s)
12 Qfinal (MGD)
FCRG-4.02 Rfinal (in)
Rain (in)
Depth (in)
Velocity (f/s)
Flow (MGD)
04/24/18 00:00:00
05/01/18 00:00:00
05/08/18 00:00:00
05/15/18 00:00:00
05/22/18 00:00:00
05/29/18 00:00:00
06/05/18 00:00:00
06/12/18 00:00:00
06/19/18 00:00:00
06/26/18 00:00:00
Printdate: 09/21/18 12:29:18


FC-15 (04/21/18 to 06/26/18) Pipe dia: 29.78 in
DVQ w Rain 1-Hour
08 Dfinal (in)
09 Vfinal (f/s)
12 Qfinal (MGD)
FCRG-2.02 Rfinal (in)
Rain (in)
Depth (in)
Velocity (f/s)
Flow (MGD)
04/24/18 00:00:00
05/01/18 00:00:00
05/08/18 00:00:00
05/15/18 00:00:00
05/22/18 00:00:00
05/29/18 00:00:00
06/05/18 00:00:00
06/12/18 00:00:00
06/19/18 00:00:00
06/26/18 00:00:00
Printdate: 09/21/18 12:29:21

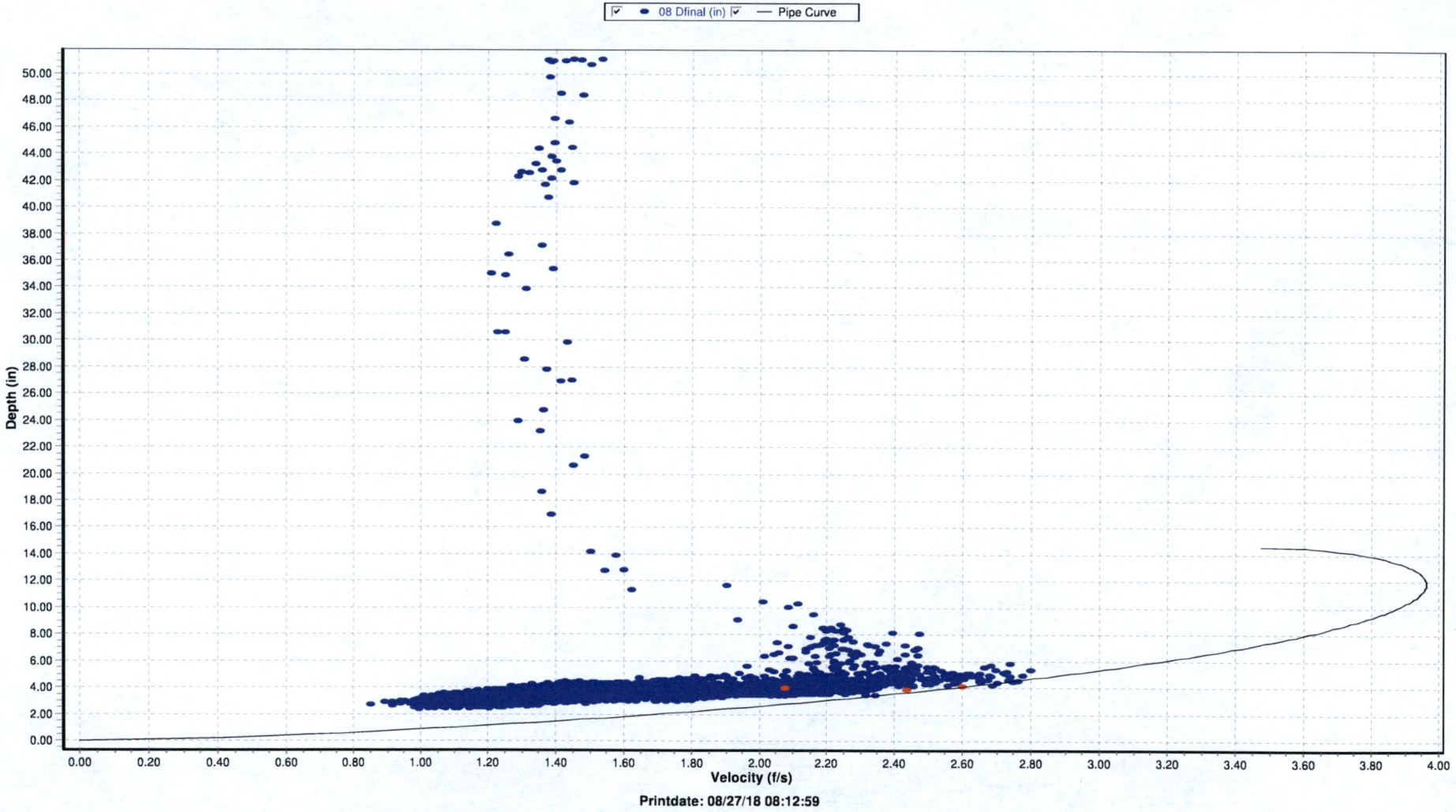

FC-16 (04/21/18 to 06/26/18) Pipe dia: 9.94 in
DVQ w Rain 1-Hour
08 Dfinal (in)
09 Vfinal (f/s)
12 Qfinal (MGD)
FCRG-4.02 Rfinal (in)
Rain (in)
Depth (in)
Velocity (f/s)
Flow (MGD)
04/24/18 00:00:00
05/01/18 00:00:00
05/08/18 00:00:00
05/15/18 00:00:00
05/22/18 00:00:00
05/29/18 00:00:00
06/05/18 00:00:00
06/12/18 00:00:00
06/19/18 00:00:00
06/26/18 00:00:00
Printdate: 09/21/18 12:29:24

APPENDIX C

SCATTERGRAPH

FC-01 (04/21/18 to 06/26/18) Pipe dia: 14.63 in

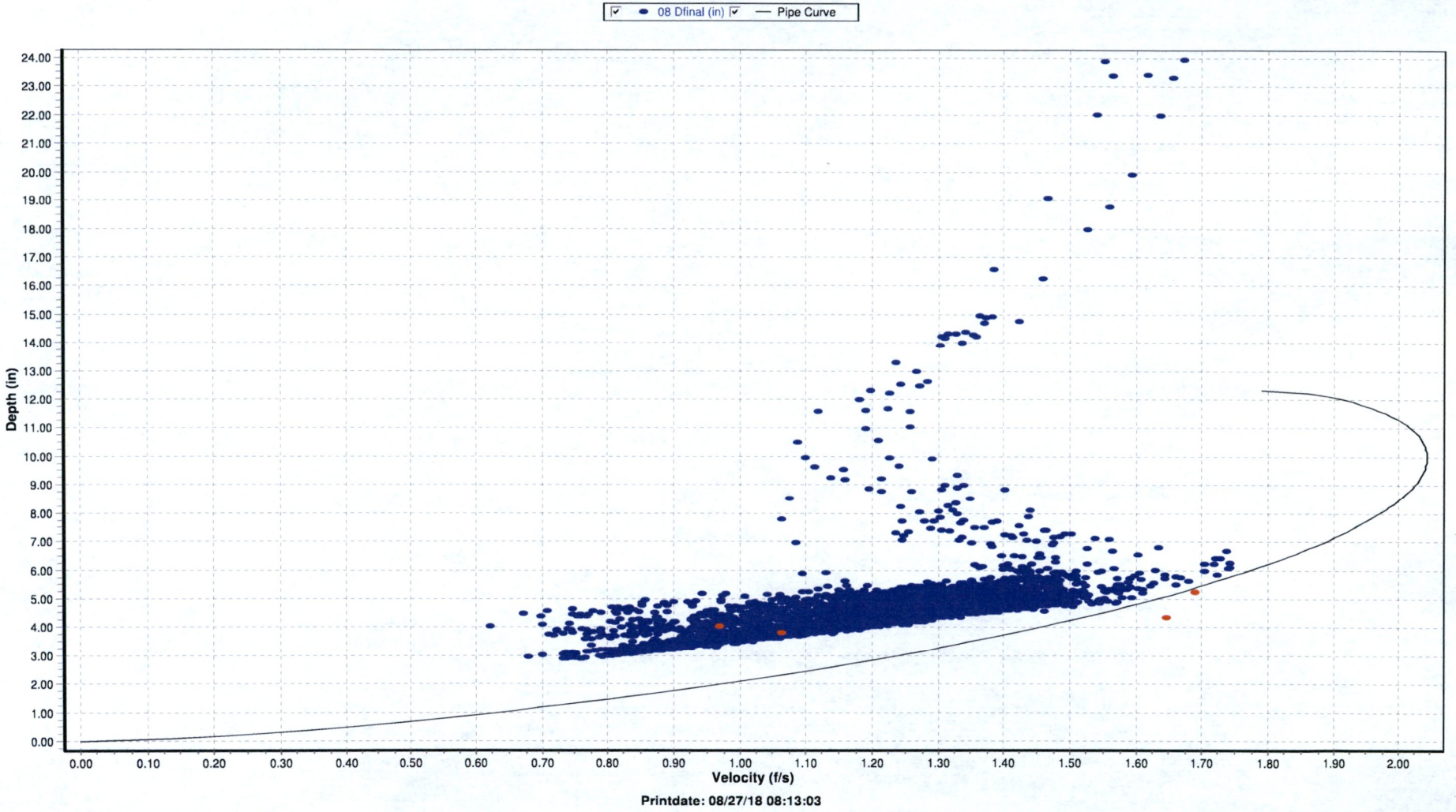
Scattergraph



Printdate: 08/27/18 08:12:59

FC-02 (04/21/18 to 06/26/18) Pipe dia: 12.31 in

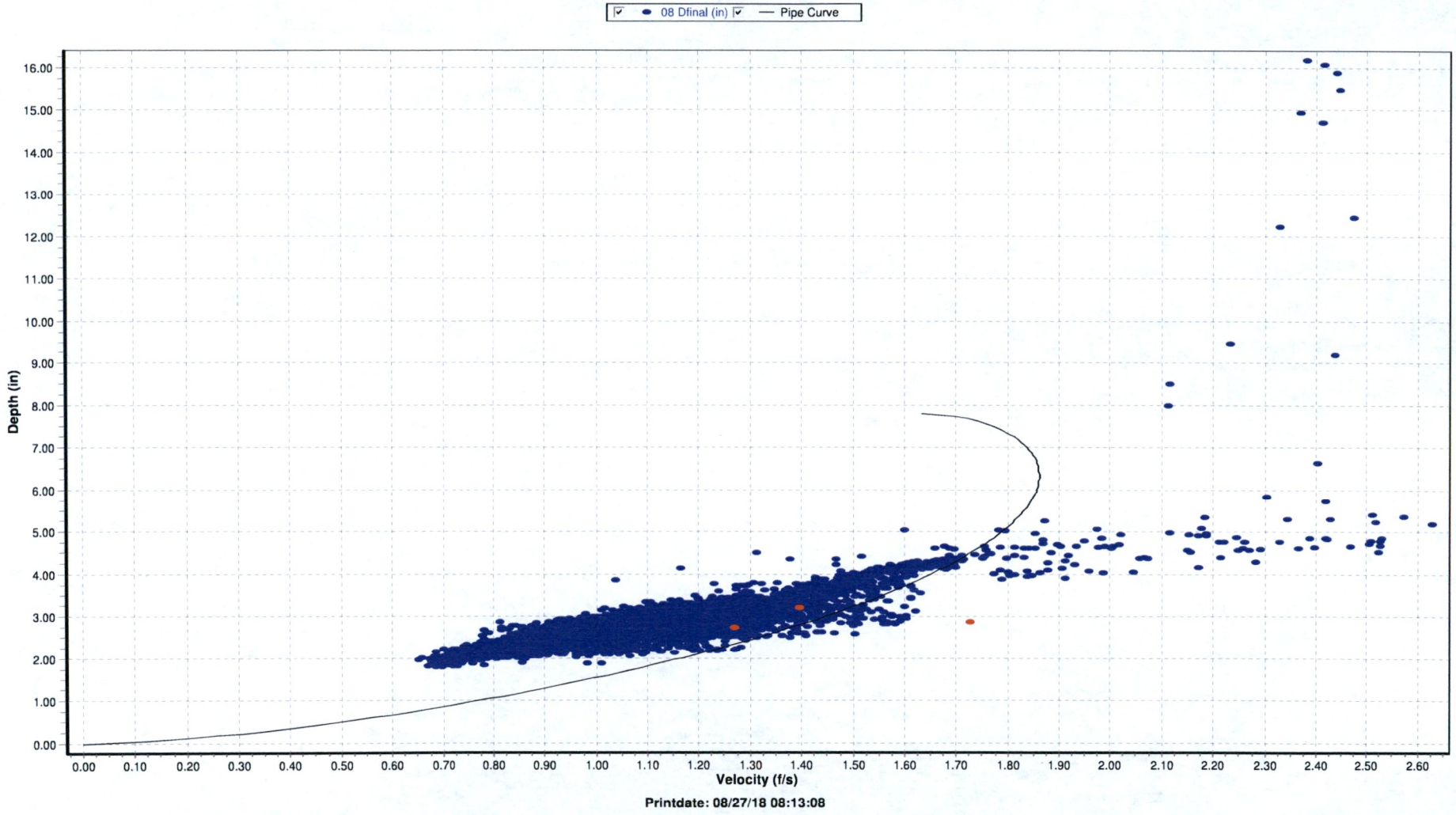
Scattergraph



Printdate: 08/27/18 08:13:03

FC-03 (04/21/18 to 06/26/18) Pipe dia: 7.81 in

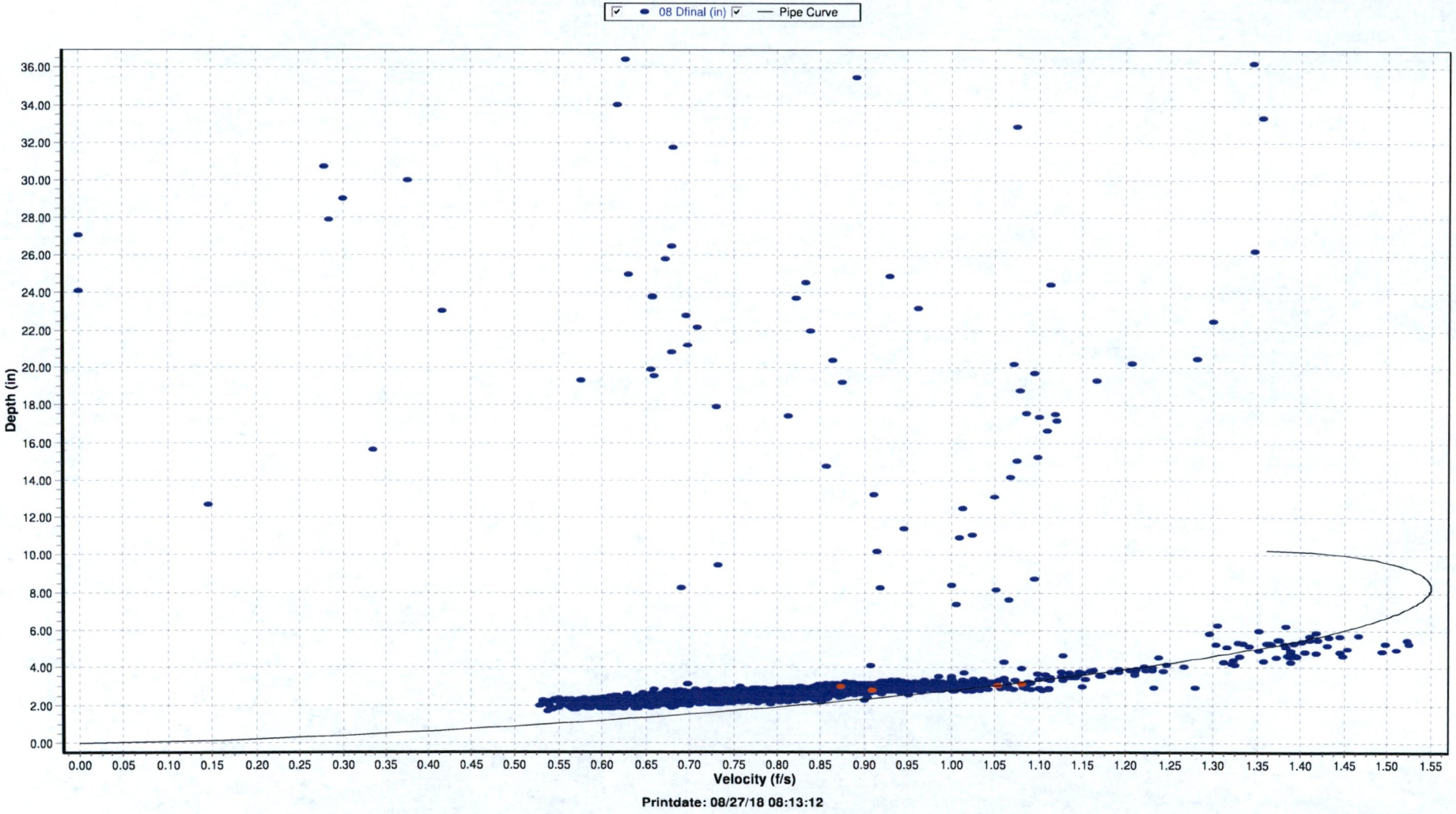
Scattergraph



Printdate: 08/27/18 08:13:08

FC-04 (04/21/18 to 06/26/18) Pipe dia: 10.25 in

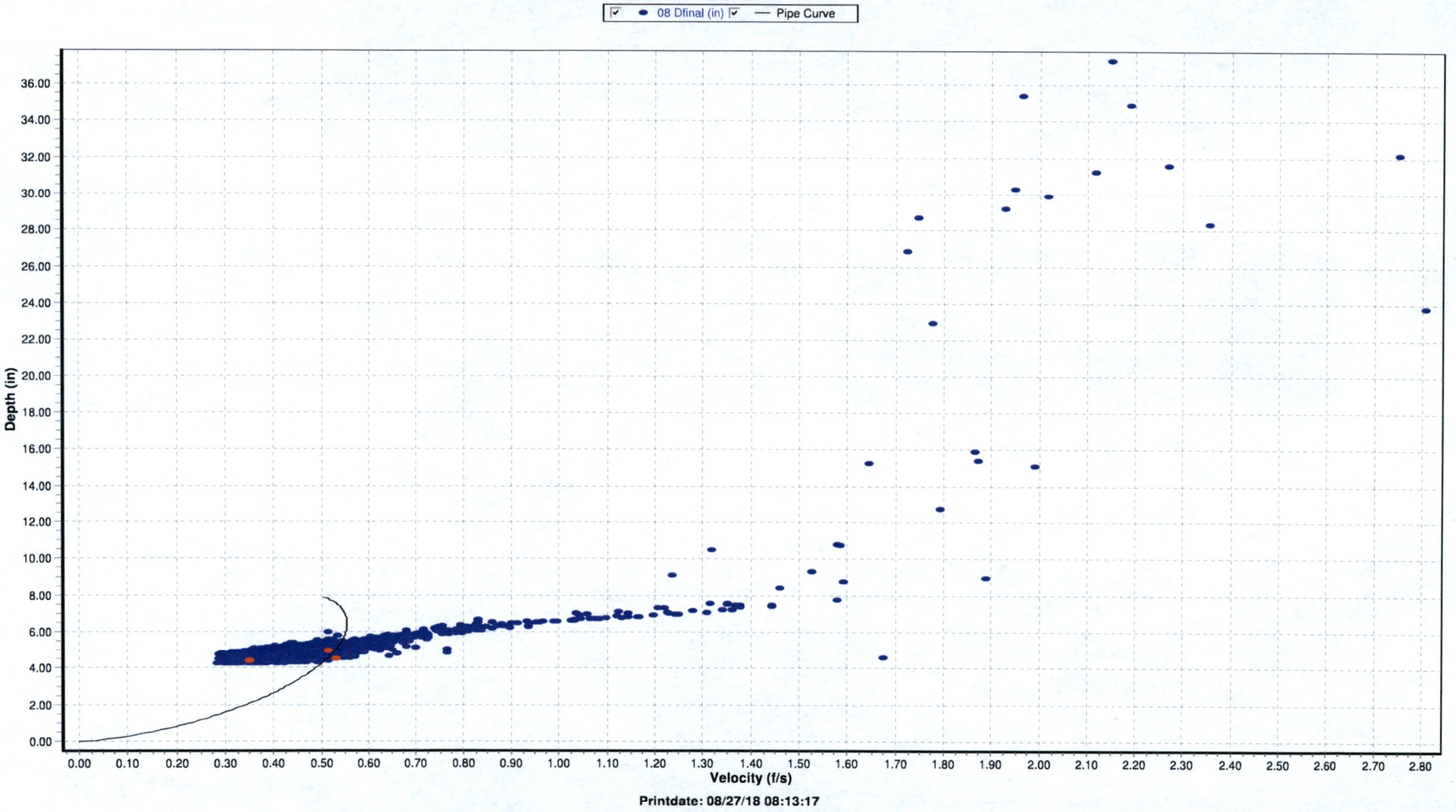
Scattergraph



Printdate: 08/27/18 08:13:12

FC-05 (04/21/18 to 06/26/18) Pipe dia: 7.94 in

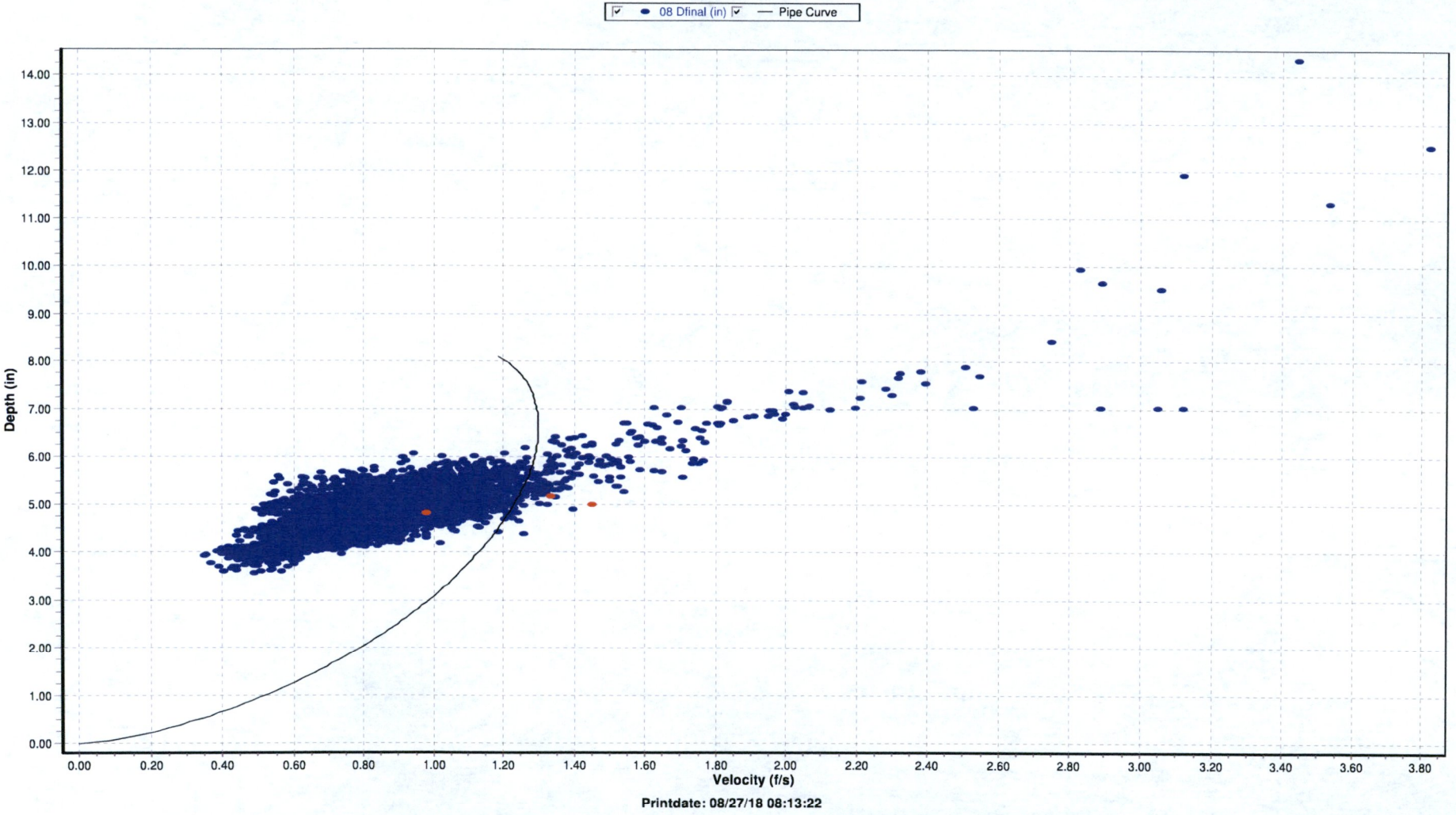
Scattergraph



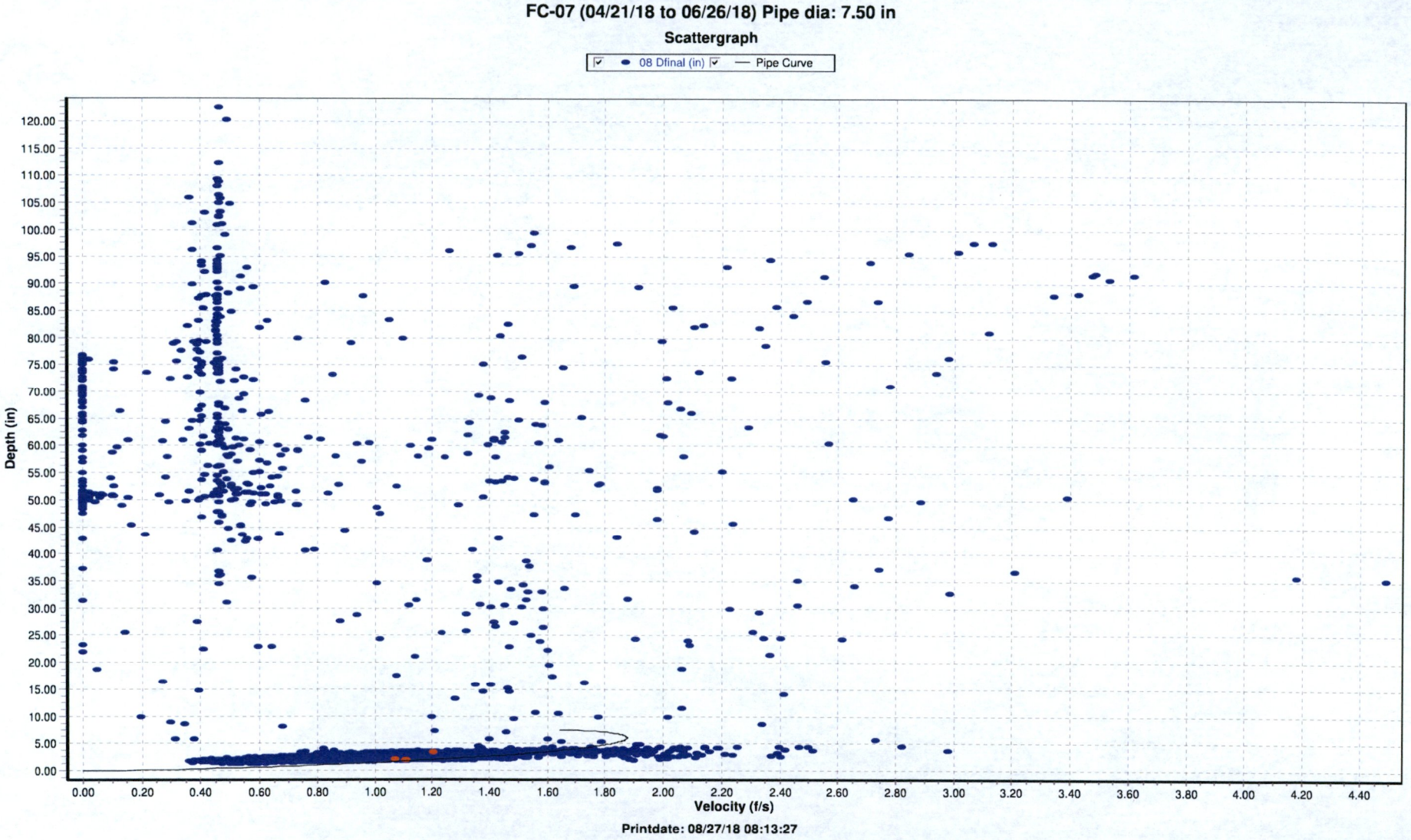
Printdate: 08/27/18 08:13:17

FC-06 (04/21/18 to 06/26/18) Pipe dia: 8.15 in

Scattergraph

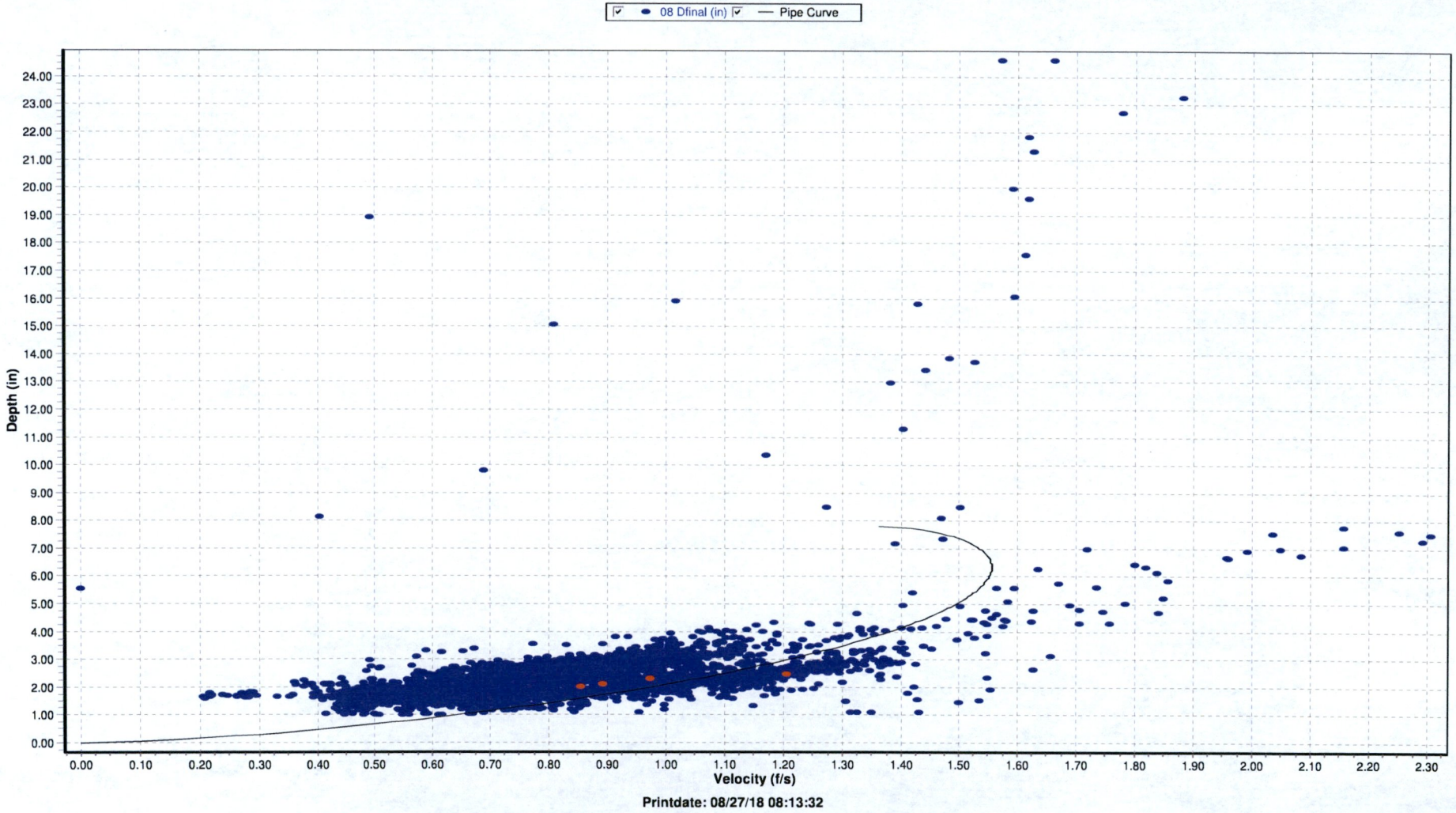


Printdate: 08/27/18 08:13:22


FC-07 (04/21/18 to 06/26/18) Pipe dia: 7.50 in
Scattergraph
08 Dfinal (in)
Pipe Curve
Depth (in)
120.00
115.00
110.00
105.00
100.00
95.00
90.00
85.00
80.00
75.00
70.00
65.00
60.00
55.00
50.00
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
0.00
0.20
0.40
0.60
0.80
1.00
1.20
1.40
1.60
1.80
2.00
2.20
2.40
2.60
2.80
3.00
3.20
3.40
3.60
3.80
4.00
4.20
4.40
Velocity (f/s)
Printdate: 08/27/18 08:13:27

FC-08 (04/21/18 to 06/26/18) Pipe dia: 7.81 in

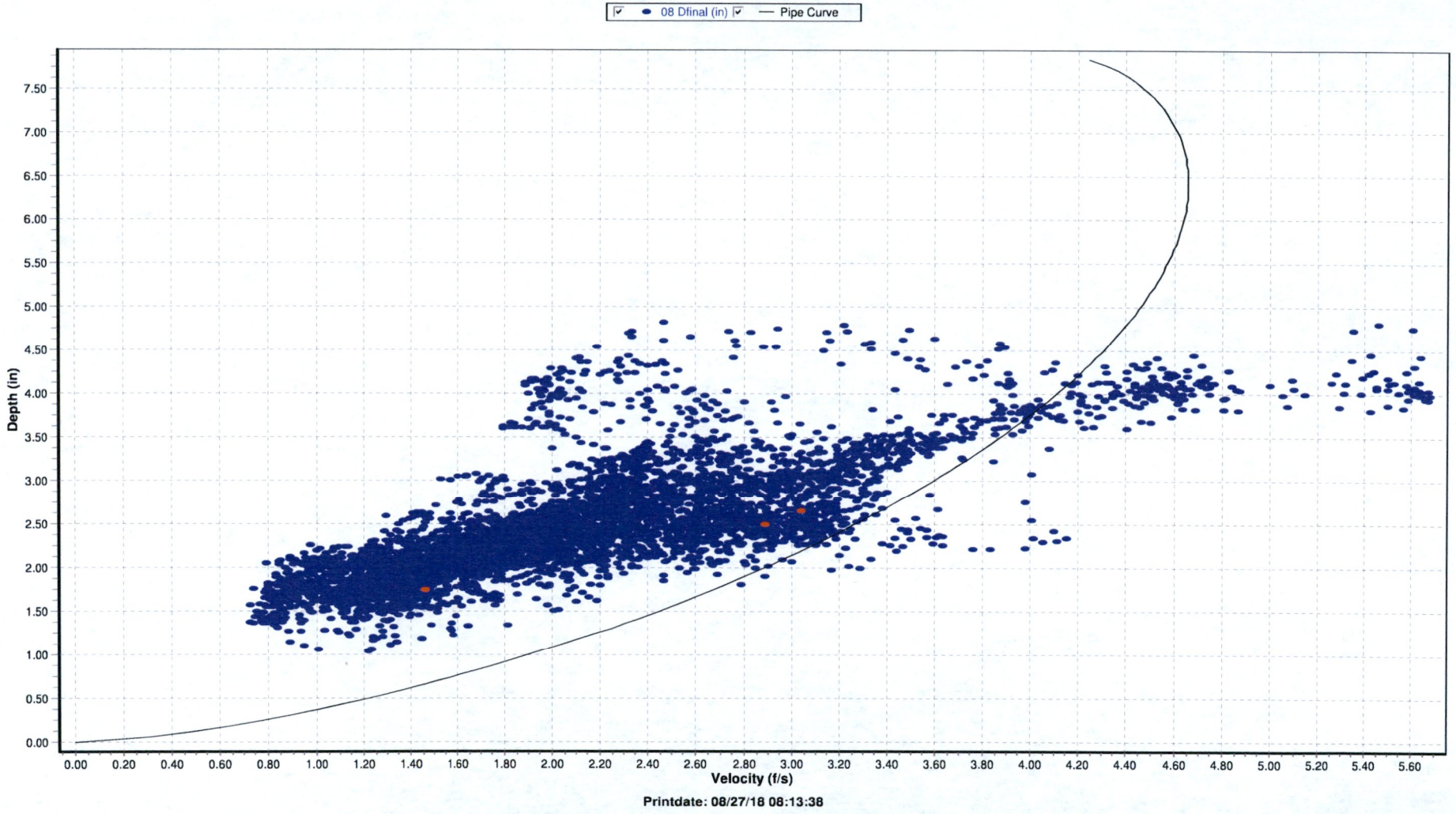
Scattergraph



Printdate: 08/27/18 08:13:32

FC-09 (04/21/18 to 06/26/18) Pipe dia: 7.91 in

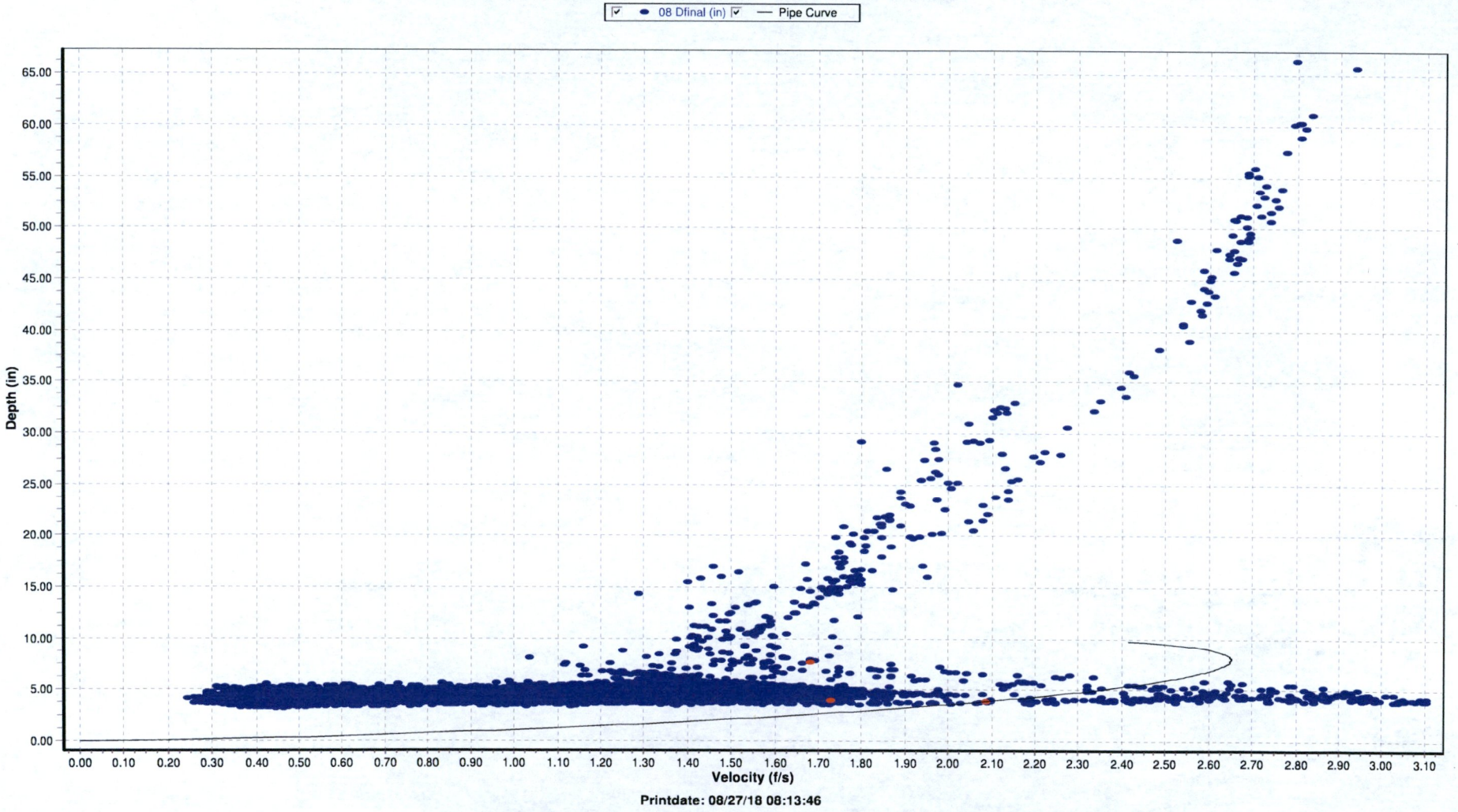
Scattergraph



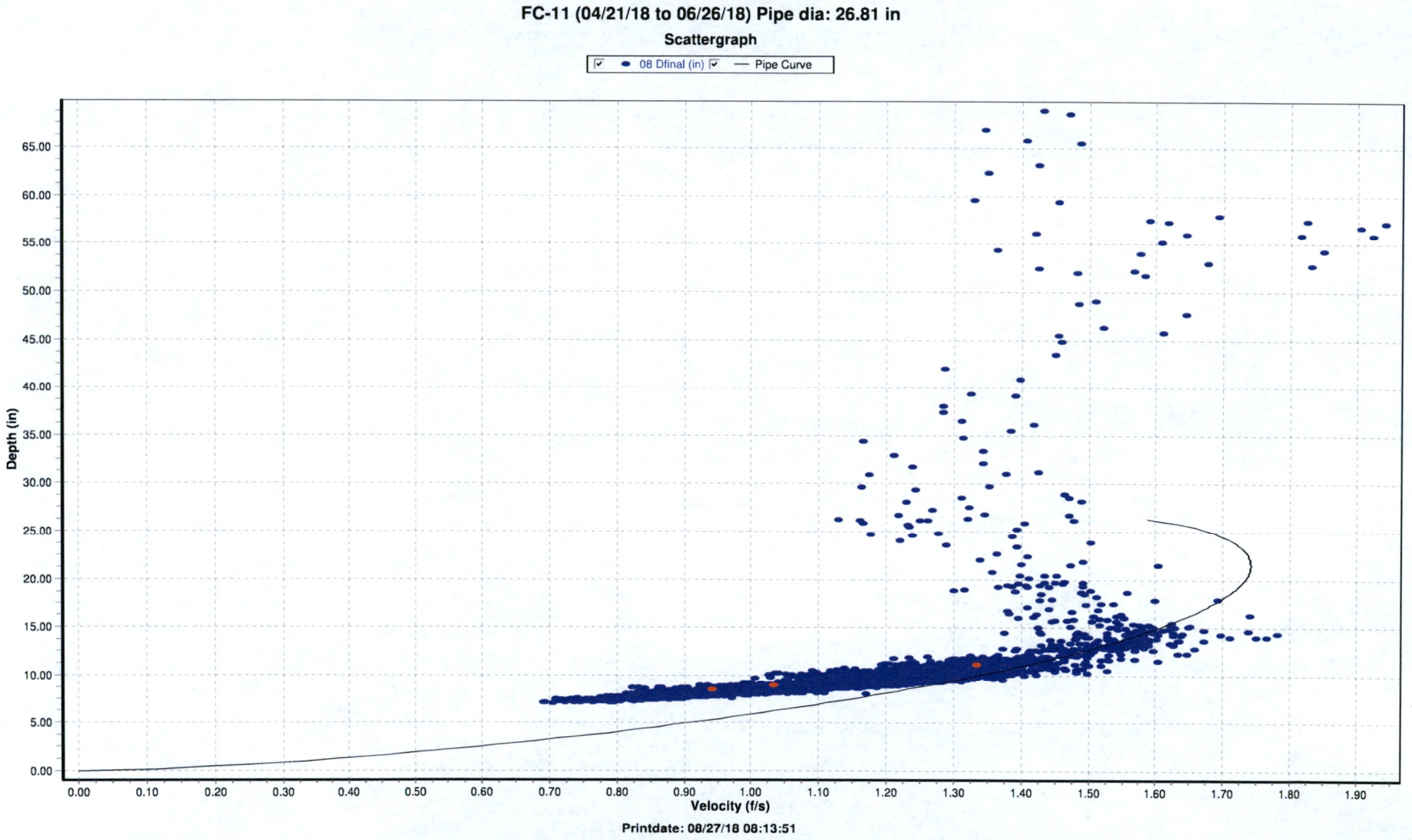
Printdate: 08/27/18 08:13:38

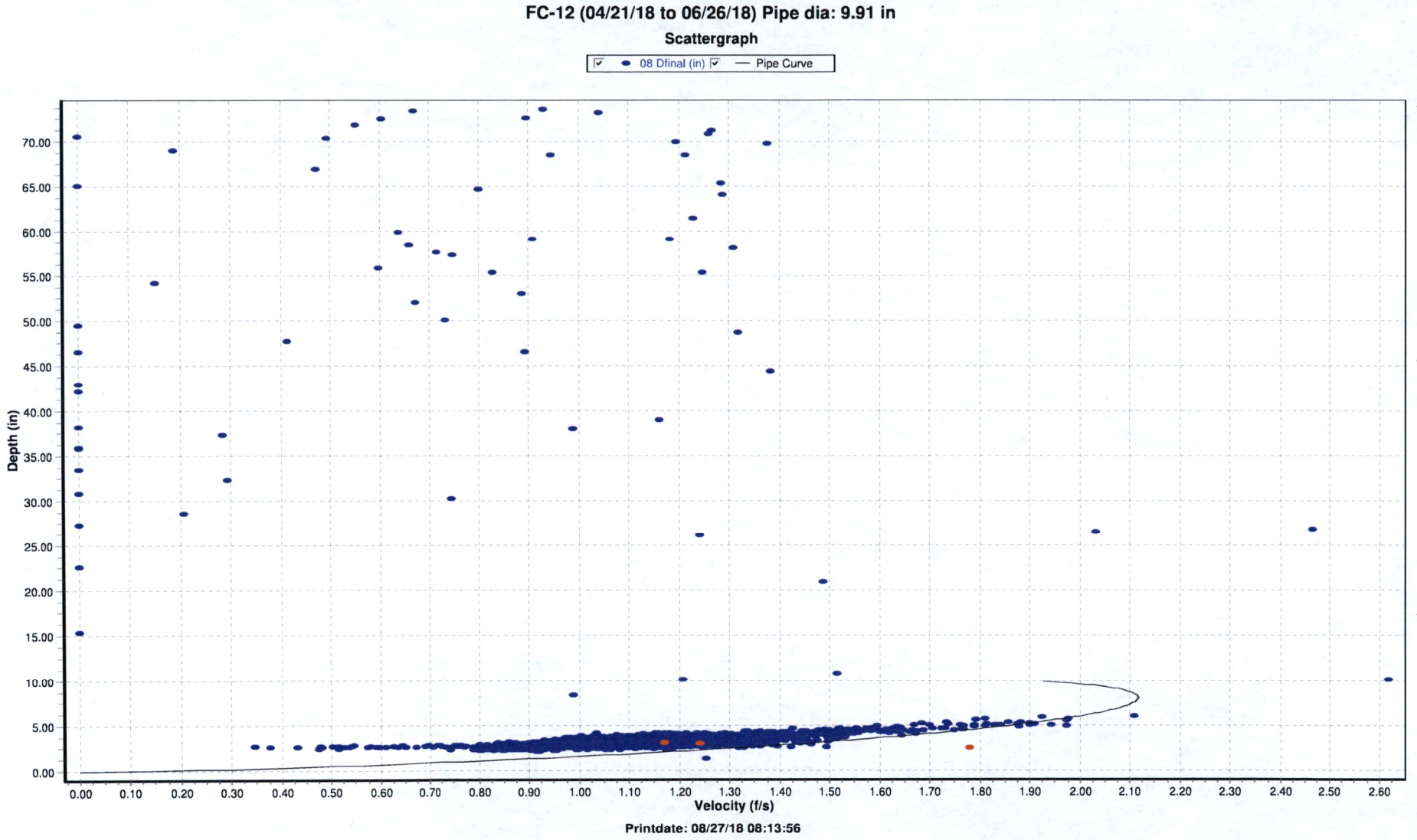
FC-10 (04/21/18 to 06/26/18) Pipe dia: 9.84 in

Scattergraph



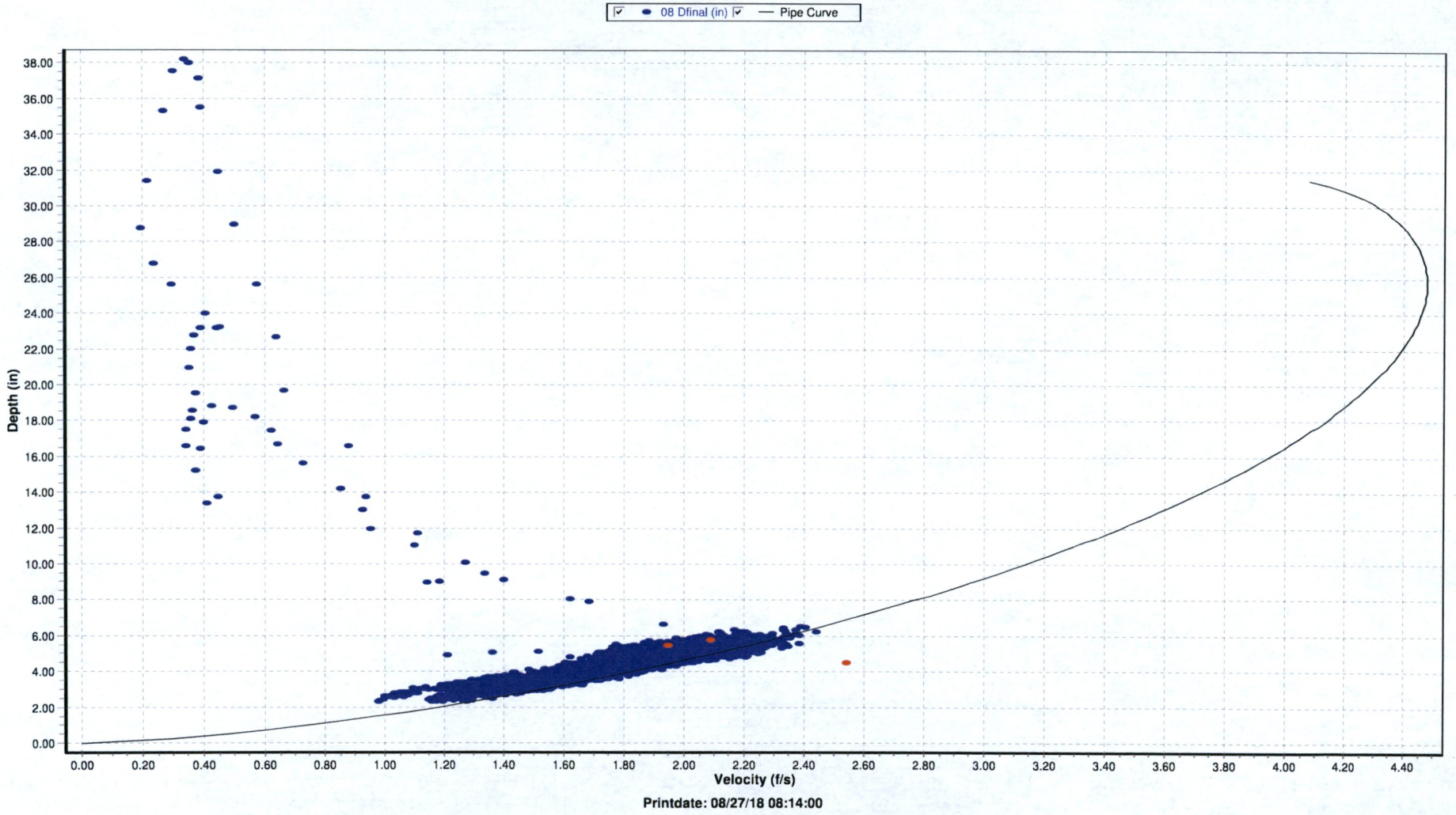
Printdate: 08/27/18 08:13:46


FC-11 (04/21/18 to 06/26/18) Pipe dia: 26.81 in
Scattergraph
08 Dfinal (in)
Pipe Curve
Depth (in)
65.00
60.00
55.00
50.00
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
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
Velocity (f/s)
Printdate: 08/27/18 08:13:51


FC-12 (04/21/18 to 06/26/18) Pipe dia: 9.91 in
Scattergraph
08 Dfinal (in)
Pipe Curve
Depth (in)
70.00
65.00
60.00
55.00
50.00
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
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 2.30 2.40 2.50 2.60
Velocity (f/s)
Printdate: 08/27/18 08:13:56

FC-13 (04/21/18 to 06/26/18) Pipe dia: 31.73 x 30.18 in

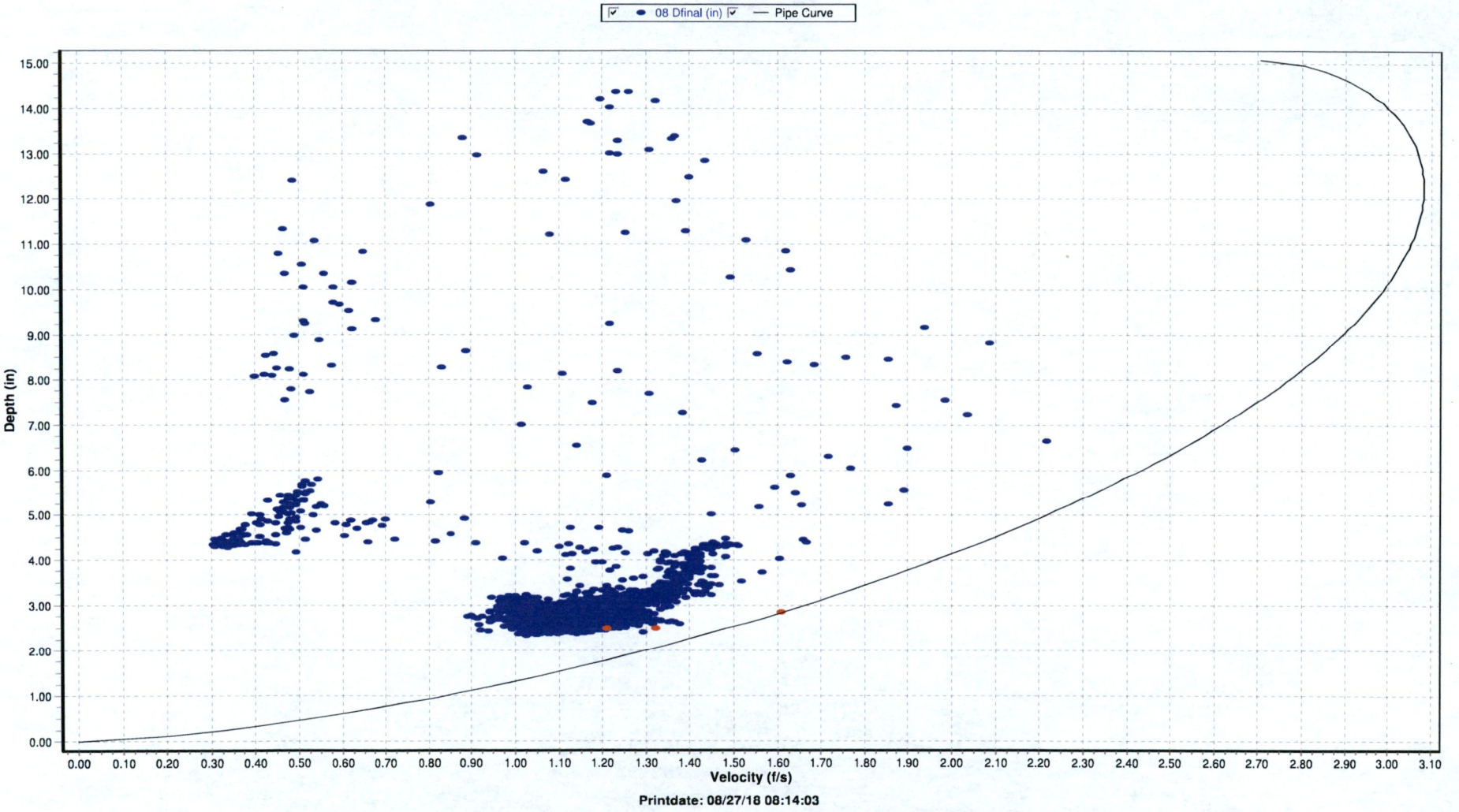
Scattergraph



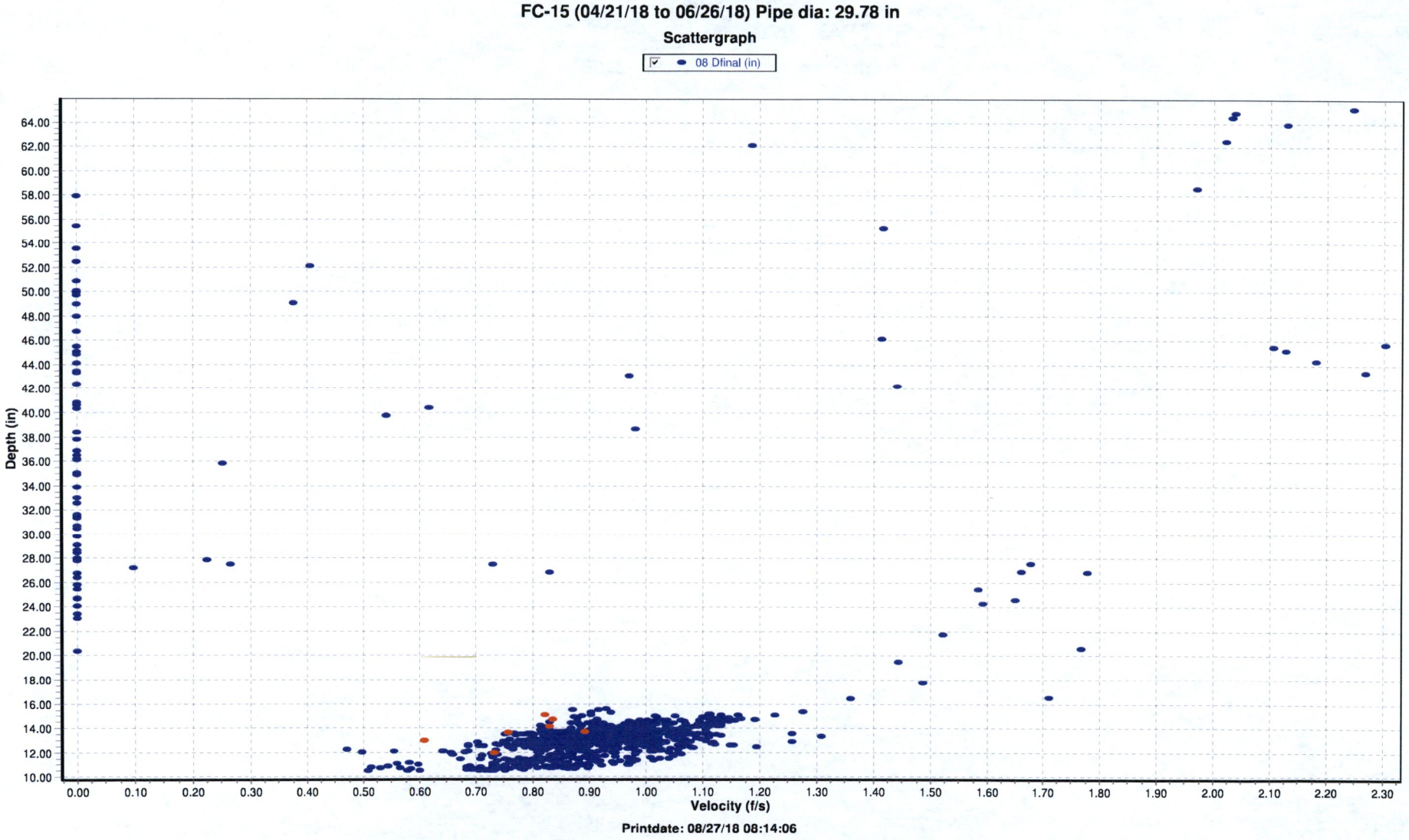
Printdate: 08/27/18 08:14:00

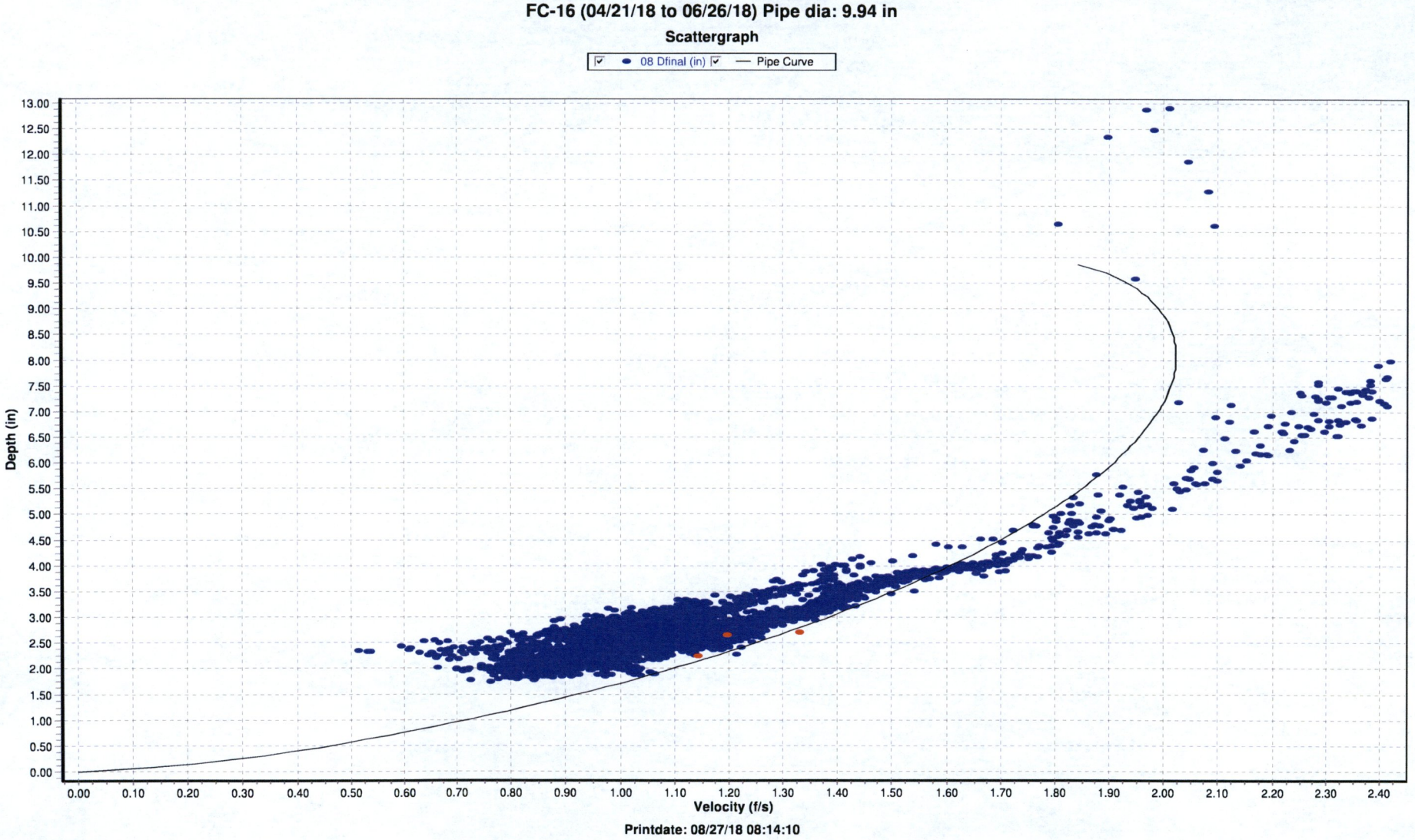
FC-14 (04/21/18 to 06/26/18) Pipe dia: 15.09 in

Scattergraph



Printdate: 08/27/18 08:14:03


FC-15 (04/21/18 to 06/26/18) Pipe dia: 29.78 in
Scattergraph
08 Dfinal (in)
Depth (in)
64.00
62.00
60.00
58.00
56.00
54.00
52.00
50.00
48.00
46.00
44.00
42.00
40.00
38.00
36.00
34.00
32.00
30.00
28.00
26.00
24.00
22.00
20.00
18.00
16.00
14.00
12.00
10.00
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
2.30
Velocity (f/s)
Printdate: 08/27/18 08:14:06

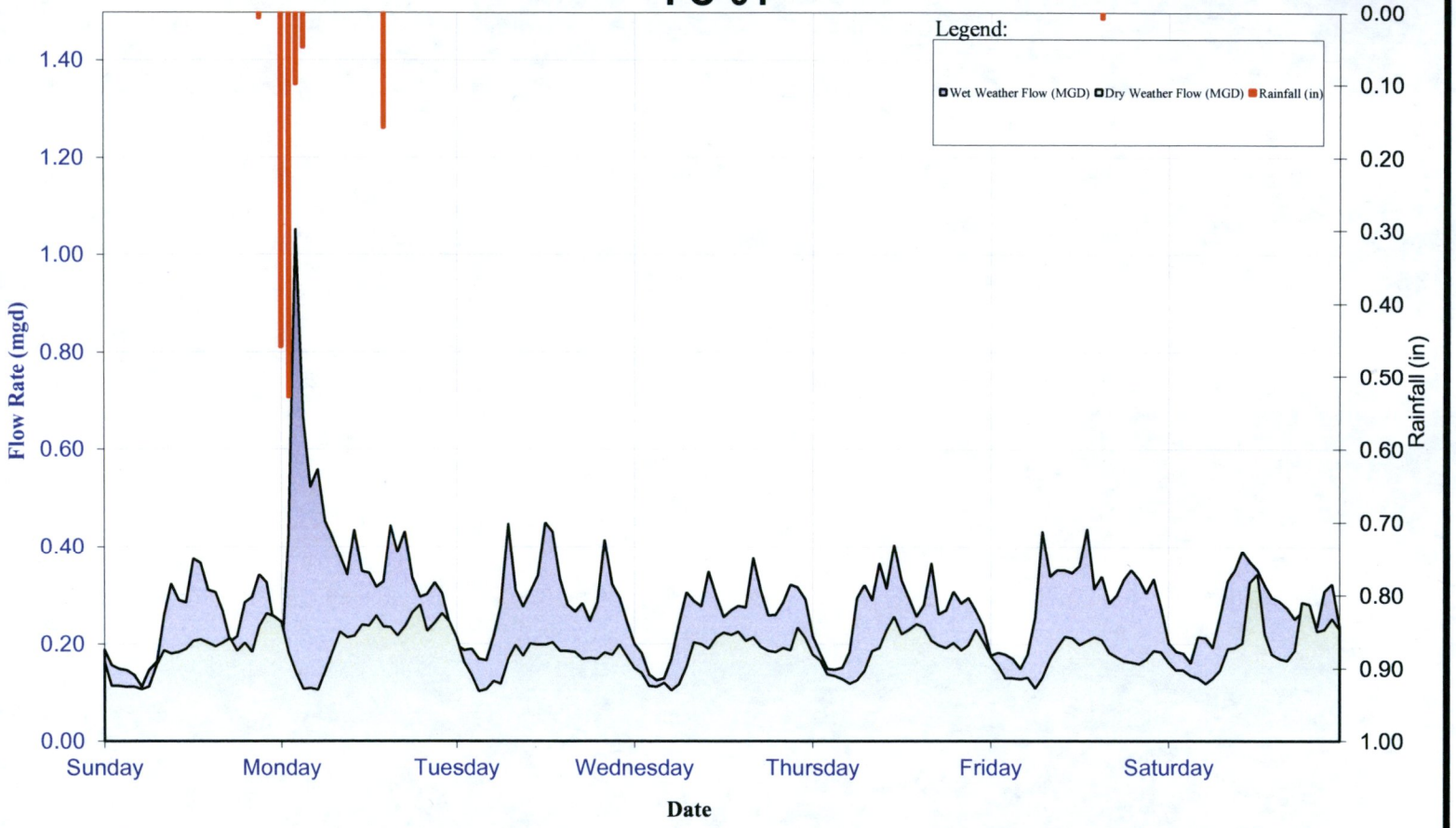

FC-16 (04/21/18 to 06/26/18) Pipe dia: 9.94 in
Scattergraph
08 Dfinal (in)
Pipe Curve
Depth (in)
13.00
12.50
12.00
11.50
11.00
10.50
10.00
9.50
9.00
8.50
8.00
7.50
7.00
6.50
6.00
5.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
0.00 0.10 0.20 0.30 0.40 0.50 0.60 0.70 0.80 0.90 1.00 1.10 1.20 1.30 1.40 1.50 1.60 1.70 1.80 1.90 2.00 2.10 2.20 2.30 2.40
Velocity (f/s)
Printdate: 08/27/18 08:14:10

APPENDIX D

DRY VS WET FLOW HYDROGRAPHS

Wet Weather Hydrograph

FC-01



rjngroup Engineering infrastructure for tomorrow

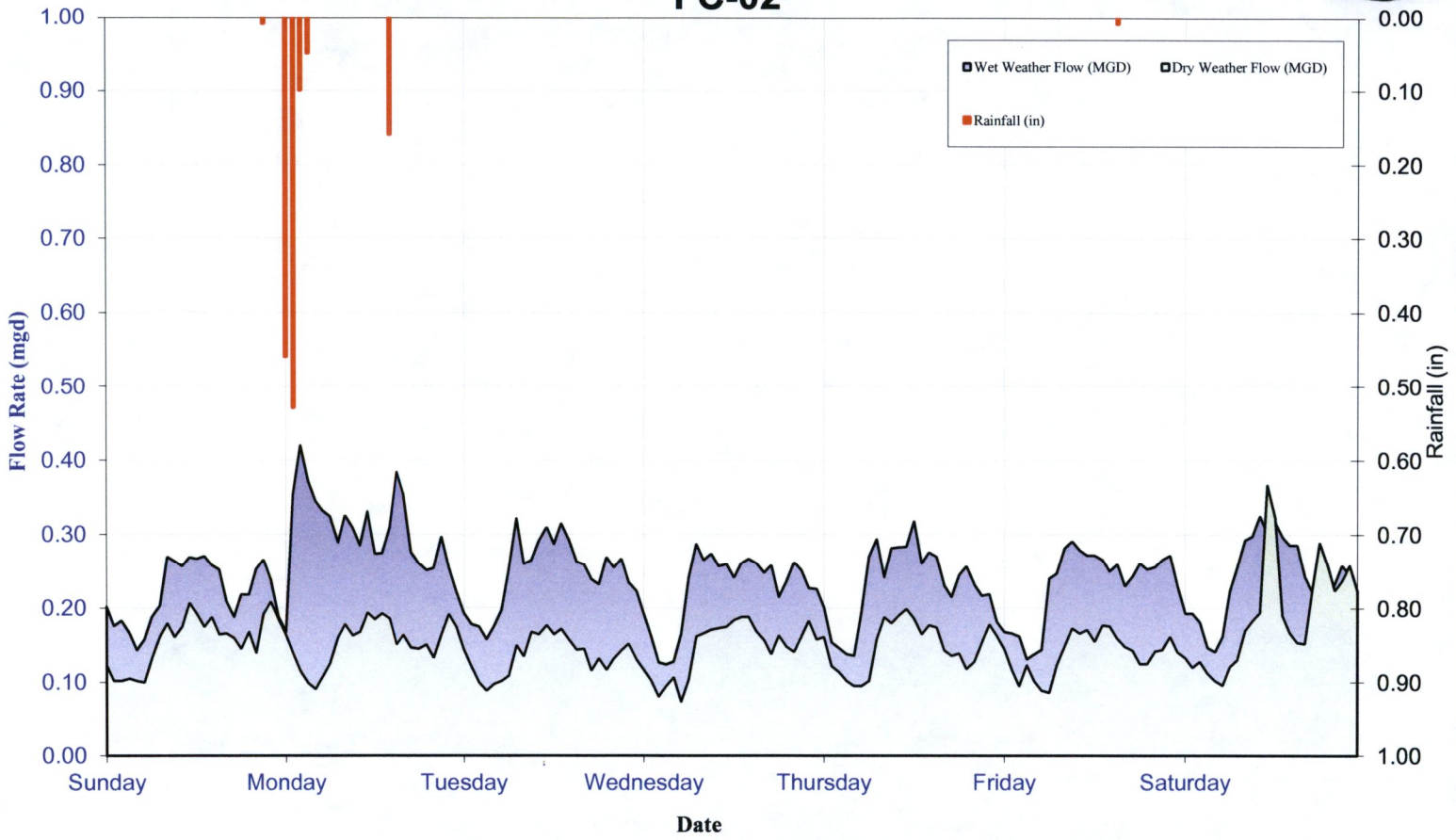
Forrest City, AR
Flow Monitoring
18-3273-00

Dry Weather Date: 6/5/18 0:00 to 6/11/18 23:00

Wet Weather Date: 5/20/18 0:00 to 5/26/18 23:00

Wet Weather Hydrograph

FC-02



rjngroup Engineering infrastructure for tomorrow

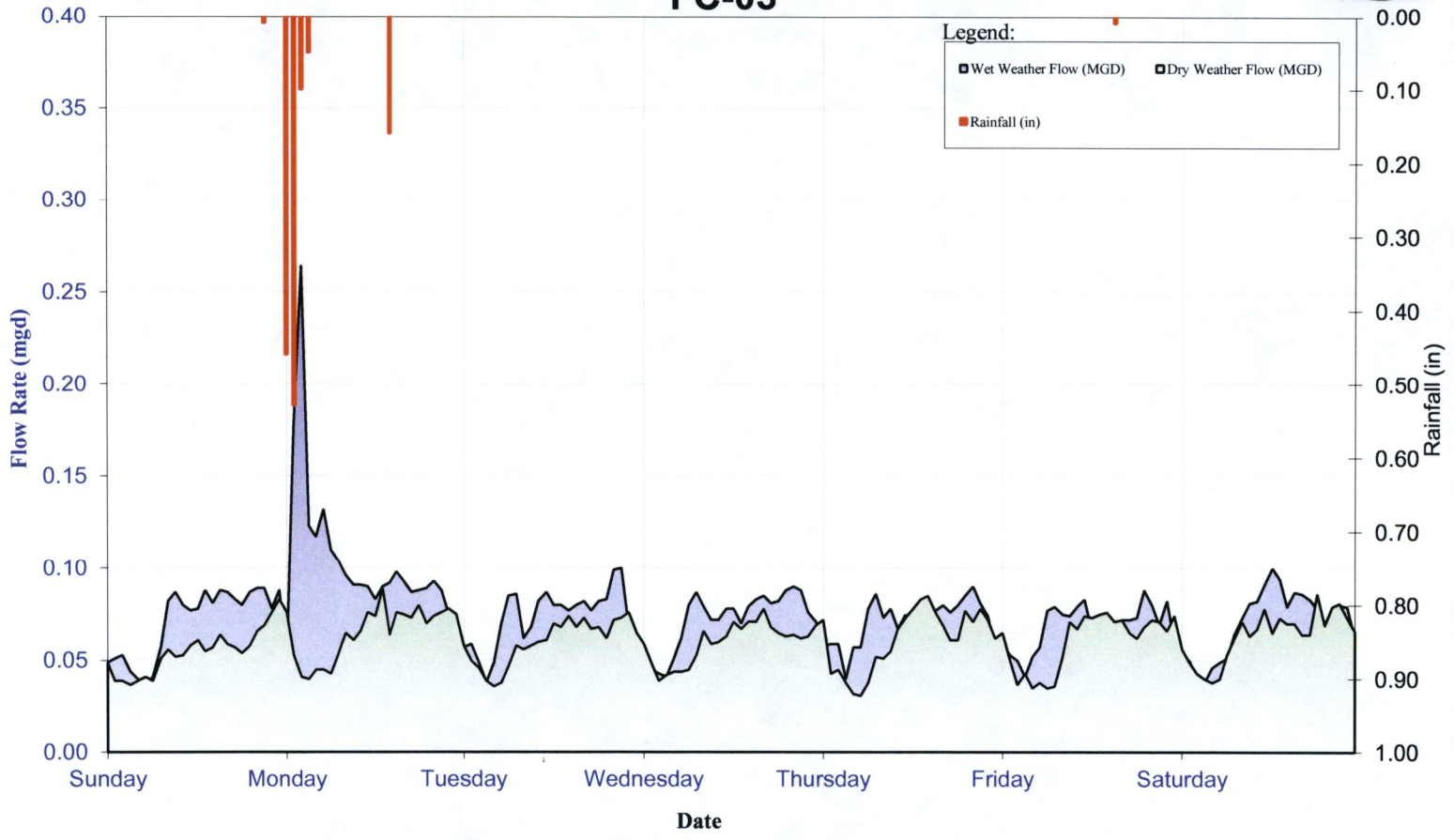
Forrest City, AR
Flow Monitoring
18-3273-00

Dry Weather Date: 6/5/18 0:00 to 6/11/18 23:00

Wet Weather Date: 5/20/18 0:00 to 5/26/18 23:00

Wet Weather Hydrograph

FC-03

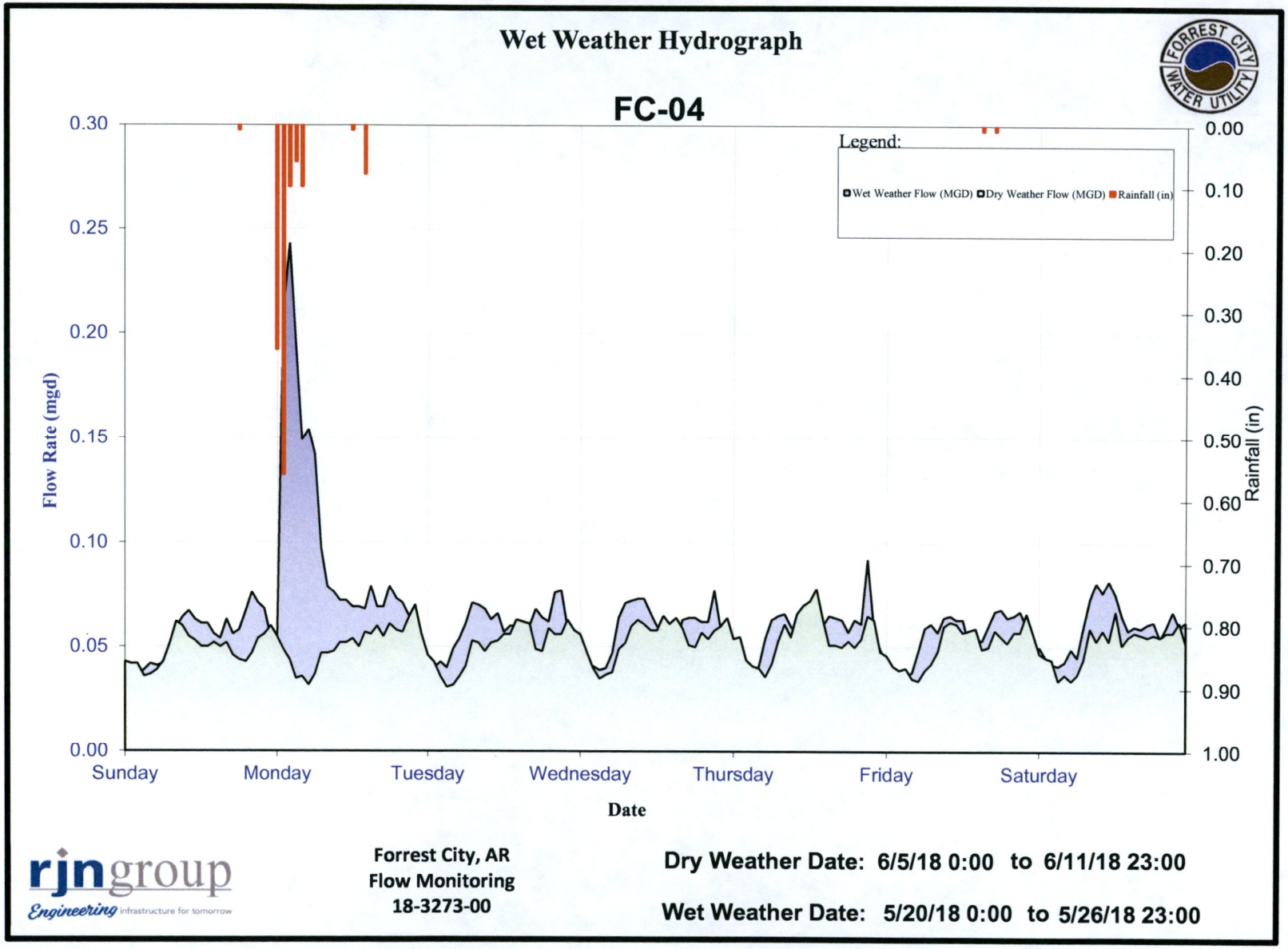


rjngroup Engineering infrastructure for tomorrow

Forrest City, AR
Flow Monitoring
18-3273-00

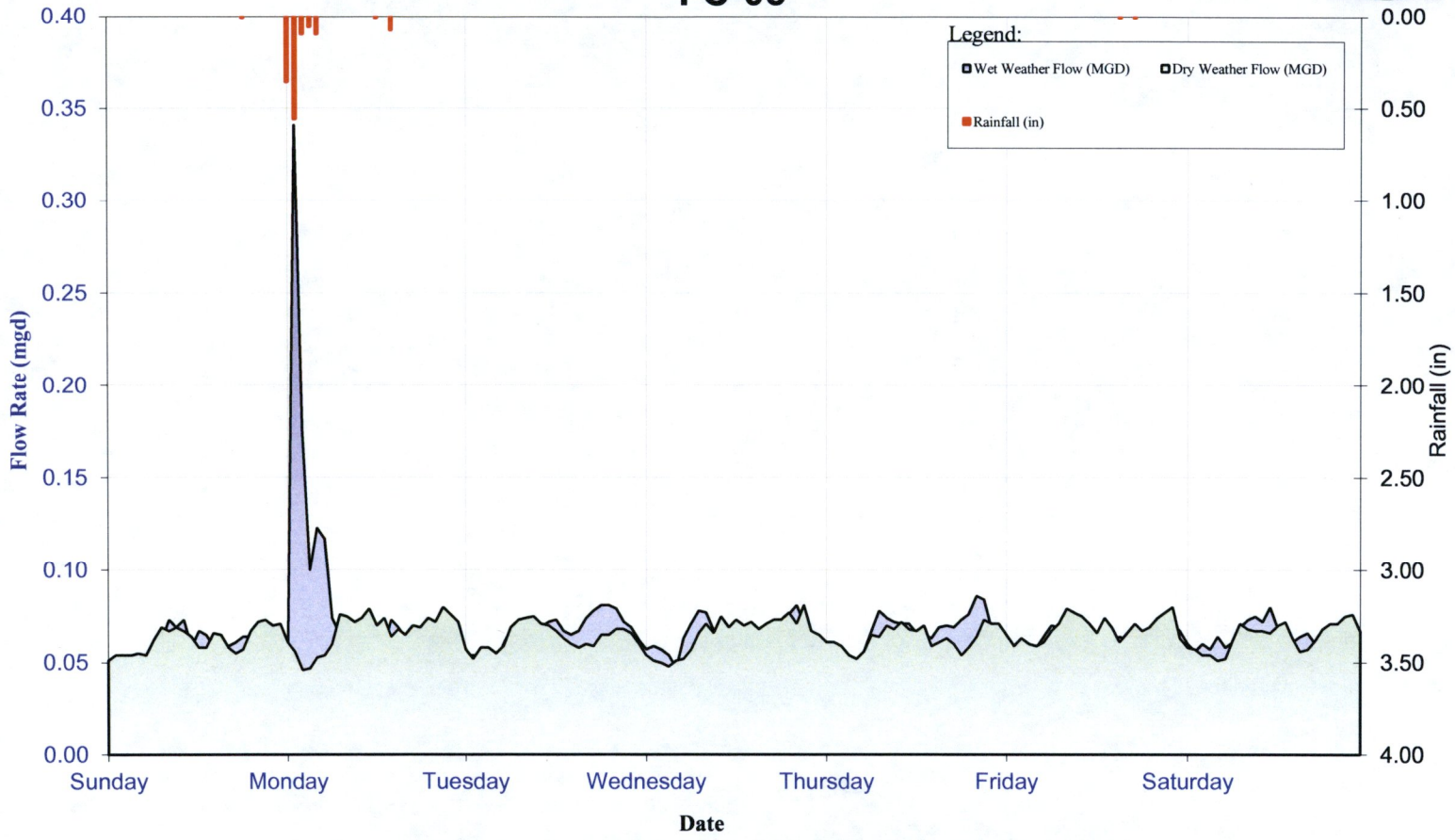
Dry Weather Date: 6/5/18 0:00 to 6/11/18 23:00

Wet Weather Date: 5/20/18 0:00 to 5/26/18 23:00


Wet Weather Hydrograph
FC-04
Legend:
Wet Weather Flow (MGD)
Dry Weather Flow (MGD)
Rainfall (in)
Flow Rate (mgd)
0.30
0.25
0.20
0.15
0.10
0.05
0.00
Rainfall (in)
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
0.90
1.00
Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Date
rjngroup
Engineering infrastructure for tomorrow
Forrest City, AR
Flow Monitoring
18-3273-00
Dry Weather Date: 6/5/18 0:00 to 6/11/18 23:00
Wet Weather Date: 5/20/18 0:00 to 5/26/18 23:00

Wet Weather Hydrograph

FC-05



rjn group
Engineering infrastructure for tomorrow

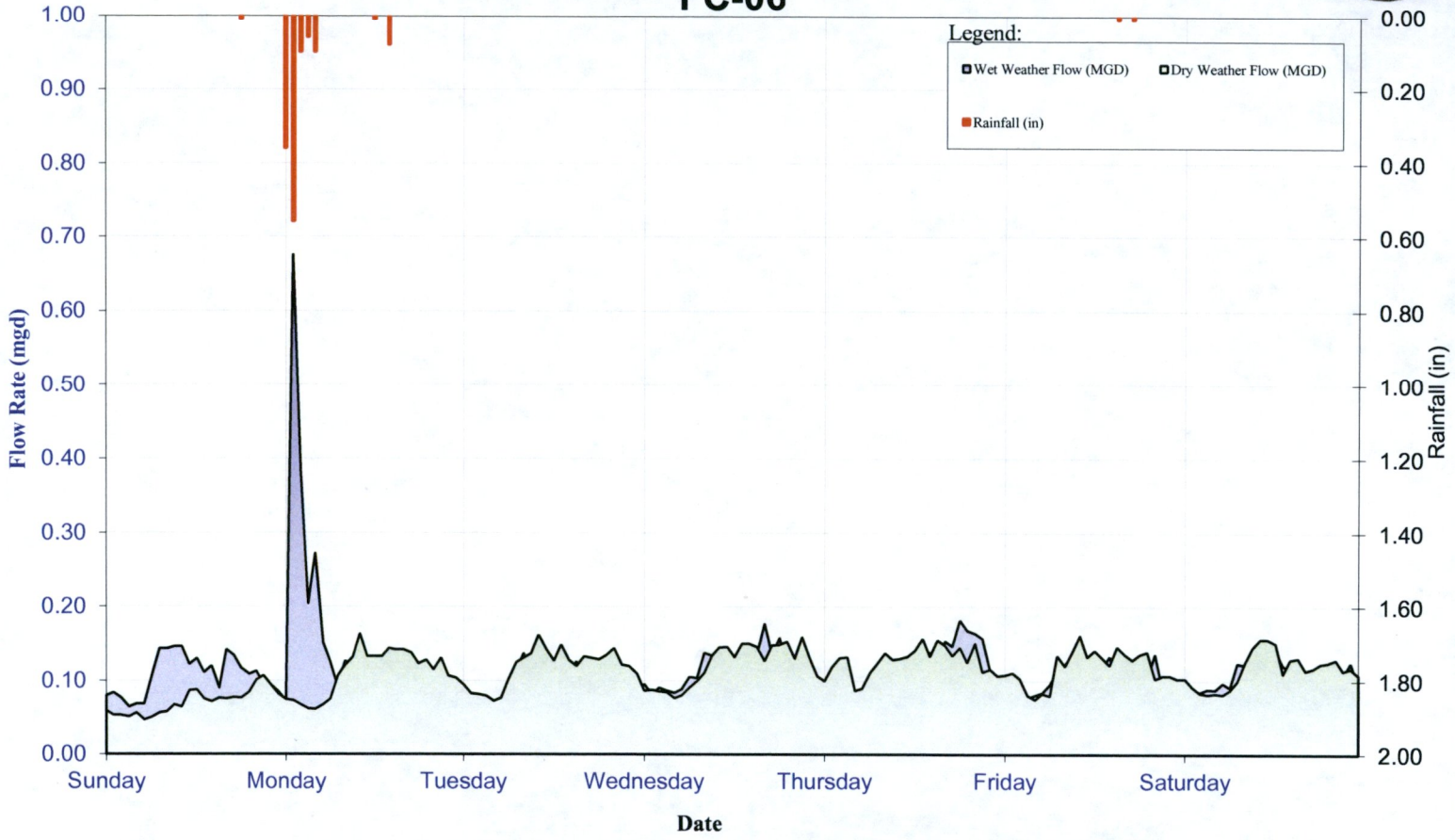
Forrest City, AR
Flow Monitoring
18-3273-00

Dry Weather Date: 6/5/18 0:00 to 6/11/18 23:00

Wet Weather Date: 5/20/18 0:00 to 5/26/18 23:00

Wet Weather Hydrograph

FC-06

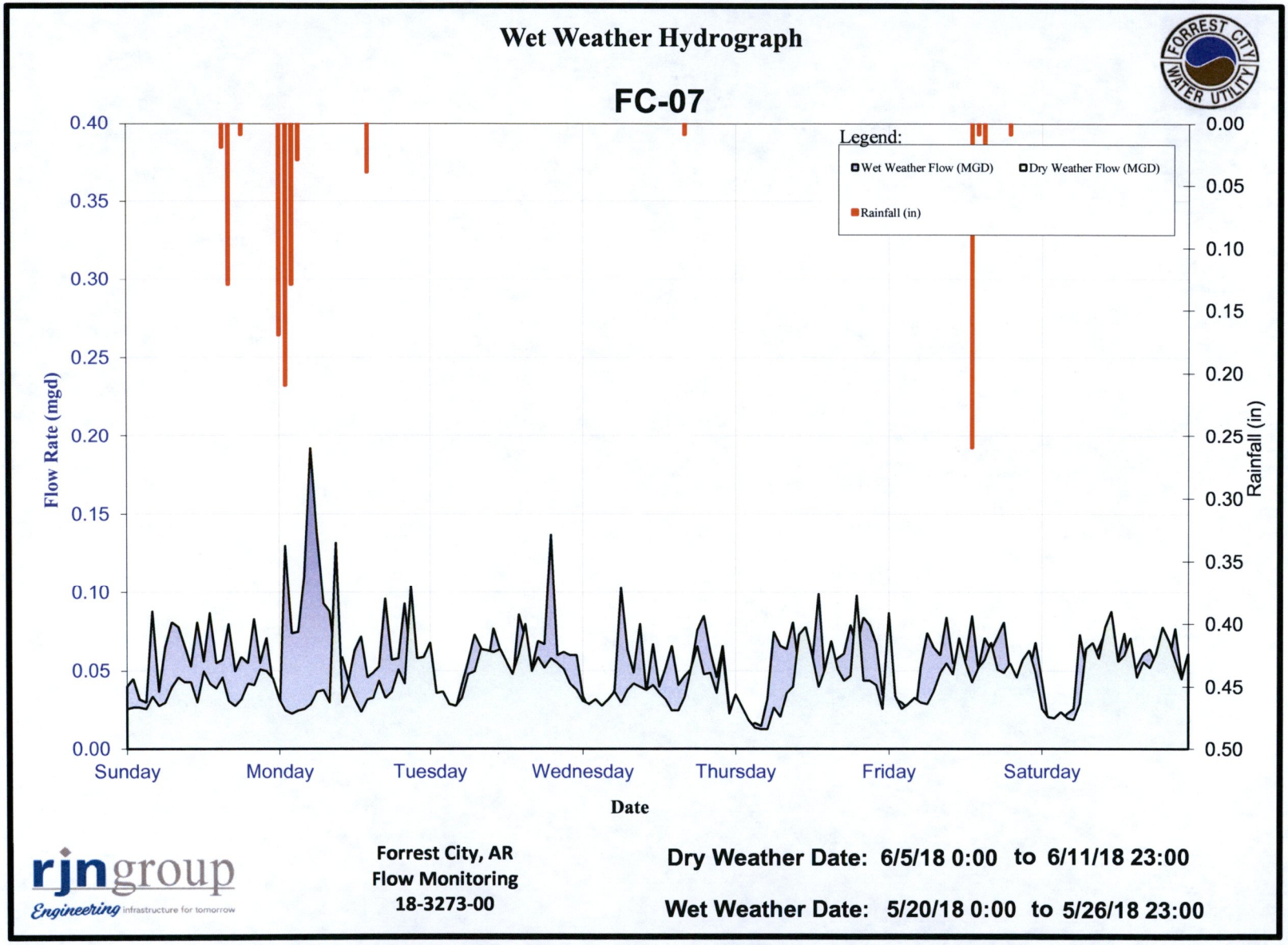


rjngroup Engineering infrastructure for tomorrow

Forrest City, AR
Flow Monitoring
18-3273-00

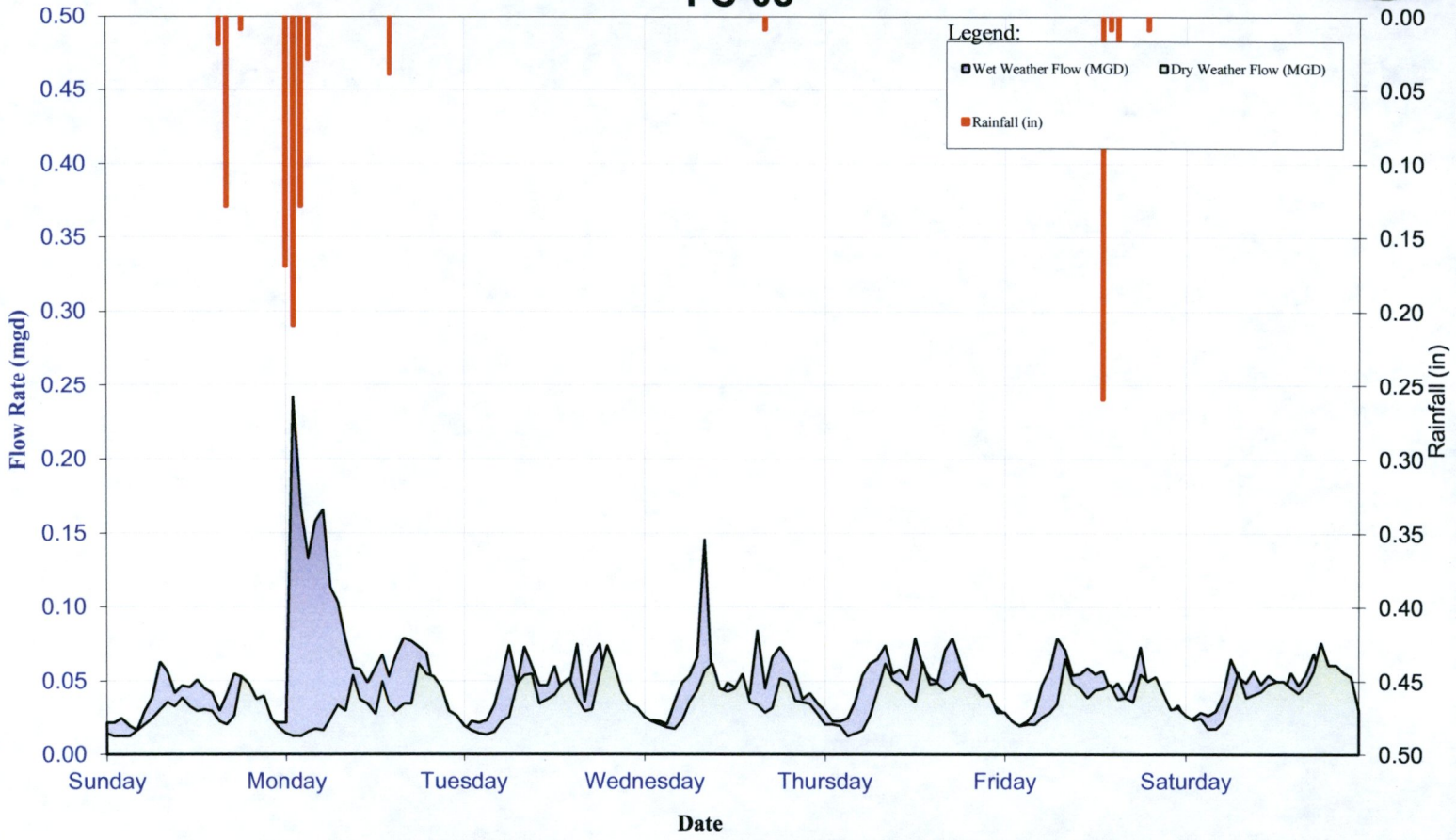
Dry Weather Date: 6/5/18 0:00 to 6/11/18 23:00

Wet Weather Date: 5/20/18 0:00 to 5/26/18 23:00


Wet Weather Hydrograph
FC-07
Legend:
Wet Weather Flow (MGD)
Dry Weather Flow (MGD)
Rainfall (in)
Flow Rate (mgd)
Rainfall (in)
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
0.45
0.50
Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Date
rjngroup
Engineering infrastructure for tomorrow
Forrest City, AR
Flow Monitoring
18-3273-00
Dry Weather Date: 6/5/18 0:00 to 6/11/18 23:00
Wet Weather Date: 5/20/18 0:00 to 5/26/18 23:00

Wet Weather Hydrograph

FC-08



rjn group
Engineering infrastructure for tomorrow

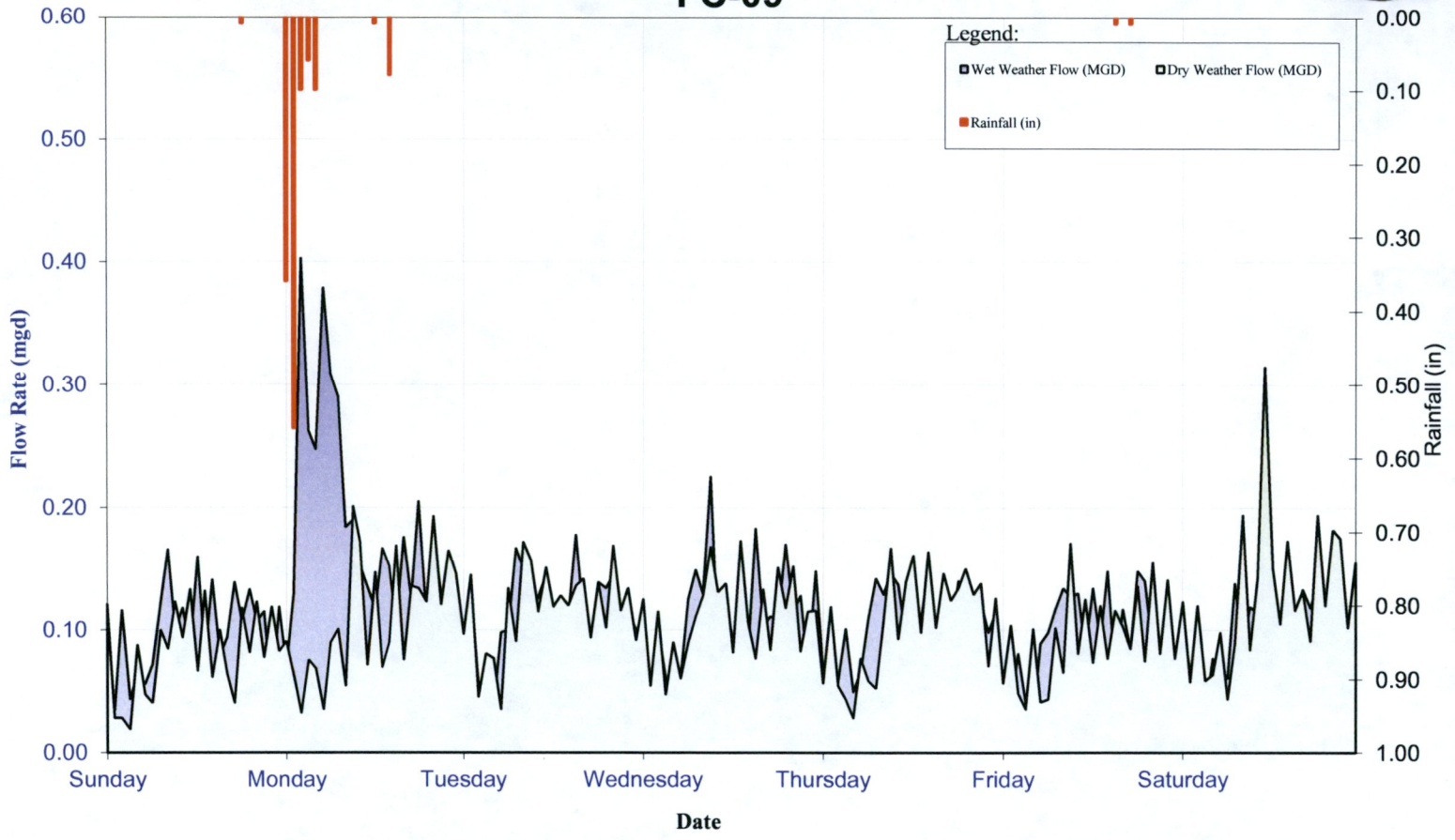
Forrest City, AR
Flow Monitoring
18-3273-00

Dry Weather Date: 6/5/18 0:00 to 6/11/18 23:00

Wet Weather Date: 5/20/18 0:00 to 5/26/18 23:00

Wet Weather Hydrograph

FC-09

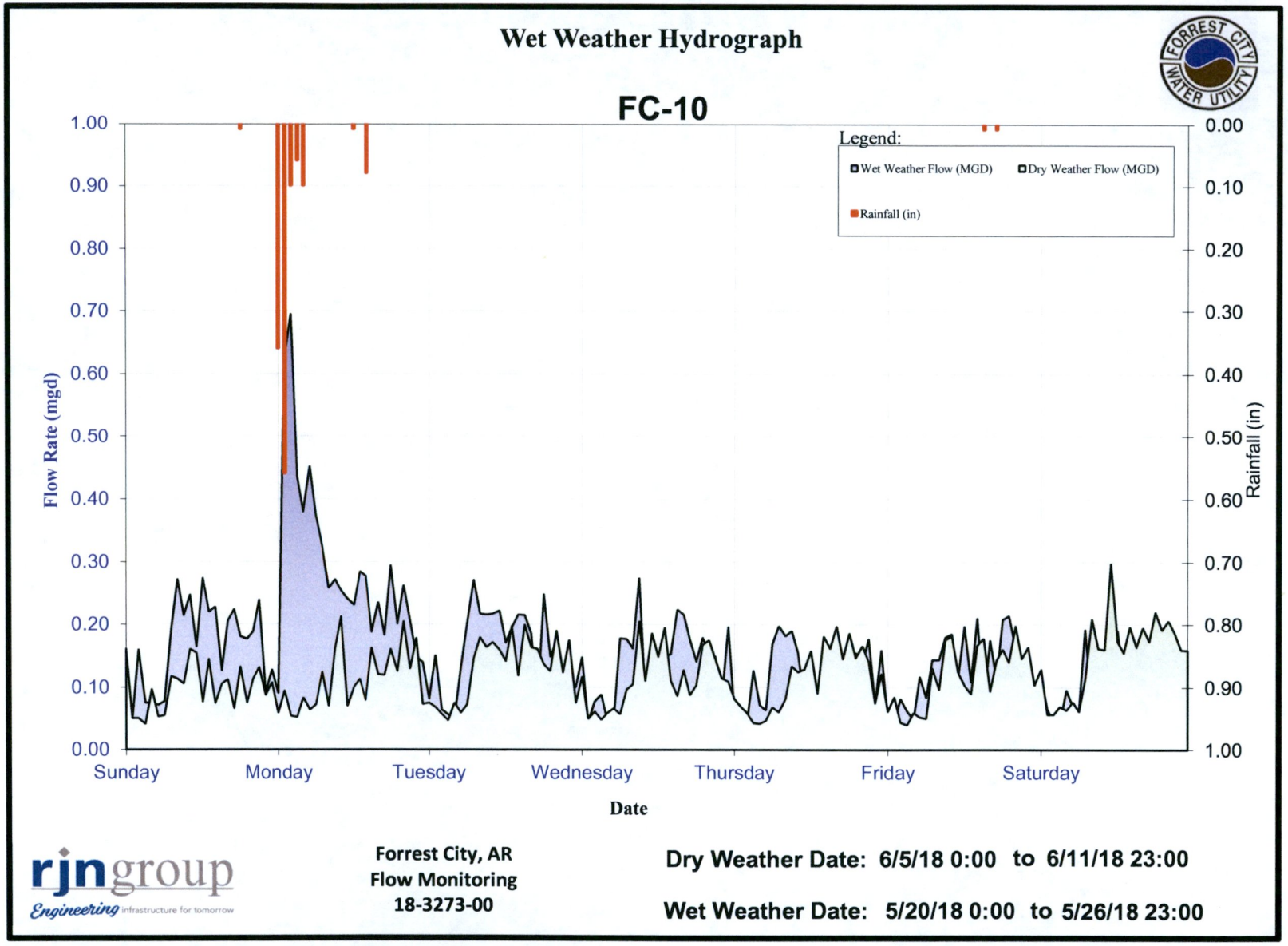


rjngroup Engineering infrastructure for tomorrow

Forrest City, AR
Flow Monitoring
18-3273-00

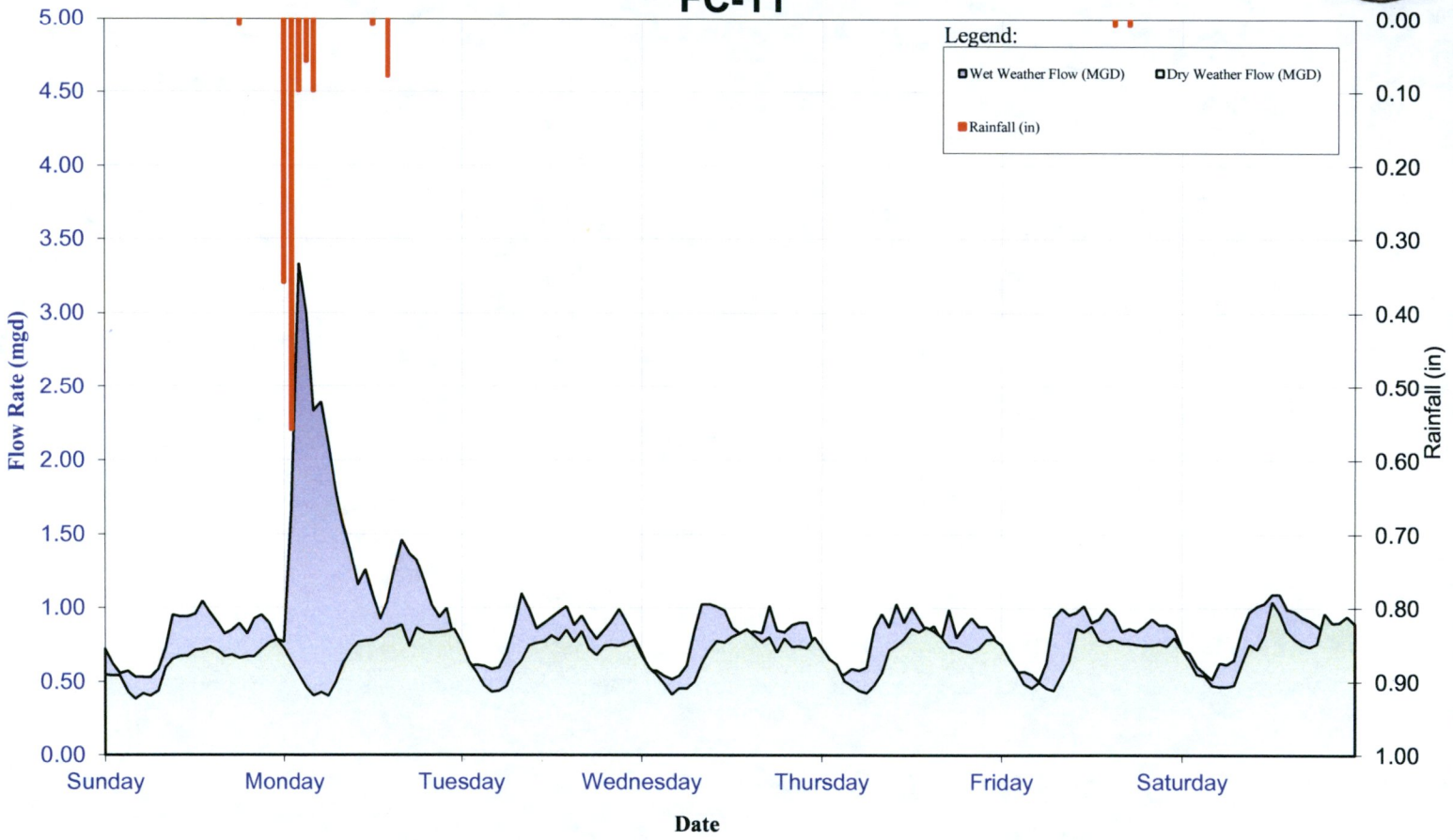
Dry Weather Date: 6/5/18 0:00 to 6/11/18 23:00

Wet Weather Date: 5/20/18 0:00 to 5/26/18 23:00


Wet Weather Hydrograph
FC-10
Legend:
Wet Weather Flow (MGD)
Dry Weather Flow (MGD)
Rainfall (in)
Flow Rate (mgd)
Rainfall (in)
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Date
rjngroup
Engineering infrastructure for tomorrow
Forrest City, AR
Flow Monitoring
18-3273-00
Dry Weather Date: 6/5/18 0:00 to 6/11/18 23:00
Wet Weather Date: 5/20/18 0:00 to 5/26/18 23:00

Wet Weather Hydrograph

FC-11

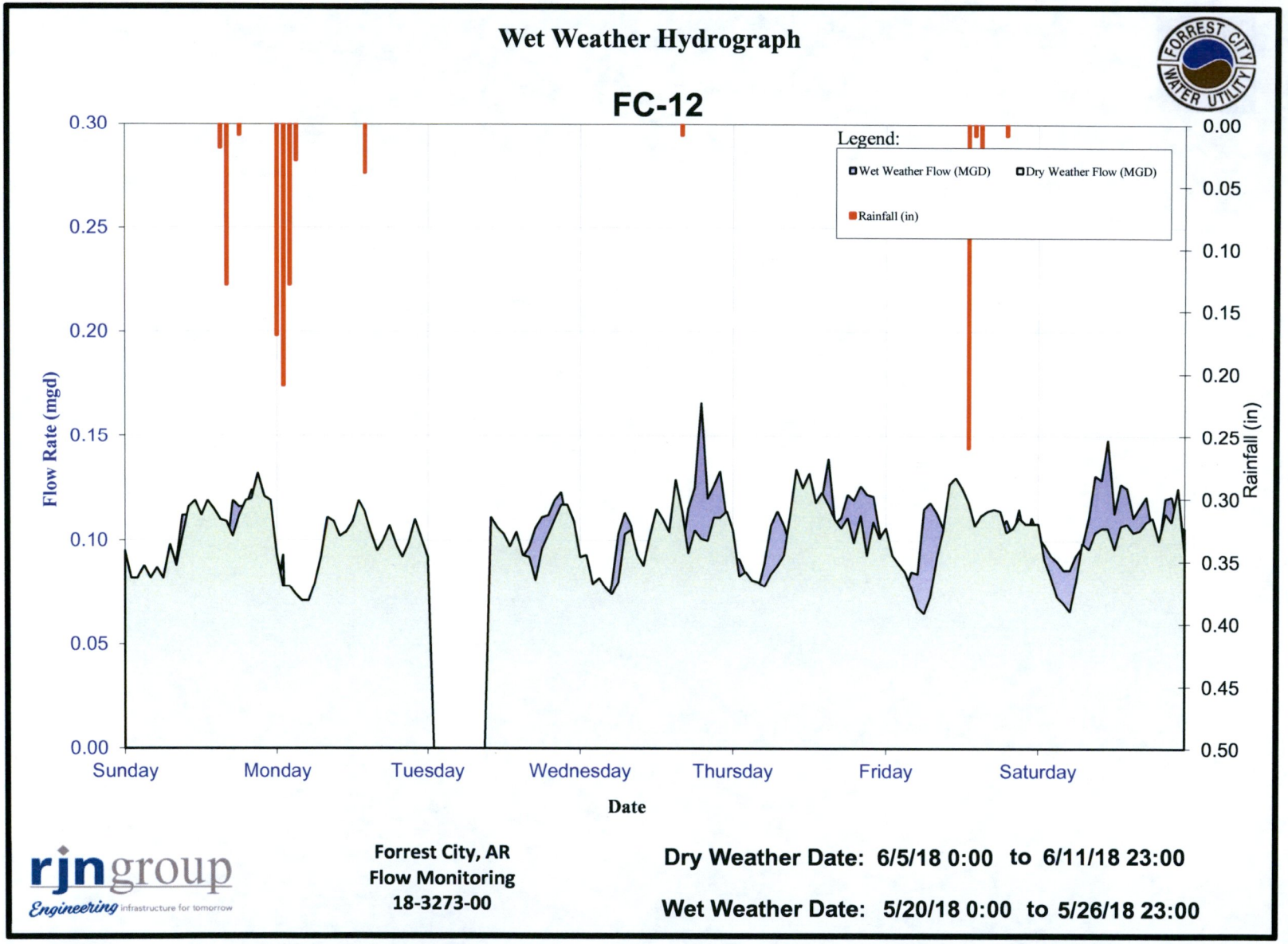


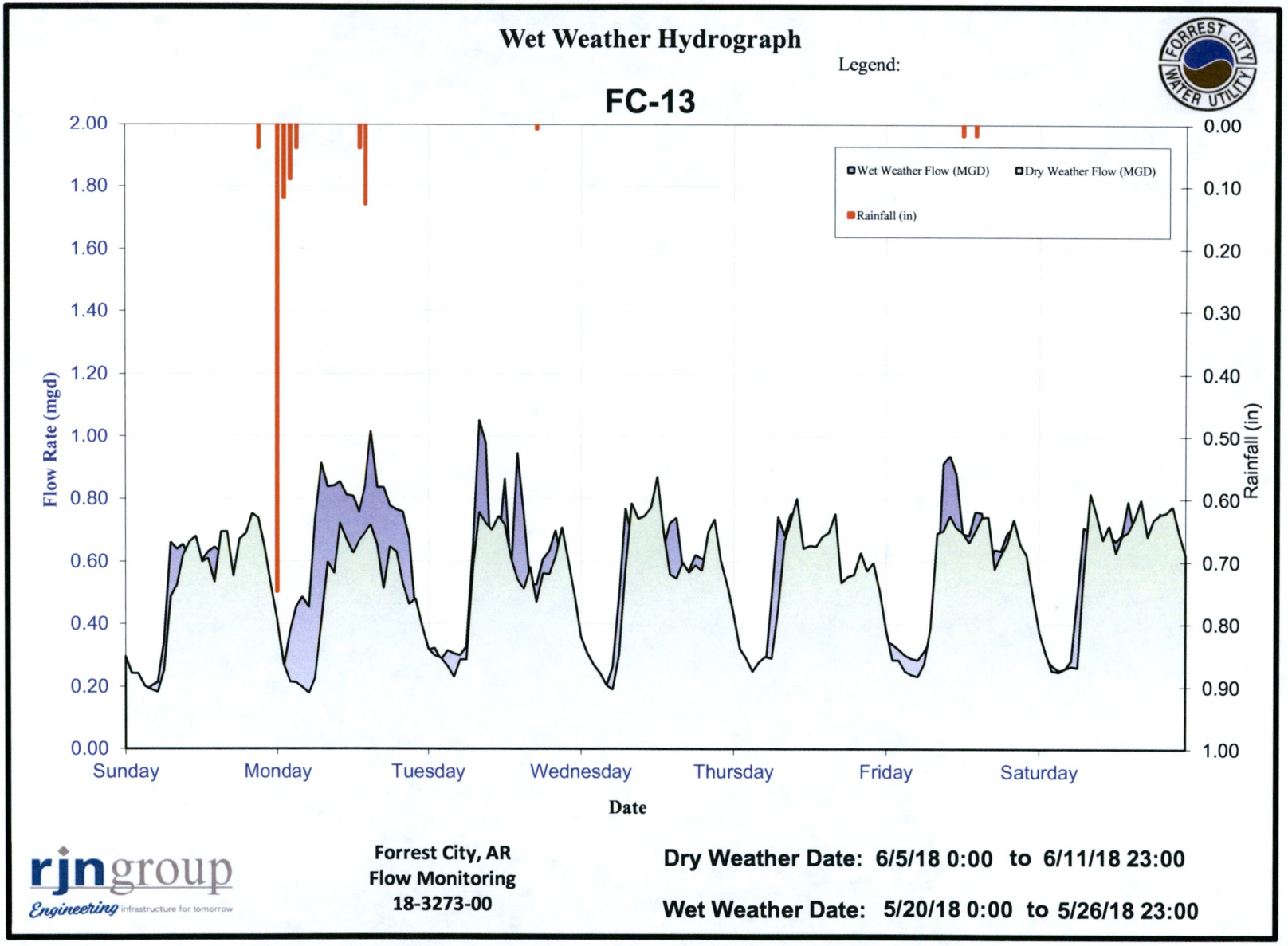
rjngroup Engineering infrastructure for tomorrow

Forrest City, AR
Flow Monitoring
18-3273-00

Dry Weather Date: 6/5/18 0:00 to 6/11/18 23:00

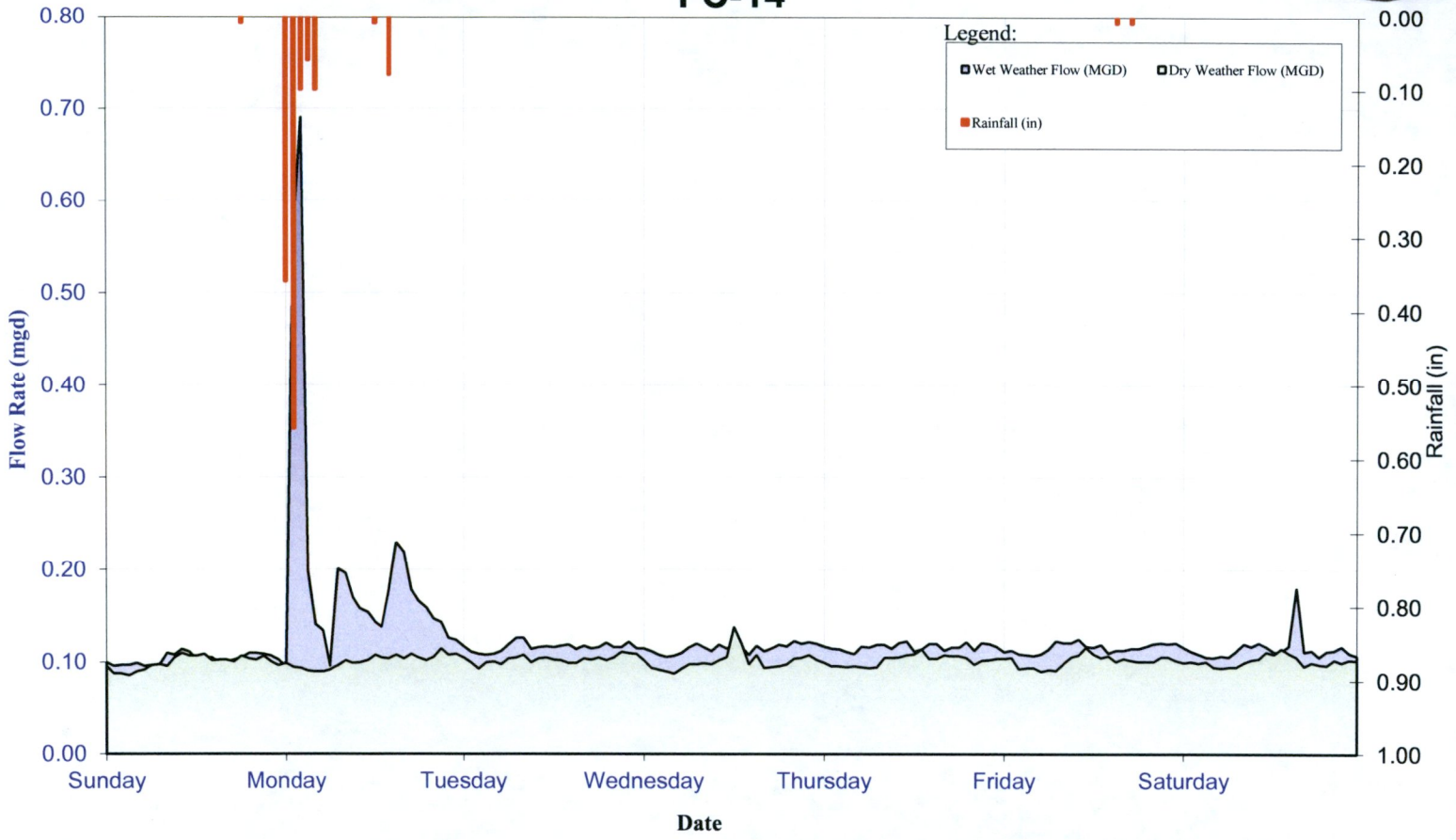
Wet Weather Date: 5/20/18 0:00 to 5/26/18 23:00


Wet Weather Hydrograph
FC-12
FORREST CITY WATER UTILITY
Legend:
Wet Weather Flow (MGD)
Dry Weather Flow (MGD)
Rainfall (in)
Flow Rate (mgd)
Rainfall (in)
0.30
0.25
0.20
0.15
0.10
0.05
0.00
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
0.45
0.50
Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Date
rjngroup
Engineering infrastructure for tomorrow
Forrest City, AR
Flow Monitoring
18-3273-00
Dry Weather Date: 6/5/18 0:00 to 6/11/18 23:00
Wet Weather Date: 5/20/18 0:00 to 5/26/18 23:00


Wet Weather Hydrograph
Legend:
FC-13
Wet Weather Flow (MGD)
Dry Weather Flow (MGD)
Rainfall (in)
Flow Rate (mgd)
Rainfall (in)
2.00
1.80
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
0.90
1.00
Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Date
rjngroup
Engineering infrastructure for tomorrow
Forrest City, AR
Flow Monitoring
18-3273-00
Dry Weather Date: 6/5/18 0:00 to 6/11/18 23:00
Wet Weather Date: 5/20/18 0:00 to 5/26/18 23:00

Wet Weather Hydrograph

FC-14

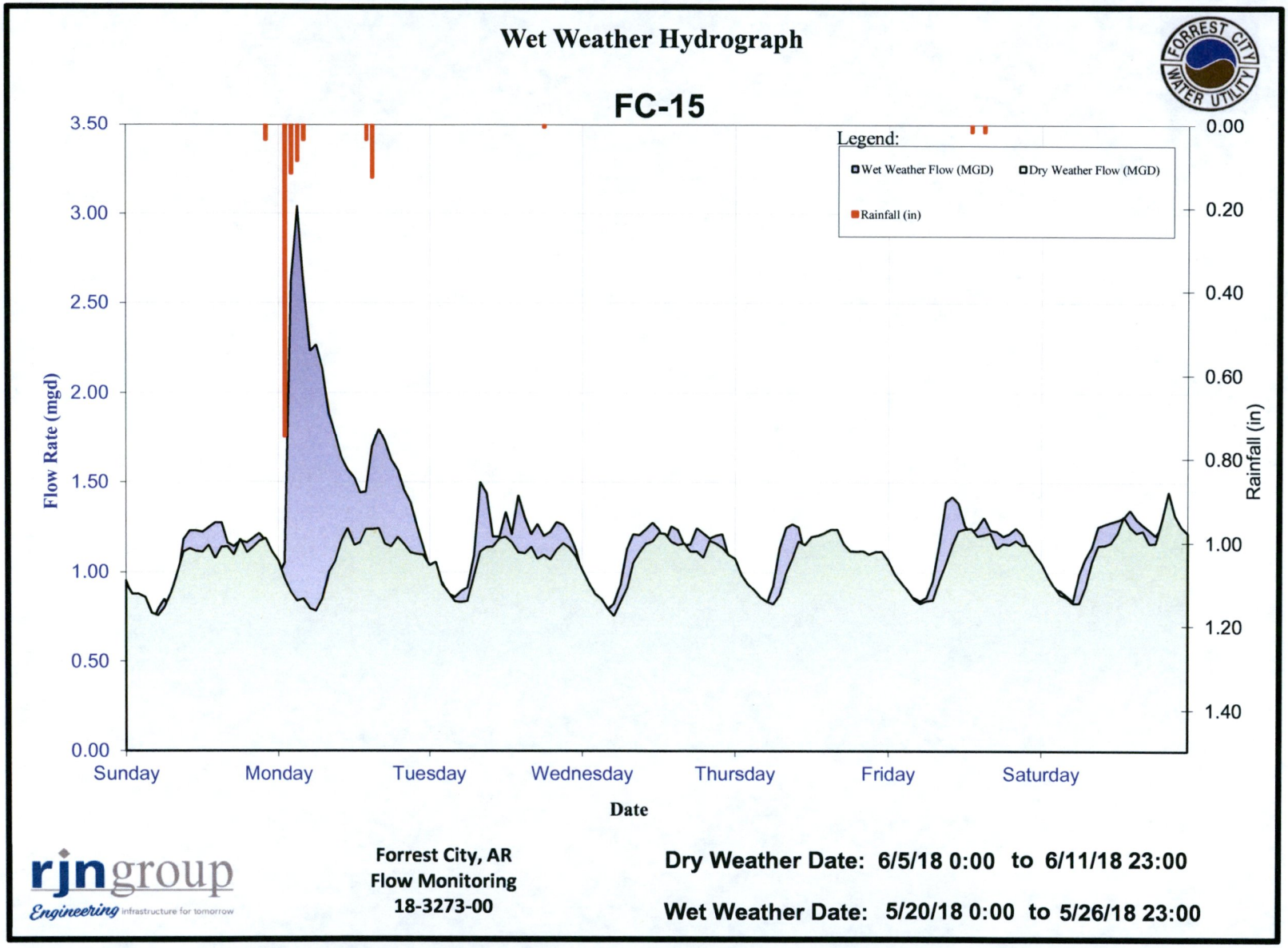


rjngroup Engineering infrastructure for tomorrow

Forrest City, AR
Flow Monitoring
18-3273-00

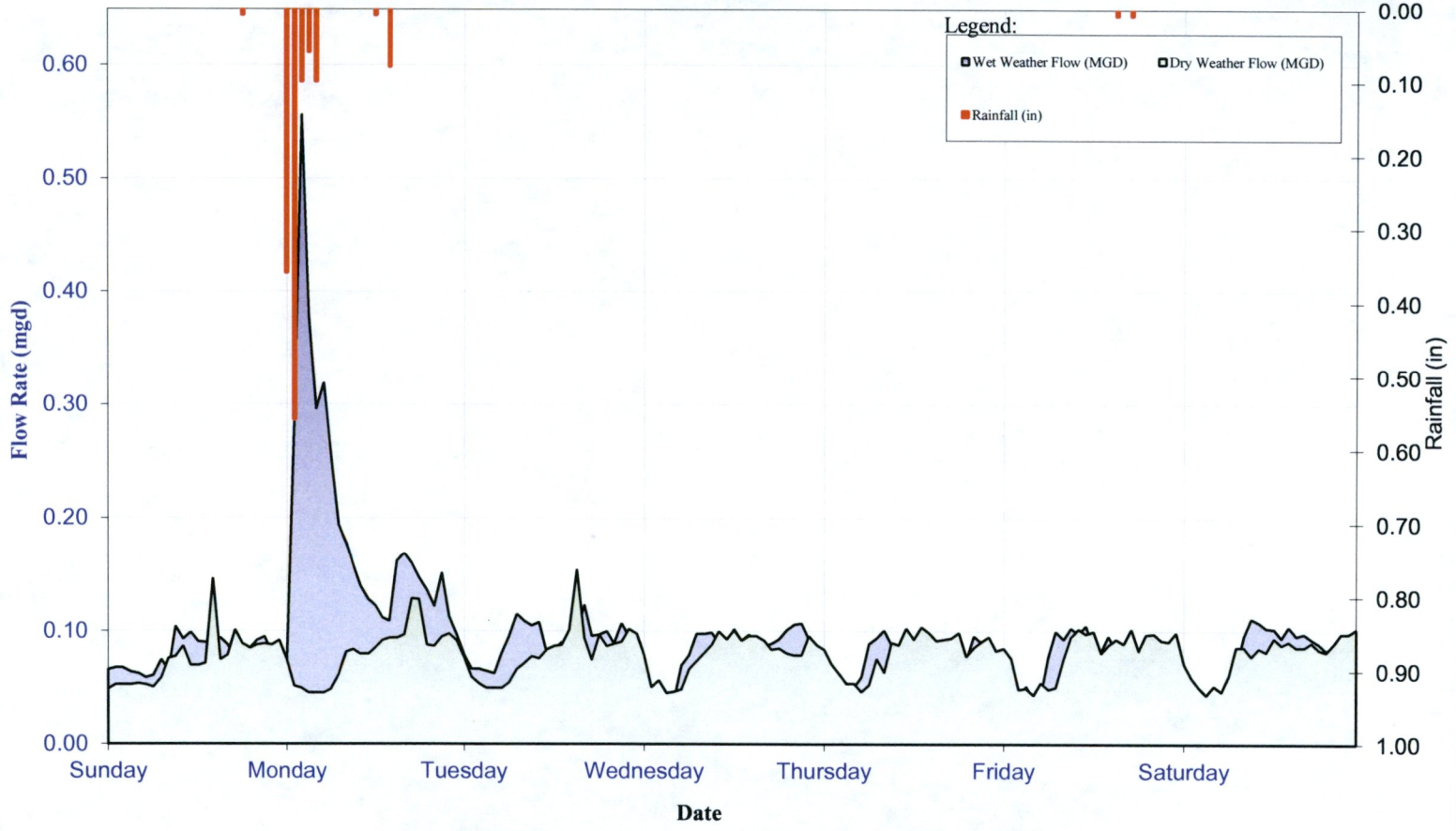
Dry Weather Date: 6/5/18 0:00 to 6/11/18 23:00

Wet Weather Date: 5/20/18 0:00 to 5/26/18 23:00


Wet Weather Hydrograph
FC-15
Legend:
Wet Weather Flow (MGD)
Dry Weather Flow (MGD)
Rainfall (in)
Flow Rate (mgd)
Rainfall (in)
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
0.00
0.20
0.40
0.60
0.80
1.00
1.20
1.40
Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Date
rjngroup
Engineering infrastructure for tomorrow
Forrest City, AR
Flow Monitoring
18-3273-00
Dry Weather Date: 6/5/18 0:00 to 6/11/18 23:00
Wet Weather Date: 5/20/18 0:00 to 5/26/18 23:00

Wet Weather Hydrograph

FC-16



rjngroup Engineering infrastructure for tomorrow

Forrest City, AR
Flow Monitoring
18-3273-00

Dry Weather Date: 6/5/18 0:00 to 6/11/18 23:00

Wet Weather Date: 5/20/18 0:00 to 5/26/18 23:00