AIM NORMAN

Area & Infrastructure Master Plan

Wastewater Utility

Baseline Development Technical Memorandum

City of Norman Norman, Oklahoma



Prepared by:



In Partnership with:



DRAFT April 2024

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Appendix A: Flow Meter and Rain Gauge Site Sheets Appendix B: Flow Monitoring Hydrographs





City of Norman Area & Infrastructure Master Plan

Wastewater Utility Baseline Development Technical Memorandum DRAFT

List of Acronyms

ADF	average daily flows
ADWF	average dry weather flows
AIM Norman	Area & Infrastructure Master Plan
CIP	Capital Improvement Plan
City	City of Norman
DMR	discharge monitoring reports
GARR	gauge-adjusted radar rainfall
gpcd	gallons per capita per day
IPR	indirect potable reuse
MGD	million gallons per day
MOR	monthly operating reports
NOAA	National Oceanic and Atmospheric Administration
NUA	Norman Utilities Authority
OAC	Oklahoma Administrative Code
ODEQ	Oklahoma Department of Environmental Quality
OPDES	Oklahoma Pollutant Discharge Elimination System
OU	University of Oklahoma
RDII	rainfall-derived infiltration and inflow
SFE	single-family equivalent
ТМ	technical memorandum
WEF	Water Environment Federation
WRF	Water Reclamation Facility
WWSA	wastewater service area





1.0 Introduction

The City of Norman (City) and the Norman Utilities Authority (NUA) are developing an Area & Infrastructure Master Plan (AIM Norman) that will cover a wide spectrum of city planning aspects including land use, transportation, stormwater management, water infrastructure, wastewater infrastructure, parks, and housing. The AIM Norman effort includes updates to related master plans for the City's infrastructure including transportation, stormwater, water, and wastewater. This technical memorandum (TM) is the first in a series of TMs that will be incorporated into the Wastewater Master Plan Report. The purpose of this TM is to establish a baseline for upcoming wastewater system evaluations that will be used to identify future capital improvements. This TM will cover the following:

- Summary of previous wastewater planning documents
- Analysis of recent wastewater collection system flow monitoring data
- Analysis of historical wastewater flows
- Projections of future wastewater flows

1.1 Wastewater System Overview

The NUA wastewater system serves the urban area within the city limits. The wastewater system includes two primary components:

- Wastewater Collection System The gravity sewers, lift stations, and force mains that collect sewage from each customer and convey it to the treatment facility.
- Water Reclamation Facility (WRF) The treatment facility that treats sewage received from the collection system and returns highly-treated water to the Canadian River.

NUA's current wastewater service area (WWSA) extends from 48th Avenue West to 36th Avenue East as shown below in Map 1.1.

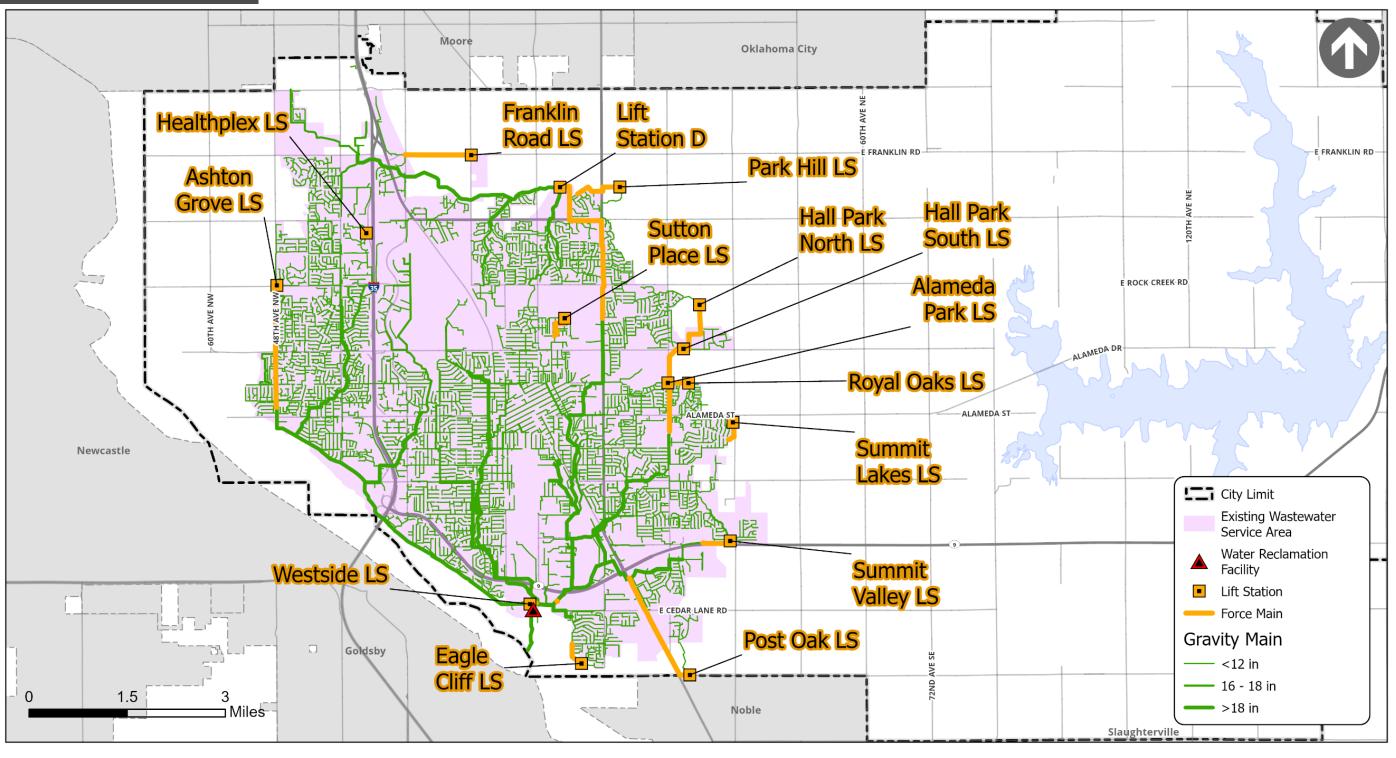
1.2 Operations and Management

The NUA is a public trust that oversees policy and financial authorizations as they relate to City-managed utilities. The elected mayor and City Council members also serve as the Board of Trustees for NUA. Three of the Norman Utilities Department Divisions administer and operate the water utility: Administration & Engineering, Water Treatment, and Line Maintenance. The Utilities Department has adopted the following Mission Statement:

Providing environmentally sound, efficient utility service to our customers in a professional, safe manner at sustainable rates through six divisions.











1.3 Related Documents

Table 1.1 summarizes the previous work by others that used in this baseline development. The reference names listed in the table are used throughout this report to refer to each document.

Table 1.1: Related Documents

Document	Author/Agency	Date	Reference Name
Wastewater Systems Master Plan	CDM Smith	2001	2001 WWMP
WRF Phase II Improvements Engineering Report	Garver, Carollo	2011	WRF Phase 2 ER
Wastewater Flow Monitoring & Modeling Report	HDR	2013	2013 WW Modeling Report
Wastewater Flow Monitoring & Modeling Report	HDR	2018	2018 WW Modeling Report
North Water Reclamation Facility Engineering Report	HDR	2018	2018 North WRF ER
AIM Norman Area & Infrastructure Master Plan - Norman Today	RDG	2024	Norman Today

1.4 Historical Data Collection

The following data was provided by NUA for use in the creation of this baseline development:

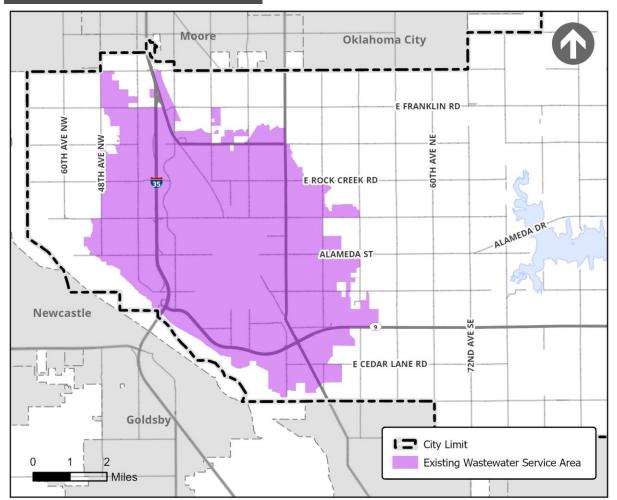
- WRF monthly operating reports (MOR) (2015–January 2024)
- Discharge monitoring reports (DMR) (2021–2023)
- GIS files with wastewater infrastructure information
- Rain and flow metering data from April 2023 to August 2023

2.0 Wastewater Service Area

The existing NUA wastewater collection system serves the urban portion of the area within the city limits. Slightly less than 90% of the City's population resides within the WWSA. Residents outside the WWSA boundary are served by private septic systems. The WWSA is illustrated in Map 2.1. The current boundary extends from 48th Avenue West to 36th Avenue East as shown below. Future WWSA expansion will be based on future urban expansion related to future land use and will be discussed further in the *Norman Tomorrow: Vision & Future Land Use* report.







Map 2.1: Wastewater Service Area Overview

2.1 Land Use

Existing land use for the purpose of this report was derived from the Norman Today report and was used to predict future development loading rates based on land use classification and historical billing data. Future land use is being developed as part of the *Norman Tomorrow: Vision & Future Land Use* report and will be discussed in a future TM.

3.0 Historical Population and Wastewater Flow

3.1 Historical Wastewater Service Population

Historically, the water service population has been approximately 88% of the City's total population. As discussed in the *Water Utility Baseline Development Technical Memorandum*, previous population projections have been





based on the assumption that the NUA service population will be about 90% of the City's total population by 2025. Based on recent GIS data, approximately 450 properties with water connections do not have connections to the City's wastewater collection system. The majority of these properties are residential. Assuming an average of 2.3 persons per household per the 2020 US Census, the wastewater system currently serves approximately 1,000 fewer people than the water system, which is equivalent to nearly 1% less of the City's total population. For the purposes of this analysis, Garver will use a historical wastewater service population of 87% of the City's total population, which will be assumed to increase to 89% of the City's total population by 2025. The historical estimated WWSA service population is summarized in Table 3.1.

Table 3.1: Historical Wastewater Service Population Estimates								
Year Service Population Percent of Total City Population								
2015	104,042	87%						
2016	105,426	87%						
2017	106,810	87%						
2018	108,194	87%						
2019	109,579	87%						
2020	111,383	87%						
2021	111,444	87%						
2022	112,775	87%						

3.2 Historical Water Reclamation Facility Flows

Figure 3.1 illustrates the historical influent flow to the Norman WRF spanning from January 2015 to January 2024. The figure includes daily data points along with lines representing the annual and monthly averages. Rolling averages are taken on a 30-day (monthly) and a 365-day (annual) basis for the influent flow data. Peaking factors are calculated according to the equation below. Here, the monthly average influent flow is divided by the annual average influent flow at a specific date to calculate the peaking factor. A peaking factor represents a peak month condition when the facility receives maximum flow and potentially maximum contaminant loadings over the course of a consecutive 30-day period. The identified peaking factor(s) can be utilized in establishing the proper maximum month conditions when the facility receives maximum levels of loadings over a month.

 $Peaking Factor(Date) = \frac{30 \text{-} day \text{ Average Flow (Date)}}{365 \text{-} day \text{ Average Flow (Date)}}$

Figure 3.2 shows the historical minimum monthly average and the annual average influent flows to the WRF by year for 2015–2023. The minimum monthly flows during dry-weather periods gradually increased over this period, while the annual average has fluctuated due to the variability in storm events.

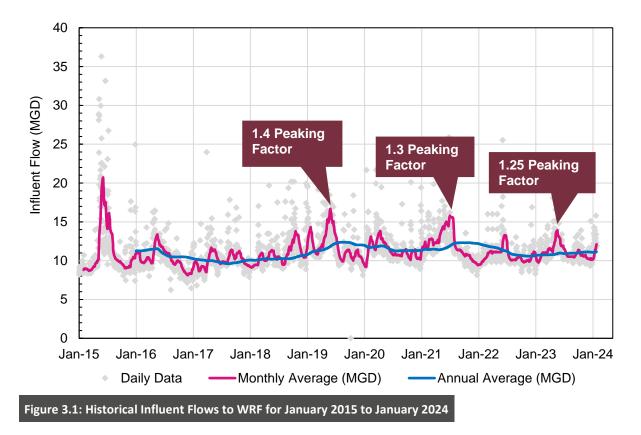
The data from 2015 indicates a period of elevated flows, with daily rates reaching up to 36 million gallons per day (MGD). However, the subsequent timeframe demonstrates a more consistent flow pattern. May 2015 experienced record rainfall (23.4-inches), leading to exceptionally high flows. While the methodology employed does not allow for an exact calculation of the mid-2015 annual average flow, it is estimated that the peak flow observed in 2015 had a peaking factor of nearly 2. This peak significantly exceeds the peaking factors recorded in subsequent years





and surpasses the typical peaking factors for a municipal treatment facility of comparable size. Figure 3.3 summarizes the historical rainfall from 2002 to 2024 and showcases the level of intensity of the May 2015 rainfall relative to other years.

Between 2016 and January 2024, monthly average peaks fluctuated within an estimated range of 13.0 to 16.6 MGD. Although there has been a slight increase in the annual average flow since 2018, it has remained relatively stable, hovering around 11 to 12 MGD. A peaking factor of 1.4 is recommended to be used for treatment capacity planning purposes within this project. It must be noted that the assessment of the treatment capacity requirement at the existing and potential future Norman WRF(s) will also be considering maximum month contaminant loadings which will be documented in the upcoming Treatment and Reuse TM.





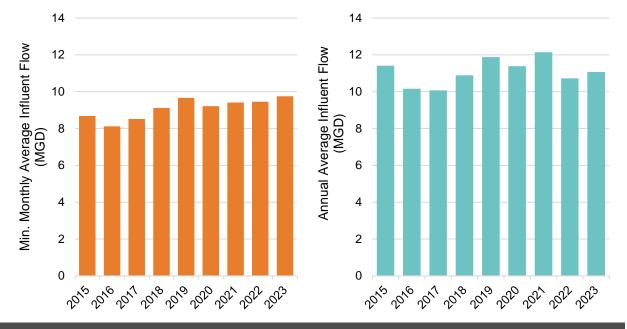
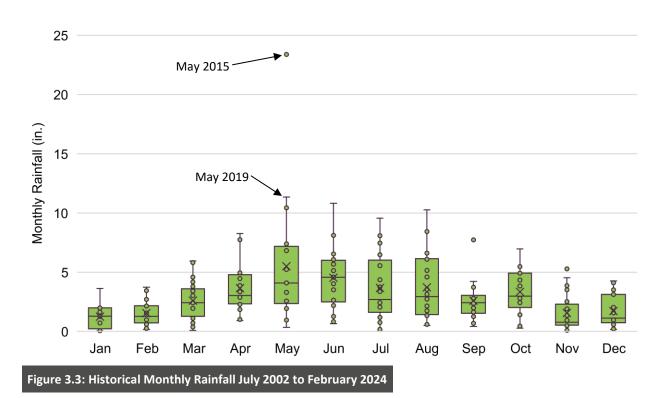


Figure 3.2: Historical Minimum Monthly Average (left) and Annual Average (right) Influent Flows to WRF by year for 2015–2023





3.3 Per Capita Wastewater Flows

Garver evaluated per capita average daily flows (ADF) using historical service population data and annual average WRF flows. Table 3.2 summarizes the historical ADF per capita. A value of 100 gallons per capita per day (gpcd) will be used to project future flows based on population projections. This value is slightly higher than recent ADF per capita and aligns with the Oklahoma Department of Environmental Quality (ODEQ) ADF design requirement of 100 gpcd.

Year	Service Population	ADF (MGD)	ADF Per Capita (gpcd)			
2015	104,042	11.20	94			
2016	105,426	10.16	84			
2017	106,810	10.08	82			
2018	108,194	10.88	88			
2019	109,579	11.88	94			
2020	111,383	11.38	89			
2021	111,444	12.16	95			
2022	112,775	10.72	83			

Table 3.2: Historic ADF Per Capita

3.4 Single-Family Equivalents

A single-family equivalent (SFE) value was determined using historical billed water consumption data provided by NUA. SFE values are used to compare water system demands for other customer classes and the system overall to the flows for a typical single-family detached dwelling. Single family residential flows are often used as the benchmark for flow planning because they tend to represent the majority of system flows, and remain more stable over time compared to other benchmarks. Multi-family, industrial, and commercial flows tend to vary significantly, and changes in these types of flows over time can cause variability in a collection system's per capita flows. Once the SFE value is determined, it can be used to express the system capacity as the number of single-family customer connections the collection system can serve currently or in the future.

Garver used historical consumption data to determine the SFE value for the wastewater collection system. The 2022 single-family water demand was determined using the total consumption from November to February for all meters classified as single-family with a diameter of 1-inch or less. The total demand was then divided by the total number of single-family meters within the system. Historically, the winter water demands have been approximately equal to the wastewater ADF. A summary of the data used to determine the SFE value is presented in Table 3.3.





Table 3.3: Single-Family Equivalent Projection						
Total Single-Family W	/inter Water Demand	Number of	ADF SFE Value			
(MG)	(MGD)	Meters	(gpd/SFE)			
828.1	6.9	33,641	205			

3.5 Wastewater Flows by Land Use

Garver used historical water consumption data from November 2022 to February 2023 and GIS data to determine historical land use loading rates. A GIS analysis was completed to determine the lot size and the existing land use associated with each geolocated meter by extracting data for the nearest parcel. Table 3.4 summarizes the loading rate by land use category. The projected loading rate values will be used to determine future wastewater flows for new developments, which will be discussed in more detail in the upcoming Collection System Modeling and Evaluation TM. For single-family residential developments, the residential area will be assumed to be about 80% of the total development area for high-density developments and 70% for low-density developments to account for the area of streets, detention ponds, and other open spaces. The actual development area will be used to determine loading rates for the new developments.

Table 3.4: Historical Loading Rates by Customer Class						
Customer Class	Customer Sub Class	Winter Water Demand (MG)	Total Area (acre)	Historical Loading Rate (gpd/acre)	Projected Loading Rate (gpd/acre)	
	Residential - Multi-Family	2,155	700	2,567	2,600	
Residential	Residential - Single Family Attached	621	311	1,664	1,700	
	Residential - Single Family Detached	7,576	7,575	833	See Table 3.5	
In durate in I	Light Industrial	270	293	768	800	
Industrial	Heavy Industrial	117	94	1,035	1,100	
Commonial	Commercial	1,622	1,745	775	800	
Commercial	Office	870	403	1,802	1,800	

Table 3.4: Historical Loading Rates by Customer Class

Residential users make up a large percentage of users with a majority of residential users being classified as single family detached. Due to the large percentage of single family detached users, further analysis was completed to determine the varied flows based on lot size. An analysis was completed to determine the correlation between lot size and flows to better predict future loading rates for new subdivision developments. Table 3.5 and Figure 3.4 summarize the differences in flows related to differing lot sizes.



Table 3.5: Single F	by Lot Size				
Lot Size (acre)	Winter Water Demand (MG)	Total Area (acre)	Historical Loading (gpd/acre)	Projected Loading Rate (gpd/acre)	Historical Loading (gpd/connection)
<0.14	560	358	1,304	1,300	146
0.15 - 0.25	4,301	3,557	1,008	1,000	173
0.26 - 0.50	2,114	1,925	915	900	243
0.51 - 1.00	331	366	754	800	371
>1.00	270	1,041	216	250	379

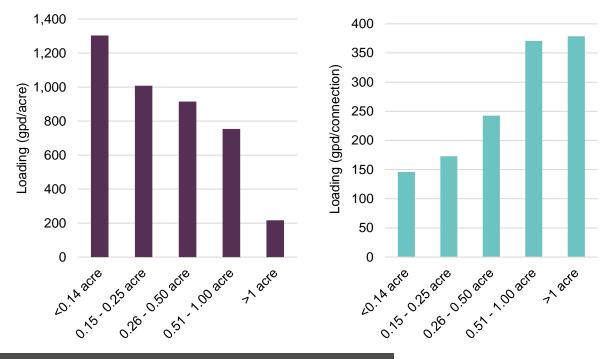


Figure 3.4: Historical Single Family Detached Loading Rates by Lot Size

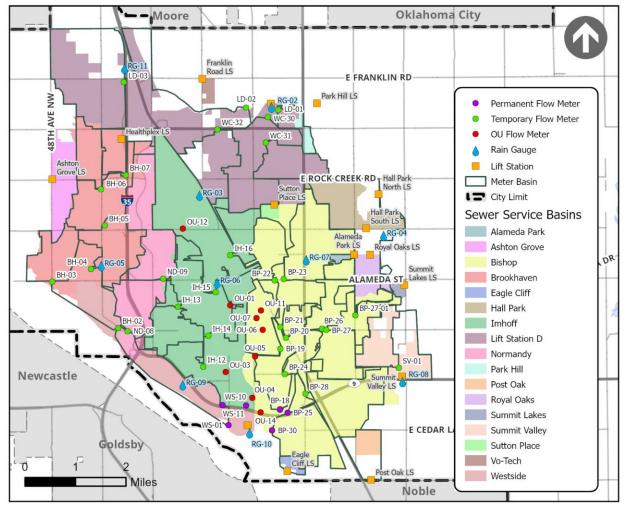
4.0 Flow Metering Data Analysis

Flow meter data was collected to assess existing dry- and wet-weather flows in the collection system. Thirty-one temporary flow meters and ten temporary rain gauges were installed throughout the collection system. Temporary flow metering data was supplemented by six permanent flow meters that are installed just upstream of the WRF. A map of the flow metering basins is shown in Map 4.1. Flow metering and rainfall data were collected on 5- to 15- minute increments between April 20, 2023 and August 1, 2023. Site sheets showing detailed location and hydraulic information for the flow meter and rain gauge sites are provided in Appendix A. The flow monitoring hydrographs are included in Appendix B.





Map 4.1: Flow Monitoring Basin Map



Note: The OU flow meters included in the above figure were not used for the purpose of the flow metering data analysis.





Flow meter analysis involved determination of average dry-weather flows (ADWF) and diurnal patterns, as well as rainfall-derived infiltration and inflow (RDII) during wet-weather events. Figure 4.1 shows a schematic of the flow network of all the metered basins.

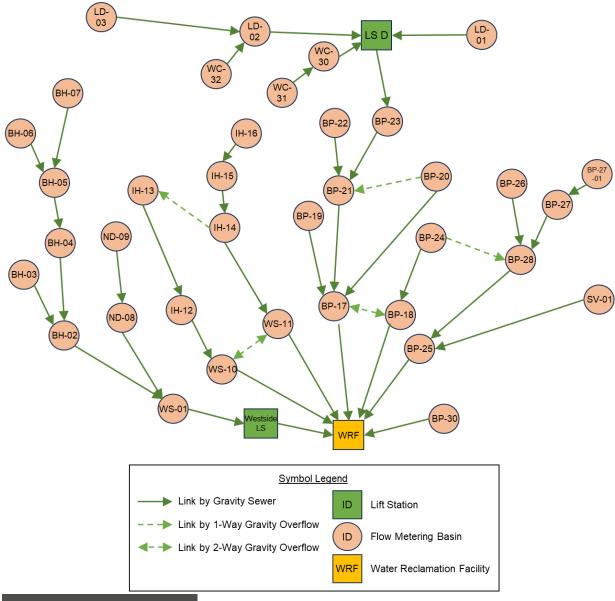


Figure 4.1: Flow Meter Schematic

Dry-weather flow days were used for calculation of ADWF and diurnal patterns. A dry-weather flow day was considered to be any day in the flow metering period that had five or more days without rainfall preceding it.





Depending on the rain gauge associated with the metered basin, as many as 18 to 30 dry-weather days were used to determine dry-weather flow conditions. Table 4.1 shows the ADWF and the dry-weather flow peaking factor for each basin. The values shown are for the total metered flow at each flow meter, without upstream flows subtracted out. The dry-weather flow peaking factor is the ratio of the peak hour dry-weather flow to the ADWF. The dry-weather peaking factors range from 1.16 to 1.5, and the average dry-weather peaking factor is 1.29 as shown in Figure 4.2.

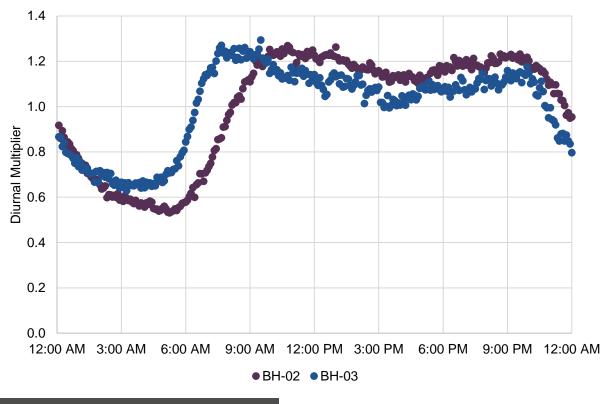


Figure 4.2: Example Dry-Weather Diurnal Patterns





Table 4.1: Dry-Weather Flows

Flow Meter	Average Dry-Weather Flow (MGD)	Peak Hour Dry- Weather Flow (MGD)	Dry-Weather Flow Peaking Factor
BH-02	1.85	2.37	1.28
BH-03	0.39	0.51	1.30
BH-04	1.39	1.72	1.24
BH-05	0.81	1.06	1.32
BH-06	0.23	0.30	1.29
BH-07	0.19	0.27	1.45
BP-17	3.47	4.01	1.16
BP-18	0.41	0.49	1.20
BP-19	0.55	0.66	1.20
BP-20	0.16	0.21	1.32
BP-21	2.70	3.28	1.21
BP-22	0.34	0.42	1.22
BP-23	2.45	2.92	1.19
BP-24	0.30	0.39	1.32
BP-25	2.09	2.62	1.25
BP-26	0.62	0.80	1.28
BP-27	0.57	0.76	1.33
BP-27-01	0.46	0.69	1.50
BP-28	0.69	0.89	1.29
BP-30	0.28	0.42	1.48
IH-13	0.24	0.30	1.28
IH-14	1.14	1.50	1.31
IH-15	0.60	0.74	1.22
IH-16	0.39	0.46	1.18
LD-02	0.81	1.01	1.25
LD-03	0.25	0.33	1.30
ND-08	0.70	0.92	1.31
ND-09	0.65	0.84	1.29
SV-01	0.10	0.15	1.43
WC-30	0.69	0.90	1.31
WC-31	0.28	0.38	1.35
WC-32	0.20	0.29	1.44
WS-01	2.70	3.42	1.27
WS-10	0.64	0.81	1.27
WS-11	1.25	1.52	1.21

Each flow meter is associated to the nearest rain gauge in the rainfall monitoring network. Wet-weather events were determined for each rain gauge, and the wet-weather events were used as analysis periods for wet weather flows. Wet-weather events were considered to be rainfall events in which 24-hour rainfall totals exceed 0.9 inches. This 24-hour rainfall total was selected so that multiple qualifying wet-weather events could be evaluated at each flow meter, while ensuring that only significant rainfall events were analyzed. Several rain gauges did not have multiple events that met this criteria, in which case the wet-weather event criteria was lowered to 0.5 inches of





rainfall in a 24-hour period. A summary of the rainfall experienced at each of the rain gauges during the monitoring period is shown in Table 4.2. This table also shows an estimate of the maximum 24-hour and 1-hour frequency storms experienced during the monitoring period (according to the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 precipitation frequency-duration curves).

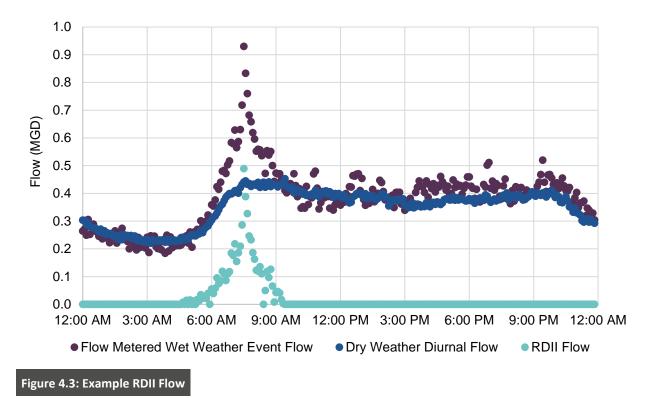
Table 4.	2: Wet-Weather Events					
Rain Gauge	Associated Flow Meters	Number of Wet- Weather Events	Maximum 24-hour Rainfall (in)	Equivalent 24-hour Frequency Storm	Maximum 1-hour Rainfall (in)	Equivalent 1-hour Frequency Storm
RG-02	LD-02, WC-30, WC-31, WC-32	4	2.36	< 1-year	0.78	< 1-year
RG-04	BP-18, BP-22, BP-23, BP-26, BP-27-01, BP-28, IH-14	4	3.91	2-year	2.90	10-year
RG-05	BH-02, BH-03, BH-04, BH-05, BH-06, BH-07, ND-08	4	3.77	2-year	2.57	10-year
RG-06	IH-13, IH-15, IH-16, ND-09	3	3.50	1-year	2.36	5-year
RG-07	BP-19, BP-20, BP-21, BP-24, BP-27	3	5.41	5-year	3.52	25-year
RG-08	SV-01	4	4.08	2-year	2.99	10-year
RG-09	WS-10	4	1.04	<1-year	0.62	<1-year
RG-10	BP-25, BP-30, WS-01, WS-11, BP-17	2	3.83	2-year	2.73	10-year
RG-11	LD-03	3	2.36	<1-year	0.78	<1-year

Table 4.2: Wet-Weather Events

The RDII was calculated at each basin for each wet-weather event. RDII was calculated as the difference between the wet-weather event flow and the typical dry-weather flow of the basin. Figure 4.3 shows an example of the wet-weather (combined dry-weather and RDII flow), RDII, and dry-weather flow for flow meter basin BH-03.







For each wet-weather event, the RDII flow was modeled using the RTK method. The RTK method is a parameterization of RDII flow that estimates flow by defining three separate unit hydrographs (the hypothetical flow response to a unit of rainfall). The three hydrographs represent inflow, short-term infiltration, and long-term infiltration of rainwater into the wastewater system after a rainfall event. The RTK parameters were generated with a genetic algorithm that selects parameters with the goal of minimizing average peak flows and volume errors for each wet-weather event in the monitoring period. The RTK parameters are then used to simulate wet-weather flows for the 2-year, 5-year, and 10-year 24-hour design storms. The design storm volumes were taken from the NOAA Atlas 14 precipitation frequency-duration tables. The design storm volumes were distributed over 24-hours using the SCS Type II rainfall distribution. The rain volumes and the maximum 1-hour rainfall intensities used for the design storms are shown in Table 4.3.

Table 4.3: Design Storm Rain Volume		
Design Storm	Rain Volume (inch)	Maximum 1-hour Intensity (inch/hour)
2-year	3.77	1.71
5-year	4.67	2.12
10-year	5.53	2.51



Table 4.2. Destau Chause Date Maleur



Table 4.4 shows the resulting peaking factors and design peak flows. This table also shows the average peak flow error the selected RTK parameters result in for the monitored wet-weather events. Figure 4.4 shows a graphical representation of the 5-year wet-weather peaking factor and the RTK calibration peak flow errors. The peak flow error represents the average overestimation (positive error) or underestimation (negative error) of RDII peak flow for each wet-weather event. There are several basins that have high peak flow errors. This is typically caused by inconsistent wet-weather responses in the flow metering data, often as a result of the influence of lift station pumping on the flow patterns or due to high geospatial variability in the rainfall data. The calibration of these basins can be revisited with more sophisticated methods, including the use of gauge-adjusted radar rainfall (GARR) for more precise definition of wet-weather events. Additionally, basins with large amounts of pumped flow can be further calibrated during hydraulic model development. The wet-weather analysis in this report was conducted on total flows at each flow meter, without upstream flows subtracted out. Discrete dry- and wet-weather flows will be assessed during model development and calibration and discussed in the Collection System Modeling and Evaluation TM.

Table 4.4: Temporary Flow Meters Wet-Weather Flows

Flow	Peaking Factors			Design Storm Peak Flows (MGD)			Average
Flow Meter	2 Year Storm	5 Year Storm	10 Year Storm	2 Year Storm	5 Year Storm	10 Year Storm	Event Peal Flow Error (%)
BH-02	9.33	11.25	13.06	17.28	20.83	24.19	7%
BH-03	8.60	10.33	11.97	3.35	4.02	4.66	0%
BH-04	4.88	5.75	6.57	6.79	8.00	9.14	0%
BH-05	11.80	14.30	16.65	9.54	11.55	13.46	13%
BH-06	9.66	11.65	13.54	2.23	2.69	3.12	0%
BH-07	8.28	9.91	11.45	1.56	1.87	2.16	10%
BP-19	10.28	12.44	14.48	5.65	6.84	7.96	48%
BP-20	8.68	10.44	12.09	1.39	1.68	1.94	-3%
BP-21	4.68	5.51	6.29	12.64	14.87	16.97	1%
BP-22	10.44	12.63	14.70	3.58	4.33	5.04	-3%
BP-23	6.55	7.82	9.03	16.06	19.19	22.14	111%
BP-24	9.33	11.24	13.04	2.79	3.36	3.89	8%
BP-26	15.15	18.45	21.57	9.46	11.52	13.47	50%
BP-27	5.17	6.08	6.95	2.94	3.46	3.95	0%
BP-27-01	18.55	22.61	26.45	8.58	10.45	12.23	1%
BP-28	6.03	7.16	8.22	4.16	4.94	5.67	-3%
IH-13	5.83	6.91	7.94	1.37	1.63	1.87	-4%
IH-14	5.12	6.02	6.88	5.83	6.86	7.84	-5%
IH-15	12.75	15.49	18.09	7.66	9.31	10.86	15%
IH-16	9.04	10.91	12.68	3.49	4.22	4.90	2%
LD-02	15.77	19.23	22.50	12.76	15.56	18.20	10%
LD-03	8.49	10.20	11.82	2.12	2.55	2.95	9%
ND-08	5.68	6.72	7.71	3.98	4.71	5.40	15%
ND-09	5.67	6.71	7.69	3.68	4.36	5.00	1%
SV-01	12.67	15.34	17.87	1.28	1.55	1.81	12%
WC-30	11.59	14.04	16.35	8.00	9.69	11.28	12%





F low	Peaking Factors			Design St	Design Storm Peak Flows (MGD)			
Flow Meter	2 Year Storm	5 Year Storm	10 Year Storm	2 Year Storm	5 Year Storm	10 Year Storm	Event Peak Flow Error (%)	
WC-31	8.87	10.66	12.35	2.50	3.01	3.48	-9%	
WC-32	15.23	18.52	21.62	3.09	3.76	4.39	19%	

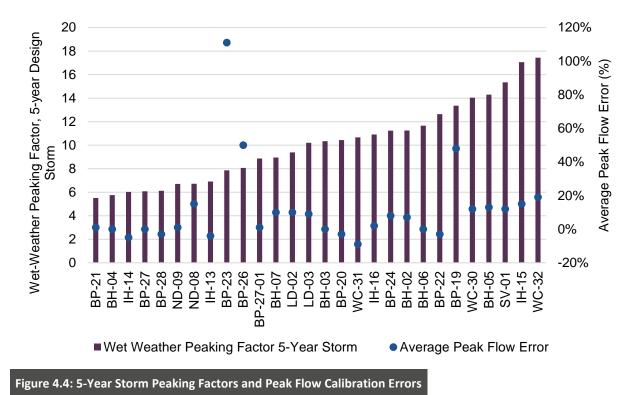


Table 4.5 shows the statistics of the basin peaking factors for the 2-year, 5-year, and 10-year design storms. The median peaking factor for the 2-year storm is 8.5. The median peaking factor for the 5-year storm is 10.3, and the median peaking factor for the 10-year storm is 11.9. These peaking factors represent the impact of RDII on collection system flows. Actual peak flows experienced at the WRF and at other locations in the system will depend on travel time, flow attenuation, and storage as water is conveyed through the collection system. The peak influent flows to the WRF will be evaluated in hydraulic modeling scenarios.

Table 4.5: Basin Peaking Factor Summary for 2-Year, 5-Year, and 10-Year Design Storms							
Design Storm	Minimum Peaking Factor	Median Peaking Factor	Maximum Peaking Factor				
2-year	4.7	8.5	14.4				
5-year	5.5	10.3	17.4				
10-year	6.3	11.9	20.3				
Note: Peaking factor	Jote: Peaking factors shown represent 5-minute peak flows divided by ADWF to be used for collection system						

Note: Peaking factors shown represent 5-minute peak flows divided by ADWF to be used for collection system infrastructure capacity evaluations.





The six permanent flow meters were not included in the wet-weather analysis. These flow meters are located on interceptors at the downstream end of the collection system, just upstream of the outfall to the WRF. These meters were not included in the evaluation because they are located on interceptors that are designed to surcharge, store water, and attenuate peak flow rates through diversions to other interceptors. The wet weather response of these basins will be investigated during wet-weather calibration for the upcoming Collection System Modeling and Evaluation TM. The permanent flow meters and their maximum observed flows reported during the flow metering period are shown in Table 4.6.

Table 4.6: Permanent Flow Meters Wet-Weather Fl	lows
Flow Meter	Maximum Observed Flow (MGD)
BP-17	11.15
BP-18	9.02
BP-25	7.55
BP-30	1.32
WS-01	12.57
WS-10	2.00
WS-11	12.74

5.0 Wastewater Flow Projections

As discussed in Section 3.3, the wastewater flow rate projections are calculated based on the anticipated service population and an ADF per capita of 100 gpcd. Garver used the 1.5% annual growth rate projection included in the Norman Today report as the basis of the population projections through the year 2045. It was assumed that the service population would be approximately 90% of the city's population, and the growth rate percentage was applied independently to both the city population and the service population. The projected service population and ADF are shown below in Table 5.1 and Figure 5.1 for the WWSA throughout the planning period. Projections through the year 2045 will be used for the purpose of the capital improvement plan (CIP) development. The projections through buildout will be determined based off the land use capacity of the service area and will be used to determine the sizing of proposed wastewater infrastructure.

In addition to the flow calculated based on population growth, a reserve capacity of 10% was included to remain consistent with the reserve capacity projected for the water system. Garver recommends the inclusion of a reserve capacity to mitigate any potential changes to per capita flows as a result of new industrial flows, unanticipated growth, or severe weather events.

Previous wastewater flow projection efforts have focused on buildout flows based on the future WWSA anticipated at the time of their development. The 2001 WWMP predicted that the buildout ADF would be 20.5 MGD and the ADF plus planning capacity would be 21.5 MGD. The 2013 WW Modeling Report buildout projections, which is also referenced in the 2018 WW Modeling Report, predicted that the ADF would be 17.1 MGD and the ADF plus planning capacity would be 18.0 MGD.



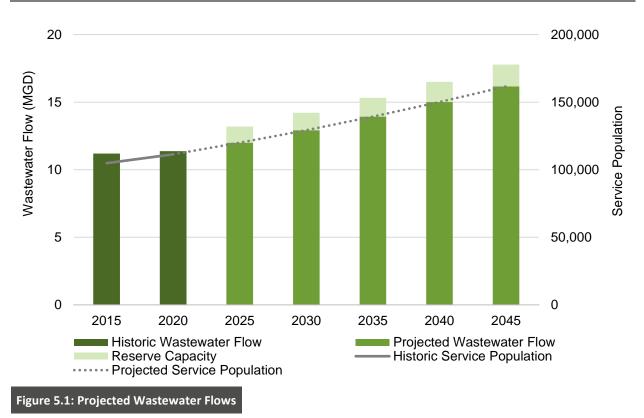


Table 5.1: Projected Wastewater Flows

Year	Service Population	ADF (MGD)	ADF Reserve Capacity (MGD)	ADF Total (MGD)	SFE ¹
2025	119,990	12.00	1.20	13.20	58,532
2030	129,264	12.93	1.29	14.22	63,055
2035	139,254	13.93	1.39	15.32	67,929
2040	150,016	15.00	1.50	16.50	73,178
2045	161,610	16.16	1.62	17.78	78,834
Notes:					

Notes:

¹Based on projected ADF with reserve capacity and value of 205 gpd/SFE discussed in Section 3.4.



6.0 Wastewater System Evaluation Criteria

Design criteria and regulatory requirements from a variety of sources were assembled to develop the evaluation criteria for analysis of the wastewater system. Specifically, documents from the following sources were reviewed:

• Oklahoma Department of Environmental Quality (ODEQ)





- City of Norman 2023 Engineering Design Criteria and Standard Specifications (Norman EDC)
- Water Environment Federation's Manual of Practice (WEF MOP 8)

Table 6.1 summarizes the evaluation criteria that will be used to evaluate the wastewater system's performance and identify potential capital improvement projects. The table also includes NUA system-specific goals/criteria recommended by Garver for evaluating the existing collection system.

Table 6.1: Wastewater System Evaluation Criteria					
Criteria	Limiting Source	Description			
Treatment Plant Design Life	ODEQ	Design sewage treatment plants for an estimated 20-year population projection. Construction may occur in phases.			
Gravity Sewer Sizing	Norman EDC	No public gravity sewer should be less than 8 inches in diameter.			
Gravity Pipe Velocity	ODEQ	Gravity pipes should obtain a velocity of 2 ft/s.			
Minimum Gravity Pipe Slope	Norman EDC	Minimum pipe grade by diameter as presented in the 2023 Norman EDC.			
Gravity Sewer Hydraulic Capacity	Industry Standard	A "d/D" ratio of 0.75 will be used to determine the sizing of future infrastructure. The d/D ratio is defined as the depth of water in the gravity main during peak flow conditions divided by the inside diameter.			
Maximum Surcharge	NUA system performance target	Existing gravity mains should surcharge no more than 1 foot above the crown of pipe.			
Minimum Freeboard	NUA system performance criteria	Existing gravity mains should surcharge to no more than 3 feet below the manhole rim elevation.			
Lift Station Capacity	ODEQ	All lift stations shall have a minimum of two pumping units. With any pump out of service the remaining pump(s) shall be capable of providing the maximum sewage flows of the system.			
Force Main Velocity	ODEQ	Force mains should obtain a velocity of 2 ft/s.			
Force Main Maximum Flow Velocity	Industry Standard	Force mains should not experience a maximum flow velocity of 6 ft/s. (Note: Guideline is not a regulatory requirement)			

6.1 Wastewater Treatment Evaluations and Planning

The assessment of the wastewater treatment system will be conducted in accordance with the Oklahoma Department of Environmental Quality (ODEQ) standards for the design of water pollution control facilities,



City of Norman Area & Infrastructure Master Plan



Wastewater Utility Baseline Development Technical Memorandum DRAFT

alongside the treatment specifications required by the Norman WRF to comply with the facility's Oklahoma Pollutant Discharge Elimination System (OPDES) permit limits. Additionally, the industry-recommended practices outlined in the Water Environment Federation's Manual of Practice (WEF MOP 8) for municipal water reclamation facilities will also be taken into consideration. This assessment of the existing wastewater treatment system and further discussion of the WRF will be detailed in the upcoming Treatment and Reuse TM.

The CIP improvements for the Norman WRF will be designed based on a 20-year planning horizon, extending to the year 2045. These CIP enhancements aim to provide sufficient capacity to manage and treat this average wastewater flow rate. However, the implementation of CIP improvements can adopt a trigger-based approach, meaning they will only be executed once the projected wastewater flows are observed in the future.

If all or a portion of the treated effluent from the existing WRF or a potential greenfield WRF is planned to be discharged to Lake Thunderbird, the findings of the 2022 Indirect Potable Reuse (IPR) Pilot Study together with the Oklahoma Administrative Code § 252:628 (OAC) Requirements for IPR in a Reservoir will be used to determine the scope of improvements required to reach the treatment limits established for IPR.

Regarding capacity expansions, Garver's approach assumes that once the facility reaches 75% of its rated capacity, planning, and design phases for the next phase of capacity expansion must begin. This 75% capacity level acts as the trigger for initiating the planning and design process. Additionally, when the facility hits 90% of its rated capacity, construction to implement the designed improvements must be initiated. Anticipated construction timelines will be evaluated and considered in development of final triggers for recommended projects.

7.0 Future Work

The City's population projections and future land use plan are being developed in parallel with the baseline development for the wastewater system. Once the future land use plan is finalized, Garver will update the wastewater baseline development presented in this TM and move forward with the following future wastewater system evaluations:

- Collection System Modeling and Evaluation
- Treatment and Reuse Evaluation
- Capital Improvement Plan

Each evaluation will be documented in an upcoming TM that will be incorporated in the Wastewater Master Plan Report.





Appendix A: Flow Meter and Rain Gauge Site Sheets



rin			Norman,OK		Site Name		
grou	р	2023 N	orman Temporary Flow Monit	oring	BH-02		
Inspected By		mjaurez	Proj	ect No.	Site Code		
Inspected Date/Time		3/22/2023 9:24 AM	30-:	3984-00	Т		
Syster	n Informa	tion	Area Location	Мар	Area View Picture		
Target Pipe Dia. (in)	43.0		F REAL PROPERTY FRANK	Berger W. F.	NA AND THE A		
Municipality	Norman		-33		A A MARKEN A		
District			6 The	Home Depot 🌳	TALL TO A LONG &		
Assigned Rain Gauge			Sen Ave Su				
Client Manhole #	253006		SW	aller in the			
U/S Connecting MH I.D	253005						
System Characteristics:			P-d R	ohin Gourmet			
Residential - 🔲	Commercial -	Industrial -	Mige	obin Gourmet			
P/S Influence	No		A FAIL A FAIL AND A FAIL AND A	and brewe	T Ni Di-t		
WWTP Influence					Top View Picture		
Locatio	on Informa	ation	McCla Norma	in Bank - S			
Site Address 600-672 3	6th Ave SW						
Site Access	Off-Road		Contraction of the second second	ALC: NON CONTRACT			
Longitude	-97.488800	00	Raiver.	State Latin			
Latitude	35.2048000						
МН Туре	Precast Con			is the company			
Manhole Depth (ft)	13.90		Google J23 Maxar Technologi				
Manhole Width (ft)	4.0		Intagen 992025 Maxar Technologi	es, usda/fpac/ge			
Elevated MH	Yes		Access Notes				
Height Elevated (ft)	1.5						
Structural Integrity	1.5 Safe		Investigation Photo	D	Installation Photo		
				10 Tot 10			
	Informati	on			1 March		
Pipe Height (in)	42.50						
Pipe Width (in)	42.50		A CONTRACTOR OF	A			
Pipe Type	Other		A CONTRACTOR OF				
Pipe Shape	Circular		Contraction of the second	- BARN			
02 20.9	LEL %	0.0					
H2S 0.0	со	0.0					
	llic Inform	ation					
Flow Depth (in) Instant Velocity (fps)	12.00						
Surcharge Evidence (ft)	1.84 13.00		Hydraulic Characteristics	Installati Notes	on		
Silt Type	13.00 None			NUCS			
Silt Depth (in)	0.00		Install Plan Sketch	I	nstall Cross-Section Sketch		
Needs Cleaning	0.00 No						
Backwater	No				Flow Depth		
Flow Path							
Flow Path Drop Inlet	Straight No				 Velocity Sensor 		
Hydraulic Rating	Good				A/V		
	000u			This Meter	Sensor		
	llation No	tes		Pipe			
Location in Pipe (ft)	1.0			Elevated			
Location from Manhole				Pipe			
	Pressure, Ve	elocity, and Ultra		A/V Cloc	k Position: 6:00		
Sensors		Surface			Clock Position: 0:00		
Antenna Surface	Non-Paved			velocity			
Antenna Surface Signal Strength							
Antenna Surface Signal Strength Post Ins	Non-Paved	Notes		Approvals			
Antenna Surface Signal Strength Post Ins Meter Type		Notes	Recommended by FSP	Approvals	Client Approval		
Antenna Surface Signal Strength Post Ins		Notes	Recommended by FSP	Approvals			

rin			Norman,Ol	<	Site Name
grou	р	2023 N	orman Temporary F	low Monitoring	BH-03
Inspected By		mjaurez		Project No.	Site Code
Inspected Date/Time		3/21/2023 7:15 PM		30-3984-00	т
Syster	m Informa	tion	Area	Location Map	Area View Picture
Target Pipe Dia. (in)	22.0		Car Lange Start St		
Municipality	Norman				
District			Contraction into		
Assigned Rain Gauge			Enhabit Ho	me Health	
Client Manhole #	235001		J		
U/S Connecting MH I.D	204039				HARINA CONTRACTOR
System Characteristics:					
Residential -	Commercial -	Industrial -	1 Croo	e S Med Nursing	
P/S Influence	No			e S. Mad Nursing herapy - Norman	
WWTP Influence				nerapy-iterinan	Top View Picture
Locatio	on Informa	ation	- 18 P		
Site Address 4746 W M	lain St		·	the states	
Site Access	Sidewalk		- Aller	Canadian Sho	pres
Longitude	-97.5118000	00		Canadian Sho Mobile Ho	me
Latitude	35.2181000		1 Call	The second second	
МН Туре	Precast Con				
Manhole Depth (ft)	10.00		Google 123 Maxar	Technologies, USDA/F	
Manhole Width (ft)	4.0		Imager 392023 Maxar	Technologies, USDA/F	PAC/GEO
Elevated MH			Access Notes		
	No				
Height Elevated (ft)	C (Investiga	tion Photo	Installation Photo
Structural Integrity	Safe				
Site	Informati	on	ter ter		
Pipe Height (in)	22.00		ALL CONTRACTOR	The second second	
Pipe Width (in)	22.00				
Ріре Туре	Other		Liefe the state		
Pipe Shape	Circular		1		
02 20.9	LEL %	0.0	2	A Share and the second second	
H2S 0.0	со	0.0	Remove Free	N. Langes	
Hydrau	lic Inform	ation	and the second s	1	
Flow Depth (in)	4.00		1		
Instant Velocity (fps)	2.02		Hydraulic	10 y 310	Installation
Surcharge Evidence (ft)	5.00		Characteristics		Notes
Silt Type	None				
Silt Depth (in)			Install Pl	an Sketch	Install Cross-Section Sketch
	0.00				
	0.00 No				
Needs Cleaning	No			Δ	Flow
Needs Cleaning Backwater	No No		Mh	A	Depth
Needs Cleaning Backwater Flow Path	No No Straight		t.		Depth
Needs Cleaning Backwater Flow Path Drop Inlet	No No Straight No		t de la companya de	A N	Depth
Needs Cleaning Backwater Flow Path	No No Straight		<u>L</u>	N N This Meter	Depth Velocity Sensor
Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating	No No Straight No	tes		N <p< td=""><td>Depth Velocity Sensor A/V</td></p<>	Depth Velocity Sensor A/V
Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating	No No Straight No Good	tes		Pipe	Depth Velocity Sensor A/V
Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating Insta	No No Straight No Good	tes		Pipe	Depth Velocity Sensor A/V
Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating Insta Location in Pipe (ft) Location from Manhole	No Straight No Good Ilation No	tes elocity, and Ultra		Pipe	Depth Velocity Sensor A/V Sensor
Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating Insta Location in Pipe (ft)	No Straight No Good Ilation No	elocity, and Ultra		Pipe	A/V Clock Position: 6:00
Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating Insta Location in Pipe (ft) Location from Manhole Sensors Antenna Surface	No Straight No Good Ilation No 1.0 Pressure, Ve	elocity, and Ultra		Pipe	Depth Velocity Sensor A/V Sensor
Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating Insta Location in Pipe (ft) Location from Manhole Sensors Antenna Surface Signal Strength	No Straight No Good Ilation No 1.0 Pressure, Ve	elocity, and Ultra Surface		Pipe Elevated Pipe	A/V Clock Position: 6:00
Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating Insta Location in Pipe (ft) Location from Manhole Sensors Antenna Surface Signal Strength	No Straight No Good Ilation No 1.0 Pressure, Ve Non-Paved	elocity, and Ultra Surface	Recomme	Pipe Elevated Pipe	A/V Clock Position: 6:00 Velocity Clock Position: 0:00
Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating Insta Location in Pipe (ft) Location from Manhole Sensors Antenna Surface Signal Strength Post Inst	No Straight No Good Ilation No 1.0 Pressure, Ve Non-Paved	elocity, and Ultra Surface	Recomme	Pipe Elevated Pipe	A/V Clock Position: 6:00 Velocity Clock Position: 0:00

rin			Norman,O	К	Site Name
grou	р	2023 N	orman Temporary I	-low Monitoring	BH-04
Inspected By		mjaurez	Project No.		Site Code
Inspected Date/Time		3/21/2023 6:41 PM		30-3984-00	т
Syste	m Informa	tion	Are	a Location Map	Area View Picture
Site Address 3837 Ced Site Access Longitude Latitude MH Type Manhole Depth (ft) Manhole Width (ft)	No On Inform Off-Road -97.498200 35.2218000 Precast Cor 25.00 4.0	ation	W Main St Fr	rd's Asylum and Games aising Cane's icken Fingers edEx Office Print & Ship Center r Technologies. USDA/F	t Union Top View Picture
Elevated MH Height Elevated (ft)	Yes 0.0				
Structural Integrity	Safe		Investig	ation Photo	Installation Photo
Pipe Height (in) Pipe Width (in) Pipe Type Pipe Shape O2 20.9 H2S 0.0 Hydrau	Informati 23.00 23.00 Vitrified Cla Circular LEL % CO Vilic Inform	y 0.0 0.0			
Flow Depth (in)	10.00				
Instant Velocity (fps) Surcharge Evidence (ft) Silt Type Silt Depth (in)	1.78 13.00 None 0.00		Hydraulic Characteristics Install F	lan Sketch	Installation Notes Install Cross-Section Sketch
Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating	No No Slight Bend No Fair			N N N N N N N N	Flow Depth Velocity Sensor A/V Sensor
	Illation No	iles in the second s		Pipe	
Location in Pipe (ft) Location from Manhole Sensors Antenna Surface Signal Strength	1.0 Pressure, V Non-Paved	elocity, and Ultra Surface		? Elevated ? Pipe	A/V Clock Position: 6:00 Velocity Clock Position: 0:00
Post In	stallation	Notes		Арр	provals
Meter Type Telemetry Type Installation Date	- 4/27/2023		Recomm	ended by FSP	Client Approval

rip			Norman, C	ОК	Site Name	e
J grou	р	2023 N	orman Temporary	Flow Monitoring	BH-05	
Inspected By mjaurez			Project No.	Site Code	•	
Inspected Date/Time 3/21/2023 6:12 PM			30-3984-00	т		
System Information			Area Location Map		Area View I	Picture
Target Pipe Dia. (in)	24.0		Brammer Denta			
Municipality	Norman		- Norma		A LANK AND	AN WAR
District					C/Rear - March	A Val
Assigned Rain Gauge	450406			A A A A A A A A A A A A A A A A A A A		Bull of the Party
Client Manhole #	158106					
U/S Connecting MH I.D	158105					门的建设。
System Characteristics:	Commoraial			AMC Robinsc	n e	·Harris
Residential -	Commercial -	Industrial -		M Crossing		
P/S Influence	No			A	Top View F	Picture
WWTP Influence			CVS			
Locatio	on Informa	ation		S Armstrong Bar	ik	
Site Address 1219 36th	Ave NW					
Site Access	Off-Road		Volcano Sushi	In Anna	Store It.	
Longitude	-97.4933000	00	Volcano Sushi Bar & Hibachi	Phillips 66	CALL REAL	
Latitude	35.2342000	0				the set
МН Туре	Precast Con	crete				in the
Manhole Depth (ft)	15.50		e Google, U.S. Ge	ological Survey, USDA/F	PAC/GEO	
Manhole Width (ft)	4.0		Access Notes			
Elevated MH	Yes		ALLESS NOTES			
Height Elevated (ft)	0.0		Invoctio	ation Photo	Installation Pho	to
Structural Integrity	Safe		investig		Installation Pho	10
Site	Informatio	on	1100	Ree .		
Pipe Height (in)	23.00				1 martin	the party
Pipe Width (in)	23.00		Mark Los		R CONTRACTOR	ALL ST TH
Ріре Туре	Polyvinyl Ch	loride	1000 A.C. 2		14 · 145-	S. C. C. L.
Pipe Shape	Circular					Martin I
02 20.9	LEL %	0.0				
H2S 0.0	со	0.0				200 I
Hydrau	lic Inform	ation		1	S W.	
Flow Depth (in)	7.50		X		Carlos and	
Instant Velocity (fps)	2.24		Hydraulic		Installation	
Surcharge Evidence (ft)	10.00		Characteristics		Notes	
Silt Type	None		line ter ll	Dian Skatah	Install Cross Costing	Skotch
Silt Depth (in)	0.00		Install	Plan Sketch	Install Cross-Section	Sketch
Needs Cleaning	No			*		Flow
-	No No			\wedge		Flow Depth
Needs Cleaning Backwater Flow Path						
Backwater	No		2	N		Depth Velocity Sensor
Backwater Flow Path Drop Inlet	No Slight Bend			N		Depth Velocity Sensor A/V
Backwater Flow Path Drop Inlet Hydraulic Rating	No Slight Bend No	tes		→ N N N N N N N N N N N N N N		Depth Velocity Sensor
Backwater Flow Path Drop Inlet Hydraulic Rating	No Slight Bend No Good	tes		K This Meter Pipe Filevated		Depth Velocity Sensor A/V
Backwater Flow Path Drop Inlet Hydraulic Rating Insta	No Slight Bend No Good	tes		Pipe		Depth Velocity Sensor A/V
Backwater Flow Path Drop Inlet Hydraulic Rating Insta Location in Pipe (ft)	No Slight Bend No Good Ilation No 1.0	tes Plocity, and Ultra		Pipe		Depth Velocity Sensor A/V
Backwater Flow Path Drop Inlet Hydraulic Rating Insta Location in Pipe (ft) Location from Manhole	No Slight Bend No Good Ilation No 1.0	elocity, and Ultra		Pipe	A/V Clock Position: 6:00	Depth Velocity Sensor A/V
Backwater Flow Path Drop Inlet Hydraulic Rating Insta Location in Pipe (ft) Location from Manhole Sensors	No Slight Bend No Good Ilation No 1.0 Pressure, Ve	elocity, and Ultra		Pipe	A/V Clock Position: 6:00 Velocity Clock Position: 0:00	Depth Velocity Sensor A/V
Backwater Flow Path Drop Inlet Hydraulic Rating Insta Location in Pipe (ft) Location from Manhole Sensors Antenna Surface Signal Strength	No Slight Bend No Good Ilation No 1.0 Pressure, Ve	elocity, and Ultra Surface		Pipe		Depth Velocity Sensor A/V
Backwater Flow Path Drop Inlet Hydraulic Rating Insta Location in Pipe (ft) Location from Manhole Sensors Antenna Surface Signal Strength	No Slight Bend No Good Ilation No 1.0 Pressure, Ve Non-Paved S	elocity, and Ultra Surface	Recomm	Pipe	Velocity Clock Position: 0:00	Depth Velocity Sensor A/V
Backwater Flow Path Drop Inlet Hydraulic Rating Insta Location in Pipe (ft) Location from Manhole Sensors Antenna Surface Signal Strength Post Inst	No Slight Bend No Good Ilation No 1.0 Pressure, Ve Non-Paved S	elocity, and Ultra Surface	Recomm	Pipe Elevated Pipe	Velocity Clock Position: 0:00	Depth Velocity Sensor A/V

rin		Norman,	ЭК	Site Name	
2023 N		orman Temporary	Flow Monitoring	BH-06	
Inspected By mjaurez		Project No.		Site Code	
Inspected Date/Time		3/21/2023 5:49 PM		30-3984-00	Т
Systen	System Information			ea Location Map	Area View Picture
Target Pipe Dia. (in)	18.0		Del Assessed	A 10000 1000 1000	THEFT
Municipality	Norman			Walmart	
District			Neighborhoo	d Market 💙	
Assigned Rain Gauge					
Client Manhole #	143107		AND PRAIRIES		ITAL MARKER
U/S Connecting MH I.D	143106		Olt		ar Wash
System Characteristics:			Otolaryngo	homa	
Residential -	Commercial -	Industrial -	otolarynyd	M	
P/S Influence	No			Carlo Carrow Caller	
WWTP Influence					Top View Picture
Locatio	n Informa	ation			
Site Address 2252 36th	Ave NW		A BURNER		
Site Address 2252 36(1)	Off-Road				
Longitude	-97.494600	Ω		36t	
Latitude	35.2447000		-6-X		
				We we	AKIAN AND AND AND AND AND AND AND AND AND A
MH Type	Precast Con	crete	Google	Z	Inschiller .
Manhole Depth (ft)	18.80		ecanology, U.S. G	eological Survey, USDA/Fl	PAC/GEO
Manhole Width (ft)	4.0		Access Notes		
Elevated MH	Yes				
Height Elevated (ft)	1.5		Investi	gation Photo	Installation Photo
Structural Integrity	Safe			5	
Site	Informati	on	y and		
Pipe Height (in)	17.50			Same and the second	
Pipe Width (in)	17.50				21/2
Ріре Туре	Polyvinyl Ch	loride			
Pipe Shape	Circular				
02 20.9	LEL %	0.0			
H2S 0.0	со	0.0			
Hydrau	lic Inform	ation			
Flow Depth (in)	3.50			13	
Instant Velocity (fps)	2.31		Hydraulic		Installation
Surcharge Evidence (ft)	8.00		Characteristics		Notes
Silt Type	None				
Silt Depth (in)	0.00		Install	Plan Sketch	Install Cross-Section Sketch
Needs Cleaning	No				
Backwater	No		_		Flow Depth
Flow Path	Straight				U Velocity
Drop Inlet	No				Sensor
Hydraulic Rating	Good				■ A/V
				This Meter	Sensor
	Installation Notes			Pipe	
Location in Pipe (ft)	1.0		$ $ \square	Elevated	
Location from Manhole				Pipe	
	Pressure Ve	elocity, and Ultra			A/V Clock Position: 6:00
Sensors					
Antenna Surface	Non-Paved	Surface			Velocity Clock Position: 0.00
		Surface			Velocity Clock Position: 0:00
Antenna Surface Signal Strength Post Ins					rovals
Antenna Surface Signal Strength	Non-Paved		Recom	Appr mended by FSP	
Antenna Surface Signal Strength Post Ins	Non-Paved		Recom		rovals

rin			Norman,	ЭК	Site Name
2023 N		orman Temporary	Flow Monitoring	BH-07	
nspected By zsanders			Project No.		Site Code
Inspected Date/Time		4/4/2023 3:18 PM		30-3984-00	т
Syster	System Information			ea Location Map	Area View Picture
	Norman 113038 113036 Commercial No On Informa rough Way Off-Road -97.485900 35.2487000 Precast Con 12.30 4.0	ation		astic cademy	Top View Picture
Elevated MH	4.0 No		Access Notes		
Height Elevated (ft) Structural Integrity	Safe		Investig	gation Photo	Installation Photo
	Informati	on			
Pipe Height (in) Pipe Width (in) Pipe Type Pipe Shape O2 20.9 H2S 0.0 Hydrau	16.50 16.50 Polyvinyl Cł Circular LEL % CO	0.0 0.0	and a second		
Flow Depth (in)	6.00				
Instant Velocity (fps) Surcharge Evidence (ft) Silt Type	0.40 1.00 Fine		Hydraulic Characteristics		Installation Notes Install Cross-Section Sketch
Silt Depth (in) Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating Insta Location in Pipe (ft) Location from Manhole Sensors	2.00 No Straight No Good Ilation No 1.0 Pressure, Vi	tes elocity, and Ultra		Ketti	Flow Depth Silt Depth Velocity Sensor A/V Sensor
Antenna Surface	Non-Paved		UH UH		A/V Clock Position: 6:00
Signal Strength					Velocity Clock Position: 0:00
	stallation	Notes		Appro	
Meter Type Telemetry Type Installation Date	- 4/25/2023		Recom	nended by FSP	Client Approval

rip			Norman,0	ЭК	Site Name	
J group			Norman Utilities	Authority	BP-17	
Inspected By r_bass				Project No.	Site Code	
Inspected Date/Time		12/10/2014 12:48 PM	1	30-3884-00	Т	
System	n Informa	tion	Ar	ea Location Map	Area View Picture	
	33.5 Norman Norman RG-04 329011 329012 Commercial - No No No on Informa stellation St Off-Road -97.432446(35.1810680 Poured Con	ation			Image: orgen set of the set of th	
Manhole Depth (ft) Manhole Width (ft) Elevated MH Height Elevated (ft) Structural Integrity	17.60 4.0 Yes 0.3 Safe		Access Notes	ogram, USDA Farm Servi gation Photo	ice Agency	
Site	Informati	on	Chine the second		The second second	
Pipe Height (in) Pipe Width (in) Pipe Type Pipe Shape O2 H2S Hydrau	32.94 33.98 Concrete Elliptical LEL % CO	ation				
Flow Depth (in) Instant Velocity (fps)	20.00 2.74					
Surcharge Evidence (ft) Silt Type Silt Depth (in) Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating	None 0.00 No Straight No Good 1.0 Upstream Non-Paved		Hydraulic Characteristics Install	Plan Sketch	Installation Notes Install Cross-Section Sketch Pressure Sensor A/V Sensor Ultra Sensor Pressure Clock Position: 6:00	
	tallation	Notes		Арр	rovals	
Meter Type Telemetry Type Installation Date	1/8/2015		Recom	mended by FSP Yes	Client Approval Yes	

rin			Norman,O	к	S	Site Name	
group		Norman Utilities A	uthority		BP-18		
Inspected By RJNGROUP\Kgarrett Inspected Date/Time 6/17/2014 5:23 PM			Project No.		5	Site Code	
				30-3884-00		Т	
System Information			Are	a Location Map	Are	Area View Picture	
Target Pipe Dia. (in)	36.0			1 P9 50		86.6	
Municipality	Norman		Contraction in the second	a la second			
District	Norman		Constellation S	1			
Assigned Rain Gauge	RG-04		Provident Contraction		Control		
Client Manhole #	329010			A A A	20		
U/S Connecting MH I.D	329002			1			
System Characteristics:				Semiser at	Charles		
Residential - 🔽	Commercial -	Industrial -	The C	hick ^M aw Nation	Annual Contraction of the		
P/S Influence	No		THE CI				
WWTP Influence	No		No. in and	A to a	То	p View Picture	
Locati	on Informat	ion	Merrimac St	and the second second			
	stellation St						
			the state	Standard Strange	to the day		
Site Access	Off-Road		the second	all			
Longitude	-97.43236400		and the second of				
Latitude	35.18122300			9			
MH Type	Precast Concr	ete	Googla	And the state of t			
Manhole Depth (ft)	16.50		xagoogleagery Pro	gram, USDA Farm Serv	lice Agency V		
Manhole Width (ft)	4.0		Access Notes				
Elevated MH	No						
Height Elevated (ft)			Investig	ation Photo	Installa	tion Photo	
Structural Integrity	Safe		investige		mistalia		
Site	Informatio	n	1:522		1:52		
Pipe Height (in)	36.88		1080		1.10000		
Pipe Width (in)	36.88				A C HARGE		
Ріре Туре	Vitrified Clay			and the second second		and the second second	
Pipe Shape	Circular				Alt the loss		
02	LEL %						
H2S	со			A DECEMBER OF		and the second	
Hvdrau	ulic Informa	tion					
Flow Depth (in)	19.00						
Instant Velocity (fps)	0.60		Hydraulic		Installation		
Surcharge Evidence (ft)			Hydraulic Characteristics		Notes		
Silt Type	None						
Silt Depth (in)	0.00		Install P	Plan Sketch	Install Cross	-Section Sketch	
Needs Cleaning	No						
Backwater	No		1	$\mathbf{\Lambda}$		Flow Depth	
Flow Path	Straight		I M				
Drop Inlet	No			N	/	A/V Sensor	
Hydraulic Rating	Good					Ultra	
	9000			🚫 This Meter		Sensor	
Installation Notes		25		Pipe			
Location in Pipe (ft)	1.0			Elevated			
Location from Manhole	Upstream			¹ Pipe		P'	
Sensors					A/V Clock Position: 5:00		
Antenna Surface	Non-Paved Su	rface					
Signal Strength	100		1				
Post In	stallation N	otes		Apr	provals		
POSLIII							
			Bacarra	anded by ESP	C!:	t Annroval	
Meter Type				ended by FSP	Clien	t Approval	
	5/7/2015			ended by FSP Yes	Clien	t Approval Yes	

Target Pipe Dia. (in) 3 Municipality N District Assigned Rain Gauge Client Manhole # 2	2023 zsanders 3/21/2023 4:04 PM Information 80.0 Norman		Project No. 30-3984-00 Rea Location Map	BP-19 Site Code T Area View Picture
Inspected Date/Time System I Target Pipe Dia. (in) 3 Municipality N District Assigned Rain Gauge Client Manhole # 2 U/S Connecting MH I.D 2	3/21/2023 4:04 PM Information 80.0 Norman	Ar The University of Oklahoma	30-3984-00	Т
System I Target Pipe Dia. (in) 3 Municipality N District Assigned Rain Gauge Client Manhole # 2 U/S Connecting MH I.D 2	Information 80.0 Norman	Ar The University of Oklahoma		
Target Pipe Dia. (in) 3 Municipality N District 3 Assigned Rain Gauge 2 Client Manhole # 2 U/S Connecting MH I.D 2	30.0 Norman 286085	The University of Oklahoma	ea Location Map	Area View Picture
Municipality N District Assigned Rain Gauge Client Manhole # 2 U/S Connecting MH I.D 2	Norman 286085			
	286084	Fielde		
0	Commercial - 📋 Industrial - 🚺	Madiso	Edge At Norman • n tary School	Top View Picture
Location	Information		Dank's Wellr	
Longitude	t sidewalk 97.43220000 95.19860000 Precast Concrete 12.50 1.0	Jimmie At OU Golf Google 23 Max Access Notes	Empor Ustin Club kar Technologies, USDA/FP	
Height Elevated (ft)		Investi	gation Photo	Installation Photo
Structural Integrity S	Safe	Investig	gation Photo	installation Photo
Site In	formation			
Pipe Width (in) 2 Pipe Type P Pipe Shape C O2 20.9 L H2S 0.0 C Hydraulic	29.50 29.50 Polyvinyl Chloride Circular EL % 0.0 CO 0.0 Cinformation			
,	3.40 1.30	Hydraulic		nstallation
Silt Type N Silt Depth (in) 0 Needs Cleaning N	1.00 None 0.00 No	Characteristics		Install Cross-Section Sketch
Flow Path S Drop Inlet N Hydraulic Rating G	No Sood		N N This Meter	Depth Velocity Sensor A/V Sensor
Installation Notes			Pipe	
Location from Manhole Sensors P	l.0 Pressure, Velocity, and Ultra Paved Surface		? Elevated Pipe	A/V Clock Position: 6:00 Velocity Clock Position: 0:00
Post Insta	llation Notes		Appro	ovals
Meter Type - Telemetry Type Installation Date 4	1/26/2023	Recom	mended by FSP	Client Approval

rin			Norman,	ЭК		Site Name
group)	2023 N	orman Temporary	Flow Monitoring		BP-20
Inspected By		zsanders		Project No.		Site Code
Inspected Date/Time		3/21/2023 4:25 PM		30-3984-00		т
Systen	n Informat	tion	Ar	ea Location Map		Area View Picture
Target Pipe Dia. (in)	18.0		Magic Noo	dle	a water and	
Municipality	Norman				and the second sec	
District				Braum's Ice C	Cream	
Assigned Rain Gauge				Braum's Ice C & Dairy Store		
Client Manhole #	286013				Section 1	ár
U/S Connecting MH I.D	286012		- AL THE T		a state	
System Characteristics:			NULL TRE- ISANS			
Residential - 🔲	Commercial -	Industrial -	14 14 14 14 14 14 14 14 14 14 14 14 14 1	M		
P/S Influence	No		1 States	A ALTIN CON	安哥国家	Top View Picture
WWTP Influence			1 1 2 3 2 5 1			TOP VIEW PICture
Locatio	n Informa	ition				R Company
Site Address 2100 Classe	en Blvd		The Edge At	Norman		
Site Access	Other		ES CONTRACTOR (S		X	
Longitude	-97.4302000	0		STA VENEL		MUT I CONCERNING
Latitude	35.20170000					14-20 100 1000
МН Туре	Brick			1°C III		
Manhole Depth (ft)	6.20		Google J23 Max	ar Technologies, USDA/F	PACICEO	
Manhole Width (ft)	4.0		Timager (092020 IVIA)	ar recurrologies, USDA/F	PAC/GEU	
Elevated MH	No		Access Notes	Parking lot of carwash		
Height Elevated (ft)	NO					
Structural Integrity	Safe		Investig	gation Photo		Installation Photo
	3416		17 B-0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0			
Site I	Informatio	on			2. 19	
Pipe Height (in)	18.50		1 States		T- Wall	
Pipe Width (in)	18.50				10 10	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Ріре Туре	Vitrified Clay	/	· · · · · · · · · · · · · · · · · · ·		18 183	
Pipe Shape	Circular		THE REAL PROPERTY OF	~		
02 20.9	LEL %	0.0	1 4 1 1 1 V		100	
H2S 0.0	со	0.0	ALC: NO AND		100	
Hydrau	lic Informa	ation	AN AR DO			
Flow Depth (in)	3.00		1	and the second s		
Instant Velocity (fps)	0.75		Hydraulic		Installation	
Surcharge Evidence (ft)	1.00		Characteristics		Notes	
Silt Type	None					
Silt Depth (in)	0.00		Install	Plan Sketch	Inst	all Cross-Section Sketch
Needs Cleaning	No					rt
Backwater	No			$\mathbf{\Lambda}$		Flow Depth
Flow Path	Straight		_	N		
Drop Inlet	No			IN	1/	 Velocity Sensor
Hydraulic Rating	Good					A/V
	3000			This Meter	1	Sensor
				Pipe		/
Instal	lation Not	tes				
Instal	1.0	tes		Elevated		
		tes		Elevated Pipe		
Location in Pipe (ft)	1.0	locity, and Ultra			A/V Clock Pos	ition: 6:00
Location in Pipe (ft) Location from Manhole	1.0	locity, and Ultra			A/V Clock Pos	
Location in Pipe (ft) Location from Manhole Sensors	1.0 Pressure, Ve	locity, and Ultra				ition: 6:00 : Position: 0:00
Location in Pipe (ft) Location from Manhole Sensors Antenna Surface Signal Strength	1.0 Pressure, Ve	locity, and Ultra		¹ Pipe		
Location in Pipe (ft) Location from Manhole Sensors Antenna Surface Signal Strength	1.0 Pressure, Ve Paved Surfac	locity, and Ultra	Recom	¹ Pipe	Velocity Clock	
Location in Pipe (ft) Location from Manhole Sensors Antenna Surface Signal Strength Post Ins	1.0 Pressure, Ve Paved Surfac	locity, and Ultra	Recom	App	Velocity Clock	Position: 0:00

rin			Norman,	ОК	Site Name
2023 No			orman Temporary	Flow Monitoring	BP-21
Inspected By	Inspected By zsanders			Project No.	Site Code
nspected Date/Time 3/21/2023 4:44 PM			30-3984-00	т	
Syste	m Informa	tion	Ar	ea Location Map	Area View Picture
Target Pipe Dia. (in)	30.0				
Municipality	Norman			and the second second	
District			TENE A VER		
Assigned Rain Gauge					
Client Manhole #	260116		OUDuckP	ond	
U/S Connecting MH I.D	260117				
System Characteristics:			and the set of the		
Residential -	Commercial	- 🔲 Industrial - 🔲			
P/S Influence	No		Brandt Park	Magic Noo	
WWTP Influence					Top View Picture
L a anti		-+:	E Lindsey St		
Locatio	on Inform	ation	Generoy et		TETAL ASSA
Site Address Suite 115	1915		STATISTICS STATISTICS	Braum's Ice Creat & Dairy Stor	
Site Access	Off-Road			& Dairy Stor	e
Longitude	-97.432100	00		A CALL	Chille Internet
Latitude	35.2048000	00			
МН Туре	Precast Cor	crete			CANES AND A
Manhole Depth (ft)	10.30		I Google J23 Max	ar Technologies, USDA/F	PAC/GEO
Manhole Width (ft)	4.0				
Elevated MH	No		Access Notes		
Height Elevated (ft)				nation Dhoto	Installation Photo
Structural Integrity	Safe		Investig	gation Photo	
Site	Informati	on			PRI ARE STON
Pipe Height (in)	29.75		C. 200 Martin	and the second second	
Pipe Width (in)	28.75		Part Harden	A CARE AND	
Pipe Type	Concrete		Cont provide		
Pipe Shape	Circular		AND ADDRESS		
02 20.9	LEL %	0.0			
H2S 0.0	со	0.0			
Hydrau	lic Inform	ation	And the second s		
Flow Depth (in)	1.00		Constant and a state		
Instant Velocity (fps)	1.50		Hydraulie	22.63	Installation
Surcharge Evidence (ft)	1.00		Hydraulic Characteristics		Installation Notes
Silt Type	None				
Silt Depth (in)	0.00		Install	Plan Sketch	Install Cross-Section Sketch
Needs Cleaning	0.00 No				
Backwater	No			$\mathbf{\Lambda}$	Flow Depth
Flow Path	Straight			N	
Drop Inlet	No				Velocity Sensor
Hydraulic Rating	Good			W.	■ A/V
				This Meter	Sensor
	Ilation No	tes		Pipe	
Location in Pipe (ft)	1.0		$ $ $\langle , \gamma \rangle$	Elevated	
Location from Manhole	_			Pipe	
Sensors		elocity, and Ultra			A/V Clock Position: 6:00
Antenna Surface	Non-Paved	Surface			Velocity Clock Position: 0:00
Signal Strength					
Post In	stallation	Notes		Арр	rovals
Meter Type	-		Recom	mended by FSP	Client Approval
Meter Type Telemetry Type	-		Recom	mended by FSP	Client Approval

rin			Norman,	ОК		Site Name	
group)	2023 N	orman Temporary	Flow Monitoring	itoring BP-22		
Inspected By		zsanders		Project No.		Site Code	
Inspected Date/Time		3/22/2023 9:23 AM		30-3984-00		Т	
System	n Informa	tion	Ar	ea Location Map	A	rea View Picture	
Target Pipe Dia. (in)	18.0		Norman				
Municipality	Norman		Norman				
District			The last of the second	ORIGINAL			
Assigned Rain Gauge Client Manhole #	243054			OWNSITE		ANDA	
U/S Connecting MH I.D	243034		Тас	queria San Tadeo		The second second	
System Characteristics:	212007					A states	
Residential -	Commercial -	Industrial -					
P/S Influence	No						
WWTP Influence	NO			Alameta St	T	op View Picture	
www.phimdence					·//	CONTRACTOR OF THE OWNER.	
Locatio	n Informa	ation					
Site Address 500 E Alam						Company and	
Site Access	Sidewalk		A REAL	Lincoln		AL SLOW	
ongitude	-97.4339000	00		Elementary School			
atitude	35.2182000	0					
ИН Туре	Precast Con	crete			N. C. L.		
Manhole Depth (ft)	14.70		IGoogle J23 Max	ar Technologies, USDA/F	PAC/GEO		
/lanhole Width (ft)	4.0		Access Notes				
levated MH	No						
Height Elevated (ft)			Investi	gation Photo	Install	ation Photo	
Structural Integrity	Safe		investi	Bation i noto	mstan		
Site I	nformati	on		11		-	
Pipe Height (in)	16.50		1			E	
Pipe Width (in)	17.00		Silver and State	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
Ріре Туре	Polyvinyl Ch	loride	and the second second				
Pipe Shape	Circular		Constant and				
02 20.9	LEL %	0.0					
H2S 0.0	со	0.0	- Aller				
Hydraul	ic Inform	ation	all a second sec		1912 .		
low Depth (in)	4.80					ten - Alle	
nstant Velocity (fps)	0.75		Hydraulic		Installation		
urcharge Evidence (ft)	1.00		Characteristics		Notes		
ilt Type	None		Install	Plan Sketch	Install Cros	s-Section Sketch	
ilt Depth (in)	0.00		Install	Han Sketten	install ClOS	5 Section Sketch	
leeds Cleaning	No			Δ		Flow	
Backwater	No		Jh			Depth	
low Path	Straight			Ń N		Velocity	
Drop Inlet	No				1/	Sensor	
lydraulic Rating	Good			🚫 This Meter		A/V Sensor	
Instal	lation No	tes		Pipe			
ocation in Pipe (ft)	1.0			Elevated			
ocation from Manhole				Pipe			
Sensors	Pressure, Ve	elocity, and Ultra		V	A/V Clock Position: 6:00	1	
Antenna Surface	Non-Paved	Surface					
ignal Strength					Velocity Clock Position:	0:00	
Post Ins	tallation I	Notes		Арр	rovals		
Neter Type	-		Recom	mended by FSP	Clie	nt Approval	
			1				
Telemetry Type							

rin			Norman,0	ЭК	Site Name
J group)	2023 No	orman Temporary	Flow Monitoring	BP-23
Inspected By		zsanders		Project No.	Site Code
Inspected Date/Time		3/21/2023 6:01 PM		30-3984-00	т
System	n Informa	tion	Ar	ea Location Map	Area View Picture
Target Pipe Dia. (in) Municipality District Assigned Rain Gauge Client Manhole # U/S Connecting MH I.D System Characteristics: Residential - P/S Influence WWTP Influence WWTP Influence Site Address Site Address Site Address Longitude Latitude MH Type Manhole Depth (ft)	24.0 Norman 213051 213035 Commercial - No n Informa eda St Sidewalk -97.4308000 35.2186000 Poured Con 12.10	ation	E Alameda St Lincoln Elementary	entral Ok omm y-Health Panda Ga School ar Technologies, USDA/F	
Manhole Width (ft) Elevated MH Height Elevated (ft) Structural Integrity	4.0 No Safe		Access Notes	gation Photo	Installation Photo
Site I	nformati	on	1 100		
Pipe Height (in) Pipe Width (in) Pipe Type Pipe Shape O2 20.9 H2S 0.0 Hydrau	23.50 25.00 Concrete Circular LEL % CO	0.0 0.0 ation			
Flow Depth (in)	8.40		, <i>1</i> 0	18	
Instant Velocity (fps) Surcharge Evidence (ft) Silt Type Silt Depth (in) Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating Instal	2.40 1.00 None 0.00 No Straight No Good	tes	Hydraulic Characteristics Install	Plan Sketch	Installation Notes Install Cross-Section Sketch Depth Velocity Sensor A/V Sensor
Location in Pipe (ft) Location from Manhole Sensors Antenna Surface Signal Strength	1.0 Pressure, Ve Non-Paved	elocity, and Ultra Surface		Elevated Pipe	A/V Clock Position: 6:00 Velocity Clock Position: 0:00
Post Ins	tallation	Notes		Арр	rovals
Meter Type Telemetry Type Installation Date	- 4/26/2023		Recom	nended by FSP	Client Approval

rin			Norman,	ЭК	Site Name
group)	2023 N	orman Temporary	Flow Monitoring	BP-24
Inspected By		zsanders		Project No.	Site Code
Inspected Date/Time		3/21/2023 3:35 PM		30-3984-00	
Systen	n Informa	tion	Ar	ea Location Map	Area View Picture
Target Pipe Dia. (in)	19.0		1 Contraction	· · ··································	
Municipality	Norman		2 Jane -	limmin Austin	
District				Jimmie Austin OU Golf Club	
Assigned Rain Gauge				OU GUII CIUD	
Client Manhole #	297022				
U/S Connecting MH I.D	297099		- 100/100		
System Characteristics:					
Residential - 🔲	Commercial -	Industrial -	1 Anno 1) M	
P/S Influence	No		- to Ball game		Ton View Disture
WWTP Influence			AP Jan "a T.P. sons -	R. 8 1 1 1 6 1 1	Top View Picture
Locatio	n Informa	ation	Police De	of Oklahoma	
Site Address 720 E Cons	titution St		The Plant of 1		
Site Access	Off-Road			Emerald Green	
Longitude	-97.430600	00		Apartments	CONTRACTOR AND
Latitude	35.1913000			17 1 2 2 1 - 1 ·	
МН Туре	Brick			and the office of the	
Manhole Depth (ft)	17.60		Google J23 Max	ar Technologies, USDA/F	BACKED A G
Manhole Width (ft)	4.0		Intager 92023 Max	al leciliologies, USDAI	FAC/GEO
Elevated MH	Yes		Access Notes	Need 9 foot tripod	
Height Elevated (ft)	3.0				
Structural Integrity	Safe		Investi	gation Photo	Installation Photo
	nformati	on		Contraction of the second	
Pipe Height (in)	19.00				
Pipe Width (in)	18.50		and the second		
Ріре Туре	Lined		E. M. 8778		
Pipe Shape	Circular				MARINA MARINA - M
O2 20.9	LEL %	0.0			
H2S 0.0	со	0.0	Section 1		
Hydrau	lic Inform	ation			The second second
Flow Depth (in)	3.60			A TANK	
Instant Velocity (fps)	2.10		Hydraulic		Installation
Surcharge Evidence (ft)	1.00		Characteristics		Notes
Silt Type	None		1	Plan Sketch	
Silt Depth (in)	0.00		Install	Fian Sketch	Install Cross-Section Sketch
Needs Cleaning	No			*	Flow
Backwater	No				Depth
Flow Path	Straight			N	u Velocit
Drop Inlet	No				Sensor
Hydraulic Rating	Good			Ø	A/V Sensor
Instal	lation No	tes		This Meter	
Location in Pipe (ft)	1.0			Pipe	
Location from Manhole	1.0			Elevated Pipe	
Sensors	Pressure V	elocity, and Ultra		·F -	
Antenna Surface	Non-Paved				A/V Clock Position: 6:00
Antenna Junace	Non-raveu				Velocity Clock Position: 0:00
Signal Strength					1
Signal Strength	tallation	Notes		A	rovals
Post Ins	tallation	Notes			rovals
Post Ins	tallation	Notes	Recom	App mended by FSP	rovals Client Approval
Post Ins	tallation	Notes	Recom		

rin			Norman,	ОК	Site Name	
grou	0		Norman Utilities	Authority	BP-25	
Inspected By		r_bass		Project No.	Site Code	
Inspected Date/Time		1/7/2015 10:38 AM		30-3884-00	т	
Syster	n Informa	tion	Ar	ea Location Map	Area View Picture	2
Target Pipe Dia. (in)	36.0			Jniversity of Oklahor	ma	State of the second
Municipality	Norman					
District	Norman		2	and the structure and	10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	and for
Assigned Rain Gauge	RG-04		Architects	In Partnership	The second second	
Client Manhole #	330006					The second
U/S Connecting MH I.D	330030					
System Characteristics:	Commencial					
Residential - 🗹	Commercial -	🗹 Industrial - 🔲	Bishop	reeki edical		and the second
P/S Influence	No		And Cou	reek), edical nseling Grp	Top View Picture	ļ
WWTP Influence	No		Carto ma	The second and		
Locatio	on Informa	ation		and the second	9	A
Site Address 3240 Mars	hall Ave				aller'	
Site Access	Other		*	and the second second		Jren
Longitude	-97.4297000	00	9	Aller and	inst week	
Latitude	35.1802000	0	The and the second	Street 6 44	a	
МН Туре	Poured Con	crete	CONT	The stand of the	B	Cept
Manhole Depth (ft)	8.57		xagery Pi	rogram, USDA Farm Servi	ice Agency	19/1
Manhole Width (ft)	5.0		Access Notes	In island		
Elevated MH	No		Access NULES			
Height Elevated (ft)			Inverti	gation Photo	Installation Photo	
Structural Integrity	Safe		Investi	Bation i noto		
Site	Informatio	on			-	
Pipe Height (in)	35.75		and the second second	- PA	and the second second	1976
Pipe Width (in)	35.75			A A		
Ріре Туре	Concrete		1	1 1		N
Pipe Shape	Circular			A MARINE		K
02	LEL %					1
H2S	со		PH -	that		and a
Hydrau	lic Inform	ation		17	17	
Flow Depth (in)	17.06					
Instant Velocity (fps)	1.41		Hydraulic		Installation	
Surcharge Evidence (ft)			Characteristics		Notes	
Silt Type	Fine					
Silt Depth (in)	6.00		Install	Plan Sketch	Install Cross-Section Sketch	n
Needs Cleaning	No					low
Backwater	No			$\mathbf{\Lambda}$		epth
Flow Path	Straight			N	Sil	
Drop Inlet	No					epth
Hydraulic Rating	Good					
				This Meter		ensor Iltra
Insta	llation No	tes		Pipe		ensor
Location in Pipe (ft)	1.0					
Location from Manhole	Upstream			¹ Pipe		
Sensors					A/V Clock Position: 4:00	
Antenna Surface	Non-Paved	Surface				
Signal Strength	75					
Post Ins	tallation I	Notes		Арр	rovals	
Meter Type			Recom	mended by FSP	Client Approval	
meter type			necom	-		
Telemetry Type				Voc	Voc	
Telemetry Type Installation Date	11/5/2014			Yes	Yes	

rin			Norman,	ОК	Site Name
rjn group)	2023 N	orman Temporary	Flow Monitoring	BP-26
Inspected By		zsanders		Project No.	Site Code
Inspected Date/Time		3/21/2023 5:04 PM		30-3984-00	Т
System	Informa	tion	Ar	ea Location Map	Area View Picture
Target Pipe Dia. (in)	15.0				mmons 1.
Municipality	Norman		Here and the second	A WAR	Park
District					The second se
Assigned Rain Gauge			Cam	pus Lodge	
Client Manhole #	261088			tel aliker	
U/S Connecting MH I.D	261058			Man Aller	
System Characteristics:					
Residential -	Commercial -	Industrial -	CSL	Plas M	
P/S Influence	No	_	VITE		
WWTP Influence			Sonic [Drive-In E Linds	Top View Picture
					SI
Locatio	n Informa	ation			
Site Address 1531 E Lind	sey St				
Site Access	Other				
Longitude	-97.417500	00		The Company of the	
Latitude	35.2042000		123 CHARGE	6	
MH Type	Precast Con		an and the second second		
Manhole Depth (ft)	15.50		Google 123 Max	ar Technologies, USDA/FI	PACICEO
Manhole Width (ft)	4.0		Thager 92020 Max	al Technologies, USDA/Fr	AC/GEO
Elevated MH	Yes		Access Notes	Park, inside drop influenced by	water park
Height Elevated (ft)	2.0				
Structural Integrity	Safe		Investig	gation Photo	Installation Photo
			CONTRACTOR OF A		
SITE I Pipe Height (in)	nformati	on			
Pipe Width (in)	14.50		No. Constant	The second second	and the second second
Pipe Type	Polyvinyl Ch	lorida		-	
Pipe Shape	Circular	lionde		· Wat I	
O2 20.9	LEL %	0.0	RA		
H2S 0.0	CO	0.0		the states	
			Cini Maria		
	ic Inform	ation			
Flow Depth (in)	7.20		A CONTRACTOR OF A		Elow picked up as we were
Instant Velocity (fps)	0.80		Hydraulic		Installation Flow picked up as we were finishing, may be a pump near by,
Surcharge Evidence (ft)	1.00		Characteristics		Notes heights and flow speed both increa
Silt Type	None		Install	Plan Sketch	Install Cross-Section Sketch
Silt Depth (in)	0.00				
Needs Cleaning	No			Δ	Flow
Backwater	No		- Mh		Depth
Flow Path	Straight			Ń N	Uelocity
Drop Inlet	Yes		1 M		Sensor A/V
Hydraulic Rating	Good			🚫 This Meter	A/V Sensor
Instal	lation No	tes	₩(This Meter Pipe	
Location in Pipe (ft)	1.0			Elevated	
Location from Manhole				¹ Pipe	
		elocity, and Ultra	<u> </u>		A/V Clock Position: 6:00
Sensors	Pressure, Ve				Ay V CIOCK I USICIOII. U.UU
Sensors Antenna Surface	Pressure, Ve Non-Paved				
					Velocity Clock Position: 0:00
Antenna Surface Signal Strength		Surface		Appr	
Antenna Surface Signal Strength Post Inst	Non-Paved	Surface	Recom		ovals
Antenna Surface Signal Strength Post Inst Meter Type	Non-Paved	Surface	Recom	Appr mended by FSP	
Antenna Surface Signal Strength Post Inst	Non-Paved	Surface	Recom		ovals

rin			Norman,0	ЭК		Site Name	
J group)	2023 N	orman Temporary	Flow Monitoring		BP-27	
Inspected By		zsanders		Project No.		Site Code	
Inspected Date/Time		3/21/2023 5:21 PM		30-3984-00		т	
Systen	n Informa	tion	Ar	ea Location Map		Area View Picture	
Target Pipe Dia. (in) Municipality District Assigned Rain Gauge Client Manhole # U/S Connecting MH I.D System Characteristics: Residential -	21.0 Norman 261092 262109 Commercial - No	Industrial -	Campus Lo CSL Plasr				
WWTP Influence			Sonic Drive-I	n E Lindsey St		Top View Picture	
	n Informa	ation					
Site Address 1699 E Lind Site Access Longitude Latitude MH Type Manhole Depth (ft) Manhole Width (ft) Elevated MH	dsey St Sidewalk -97.4161000 35.2039000 Brick 10.90 4.0 No		Google 23 Max Access Notes	ar Technologies, USDA/F	PAC/GEO		
Height Elevated (ft)			Investig	gation Photo		Installation Photo	
Structural Integrity	Safe		investig	,			
Pipe Height (in) Pipe Width (in) Pipe Type Pipe Shape O2 20.9	20.25 20.25 Vitrified Cla Circular LEL %	-	10		1 Ja		
H2S 0.0	CO	0.0	and the second				
Hydrau Flow Depth (in)	lic Inform	ation	AN ISS	and the second se	14		
Instant Velocity (fps) Surcharge Evidence (ft) Silt Type Silt Depth (in)	1.10 1.00 None 0.00		Hydraulic Characteristics Install	Plan Sketch	Installation Notes	Flow rates vary up and down from 6 to 9 inches	
Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating	No No Straight No Good			N N This Meter		Flow Depth Velocity Sensor A/V Sensor	
Instal	lation No	tes		Pipe			
Location in Pipe (ft) Location from Manhole Sensors Antenna Surface Signal Strength	1.0 Pressure, Ve Non-Paved	elocity, and Ultra Surface	4	Pipe	A/V Clock Pos Velocity Clock	sition: 6:00 k Position: 0:00	
Post Ins	tallation	Notes		Арр	rovals		
Meter Type Telemetry Type Installation Date	- 4/20/2023		Recom	mended by FSP		Client Approval	

rin			Norman,	ЭК	Site Name
grou	0	2023 No	orman Temporary	Flow Monitoring	BP-27-01
Inspected By		zsanders		Project No.	Site Code
Inspected Date/Time		3/21/2023 5:41 PM		30-3984-00	т
System	n Informa	tion	Ar	ea Location Map	Area View Picture
Target Pipe Dia. (in) Municipality District Assigned Rain Gauge Client Manhole # U/S Connecting MH I.D System Characteristics: Residential -	18.0 Norman 263060 263059 Commercial - Yes				oname 716 ervoir
LOCATIC Site Address 769 24th A Site Access Longitude Latitude MH Type Manhole Depth (ft) Manhole Width (ft) Elevated MH	ve SE Off-Road -97.4058000 35.2081000 Precast Con 13.90 4.0 No	00	E Linds	de Bike Park Just 4 Coin Laundry ey St ar Technologies, USDA/FR	
Height Elevated (ft)			Investig	gation Photo	Installation Photo
Structural Integrity	Safe	on	and the		
Pipe Height (in) Pipe Width (in) Pipe Type Pipe Shape O2 20.9 H2S 0.0	16.94 17.25 Polyvinyl Ch Circular LEL % CO	lloride 0.0 0.0			
Flow Depth (in)	1.50			and the second s	
Instant Velocity (fps) Surcharge Evidence (ft) Silt Type Silt Depth (in) Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating Insta Location in Pipe (ft) Location from Manhole Sensors	0.60 1.00 None 0.00 No Straight No Good 1.0 Pressure, Vi	tes	Hydraulic Characteristics Install	Plan Sketch	Installation Notes Flow fluctuates from 1.5 to 4.5 inches, when flow is at its lowest, the av sensor is no longer submerge Install Cross-Section Sketch Flow Depth Velocity Sensor A/V Sensor
Antenna Surface Signal Strength	Non-Paved		LIU LIU		A/V Clock Position: 6:00 Velocity Clock Position: 0:00
Post Ins	tallation	Notes		Appr	rovals
Meter Type Telemetry Type Installation Date	- 4/20/2023		Recom	nended by FSP	Client Approval

rin			Norman,0	ЭК	Site Name
group		2023 No	orman Temporary	Flow Monitoring	BP-28
Inspected By		zsanders		Project No.	Site Code
Inspected Date/Time		3/21/2023 2:51 PM		30-3984-00	т
System	Informa	tion	Ar	ea Location Map	Area View Picture
Target Pipe Dia. (in) Municipality District Assigned Rain Gauge Client Manhole # U/S Connecting MH I.D System Characteristics:	18.0 Norman 322001 322070		Classe Ca The 290	n Urgent are Clinic	
Residential -	Commercial · No	Industrial -			Top View Picture
Location	n Informa	ation	Hampton W	oods	
Site Address 700 Oak Tre Site Access Longitude Latitude MH Type Manhole Depth (ft) Manhole Width (ft) Elevated MH	ee Ave Off-Road -97.4234000 35.1856000 Precast Con 14.30 4.0 No	0	The Overlook Apartments Google J23 Max Access Notes	Buffalo Wile ar Technologies, USDA/F Gate was open during investige	PAC/GEO
Height Elevated (ft)	. (Investig	ation Photo	Installation Photo
Structural Integrity	Safe nformati	on			
Pipe Height (in) Pipe Width (in) Pipe Type Pipe Shape O2 20.9	23.50 23.81 Polyvinyl Ch Circular LEL %	lloride 0.0			
H2S 0.0	co ic Inform	0.0			
Flow Depth (in)	3.70	ation			
Instant Velocity (fps) Surcharge Evidence (ft) Silt Type Silt Depth (in)	2.00 9.00 None 0.00		Hydraulic Characteristics Install	Plan Sketch	Installation Flow changes from 4.5 to 6 inches variably Install Cross-Section Sketch
Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating	No No Straight No Good			N This Meter	Flow Depth Velocity Sensor A/V Sensor
Instal	ation No	tes		Pipe	
Location in Pipe (ft) Location from Manhole Sensors Antenna Surface Signal Strength	1.0 Pressure, Ve Non-Paved	elocity, and Ultra Surface		Elevated Pipe	A/V Clock Position: 6:00 Velocity Clock Position: 0:00
Post Inst	allation	Notes		Арр	rovals
Meter Type Telemetry Type Installation Date	- 4/20/2023		Recom	nended by FSP	Client Approval

rin			Norman,	ЭК	Site Name
group			Norman Utilities	Authority	BP-30
Inspected By		r_bass		Project No.	Site Code
Inspected Date/Time		10/7/2014 3:07 PM	_	30-3884-00	
System	Informat	tion	Ar	ea Location Map	Area View Picture
Target Pipe Dia. (in)	24.0			The second second	A A A A A A A A A A A A A A A A A A A
Municipality	Norman			een	THE PARTY AND
District	Norman			G	All and a state of the second se
Assigned Rain Gauge	RG-10			shopcleek	A A A A A A A A A A A A A A A A A A A
Client Manhole #	329087		8		
U/S Connecting MH I.D	329051		部務・「「日本」		
System Characteristics:					
Residential - 🗹	Commercial -	Industrial -		HAC (M) PARA	
P/S Influence	No				
WWTP Influence	No				Top View Picture
Location	n Informa	tion	S. Articket		
			2 10 LO 40		
Site Address 400 East Ced			A PARKET		
	Fenced In	_	- Set - Set	A LEAST AND ALL ALL ALL ALL ALL ALL ALL ALL ALL AL	
-	-97.4352000	0	State of		
Latitude	35.17520000)			
МН Туре	Precast Cond	crete	C	A STATE OF A STATE	
Manhole Depth (ft)	14.48		xagoogleagery Pr	ogram, USDA Farm Servi	ce Agency
Manhole Width (ft)	5.0				of East Cedar Lane, (RJN owned lock on gate)
Elevated MH	Yes		Access Notes	Follow fence line to the west, p	bass black iron gateMH located next to gate
Height Elevated (ft)	1.7			it at i	
Structural Integrity	Safe		Investig	gation Photo	Installation Photo
Site Ir	nformatio	on			1 And And
Pipe Height (in)	23.06		the fill and the second	and the second	
	23.31		Part & Malle	THE AND A DECEMBER	
	Polyvinyl Chl	oride			
	Circular				
	LEL %		1		
	со		and the	X	
Hydrauli		ation		A.	LAS / YOMA
	3.50		1.2		
	0.70				
Surcharge Evidence (ft)	0.70		Hydraulic Characteristics		Installation Notes
	Nono				
	None 0.00		Install	Plan Sketch	Install Cross-Section Sketch
5	No			Δ	Flow Depth
	No				
	Straight			Ń N	A/V Sensor
•	No				Ultra
Hydraulic Rating	No Flow			This Meter	Sensor
Installa	ation Not	tes	E (Pipe	
Location in Pipe (ft)	1.0			T? Elevated	
Location from Manhole	Upstream			i Pipe	
Sensors					A/V Clock Position: 6:00
Antenna Surface	Non-Paved S	urface			A/V Clock Position: 6:00
Signal Strength	75				
Post Insta	allation N	lotes		Арр	rovals
Meter Type			Pacam	mended by FSP	Client Approval
Telemetry Type			Recomi	Yes	Yes
			1	. = \	TEN
	11/7/2014				

rin			Norman,C	ОК		Site Name
group)	2023 N	orman Temporary	Flow Monitoring		IH-12
Inspected By		zsanders		Project No.		Site Code
Inspected Date/Time		3/22/2023 10:51 AM		30-3984-00		т
System	n Informa	tion	Are	ea Location Map		Area View Picture
Target Pipe Dia. (in) Municipality District Assigned Rain Gauge	21.0 Norman					
Client Manhole # U/S Connecting MH I.D System Characteristics: Residential -	293010 293009 Commercial - No	🗌 Industrial - 🔲	Pieces Renov Construction	/ation and , LLC M yaa O C		Top View Picture
Locatio	n Informa	ation		nhofi		
Site Address 2522 S Berr Site Access Longitude Latitude MH Type Manhole Depth (ft) Manhole Width (ft) Elevated MH	y Rd Roadway, Lu -97.4591000 35.1935000 Precast Con 11.70 4.0 No	00 0	The C Coogle 123 Max Access Notes	Church of ar Technologies, USDA/F	PAC/GEO	
Height Elevated (ft) Structural Integrity	Safe		Investig	ation Photo	Insta	llation Photo
	nformati	on				
Pipe Height (in) Pipe Width (in) Pipe Type Pipe Shape O2 20.9 H2S 0.0 HVdraul	22.12 22.25 Concrete Circular LEL % CO	0.0 0.0				
Flow Depth (in)	8.40		de la la		1	
Instant Velocity (fps) Surcharge Evidence (ft) Silt Type Silt Depth (in)	0.50 1.00 None 0.00		Hydraulic Characteristics Install	Plan Sketch	Installation Notes Install Cro	oss-Section Sketch
Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating	No No Straight No Good			N N This Meter		Flow Depth Velocity Sensor A/V Sensor
	lation No	tes		Pipe		
Location in Pipe (ft) Location from Manhole Sensors Antenna Surface Signal Strength	1.0 Pressure, Ve Paved Surfa	elocity, and Ultra ce		Elevated Pipe	A/V Clock Position: 6 Velocity Clock Position	
				Ann	rovals	
Post Inst	tallation	Notes		~~~~	TOVAIS	

rin			Norman,OK			Site Name		
)	2023 No	orman Temporary	Flow Monitoring		IH-13		
Inspected By		mjaurez		Project No.		Site Code		
Inspected Date/Time		3/22/2023 10:22 AM		30-3984-00		т		
Systen	n Informa	tion	Arc	ea Location Map		Area View Picture		
Target Pipe Dia. (in)	18.0						-	
Municipality	Norman		AND REPAIR				he de	
District				lackson (-	
Assigned Rain Gauge				Jackson Iementary School				
Client Manhole #	255052		PART PL			The loss of the state of the st	1	
U/S Connecting MH I.D	239129			S REAL PROPERTY AND				
System Characteristics:			A	Icott Middle School				
Residential -	Commercial	- 🔲 Industrial - 🔲						
P/S Influence	No							
WWTP Influence						Top View Picture		
Locatio	n Inform	ation				P ANY		
Site Address 708 McGee	e Dr					Maria	- AND	
Site Access	Roadway, L	ow Traffic						
Longitude	-97.467800		Whitt	ier Middle School	14-1		N	
Latitude	35.2108000		A CALL	ALC: N. S.	AND DECK			
МН Туре	Brick					心学者的外。		
Manhole Depth (ft)	16.80		Google 123 May	ar Technologies, USDA/F	PAC/GEO		Ser 1	
Manhole Width (ft)	4.0		mager, Cozozo max		THO/OLO	A PERMIT	S.C.	
Elevated MH	No		Access Notes					
Height Elevated (ft)								
Structural Integrity	Safe		Investig	ation Photo		Installation Photo		
Site	nformati	02						
			S States		all a	and the second		
Pipe Height (in)	18.00 18.00				En la			
Pipe Width (in)					Read la	1 N 20		
Pipe Type	Vitrified Cla Circular	у			100			
Pipe Shape 02 20.9	LEL %	0.0						
H2S 0.0	CO	0.0	1		and the second			
	lic Inform							
Flow Depth (in)	6.00).IX		
Instant Velocity (fps)	0.88		Hudroulis		Installation			
Surcharge Evidence (ft)	11.00		Hydraulic Characteristics		Installation Notes			
Silt Type	None							
Silt Depth (in)	0.00		Install	Plan Sketch	Inst	all Cross-Section Sketch	1	
Needs Cleaning	No							
Backwater	No			$\mathbf{\Lambda}$		Flo	ow epth	
Flow Path	Straight		l Mh					
Drop Inlet	No			IN	/		locity	
Hydraulic Rating	Good					A/1	'V	
				This Meter		Ser	nsor	
	lation No	otes		Pipe				
Location in Pipe (ft)	1.0		\square	Elevated				
Location from Manhole	_			Pipe	and the second sec			
Sensors		elocity, and Ultra			A/V Clock Pos	sition: 6:00		
Antenna Surface	Paved Surfa	ice			Velocity Clock	k Position: 0:00		
Signal Strength								
Post Ins	tallation	Notes		Арр	rovals			
Meter Type	-		Recomm	nended by FSP		Client Approval		
			1					
Telemetry Type	4/20/2023							

rin			Norman,	ОК		Site Name
rjn group)	2023 No	orman Temporary	Flow Monitoring		IH-14
Inspected By		mjaurez		Project No.		Site Code
Inspected Date/Time		3/22/2023 10:44 AM		30-3984-00		Т
System	n Informa	ition	Are	ea Location Map		Area View Picture
Target Pipe Dia. (in)	36.0		KARABARA			Land Martin
Municipality	Norman					
District			CINE A		SFIO	THE A NEW YORK
Assigned Rain Gauge			1 Li	The second s	8	
Client Manhole #	283007		TELEVICE VIE		AD	Longer Longer
U/S Connecting MH I.D	283003				Ve	All the second
System Characteristics:						
Residential -	Commercial	- 🔲 Industrial - 🔲		M	100	
P/S Influence	No		Pe	nny Bar and Cha		Tau Mary Distance
WWTP Influence			CONTINUES PORT	\supset	- Longers	Top View Picture
Locatio	n Inform	ation	and state and a state of the st	<u>~~</u> ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	at ind b	
Site Address 1101 Cherr			Carlos and Carlos	-0		
Site Access	Off-Road			CALLER - C		Ser and the second
Longitude	-97.457300	00				See 1
Latitude	35.2024000			APA NO LOUR TO		
MH Type	Precast Cor					
Manhole Depth (ft)	15.60		Google	ar Technologies, USDA/F	DACIOFO	
Manhole Width (ft)	4.0		linager 392023 Max	ar Technologies, USDA/F	PAC/GEO	
Elevated MH	4.0 No		Access Notes			
	NO					
Height Elevated (ft)	Safe		Investig	ation Photo		Installation Photo
Structural Integrity	Sale					
Site	Informati	on		12		
Pipe Height (in)	34.00					
Pipe Width (in)	35.00				41	
Ріре Туре	Polyvinyl Cł	nloride			SBIT-D	
Pipe Shape	Circular			A Charles and a	18 11	
02 20.9	LEL %	0.0		STATISTICS.	目目	
H2S 0.0	со	0.0	AND DE LE ST	State States		
Hydrau	lic Inform	ation				
Flow Depth (in)	7.50			244		
Instant Velocity (fps)	1.98		Hydraulic		Installation	
Surcharge Evidence (ft)	11.00		Characteristics		Notes	
Silt Type	None		Install	Plan Sketch	ler e	stall Cross-Section Sketch
Silt Depth (in)	0.00		install		ins	Stan Cross-Section Sketch
Needs Cleaning	No			*		Flow
Backwater	No					Depth
Flow Path	Slight Bend			N ۲		🗖 Velocity
Drop Inlet	No				1	Sensor
Hydraulic Rating	Good					A/V Sensor
Insta	lation No	otes		This Meter		
Location in Pipe (ft)	1.0			Pipe		
Location from Manhole	-			Elevated Pipe		
Sensors	Pressure V	elocity, and Ultra		\checkmark		
Antenna Surface	Non-Paved			-	A/V Clock P	osition: 6:00
Signal Strength	aveu				Velocity Clo	ck Position: 0:00
	tallation	Notes		ααΑ	rovals	
Meter Type	-		Recomm	nended by FSP		Client Approval
···· //· ·						· · · • • • • • • • • • • • • • • • • •
Telemetry Type						
Telemetry Type Installation Date	4/20/2023					

rin			Norman,0	ЭК	Site Name
grou	p	2023 No	orman Temporary	Flow Monitoring	IH-15
Inspected By		zsanders		Project No.	Site Code
Inspected Date/Time		3/22/2023 10:24 AM		30-3984-00	т
Syster	m Informa	tion	Ar	ea Location Map	Area View Picture
Target Pipe Dia. (in)	30.0				The second secon
Municipality	Norman		Spicu	is Farmers Market	
District			Dutch Bros	Coffee W Main	ST
Assigned Rain Gauge				0	
Client Manhole #	241027			공공	
U/S Connecting MH I.D	241020		TO THE AND STORE		
System Characteristics:			R	A A	
Residential -	Commercial	- 🔲 Industrial - 🔲		M TO	
P/S Influence	No	_	THE REAL PROPERTY OF		
WWTP Influence					Top View Picture
Locativ	on Inform	ation	CO WARE W	Lions Park	
Site Address 949 W Syr					
Site Access	Sidewalk		CARL BALLER AND		
Longitude	-97.454600				
Latitude	35.2149000		W Boyd St	W Boyd	St
МН Туре	Precast Con	crete	C		
Manhole Depth (ft)	12.80		IGoogle J23 Max	ar Technologies, USDA/F	PAC/GEO
Manhole Width (ft)	4.0		Access Notes		
Elevated MH	No				
Height Elevated (ft)			Investig	ation Photo	Installation Photo
Structural Integrity	Safe		IIIVESLI		
Site	Informati	on	1033	BE ST	
Pipe Height (in)	29.00		10000	and the second second	
Pipe Width (in)	30.25				
Ріре Туре	Polyvinyl Cł	nloride	Here Here	A distant	
Pipe Shape	Circular		SAL AUTO	COMPANY 1	
02 20.9	LEL %	0.0			E COMPANY
H2S 0.0	со	0.0	ALL PORT		
Hydrau	ulic Inform	ation		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
Flow Depth (in)	3.60		and and	1	
Instant Velocity (fps)	1.80		Hydraulic		Installation
Surcharge Evidence (ft)	1.00		Hydraulic Characteristics		Notes
Silt Type	None				
Silt Depth (in)	0.00		Install	Plan Sketch	Install Cross-Section Sketch
Needs Cleaning	No				
Backwater	No			$\mathbf{\Lambda}$	Flow Depth
Flow Path	Straight		l Mh		
Drop Inlet	No			IN	Velocity Sensor
Hydraulic Rating	Good				A/V
				X This Meter	Sensor
	Illation No	tes		Pipe	
Location in Pipe (ft)	1.0		I M	Elevated	
Location from Manhole				Pipe	
Sensors		elocity, and Ultra			A/V Clock Position: 6:00
	Non-Paved	Surface			Velocity Clock Position: 0:00
Antenna Surface					
Signal Strength	stallation	Notes		Арри	rovals
Signal Strength	stallation	Notes	Recom	App:	rovals Client Approval
Signal Strength Post In	stallation - 4/21/2023	Notes	Recom		

		Norman,	ок	Site Name
group)	2023 Norman Temporary	Flow Monitoring	IH-16
Inspected By	zsanders		Project No.	Site Code
Inspected Date/Time	3/22/2023 9	9:47 AM	30-3984-00	т
System	n Information	Ar	ea Location Map	Area View Picture
Target Pipe Dia. (in)	18.0	The set of the set		
Municipality	Norman			
District				SILK
Assigned Rain Gauge			STOC	CKING
Client Manhole #	211076	Walden Cleane		
U/S Connecting MH I.D	211077	Launce		
System Characteristics:		Plone	er Library	
Residential -	Commercial - 🔲 Indus	trial -	Norr M 📼 🖉	
P/S Influence	No	The second se		cres St Top View Picture
WWTP Influence		Acres St		Top View Picture
Lasatia	n Information			
	n Information		Andrews Park	
Site Address 301 W Acre				
Site Access	Roadway, Low Traffic	6 4		
Longitude	-97.44950000			
Latitude	35.22550000			
МН Туре	Precast Concrete			
Manhole Depth (ft)	17.20	Google U.S. G	eological Survey, USDA/FP	AC/GEO
Manhole Width (ft)	4.0			
Elevated MH	No	Access Notes		
Height Elevated (ft)				
Structural Integrity	Safe	Investi	gation Photo	Installation Photo
	nformation		11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Pipe Height (in)	17.44			
Pipe Width (in)	17.44	And the second s		
Pipe Type	Polyvinyl Chloride	A SAL LAND		
Pipe Type Pipe Shape	Circular		and the state	
• •				
02 20.9	LEL % 0.0			
H2S 0.0	CO 0.0		Constant Party	
Hydraul	ic Information			
Flow Depth (in)	3.00	With the second		
Instant Velocity (fps)	1.70	Hydraulic		nstallation Flow fluctuates between 3 and 4 inches during calibration, speed
Surcharge Evidence (ft)	1.00	Characteristics	I	Notes also 2 to 3 fps
Silt Type	None	Install	Plan Sketch	Install Cross-Section Sketch
Silt Depth (in)	0.00	install		
Needs Cleaning	No			Flow
Backwater	No		\mathbf{A}	Depth
Flow Path	Straight	1 1	N	Pressure
Drop Inlet	No			Sensor
Hydraulic Rating	Good			Velocity
			This Meter	Sensor A/V
	lation Notes		Pipe	Sensor
			Elevated	
Location in Pipe (ft)	1.0		Pipe	
	1.0			
Location in Pipe (ft)	1.0 Pressure, Velocity, and Ult	ra		Pressure Clock Position: 0:00
Location in Pipe (ft) Location from Manhole		ra		
Location in Pipe (ft) Location from Manhole Sensors	Pressure, Velocity, and Ult	ra		Pressure Clock Position: 0:00 Velocity Clock Position: 0:00
Location in Pipe (ft) Location from Manhole Sensors Antenna Surface Signal Strength	Pressure, Velocity, and Ult	ra	Appro	Velocity Clock Position: 0:00
Location in Pipe (ft) Location from Manhole Sensors Antenna Surface Signal Strength	Pressure, Velocity, and Ult Paved Surface		Appro mended by FSP	Velocity Clock Position: 0:00
Location in Pipe (ft) Location from Manhole Sensors Antenna Surface Signal Strength Post Inst	Pressure, Velocity, and Ult Paved Surface			Velocity Clock Position: 0:00

rip			Norman,	ЭК		Site Name	
grou	2	2023 N	orman Temporary	Flow Monitoring		LD-01	
Inspected By		mjaurez		Project No.		Site Code	
Inspected Date/Time		3/21/2023 3:16 PM		30-3984-00			
System	n Informa	tion	Ar	ea Location Map		Area View Picture	
Target Pipe Dia. (in)	10.0		at the fit			New Series New	
Municipality	Norman		CALL AND AND	16-9 10-9	-8- M	Market States	
District					A STAN		
Assigned Rain Gauge			0				
Client Manhole #	79023						
U/S Connecting MH I.D	79022					La State and the	
-	79022		And the state of t	and the first	Provent State	CONTRACT AND	
System Characteristics:			ALC: NO 1				
Residential -	Commercial	Industrial -		M		and the second	
P/S Influence	No			A State	Jalles .	Top View Picture	
WWTP Influence			Carles Lass			Top view ricture	
Locatio	on Inform	ation			<u> </u>	(MESSA)	
Site Address 4011 8th A	ve Cir NE			A Fall			
Site Access	Off-Road						
Longitude	-97.432400	00					
-			1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-				
Latitude	35.2672000		34 A 34 3 1 /				
МН Туре	Poured Con	crete	Casala	TTO REPARTMENT			
Manhole Depth (ft)	3.80		echoogie, U.S. G	eological Survey, USDA/F	PAC/GEO		
Manhole Width (ft)	4.0		Access Notes			e treatment plant. Drive through	
Elevated MH	Yes		Access Notes	the easement.			
Height Elevated (ft)	0.5		1	antina Dhata		stallation Dhata	
Structural Integrity	Safe		Investig	gation Photo	In	stallation Photo	
Site	Informati	on		alle Maria	- althe		
Pipe Height (in)	9.75				The second second	a lendrow	
	9.75 9.75		A CONTRACTOR		a chint of the		
Pipe Width (in)				ALC: NO.	Carl States		
Ріре Туре	Polyvinyl Ch	lloride			CONTRACT OF	No.	
Pipe Shape	Circular						
02 20.9	LEL %	0.0			and ship		
H2S 0.0	со	0.0				A CONTRACTOR OF	
Hydrau	lic Inform	ation					
Flow Depth (in)	1.00		A STAT				
Instant Velocity (fps)	2.13		Hydroulic		Installation		
Surcharge Evidence (ft)	3.00		Hydraulic Characteristics		Installation Notes		
	None						
Silt Type			Install	Plan Sketch	Install	Cross-Section Sketch	
Silt Depth (in)	0.00						
Needs Cleaning	No			Δ		Flow	
Backwater	No					Depth	
Flow Path	Straight			ΝÌ	/	🗖 Velocity	
Drop Inlet	No				1	Sensor	
Hydraulic Rating	Good					A/V Sensor	
Insta	llation No	tes		This Meter			
Location in Pipe (ft)	1.0			Pipe Elevated			
Location from Manhole				Pipe			
Sensors	Pressure V	elocity, and Ultra					
Antenna Surface	Non-Paved		יש ן		A/V Clock Position	n: 6:00	
Signal Strength	aveu				Velocity Clock Pos	ition: 0:00	
	tallation	Notos		A	rovala		
Post Ins	tallation	NOLES			rovals		
	-		Docom	mended by FSP		Client Annroval	
Meter Type	-		Recom	mended by FSP		Client Approval	
	- 4/25/2023		Recom	mended by FSP		Client Approval	

rin			Norman,	ЭК	Site Name
grou	р	2023 No	orman Temporary	Flow Monitoring	LD-02
Inspected By		mjaurez		Project No.	Site Code
Inspected Date/Time		3/21/2023 2:30 PM		30-3984-00	т
System	n Informa	tion	Ar	ea Location Map	Area View Picture
Site Address 301 Sonora Site Access Longitude Latitude MH Type Manhole Depth (ft) Manhole Width (ft)	Off-Road -97.4436000 35.2679000 Lined 16.70 4.0	ation	Calvar	er Tro-Ideal leigt rhoods Little river trails -landmark homes y Church t eological Survey, USDA/F	
Elevated MH Height Elevated (ft)	Yes 1.5			-	Installation Photo
Structural Integrity	Safe		Investi	ation Photo	
Pipe Height (in) Pipe Width (in) Pipe Type Pipe Shape O2 20.9 H2S 0.0	Informati 35.50 36.00 Polyvinyl Ch Circular LEL % CO Ilic Inform 6.00	lloride 0.0 0.0			
Instant Velocity (fps)	1.25		Hydraulic		Installation
Surcharge Evidence (ft) Silt Type Silt Depth (in) Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating	9.00 None 0.00 No Slight Bend No Good		Characteristics Install	Plan Sketch	Notes Install Cross-Section Sketch Flow Depth Velocity Sensor A/V Sensor
Insta	llation No	tes		Pipe	
Location in Pipe (ft) Location from Manhole Sensors Antenna Surface Signal Strength	1.0 Pressure, Ve Non-Paved	elocity, and Ultra Surface		Pipe	A/V Clock Position: 6:00 Velocity Clock Position: 0:00
Post Ins	stallation	Notes		Арр	provals
Meter Type Telemetry Type Installation Date	- 4/24/2023		Recom	nended by FSP	Client Approval

rin			Norman,0	ОК	Site Name
group)	2023 No	orman Temporary	Flow Monitoring	LD-03
Inspected By		mjaurez		Project No.	Site Code
Inspected Date/Time		3/21/2023 12:29 PM		30-3984-00	т
-	n Informa	tion	Ar	ea Location Map	Area View Picture
Target Pipe Dia. (in) Municipality District Assigned Rain Gauge Client Manhole # U/S Connecting MH I.D System Characteristics: Residential - P/S Influence WWTP Influence WWTP Influence Site Address TGG7+5F N Site Access Longitude Latitude MH Type Manhole Depth (ft)	24.0 Norman 69012 69011 Commercial No In Informa Off-Road -97.486400 35.2754000 Lined 12.60	ation	Ruby Gr	olar Garden ant Park 35 Summit Climbing, M & Fitness - Norn C Ruby Grant Hi- Bark and Inic eological Survey, USDAF	ParkDog
Manhole Width (ft) Elevated MH Height Elevated (ft) Structural Integrity	4.0 No Safe		Access Notes	gation Photo	Installation Photo
Site	Informati	on			
Pipe Height (in) Pipe Width (in) Pipe Type Pipe Shape O2 20.9 H2S 0.0	22.00 23.50 Polyvinyl Cł Circular LEL % CO	0.0 0.0			
Hydrau Flow Depth (in)	4.00	ation	1 all		
Instant Velocity (fps) Surcharge Evidence (ft) Silt Type Silt Depth (in)	0.76 7.00 None 0.00		Hydraulic Characteristics Install	Plan Sketch	Installation Notes Install Cross-Section Sketch
Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating	No No Slight Bend No Good			N N S This Meter	Flow Depth Velocity Sensor A/V Sensor
Instal	lation No	ites		Pipe	
Location in Pipe (ft) Location from Manhole Sensors Antenna Surface Signal Strength		elocity, and Ultra Surface		? Elevated Pipe	A/V Clock Position: 6:00 Velocity Clock Position: 0:00
Post Ins	tallation	Notes		Арр	rovals
Meter Type Telemetry Type Installation Date	- 4/19/2023		Recom	mended by FSP	Client Approval

k in			Norman,	ОК	Site Name
grou	р	2023 N	orman Temporary	Flow Monitoring	ND-08
Inspected By		mjaurez		Project No.	Site Code
Inspected Date/Time		3/22/2023 9:41 AM		30-3984-00	Т
Syste	m Informa	tion	Ar	ea Location Map	Area View Picture
Target Pipe Dia. (in) Municipality District Assigned Rain Gauge Client Manhole # U/S Connecting MH I.D	24.0 Norman 279003 254073		Red Rol	Jason's Deli	
System Characteristics: Residential - P/S Influence WWTP Influence	Commercial No	Industrial -		Bank - S Branch	Top View Picture
Locati	on Inform	ation	and the second second		
Site Address 2900 W L Site Access Longitude Latitude MH Type Manhole Depth (ft) Manhole Width (ft) Elevated MH	indsey St Off-Road -97.485500 35.2039000 Poured Con 12.50 4.0 Yes	0	Google 23 Max Access Notes	Landers Chev of Nor car Technologies, USDA/F	
Height Elevated (ft)	2.0		Investi	gation Photo	Installation Photo
Structural Integrity	Safe		Investi		
Site	Informati	on	E Carte		the View
	24.00 24.00 Polyvinyl CH Circular LEL % CO	0.0 0.0			
Flow Depth (in) Instant Velocity (fps)	8.00 1.43		Hydraulic		Installation
Surcharge Evidence (ft) Silt Type Silt Depth (in) Needs Cleaning	5.00 None 0.00 No		Characteristics	Plan Sketch	Install Cross-Section Sketch
Backwater Flow Path Drop Inlet Hydraulic Rating	No Straight No Good			N S This Meter	Flow Depth Velocity Sensor A/V Sensor
Insta	Ilation No	tes			
Location in Pipe (ft) Location from Manhole Sensors Antenna Surface Signal Strength	1.0 Pressure, V Non-Paved	elocity, and Ultra Surface			A/V Clock Position: 6:00 Velocity Clock Position: 0:00
Post In	stallation	Notes		Арр	rovals
Meter Type Telemetry Type	-		Recom	mended by FSP	Client Approval
Installation Date	4/20/2023				

rin			Norman, 0	ЭК	Site Name
J grou	р	2023 N	orman Temporary	Flow Monitoring	ND-09
Inspected By		mjaurez		Project No.	Site Code
Inspected Date/Time		3/22/2023 10:00 AM		30-3984-00	т
Syster	n Informa	tion	Are	ea Location Map	Area View Picture
Target Pipe Dia. (in) Municipality District Assigned Rain Gauge Client Manhole # U/S Connecting MH I.D System Characteristics: Residential -	18.0 Norman 208122 208121 Commercial No		Hobby Lobby	Merkle Creek F	Lette Top View Picture
Site Address 2121 W M Site Access Longitude Latitude MH Type Manhole Depth (ft) Manhole Width (ft) Elevated MH	ain St Off-Road -97.473000 35.2189000 Poured Con 14.30 4.0 Yes	00	Crunch F	itness = Norman	PAC/GEO
Height Elevated (ft) Structural Integrity	0.5 Questionab	1-	Investig	gation Photo	Installation Photo
	Informati		570.227		
Pipe Height (in) Pipe Width (in) Pipe Type Pipe Shape O2 20.9 H2S 0.0 H2S 0.0 Hydrau Flow Depth (in)	17.00 17.00 Polyvinyl Ch Circular LEL % CO lic Inform 5.00	0.0 0.0			
Instant Velocity (fps) Surcharge Evidence (ft)	2.14 8.00		Hydraulic Characteristics		Installation Notes
Silt Type Silt Depth (in) Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating Insta Location in Pipe (ft)	None 0.00 No Slight Bend No Good Ilation No 1.0		Install	Plan Sketch	Install Cross-Section Sketch
Location from Manhole Sensors Antenna Surface Signal Strength	Pressure, V Non-Paved	elocity, and Ultra Surface	<i>\</i>	* Pipe	A/V Clock Position: 6:00 Velocity Clock Position: 0:00
Post Ins	stallation	Notes		Арр	rovals
Meter Type Telemetry Type Installation Date	- 4/20/2023		Recomr	nended by FSP	Client Approval

rin			Norman,OK	Site Name
group	0	2023 N	orman Temporary Flow Monitorin	g SV-01
Inspected By		zsanders	Project I	No. Site Code
Inspected Date/Time		3/21/2023 2:22 PM	30-3984-	00 т
System	n Informa	tion	Area Location Map	Area View Picture
Target Pipe Dia. (in) Municipality District	8.0 Norman			
Assigned Rain Gauge Client Manhole #	301022			
U/S Connecting MH I.D System Characteristics: Residential -	301038 Commercial - No	· 🔲 Industrial - 🔲		Top View Picture
	on Informa	ation	AND DAY A	
Site Address 3301 Woo Site Access Longitude Latitude MH Type Manhole Depth (ft) Manhole Width (ft) Elevated MH	d Valley Rd Off-Road -97.3908000 35.1929000 Precast Con 7.30 4.0	0	9 Google D23 Maxar Technologies, U Access Notes	SDA/FPAC/GEO
Height Elevated (ft)	No		Investigation Photo	Installation Photo
Structural Integrity	Safe		Investigation Photo	
	Informati	on	The second	(Aller
	14.50 14.00 Polyvinyl CP Circular LEL % CO	0.0 0.0		
Flow Depth (in) Instant Velocity (fps)	2.75 1.00		Hydraulic	Installation
Surcharge Evidence (ft) Silt Type Silt Depth (in)	1.50 None 0.00		Characteristics Install Plan Sketch	Install Cross-Section Sketch
Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating	No No Straight No Good			N Neter
	llation No	tes	Pipe	
Location in Pipe (ft) Location from Manhole Sensors Antenna Surface Signal Strength	1.0 Pressure, Ve Non-Paved	elocity, and Ultra Surface	Pipe	A/V Clock Position: 6:00 Velocity Clock Position: 0:00
	tallation	Notes		Approvals
Meter Type Telemetry Type	-		Recommended by FSP	Client Approval

k ip			Norman,	ОК	Site Name
group	5	2023 N	orman Temporary	Flow Monitoring	WC-30
Inspected By		mjaurez		Project No.	Site Code
Inspected Date/Time		3/21/2023 4:58 PM		30-3984-00	т
System	n Informa	tion	Ar	ea Location Map	Area View Picture
Target Pipe Dia. (in) Municipality District Assigned Rain Gauge Client Manhole # U/S Connecting MH I.D System Characteristics: Residential - P/S Influence WWTP Influence WWTP Influence ELOCATIO Site Address Jongitude Latitude MH Type Manhole Depth (ft) Manhole Width (ft) Elevated MH	18.0 Norman 79037 79036 Commercial No Iorman Off-Road -97.4361000 35.2651000 Precast Con 10.90 4.0 Yes	ation	e Barracuda e Terecumseh Google U.S. G Access Notes	P.Rd E-Tecum eological Survey, USDA/Fr	
Height Elevated (ft) Structural Integrity	1.5 Safe		Investi	gation Photo	Installation Photo
Pipe Height (in) Pipe Width (in) Pipe Type Pipe Shape O2 20.9 H2S 0.0	Informati 23.00 23.00 Polyvinyl Ch Circular LEL % CO lic Inform	lloride 0.0 0.0			
low Depth (in) Instant Velocity (fps)	2.12		Hydraulic		Installation
Surcharge Evidence (ft) Silt Type Silt Depth (in) Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating Instal Location in Pipe (ft) Location from Manhole Sensors Antenna Surface	2.00 None 0.00 No Slight Bend No Good Ilation No 1.0 Pressure, Vo Non-Paved	elocity, and Ultra	Characteristics		Notes Install Cross-Section Sketch Velocity Sensor A/V Sensor A/V Sensor
Antenna Surface Signal Strength	Non-Paved	Suitace			Velocity Clock Position: 0:00
Post Ins	tallation	Notes		Appr	ovals
Meter Type Telemetry Type Installation Date	- 4/27/2023		Recom	mended by FSP	Client Approval

rjn group			Norman,	ЭК		Site Name
U 1		2023 No	orman Temporary	Flow Monitoring		WC-31
Inspected By		mjaurez		Project No.		Site Code
Inspected Date/Time		3/21/2023 5:13 PM		30-3984-00		Т
System	Informat	tion	Ar	ea Location Map		Area View Picture
Target Pipe Dia. (in)	15.0		The Barracuda	CONTRACTOR OF		X SALLES
Municipality 1	Norman		E-Tecums	seh Rd E Tecums	seh Rd-	
District			1	der or all press and		
Assigned Rain Gauge				In		
Client Manhole #	105128		B-F		42.	
U/S Connecting MH I.D	105025				- Je	Contraction of the second
System Characteristics:						
Residential -	Commercial -	Industrial -			2. 公司	
P/S Influence	No		Apos	stolic orship Center		
WWTP Influence				Vineword Dark		Top View Picture
Location	Informa	ition		Vineyard Park		
Site Address 400 Nantucke	ot Blud					
	et Bivd Off-Road		Z		State State	12 march
			or its			
5	-97.4368000		ter of real			
	35.25780000		A		CONTRACT!	
	Precast Conc	crete	Google			
	15.00		echinologis, U.S. G	eological Survey, USDA/FF	PAC/GEO	
.,	4.0		Access Notes			
	Yes					
U U U	1.5		Investi	gation Photo		Installation Photo
Structural Integrity	Safe					
Site In	formatio	on			A	
Pipe Height (in)	14.50					
Pipe Width (in)	15.00		S. M. C. Statistics		SA 10	
Ріре Туре	Iron				19	
Pipe Shape (Circular				100	
02 20.9	LEL %	0.0	ALL SULPHIER	T OLUMER A	1	
H2S 0.0	со	0.0	Avenue	and the second	F.	
Hydraulic	: Informa	ation	100			
Flow Depth (in)	4.50					
Instant Velocity (fps)	1.39		Hydraulic		Installation	
a			Characteristics		Notes	
Surcharge Evidence (ft)	None		Install	Plan Sketch	Inct	all Cross-Section Sketch
	0.00		IIIStall	nan sketch	mst	an cross-section sketch
Silt Type						
Silt Type I Silt Depth (in) (i	No			Α		Flow
Silt Type Silt Depth (in) Silt				A		Flow Depth
Silt Type T Silt Depth (in) (Needs Cleaning T Backwater T	No		~			Depth Velocity
Silt Type I Silt Depth (in) C Needs Cleaning I Backwater I Flow Path S	No No		13	A N		Depth Velocity Sensor
Silt Type f Silt Depth (in) (i) Needs Cleaning f Backwater f Flow Path S Drop Inlet f	No No Slight Bend			A N		Depth Velocity Sensor A/V
Silt Type I Silt Depth (in) (Needs Cleaning I Backwater I Flow Path S Drop Inlet I Hydraulic Rating (No No Slight Bend No	tes	A	→ N N N N N N N N N N N N N		Depth Velocity Sensor
Silt Type Silt Depth (in) Constraints Silt Depth (in) Silt Depth (in) Silt Depth (in) Silt Depth Silt Depth Silt Drop Inlet Silt Drop Inlet Silt Silt Cating Silt Constalla	No No Slight Bend No Good	tes		→ Pipe		Depth Velocity Sensor A/V
Silt Type I Silt Depth (in) () Needs Cleaning I Backwater I Flow Path S Drop Inlet I Hydraulic Rating () Installa	No No Slight Bend No Good	tes				Depth Velocity Sensor A/V
Silt Type for Silt Depth (in) (C) Needs Cleaning for Silt Depth (in) (C) Backwater for Silt Depth (in) (C) Flow Path (C) Drop Inlet for Silt Depth (in) (C) Installa Location in Pipe (ft) (C) Location from Manhole	No Slight Bend No Good Ation Not			Pipe		Depth Velocity Sensor A/V Sensor
Silt Type for Silt Type for Silt Type for Silt Depth (in) for Silt Depth (in) for Silt Depth (in) for Silt Depth for Silt Dept	No Slight Bend No Good ation Not 1.0 Pressure, Ve	locity, and Ultra		Pipe	A/V Clock Pos	Depth Velocity Sensor A/V Sensor
Silt Type for Silt Type for Silt Depth (in) for Silt Depth (in) for Silt Depth (in) for Silt Depth for Silt Dep	No Slight Bend No Good Ation Not	locity, and Ultra		Pipe		Depth Velocity Sensor A/V Sensor
Silt Type II Silt Depth (in) (C Needs Cleaning II Backwater II Flow Path S Drop Inlet II Hydraulic Rating (C IInstalla Location in Pipe (ft) (C Location from Manhole Sensors II Antenna Surface II	No Slight Bend No Good Ation Not 1.0 Pressure, Ve Non-Paved S	locity, and Ultra Surface	A state of the	Pipe	Velocity Clock	Depth Velocity Sensor A/V Sensor
Silt Type for the second secon	No Slight Bend No Good Ation Not 1.0 Pressure, Ve Non-Paved S	locity, and Ultra Surface	Recom	Pipe	Velocity Clock	Depth Velocity Sensor A/V Sensor
Silt Type Silt Type Silt Depth (in) Silt Drop Inlet Silt Drop Inlet Silt Antenna Surface Signal Strength Silt Depth (in) Silt	No Slight Bend No Good Ation Not 1.0 Pressure, Ve Non-Paved S	locity, and Ultra Surface	Recom	Pipe Elevated Pipe	Velocity Clock	bepth Velocity Sensor A/V Sensor
Silt Type from the second seco	No Slight Bend No Good Ation Not 1.0 Pressure, Ve Non-Paved S	locity, and Ultra Surface	Recom	Pipe Elevated Pipe	Velocity Clock	bepth Velocity Sensor A/V Sensor

kin			Norman,(ЭК	Site Name
grou	D	2023 No	orman Temporary	Flow Monitoring	WC-32
Inspected By		mjaurez		Project No.	Site Code
Inspected Date/Time		3/21/2023 4:26 PM		30-3984-00	т
Syster	n Informa	tion	Ar	ea Location Map	Area View Picture
Target Pipe Dia. (in) Municipality District Assigned Rain Gauge Client Manhole # U/S Connecting MH I.D System Characteristics: Residential -	21.0 Norman 103013 103012 Commercial - No			all Homes 9 ifeSpring Church 1	Top View Picture
Locatic Site Address 796 W Tec Site Access Longitude Latitude MH Type Manhole Depth (ft) Manhole Width (ft) Elevated MH	on Informa umseh Rd Off-Road -97.4537000 35.2617000 Precast Con 18.30 4.0 Yes	00 0	Greenleaf Google 05 % Access Notes	Trails - Ideal Neighborhoods eological Survey, USDA/F	PAC/GEO
Height Elevated (ft) Structural Integrity	2.0 Safe		Investig	gation Photo	Installation Photo
	Informati	on	1.		
	20.50 20.50 Polyvinyl CH Circular LEL % CO	0.0 0.0			
Flow Depth (in) Instant Velocity (fps)	3.00 1.02		Hydraulic		Installation
Surcharge Evidence (ft) Silt Type Silt Depth (in) Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating	16.00 None 0.00 No Slight Bend No Good	tos	Characteristics	Plan Sketch	Notes Install Cross-Section Sketch Flow Depth Velocity Sensor A/V Sensor
Location in Pipe (ft)	1.0	162	77	Pipe	
Location in Pipe (It) Location from Manhole Sensors Antenna Surface Signal Strength		elocity, and Ultra Surface		Elevated Pipe	A/V Clock Position: 6:00 Velocity Clock Position: 0:00
Post Ins	tallation	Notes		Арр	rovals
Meter Type Telemetry Type Installation Date	- 4/25/2023		Recom	mended by FSP	Client Approval

Inspected By		Norman,	OK	Site Name
Inspected By	group		Authority	WS-01
	r_bass		Project No.	Site Code
Inspected Date/Time	1/7/2015 9:12 AM		30-3884-00	т
System	Information	Ar	ea Location Map	Area View Picture
Target Pipe Dia. (in)	42.0		- the state is	
Municipality N	Norman	14. 这个学习之上		
District	Norman	and the set of the		
Assigned Rain Gauge	RG-03			
Client Manhole #	327074	The state of the second		
U/S Connecting MH I.D	327075	17 × 10/03 20	THE REPORT OF THE REPORT OF	
System Characteristics:				
•	Commercial - 🗹 Industrial - 🗌	Norma	n-CitM	
	No	Norma Transfer S	tation 🥏	
•		m. Ween	0	Top View Picture
wwiP influence	Yes	Total at	a la	
Location	Information			
Site Address 3901 Chautau	uqua Ave, Norman, OK 73072	and a fire to and		ART AND A CONTRACT
Site Access 0	Off-Road	A CONTRACTOR		and the second s
Longitude -	-97.45040000	MITTALY & AND THE AM	Ne VI	
Latitude	35.17670000	Contract Contract of the	and a state of the	
MH Type	Poured Concrete	A AND AND		
	13.00	Google	rogram, USDA Farm Servi	
	5.8		Ograffi, OSDA Faffi Servi	
	Yes	Access Notes	By cattle gate on Chatauqua	
3 ()	0.8	Investi	gation Photo	Installation Photo
Structural Integrity	Safe		5	
Site In	formation	1	A .	1
Pipe Height (in)	41.62	Charles and a set		Martin Martin Star
Pipe Width (in)	41.69		and the second second	A strange and a strange and a strange and
Pipe Type	Polyvinyl Chloride	A STORE OF		
Pipe Shape 0	Circular	L 31 /		Land / Constants
O2 I	LEL %			
H2S (со			
			A A PART	
	c Information		1	
• • • •	9.62			
,,,,,	2.13	Hydraulic		Installation
Surcharge Evidence (ft)		Characteristics		Notes
// -	None	Install	Plan Sketch	Install Cross-Section Sketch
Silt Depth (in)	0.00	install	i lan sketen	
Needs Cleaning	No		*	Flow
Backwater	No			Depth
Flow Path S	Straight		N	A/V
	No			Sensor
•	Good			Ultra
			This Meter	Sensor
	ation Notes		Pipe	
Location in Pipe (ft)	1.0		Elevated	
	Upstream		Pipe	
Location from Manhole				A/V Clock Position: 6:00
Location from Manhole				
Sensors	Paved Surface	1		1
Sensors Antenna Surface F	Paved Surface 75			
Sensors Antenna Surface F Signal Strength 7			Арр	rovals
Sensors Antenna Surface F Signal Strength 7 Post Insta	75			
Sensors Antenna Surface F Signal Strength 7 Post Insta Meter Type	75	Recom	mended by FSP	Client Approval
Sensors Antenna Surface F Signal Strength 7 Post Insta Meter Type Telemetry Type	75	Recom		

rin			Norman,	ОК	Site Name	
group			Norman Utilities Authority		WS-10	
Inspected By		r_bass		Project No.	Site Code	
Inspected Date/Time		1/7/2015 9:45 AM		30-3884-00	т	
System	Informat	ion	Ar	ea Location Map	Area View Picture	
Target Pipe Dia. (in)	22.0		·			
Municipality	Norman		25 S 25 DI			
District	Norman					
Assigned Rain Gauge	RG-03			G. mr Gill		
Client Manhole #	318010					
U/S Connecting MH I.D	318011				the - all 1	
System Characteristics:						
Residential - 🗹	Commercial -	Industrial -	The state of the state			
P/S Influence	No		appas were		Tau Miau Distant	
WWTP Influence	No		CONTRACT OF		Top View Picture	
Location	n Informa	tion		in the second	9	
Site Address 3204 Ridgect	rest Cir		NON ERES CE			
0	Off-Road		and the second	Rudy's Cou Store & Bar	ntry - RO	
	Отт-коаd -97.4524000	0	The state of the second	Store & Bar		
	-97.4524000		Cin Table			
	Brick		Google	Contract Contract		
• • •	8.06		xaGoogle _{agery Pr}	ogram, USDA Farm Servi	ce Agency	
	5.0		Access Notes	South of Post Oak apartments.		
	Yes			···· · ··· ··		
e	0.3		Investig	gation Photo	Installation Photo	
Structural Integrity	Safe					
Site Ir	nformatio	on	1			
Pipe Height (in)	22.62		- 11	- Acian D		
Pipe Width (in)	22.88		A AND AND AND AND AND AND AND AND AND AN	1 port of the	A State of the sta	
Ріре Туре	Vitrified Clay		Me an Bart	Carlette 1 Abris M	The second states and the second	
• •	Circular				8	
02	LEL %		- Aller	NAME -		
H2S	со					
Hydrauli	c Informa	ition				
Flow Depth (in)	8.44			100		
	1.62		Hydraulic		Installation	
Surcharge Evidence (ft)			Characteristics		Notes	
	None					
	0.00		Install	Plan Sketch	Install Cross-Section Sketch	
	No					
-	No			$\mathbf{\Lambda}$	Flow Depth	
	Straight		_	N		
	No			IN	A/V Sensor	
	Good				Ultra	
				This Meter	Sensor	
	ation Not	ies		Pipe		
	1.0			Elevated		
	Upstream			Pipe		
Sensors					A/V Clock Position: 5:00	
	Non-Paved S	urface				
Signal Strength	75					
Post Installation Notes		Approvals		rovals		
Post Inst	allation N	10105				
Post Insta Meter Type	allation N		Recom	mended by FSP	Client Approval	
	allation N		Recom			
Meter Type Telemetry Type	10/7/2014		Recom	mended by FSP	Client Approval	

rin		Norman,	ЭК	Site Name	
grou	p	Norman Utilities	Authority	WS-11	
Inspected By	r_bass		Project No.	Site Code	
Inspected Date/Time	1/8/2015 10:01 AN	Λ	30-3884-00	т	
System	n Information	Ar	ea Location Map	Area View Pi	cture
Target Pipe Dia. (in)	42.0		Oklat	Sity of a state of the state of	
Municipality	Norman		South C		1100
District	Norman	in the second	South C		
Assigned Rain Gauge	RG-03		·		
Client Manhole #	328046	Section of the section			
U/S Connecting MH I.D	328045	H HER			A
System Characteristics:		我 山 里里居的了。"\$P\$			NU
Residential - 🗹	Commercial - 🗹 🛛 Industrial - 🗌		M N		
P/S Influence	No	An designation of the	h. martin	Tan Minu Di	
WWTP Influence	No	Sale martines a sale and		Top View Pie	cture
Locatio	on Information	⁹ Nat	ional Weather Cente		4/1
Site Address 3428 Jenki	ins Ave Norman, OK 73072				
Site Access	Other		COLUMN R		1
Longitude	-97.44420000	Oliver Wildlife Preserve			
Latitude	35.18230000	Preserve	And the second s		2 Stall
MH Type	Poured Concrete		And the second second		13/18 1
Manhole Depth (ft)	22.60	Google	ogram, USDA Farm Serv		
Manhole Width (ft)	5.0	xas Sin Sinagery Pr	ogram, USDA Farm Serv	ice Agency	
Elevated MH	Yes	Access Notes	ROTC training ground		
Height Elevated (ft)	0.4				
Structural Integrity	Safe	Investig	gation Photo	Installation Photo	C
Site	Information	A second	1 A	Set 1 A	No market
Pipe Height (in)	41.25	Shi/ Shi			1
Pipe Width (in)	41.13		All Produces		
Ріре Туре	Polyvinyl Chloride		La haller F		the second
Pipe Shape	Circular	CARRENT CONTRACT		Canal	
02	LEL %		and the second sec		Intern Provent
H2S	со	MARKED CORRECTOR			
Hydrau	lic Information				
Hydrau Flow Depth (in)					
	lic Information	Hydraulic		Installation	
Flow Depth (in)	lic Information	Hydraulic Characteristics		Installation Notes	
Flow Depth (in) Instant Velocity (fps)	lic Information	Characteristics		Notes	
Flow Depth (in) Instant Velocity (fps) Surcharge Evidence (ft)	lic Information 26.13 0.78	Characteristics	Plan Sketch		ketch
Flow Depth (in) Instant Velocity (fps) Surcharge Evidence (ft) Silt Type	lic Information 26.13 0.78 Fine	Characteristics	Plan Sketch	Notes	
Flow Depth (in) Instant Velocity (fps) Surcharge Evidence (ft) Silt Type Silt Depth (in)	lic Information 26.13 0.78 Fine 9.00	Characteristics	Plan Sketch	Notes	ketch Flow Depth
Flow Depth (in) Instant Velocity (fps) Surcharge Evidence (ft) Silt Type Silt Depth (in) Needs Cleaning	lic Information 26.13 0.78 Fine 9.00 No No	Characteristics	\wedge	Notes	Flow Depth Silt
Flow Depth (in) Instant Velocity (fps) Surcharge Evidence (ft) Silt Type Silt Depth (in) Needs Cleaning Backwater Flow Path	lic Information 26.13 0.78 Fine 9.00 No	Characteristics	Plan Sketch	Notes	Flow Depth
Flow Depth (in) Instant Velocity (fps) Surcharge Evidence (ft) Silt Type Silt Depth (in) Needs Cleaning Backwater Flow Path Drop Inlet	lic Information 26.13 0.78 Fine 9.00 No No Straight	Characteristics	A N	Notes	Flow Depth Silt Depth
Flow Depth (in) Instant Velocity (fps) Surcharge Evidence (ft) Silt Type Silt Depth (in) Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating	lic Information 26.13 0.78 Fine 9.00 No No Straight No Good	Characteristics	\wedge	Notes	Flow Depth Silt Depth A/V Sensor
Flow Depth (in) Instant Velocity (fps) Surcharge Evidence (ft) Silt Type Silt Depth (in) Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating	lic Information 26.13 0.78 Fine 9.00 No No Straight No	Characteristics	A N	Notes	Flow Depth Silt Depth
Flow Depth (in) Instant Velocity (fps) Surcharge Evidence (ft) Silt Type Silt Depth (in) Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating	lic Information 26.13 0.78 Fine 9.00 No No Straight No Good	Characteristics	N <p< td=""><td>Notes</td><td>Flow Depth Silt Depth A/V Sensor Ultra</td></p<>	Notes	Flow Depth Silt Depth A/V Sensor Ultra
Flow Depth (in) Instant Velocity (fps) Surcharge Evidence (ft) Silt Type Silt Depth (in) Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating	lic Information 26.13 0.78 Fine 9.00 No No Straight No Good Ilation Notes	Characteristics	×N ⊗ This Meter ⊇ Pipe	Notes	Flow Depth Silt Depth A/V Sensor Ultra
Flow Depth (in) Instant Velocity (fps) Surcharge Evidence (ft) Silt Type Silt Depth (in) Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating Insta Location in Pipe (ft)	lic Information 26.13 0.78 Fine 9.00 No No Straight No Good Ilation Notes 1.0	Characteristics	N <p< td=""><td>Notes Install Cross-Section S</td><td>Flow Depth Silt Depth A/V Sensor Ultra</td></p<>	Notes Install Cross-Section S	Flow Depth Silt Depth A/V Sensor Ultra
Flow Depth (in) Instant Velocity (fps) Surcharge Evidence (ft) Silt Type Silt Depth (in) Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating Instal Location in Pipe (ft) Location from Manhole	lic Information 26.13 0.78 Fine 9.00 No No Straight No Good Ilation Notes 1.0	Characteristics	N <p< td=""><td>Notes</td><td>Flow Depth Silt Depth A/V Sensor Ultra</td></p<>	Notes	Flow Depth Silt Depth A/V Sensor Ultra
Flow Depth (in) Instant Velocity (fps) Surcharge Evidence (ft) Silt Type Silt Depth (in) Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating Instal Location in Pipe (ft) Location from Manhole Sensors	lic Information 26.13 0.78 Fine 9.00 No No Straight No Good Ilation Notes 1.0 Upstream	Characteristics	N <p< td=""><td>Notes Install Cross-Section S</td><td>Flow Depth Silt Depth A/V Sensor Ultra</td></p<>	Notes Install Cross-Section S	Flow Depth Silt Depth A/V Sensor Ultra
Flow Depth (in) Instant Velocity (fps) Surcharge Evidence (ft) Silt Type Silt Depth (in) Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating Instal Location in Pipe (ft) Location from Manhole Sensors Antenna Surface Signal Strength	lic Information 26.13 0.78 Fine 9.00 No No Straight No Good Ilation Notes 1.0 Upstream Non-Paved Surface	Characteristics	N <p< td=""><td>Notes Install Cross-Section S</td><td>Flow Depth Silt Depth A/V Sensor Ultra</td></p<>	Notes Install Cross-Section S	Flow Depth Silt Depth A/V Sensor Ultra
Flow Depth (in) Instant Velocity (fps) Surcharge Evidence (ft) Silt Type Silt Depth (in) Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating Instal Location in Pipe (ft) Location from Manhole Sensors Antenna Surface Signal Strength Post Inst	lic Information 26.13 0.78 Fine 9.00 No No Straight No Good Ilation Notes 1.0 Upstream Non-Paved Surface 75	Characteristics Install	► This Meter Pipe Elevated Pipe Pipe Elevated Pipe Reveted	Notes Install Cross-Section S	Flow Depth Silt Depth A/V Sensor Ultra
Flow Depth (in) Instant Velocity (fps) Surcharge Evidence (ft) Silt Type Silt Depth (in) Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating Insta Location in Pipe (ft) Location from Manhole Sensors Antenna Surface Signal Strength Meter Type	lic Information 26.13 0.78 Fine 9.00 No No Straight No Good Ilation Notes 1.0 Upstream Non-Paved Surface 75	Characteristics Install	Image: Constraint of the constrain	Notes Install Cross-Section S A/V Clock Position: 4:00 Client Approval	Flow Depth Silt Depth A/V Sensor Ultra
Flow Depth (in) Instant Velocity (fps) Surcharge Evidence (ft) Silt Type Silt Depth (in) Needs Cleaning Backwater Flow Path Drop Inlet Hydraulic Rating Instal Location in Pipe (ft) Location from Manhole Sensors Antenna Surface Signal Strength Post Ins	lic Information 26.13 0.78 Fine 9.00 No No Straight No Good Ilation Notes 1.0 Upstream Non-Paved Surface 75	Characteristics Install	► This Meter Pipe Elevated Pipe Pipe Elevated Pipe Reveted	Notes Install Cross-Section S	Flow Depth Silt Depth A/V Sensor Ultra



2023 Norman Temporary Flow Monitoring

Monitor Site

Monitor Site: RG-02

Monitor Location: D Pump station

Metadata

Date	Mar 22 2023 12:10PM	
Crew	C. Lyda; M. Juarez	
Coordinates	[35.2693105, -97.434748]	
Location		
Facility Name	D Pump station	
Location Description	7H98+MG Norman	
Investigation		
Arrival Time	Mar 22 2023 11:07AM	
Departure Time	Mar 22 2023 11:20AM	
Setup Conditions	Standard	
Access and Safety		
Contact Name	N/A	
Phone Number	329-0703	
Contact Title	N/A	

Review

Recommended for Installation







Area

Yes

Location



Area



2023 Norman Temporary Flow Monitoring

Monitor Site

Monitor Site: RG-03

Monitor Location: Norman City Yard

Metadata

Date	Jun 4 2021 12:48PM	
Creator	Blangdon	
Coordinates	[35.244104, -97.460121]	
Location		
Facility Name	Norman City Yard	
Location Description	1301 Da Vinci St	
Investigation		
Arrival Time	Jun 4 2021 11:46AM	
Departure Time	Jun 4 2021 11:53AM	
Setup Conditions	Standard	
Access and Safety		
Contact Name	City	
Phone Number	NA	
Contact Title	Yard	
Access Instructions	Access through South East part of the city building. Use permanent black ladder that is attached to the building, rain gauge is right up on the roof there.	

Review

Recommended for Installation

Yes



Location





2023 Norman Temporary Flow Monitoring

Monitor Site

Monitor Site: RG-04

Monitor Location: Vernon Campbell Water Treatment Plant

Metadata		Location
Date	Sep 11 2015 10:46AM	
Creator	mhuska	1 · · · · · · · · · · · · · · · · · · ·
Coordinates	[35.232275, -97.395774]	
Location		
Facility Name	Vernon Campbell Water Treatment Plant	Norn, Water Treatment Plant
Location Description	3000 East robinson St	
nvestigation		
Arrival Time	Sep 11 2015 10:46AM	
Setup Conditions	Standard	GOOGIE gical Survey, USDA/FPAC/C
Access and Safety		
Contact Name	Jared Mattern	
Phone Number	405-329-0703	
Contact Title	Utility Supervisor	
Access Instructions	Coordinate with City	
Review		
Recommended for Installation	Yes	

Monitor Site: RG-04 | Page 1 of 1



2023 Norman Temporary Flow Monitoring

Monitor Site

Monitor Site: RG-05

Monitor Location: Millenium Medical

Metadata

Date	May 2 2023 3:07PM	
Crew	C. Lyda; M. Juarez	
Coordinates	[35.22404, -97.494612]	
Location		
Facility Name	Millenium Medical	
Location Description	448 36th Ave NW	
Investigation		
Arrival Time	May 2 2023 2:05PM	
Departure Time	May 2 2023 2:18PM	
Setup Conditions	Standard	
Access and Safety		
Contact Name	Owner	
Phone Number	4055739905	
Contact Title	Owner	
Access Instructions	On top of the NE part of the roof by the front corner of building.	

Review

Recommended for Installation



Location







2023 Norman Temporary Flow Monitoring

Monitor Site

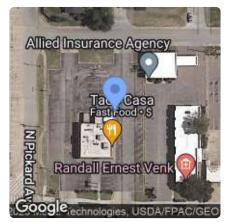
Monitor Site: RG-06

Monitor Location: Taco Casa

Metadata Date May 2 2023 2:02PM Crew C. Lyda; M. Juarez Coordinates [35.218927, -97.454122] Location **Facility Name** Taco Casa 731 W Main St **Location Description** Investigation **Arrival Time** May 2 2023 12:57PM May 2 2023 1:06PM **Departure Time Setup Conditions** Standard Access and Safety **Contact Name** Manager **Phone Number** 4058014104 **Contact Title** Manager **Access Instructions** On top of small NE corner building in the back.

Review

Recommended for Installation



Location







2023 Norman Temporary Flow Monitoring

Monitor Site

Monitor Site: RG-07

Monitor Location: Folks Auto Machine

Metadata

Date	May 2 2023 2:15PM	
Crew	C. Lyda; M. Juarez	_
Coordinates	[35.225407, -97.422871]	-
Location		
Facility Name	Folks Auto Machine	_
Location Description	541 12th Ave NE	-
Investigation		
Arrival Time	May 2 2023 1:14PM	_
Departure Time	May 2 2023 1:21PM	_
Setup Conditions	Standard	-
Access and Safety		
Contact Name	Owner	_
Phone Number	4053292287	_
Contact Title	Owner	-
Access Instructions	On top of NE vehicle awning.	-

Review

Recommended for Installation



Location



Area

Yes



2023 Norman Temporary Flow Monitoring

Monitor Site

Monitor Site: RG-08

Monitor Location: Summit Valley L/S

Metadata

Location

Date	May 11 2023 9:34AM	
Creator	danglemartin	
Coordinates	[35.1902413, -97.389453]	
Location		
Facility Name	Summit Valley L/S	
Location Description	Wood Valley Road\n	
Investigation		1/2
Arrival Time	Apr 25 2023 10:40AM	
Review		Googl

Yes



Recommended for Installation



Norman,OK

2023 Norman Temporary Flow Monitoring

Monitor Site

Monitor Site: RG-09

Monitor Location: St Michael's Episcopal Church

Metadata

Date Creator

Coordinates

May 11 2023 9:46AM

danglemartin

[35.1896856, -97.466331]

Apr 26 2023 10:30AM

Yes

Location

Facility Name

Location Description

Investigation

Arrival Time

Review

Recommended for Installation

St Michael''s Episcopal Church 1601 W Imhoff RD\n Location





Norman,OK

2023 Norman Temporary Flow Monitoring

Monitor Site

Monitor Site: RG-10

Monitor Location: City of Norman Water Reclamation Facility

Metadata

Date

Creator

Coordinates

Location

Facility Name

Location Description

Investigation

Arrival Time Departure Time Setup Conditions

Sep 11 2015 11:46AM Sep 11 2015 12:46PM Standard

City of Norman Water Reclamation

Sep 11 2015 10:46AM

[35.1757793, -97.443034]

mhuska

Facility

3500 Jenkins ave

Location



Access and Safety

Contact Name	Jared Mattern	
Phone Number	405-329-0703	
Contact Title	Utility Supervisor	
Access Instructions	Norman waste water treatment plant on top of chlorine building.	

Review

Recommended for Installation

Yes



Norman,OK

2023 Norman Temporary Flow Monitoring

Monitor Site

Monitor Site: RG-11

Monitor Location: Community Christian School Athletics

Metadata

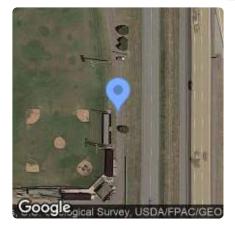
Date	Mar 22 2023 11:42AM	
Crew	S. Gentry; Z. Sanders	
Coordinates	[35.280651, -97.486143]	
ocation		
Facility Name	Community Christian School Athleti	
Location Description	5336 N Interstate Dr	
nvestigation		
Arrival Time	Mar 22 2023 10:41AM	
Departure Time	Mar 22 2023 11:46AM	
Setup Conditions	Standard	
Access and Safety		
Contact Name	Kerry Filmore	
Phone Number	4056205487	
Contact Title	Maintenance	

Review

Installation Instructions

On the dugout closest to the road, at the field south of the parking lot, or on a bleacher awning

Recommended for Installation



Location



Area

Yes



Area



Area



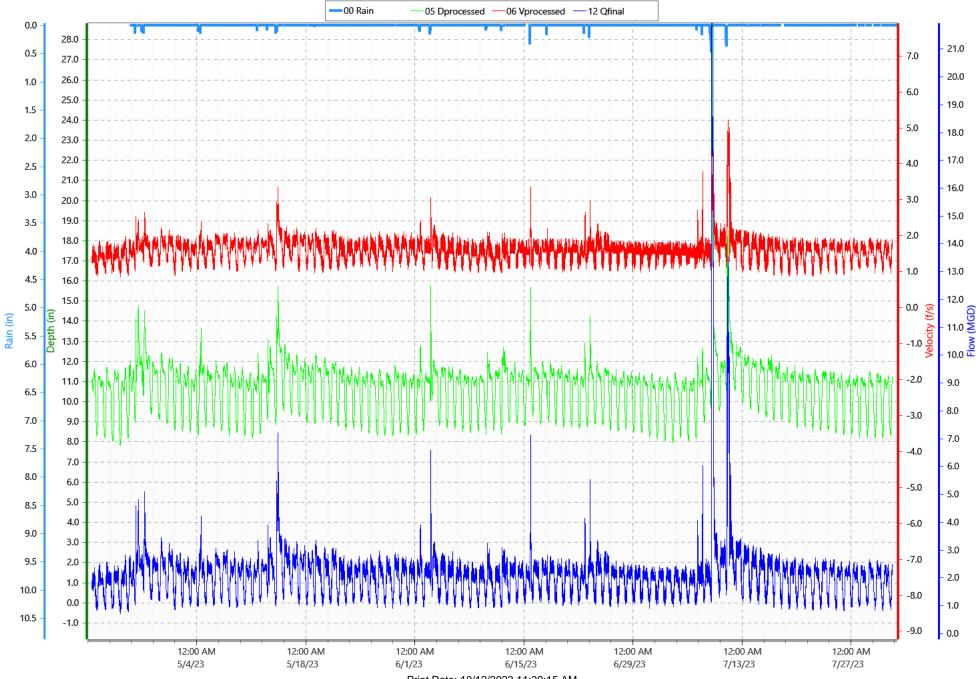
Wastewater Utility Baseline Development Technical Memorandum DRAFT

Appendix B: Flow Monitoring Hydrographs



BH-02 (4/20/2023 to 8/2/2023)

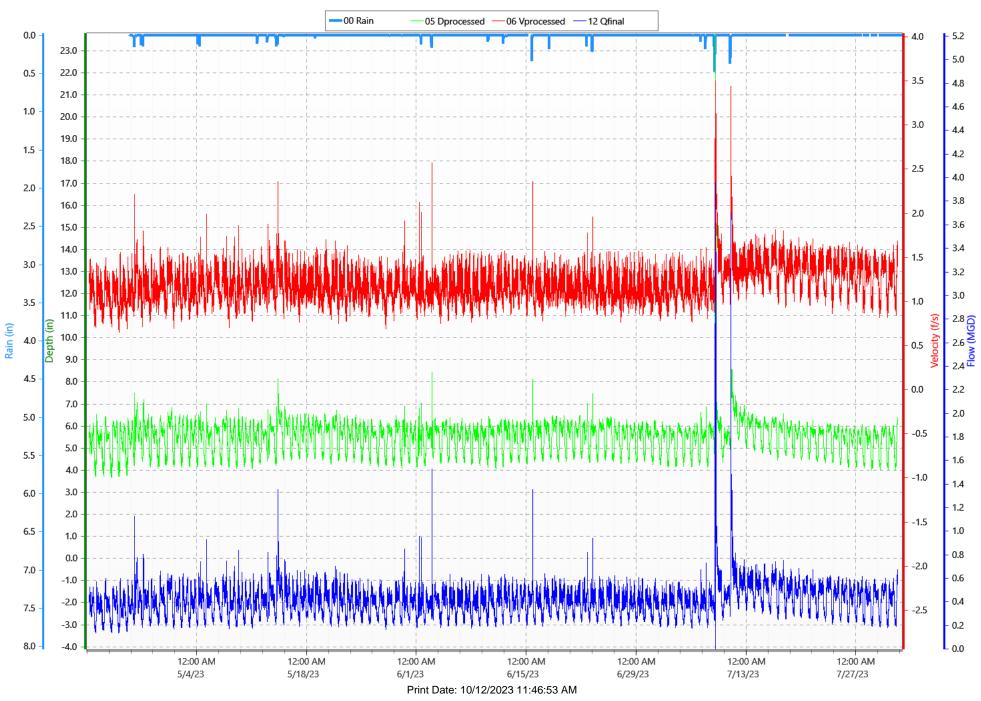
DVQ with Rain - Pipe Dia: 42.50 in.



Print Date: 10/12/2023 11:39:15 AM

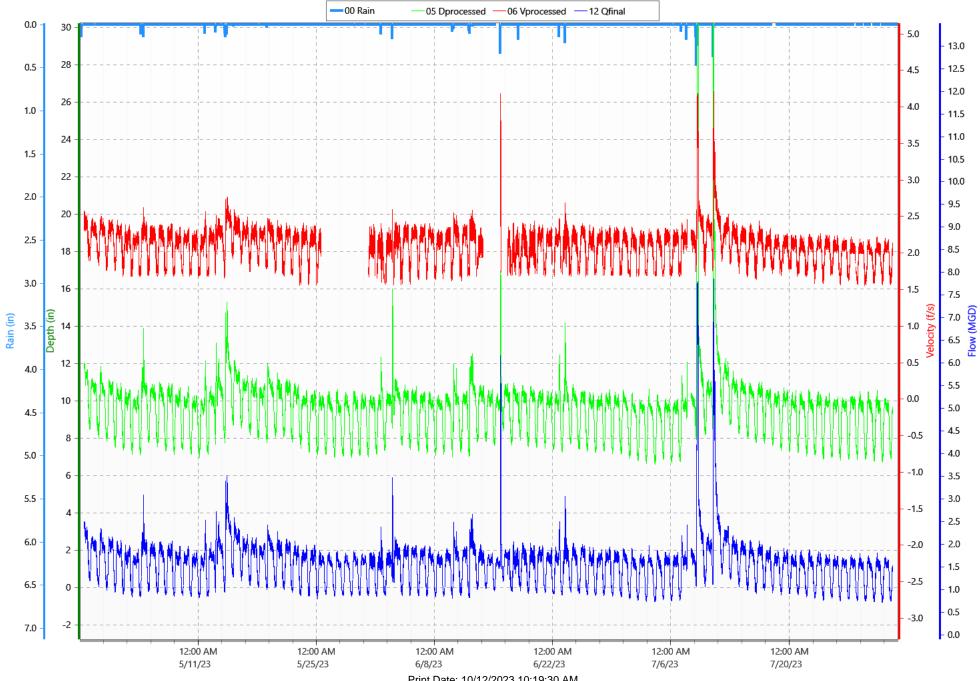
BH-03 (4/20/2023 to 8/2/2023)

DVQ with Rain - Pipe Dia: 22.00 in.



BH-04 (4/27/2023 to 8/2/2023)

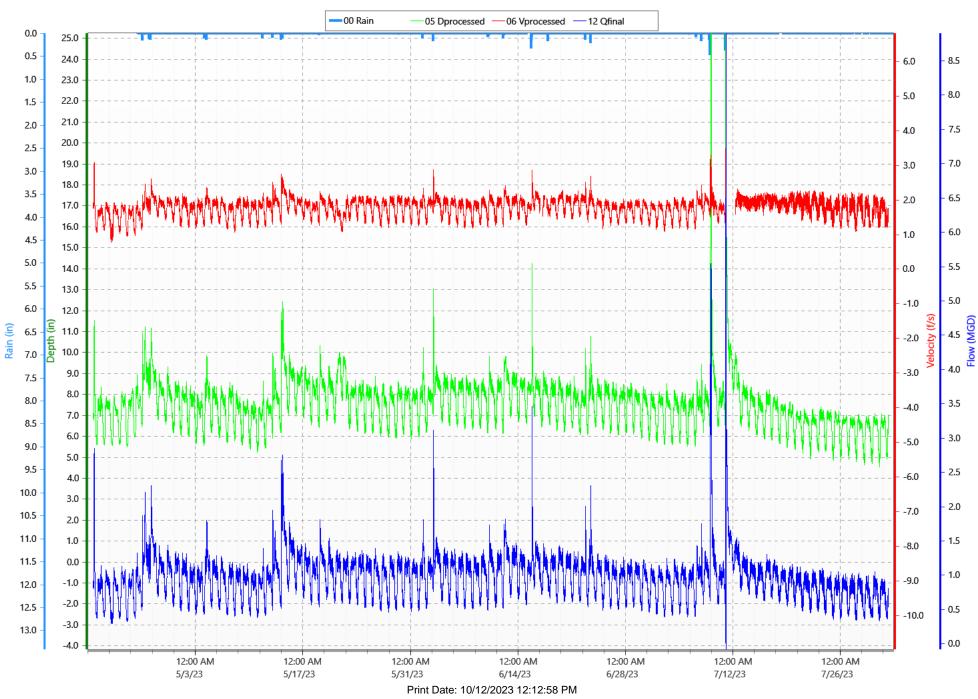
DVQ with Rain - Pipe Dia: 23.00 in.



Print Date: 10/12/2023 10:19:30 AM

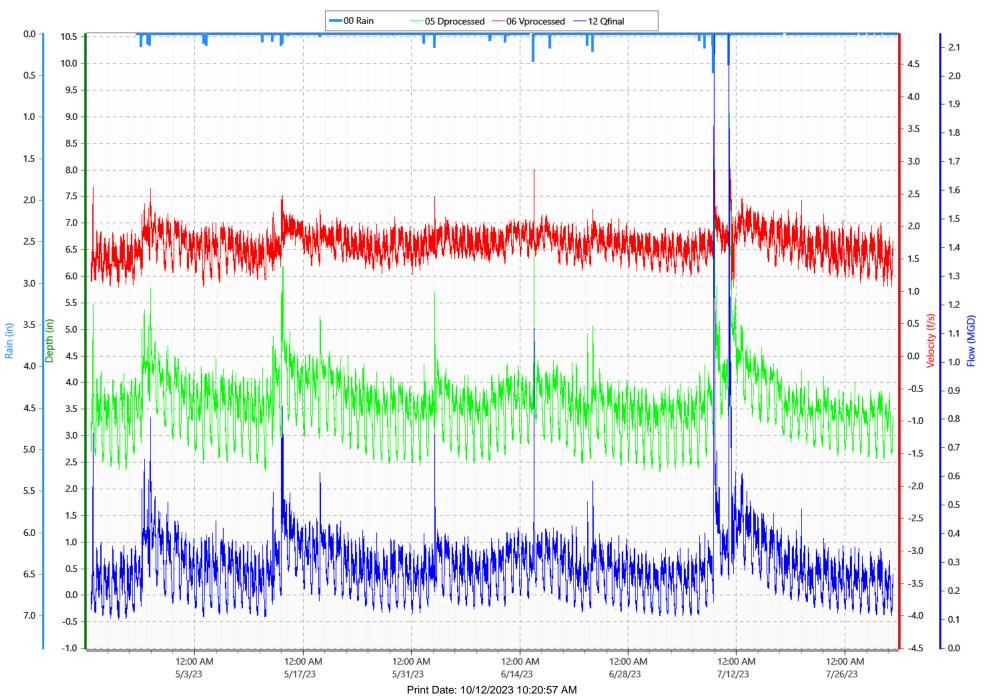
BH-05 (4/19/2023 to 8/2/2023)

DVQ with Rain - Pipe Dia: 23.00 in.



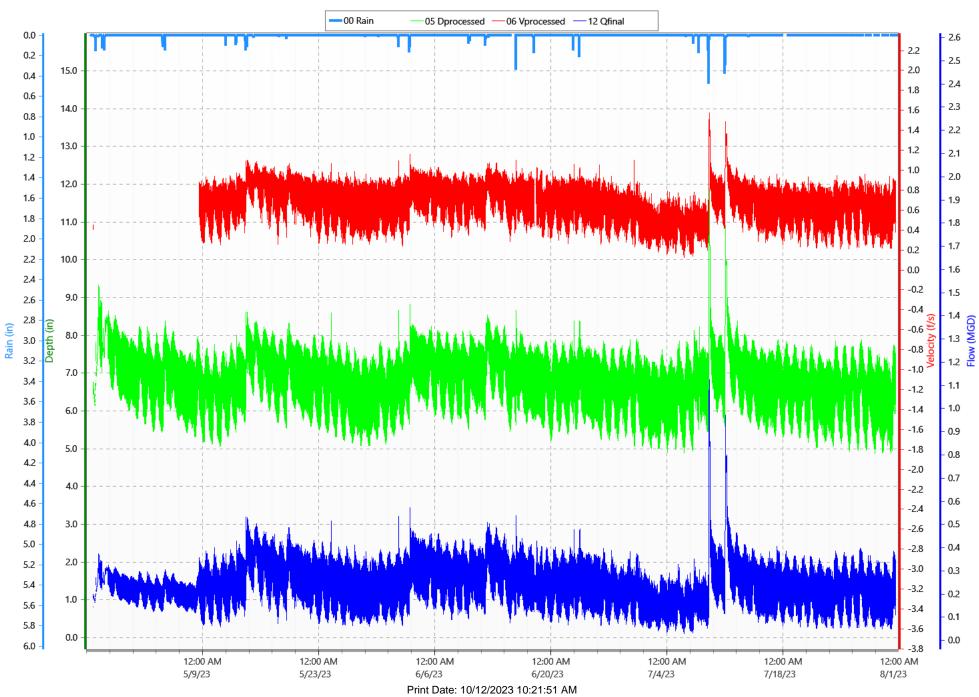
BH-06 (4/19/2023 to 8/2/2023)

DVQ with Rain - Pipe Dia: 17.5 in.



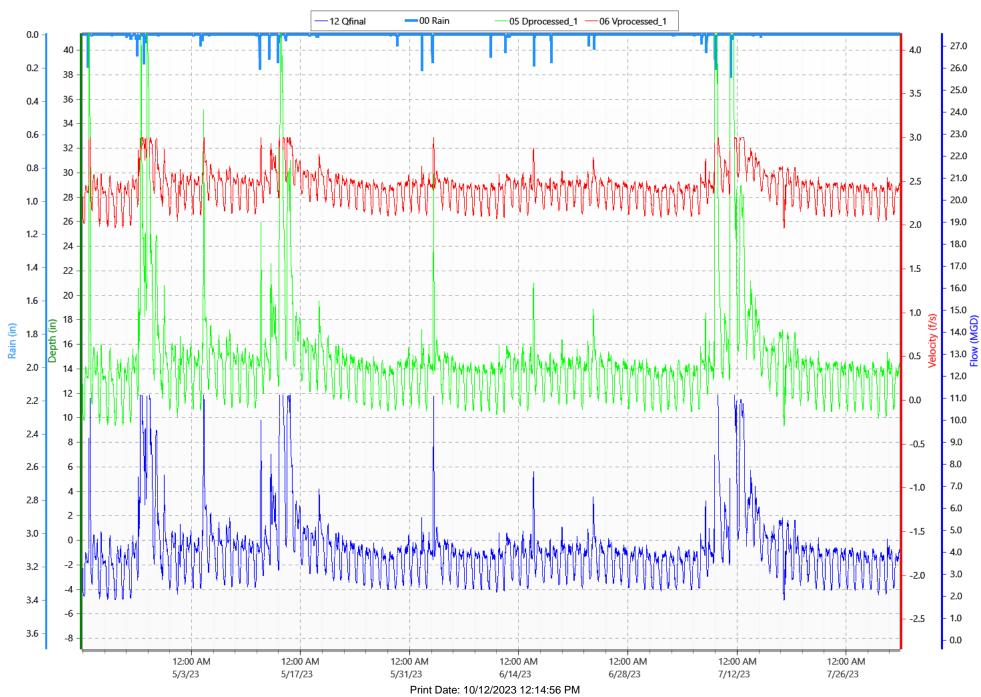
BH-07 (4/25/2023 to 8/1/2023)

DVQ with Rain - Pipe Dia: 16.50 in.



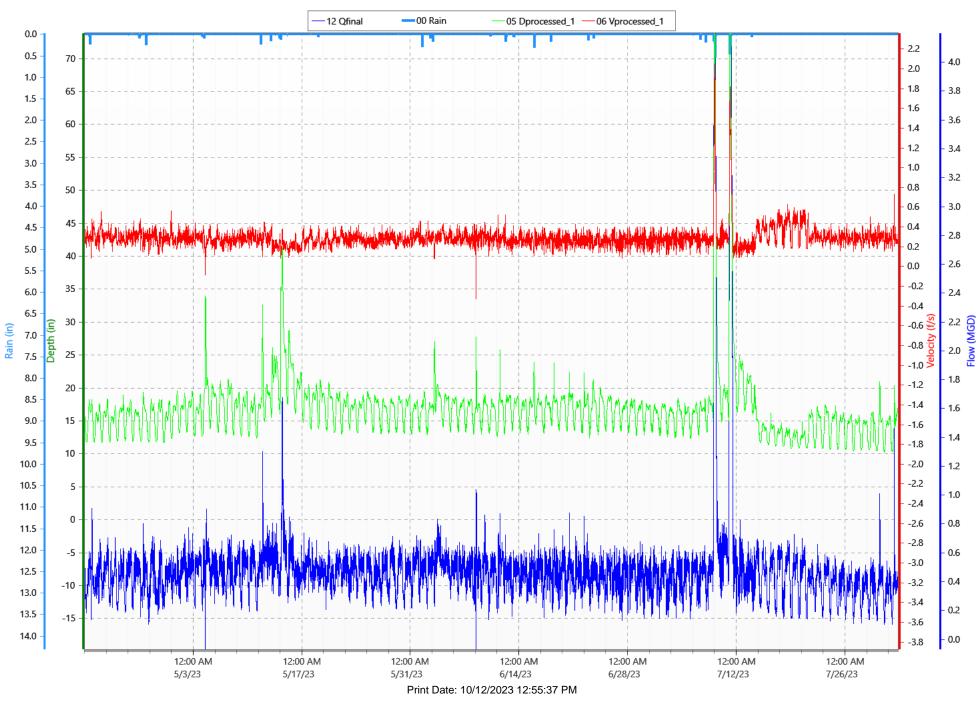
BP-17 (4/19/2023 to 8/2/2023)

DVQ with Rain - Pipe Dia: 32.94 x 33.98 in.



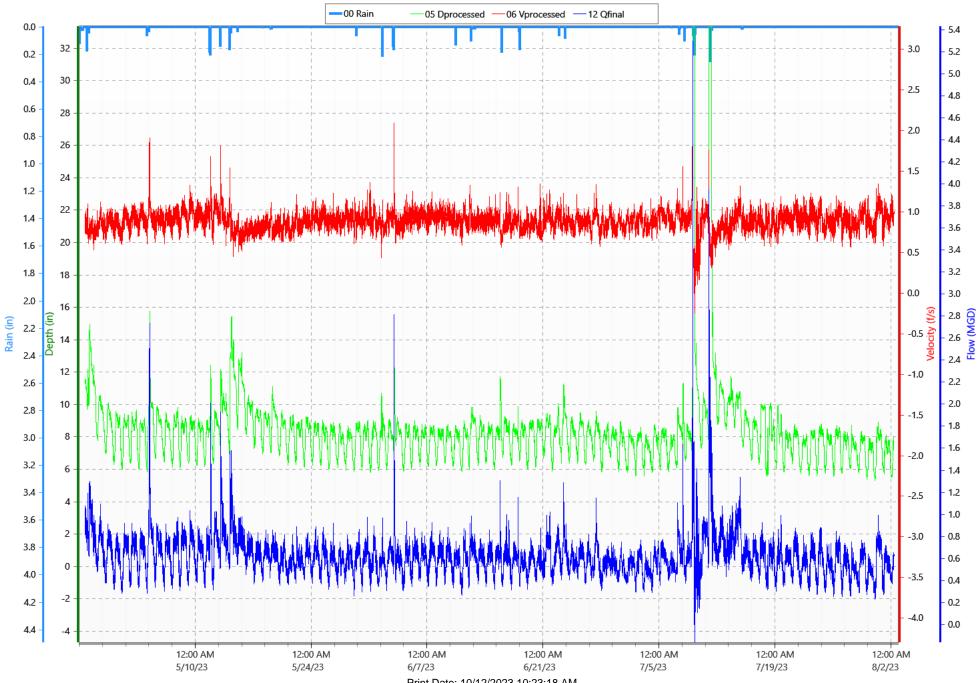
BP-18 (4/19/2023 to 8/2/2023)

DVQ with Rain - Pipe Dia: 36.88 in.



BP-19 (4/26/2023 to 8/3/2023)

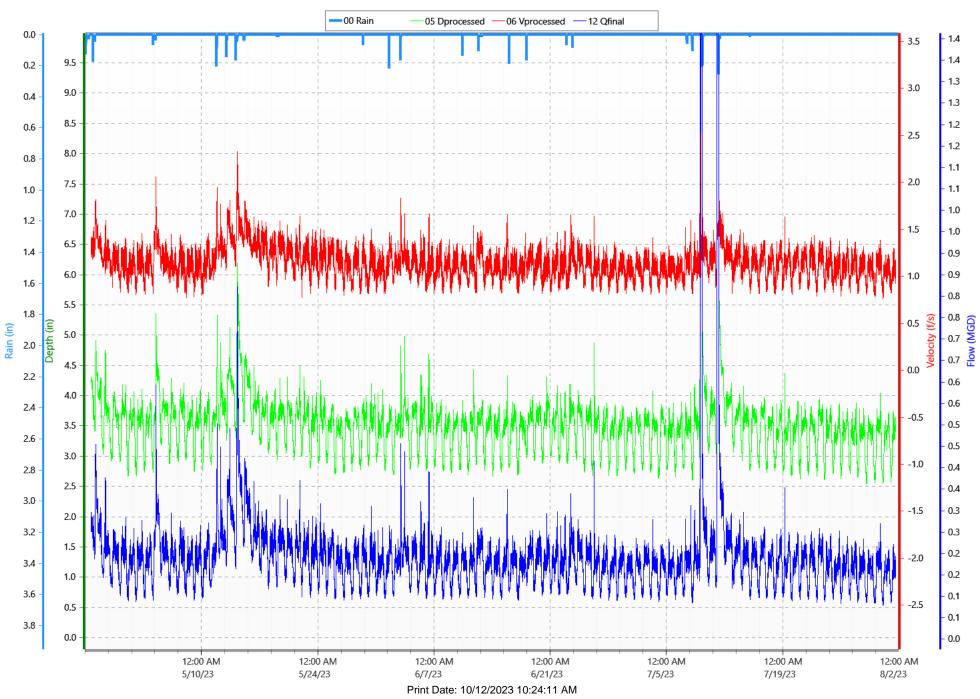
DVQ with Rain - Pipe Dia: 29.50 in.



Print Date: 10/12/2023 10:23:18 AM

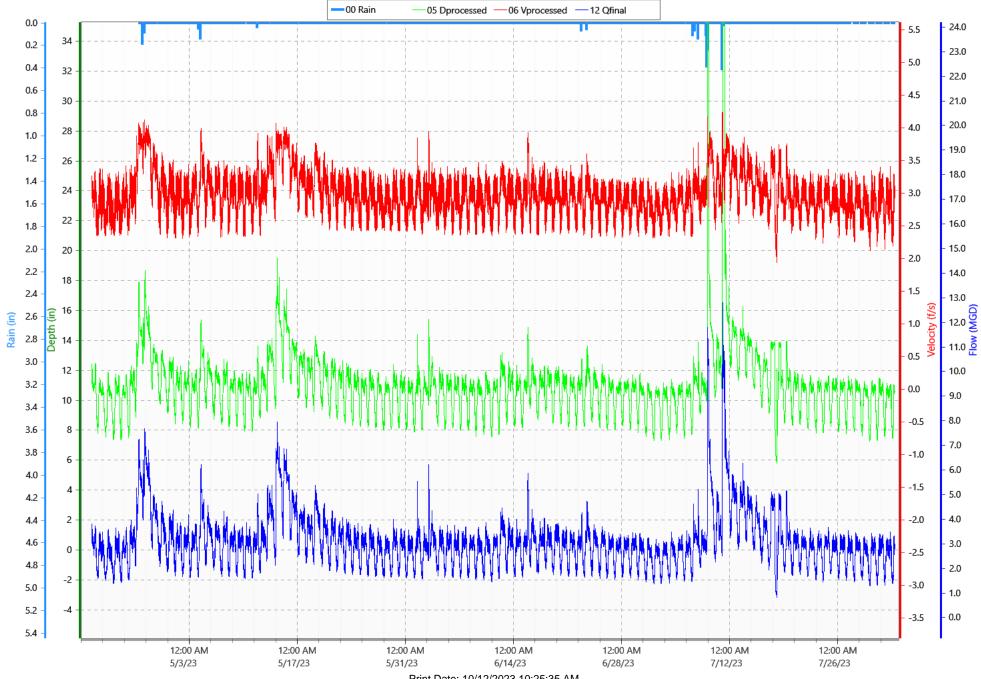
BP-20 (4/26/2023 to 8/2/2023)

DVQ with Rain - Pipe Dia: 18.50 in.



BP-21 (4/19/2023 to 8/3/2023)

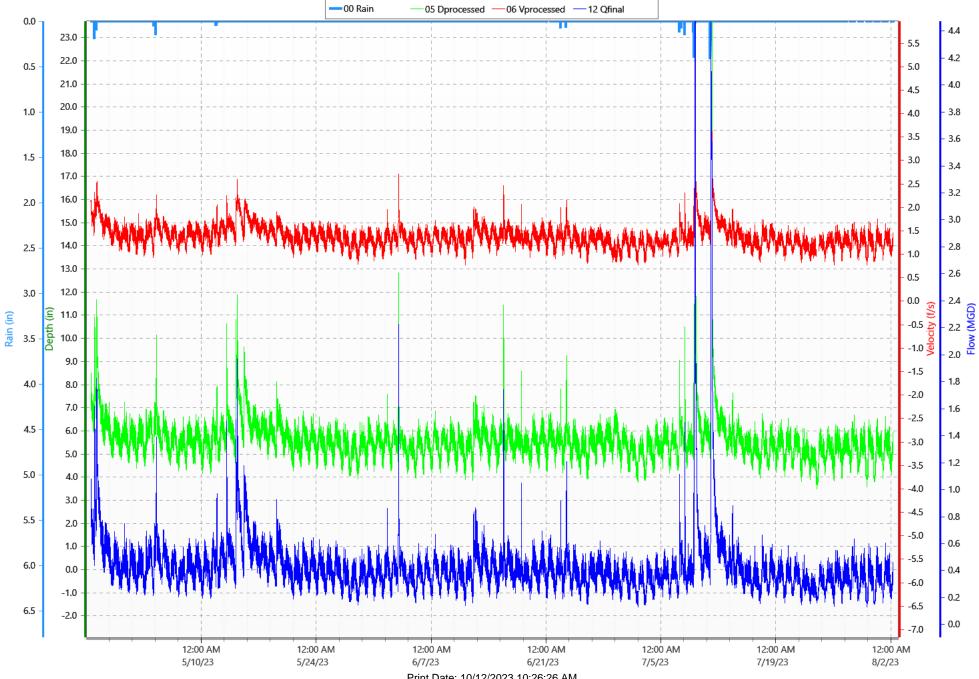
DVQ with Rain - Pipe Dia: 28.75 x 29.75 in.



Print Date: 10/12/2023 10:25:35 AM

BP-22 (4/26/2023 to 8/3/2023)

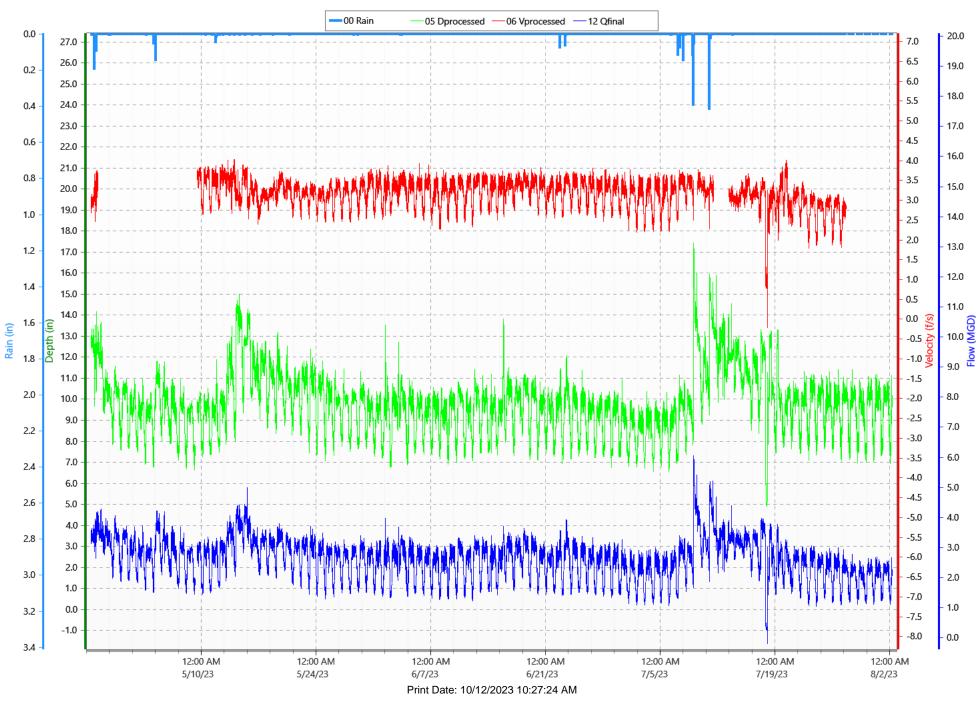
DVQ with Rain - Pipe Dia: 16.50 x 17.00 in.



Print Date: 10/12/2023 10:26:26 AM

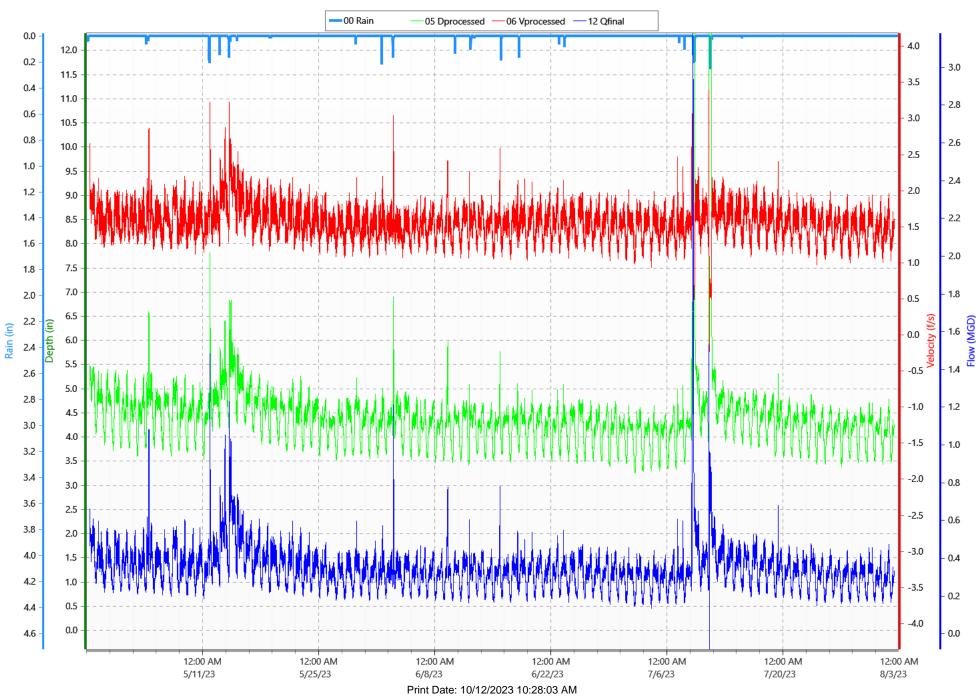
BP-23 (4/26/2023 to 8/3/2023)

DVQ with Rain - Pipe Dia: 23.50 x 25.00 in.



BP-24 (4/27/2023 to 8/3/2023)

DVQ with Rain - Pipe Dia: 18.50 x 19.00 in.



BP-25 (4/19/2023 to 8/2/2023)

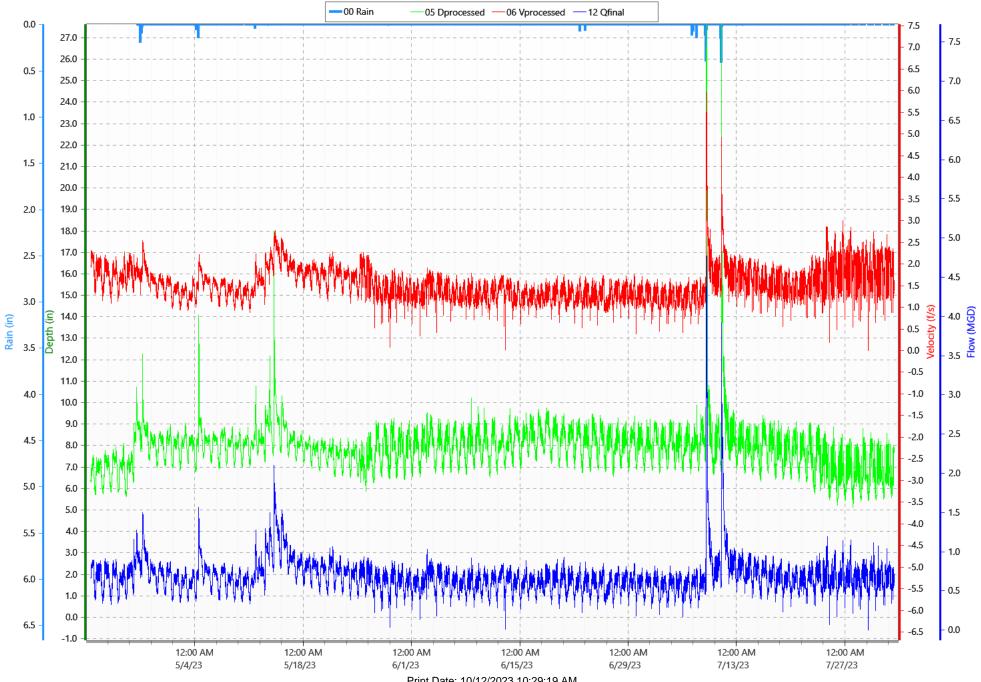
DVQ with Rain - Pipe Dia: 35.75 in.



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BP-26 (4/20/2023 to 8/3/2023)

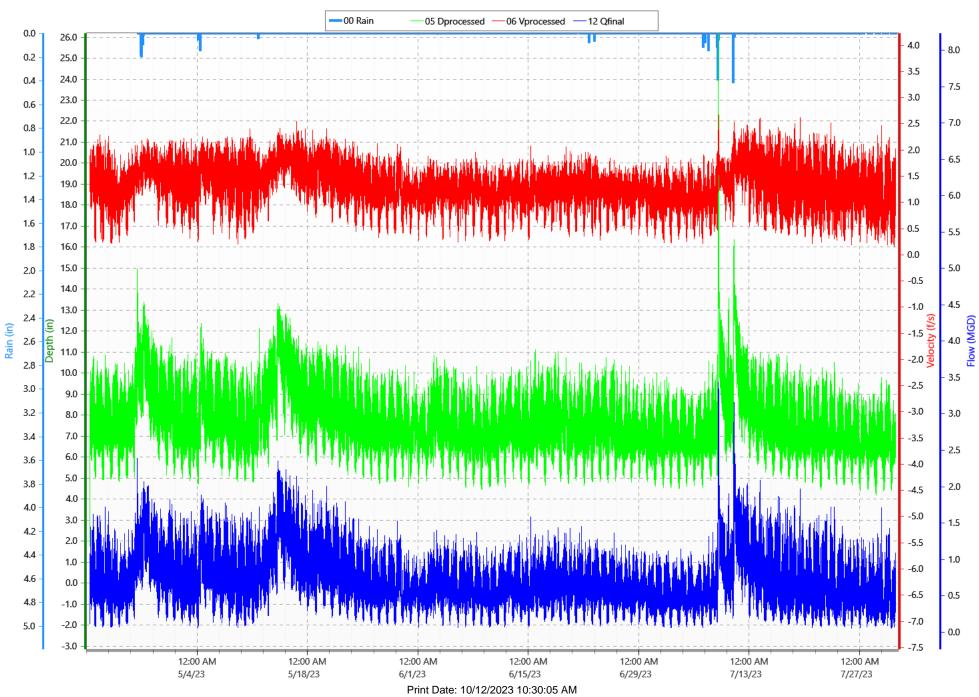
DVQ with Rain - Pipe Dia: 1450 x 15.62 in.



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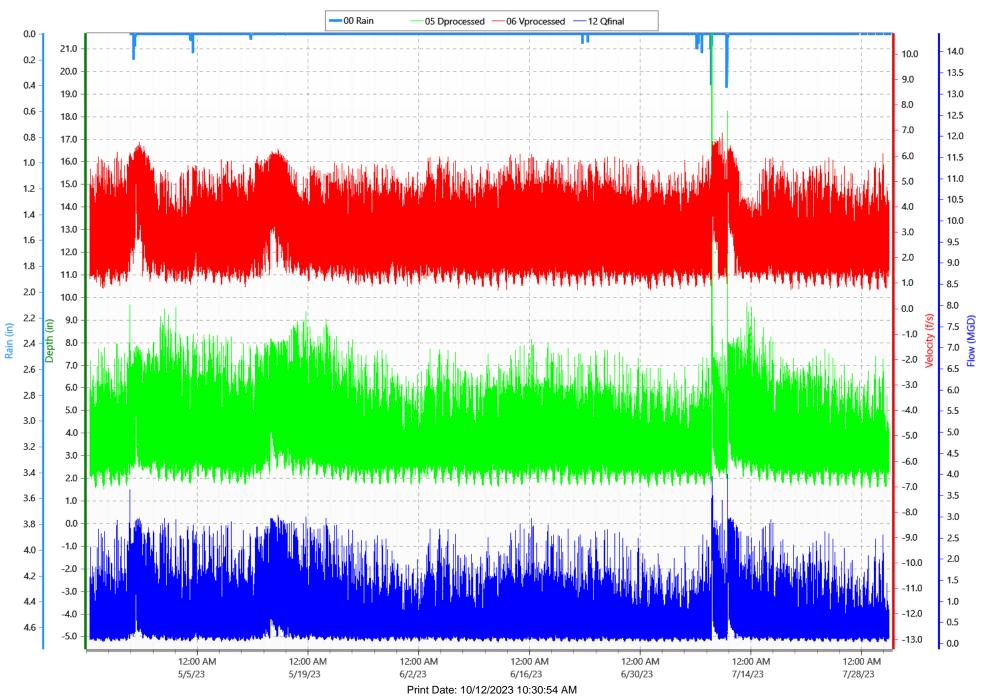
BP-27 (4/20/2023 to 8/1/2023)

DVQ with Rain - Pipe Dia: 20.25 in.



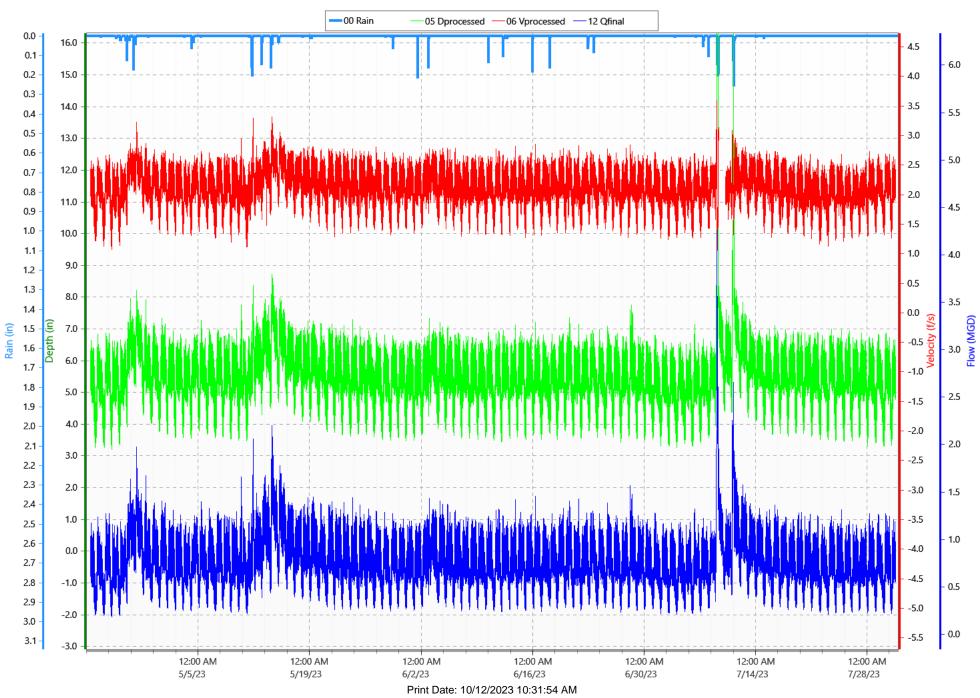
BP-27-01 (4/21/2023 to 8/1/2023)

DVQ with Rain - Pipe Dia: 17.10 in.



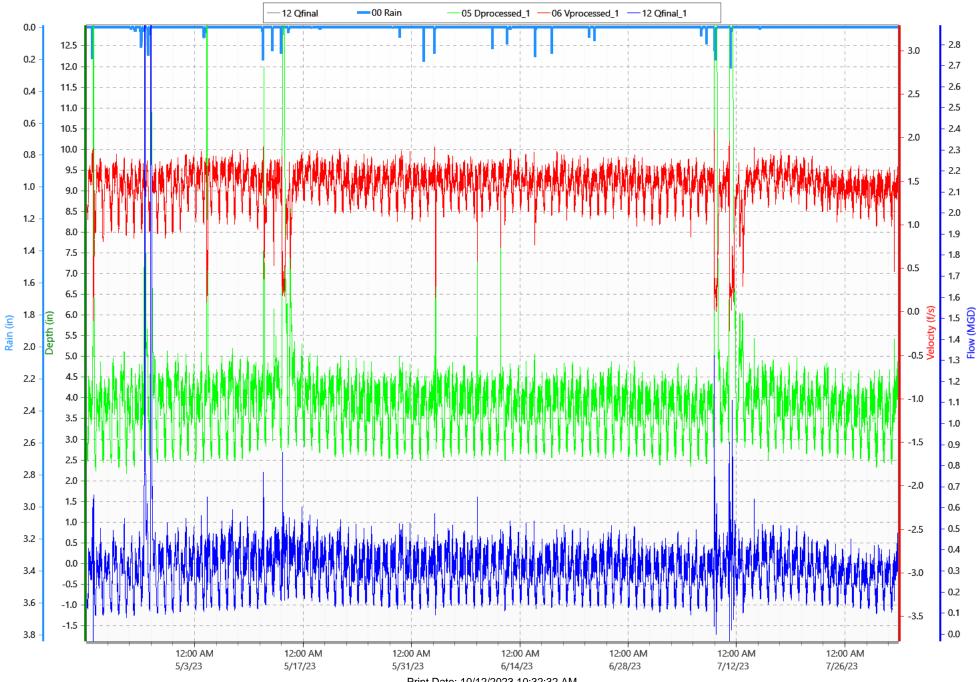
BP-28 (4/21/2023 to 8/1/2023)

DVQ with Rain - Pipe Dia: 23.70 in.



BP-30 (4/19/2023 to 8/2/2023)

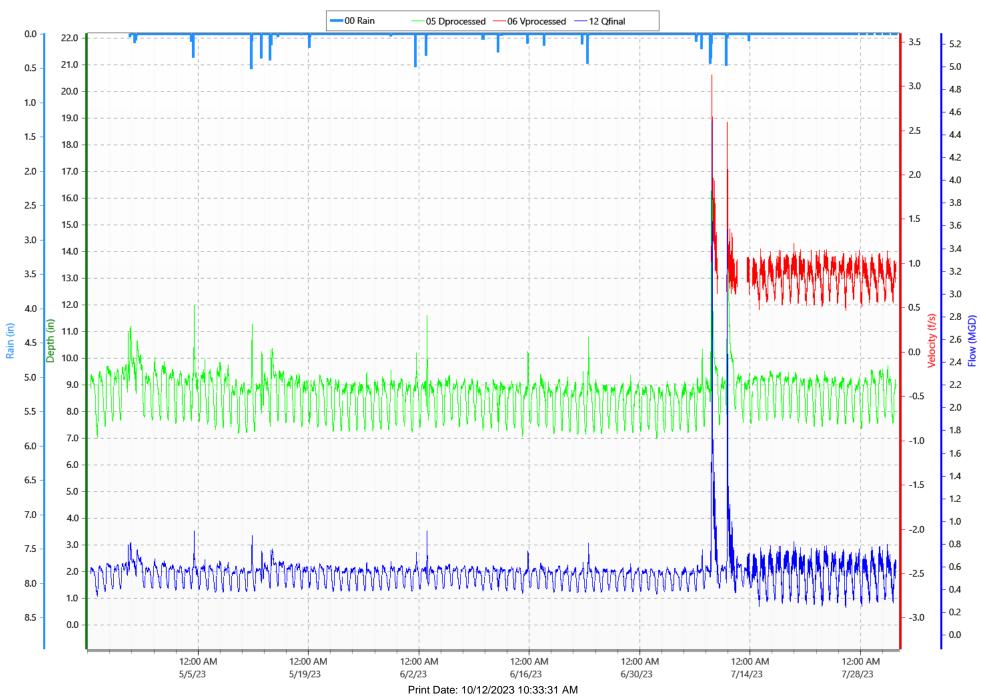
DVQ with Rain - Pipe Dia: 23.20 in.



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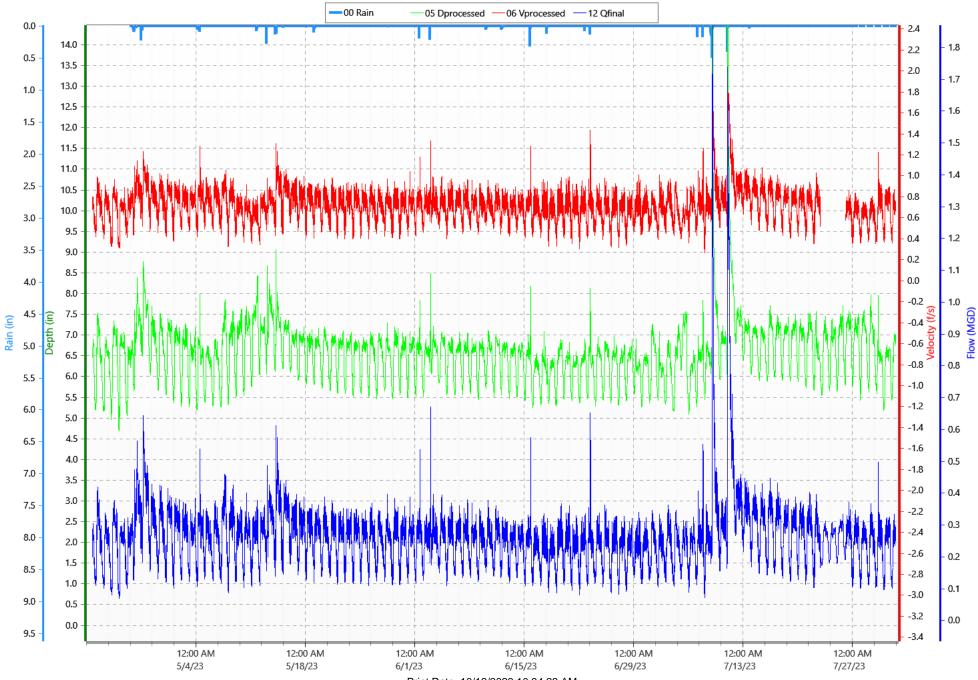
IH-12 (4/21/2023 to 8/2/2023)

DVQ with Rain - Pipe Dia: 22.20 in.



IH-13 (4/20/2023 to 8/2/2023)

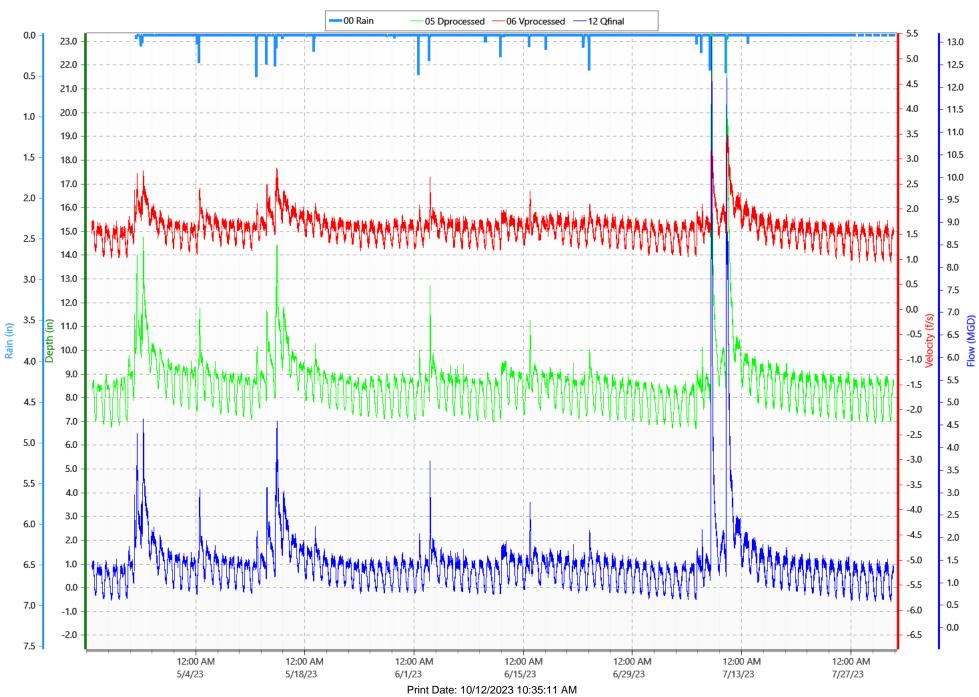
DVQ with Rain - Pipe Dia: 18.00 in.



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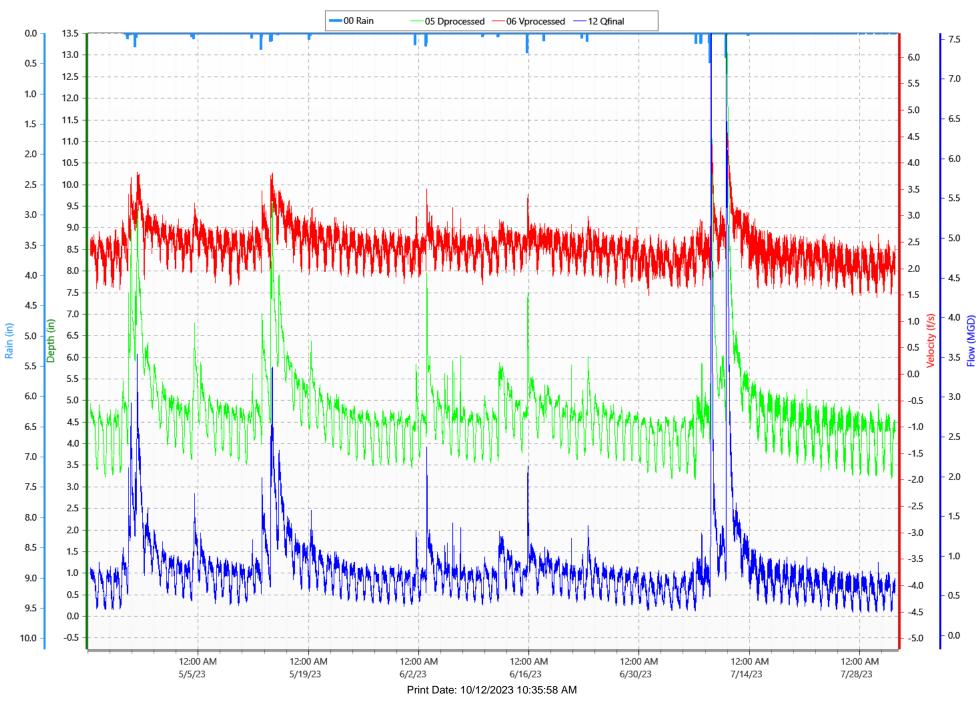
IH-14 (4/20/2023 to 8/2/2023)

DVQ with Rain - Pipe Dia: 34.00 x 35.00 in.



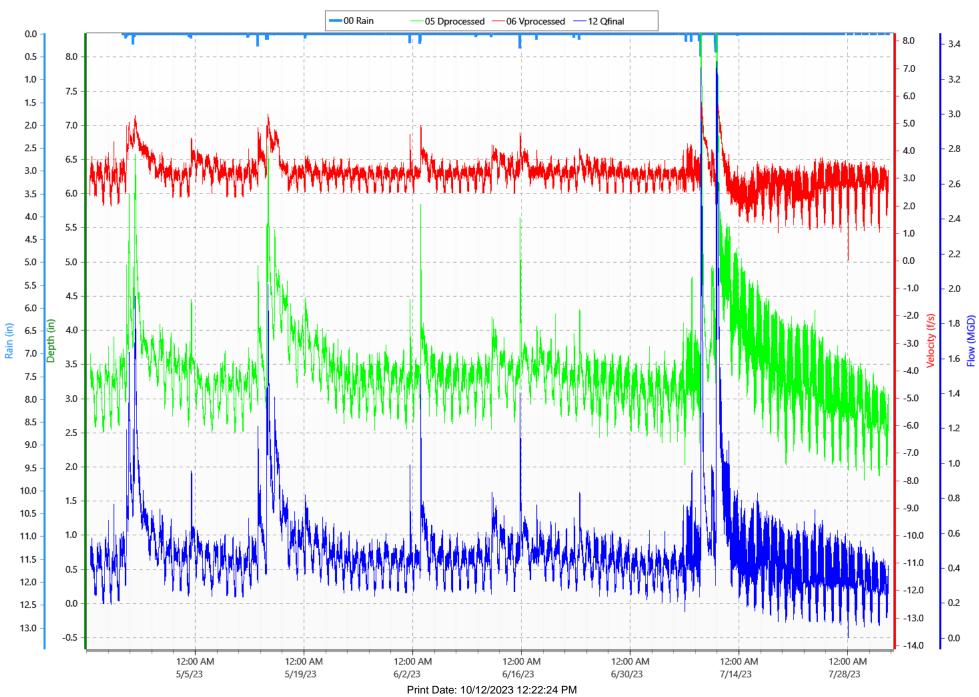
IH-15 (4/21/2023 to 8/2/2023)

DVQ with Rain - Pipe Dia: 29.00 x 30.25 in.



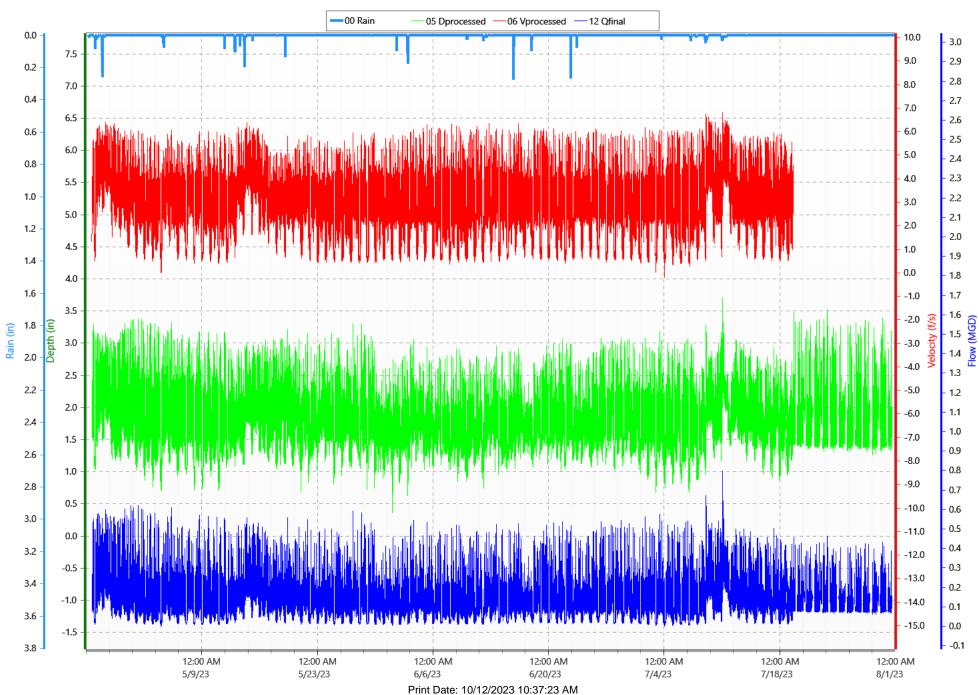
IH-16 (4/21/2023 to 8/3/2023)

DVQ with Rain - Pipe Dia: 17.44 in.



LD-01 (4/25/2023 to 8/1/2023)

DVQ with Rain - Pipe Dia: 9.75 in.



LD-02 (4/24/2023 to 8/1/2023)

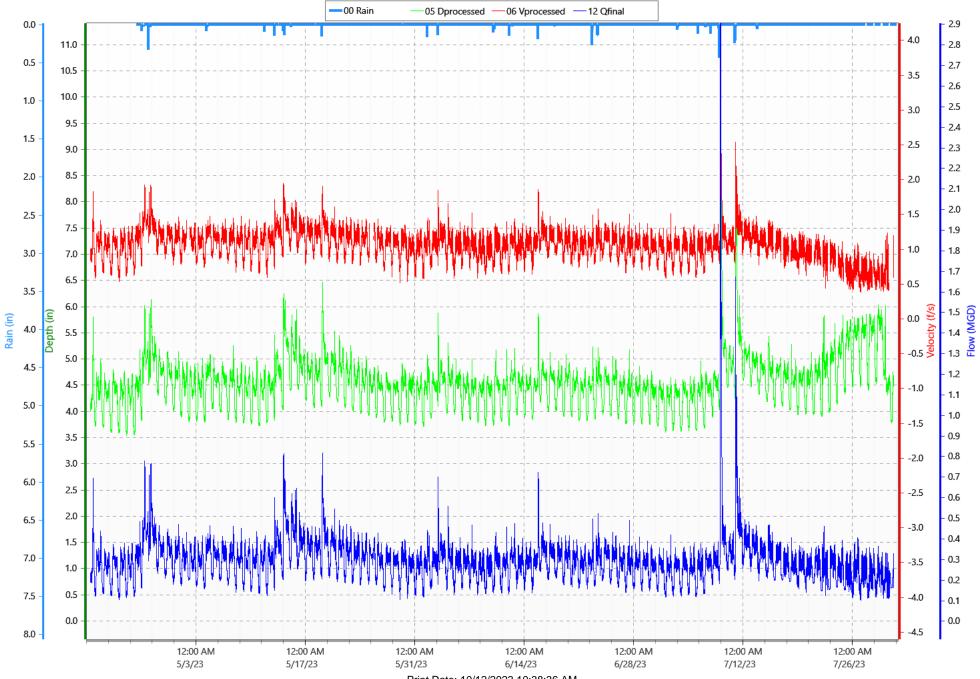
DVQ with Rain - Pipe Dia: 35.50 x 36.00 in.



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LD-03 (4/19/2023 to 8/1/2023)

DVQ with Rain - Pipe Dia: 22.00 x 23.50 in.



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ND-08 (4/20/2023 to 8/2/2023)

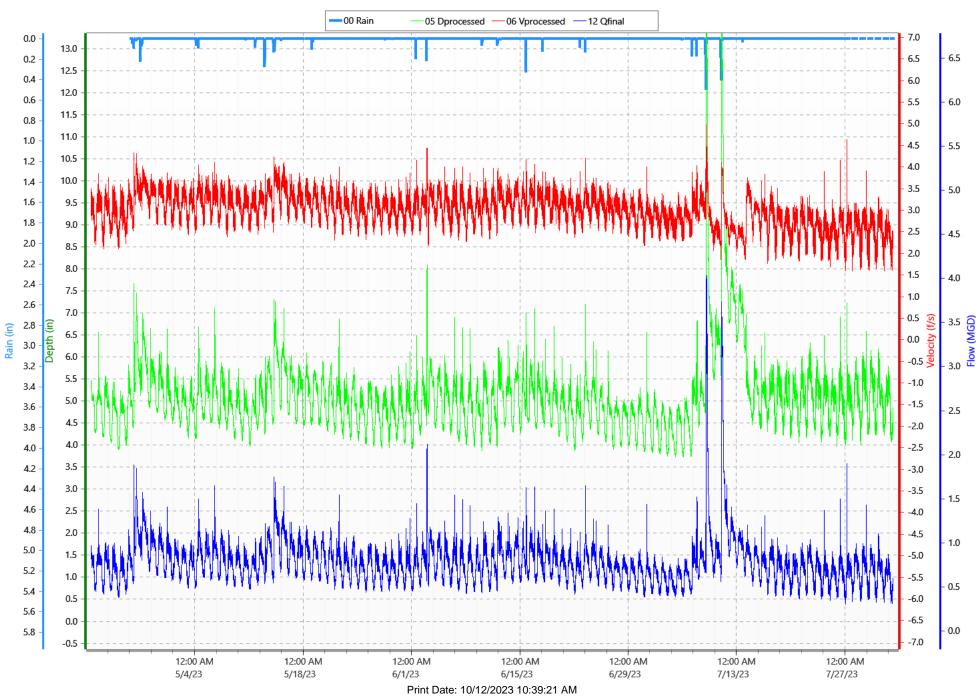
DVQ with Rain - Pipe Dia: 24.00 in.



Print Date: 10/12/2023 10:39:03 AM

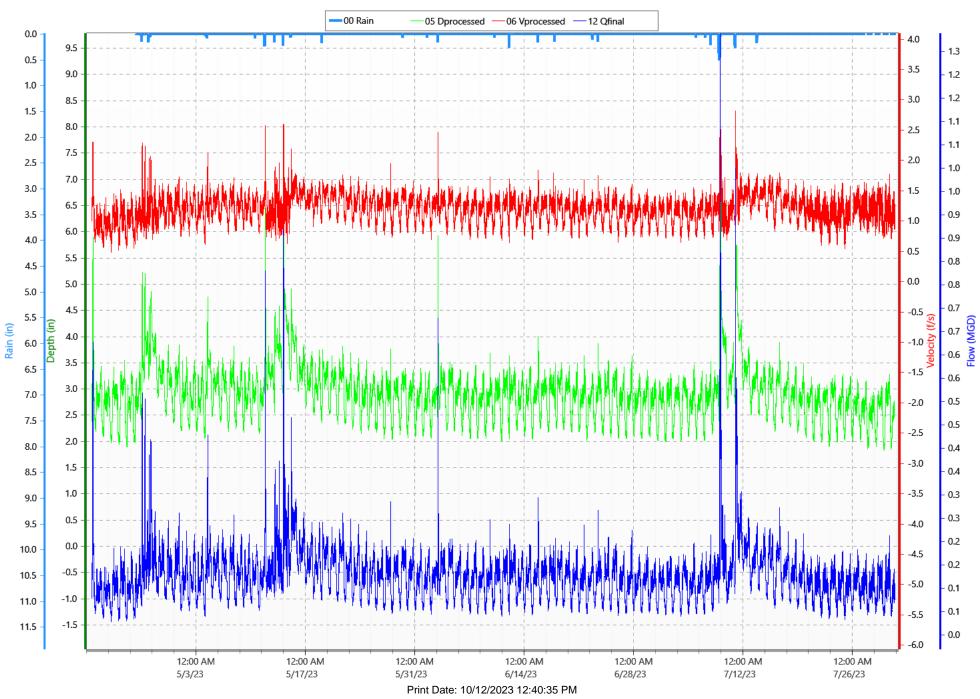
ND-09 (4/20/2023 to 8/3/2023)

DVQ with Rain - Pipe Dia: 17.00 in.



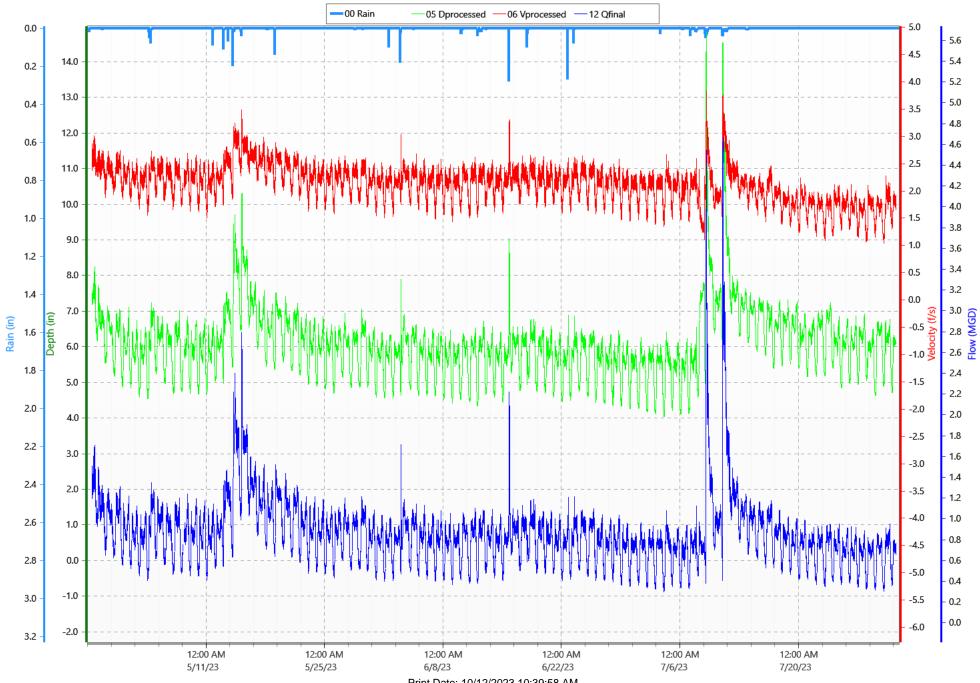
SV-01 (4/19/2023 to 8/1/2023)

DVQ with Rain - Pipe Dia: 14.00 x 14.50 in.



WC-30 (4/27/2023 to 8/1/2023)

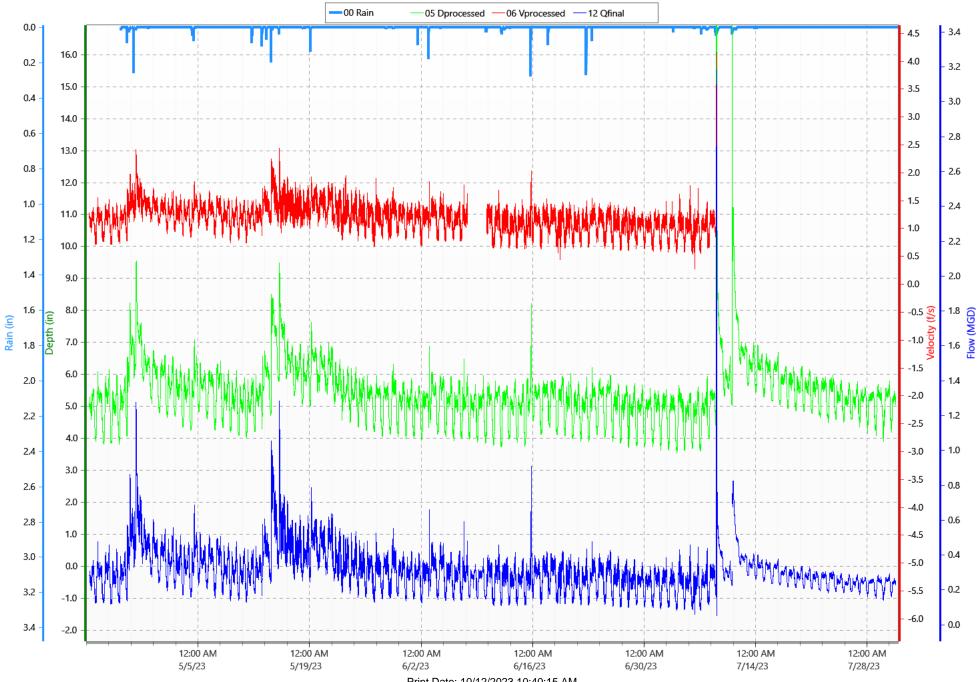
DVQ with Rain - Pipe Dia: 23.00 in.



Print Date: 10/12/2023 10:39:58 AM

WC-31 (4/21/2023 to 8/1/2023)

DVQ with Rain - Pipe Dia: 15.00 in.



Print Date: 10/12/2023 10:40:15 AM

WC-32 (4/25/2023 to 8/1/2023)

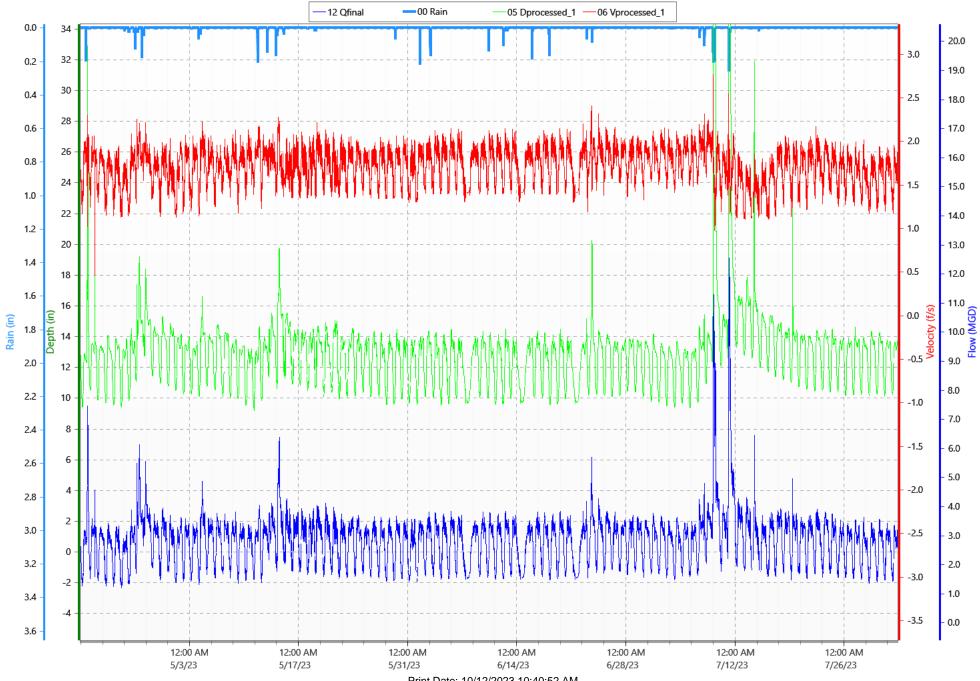
DVQ with Rain - Pipe Dia: 20.50 in.



Print Date: 10/12/2023 10:40:40 AM

WS-01 (4/19/2023 to 8/2/2023)

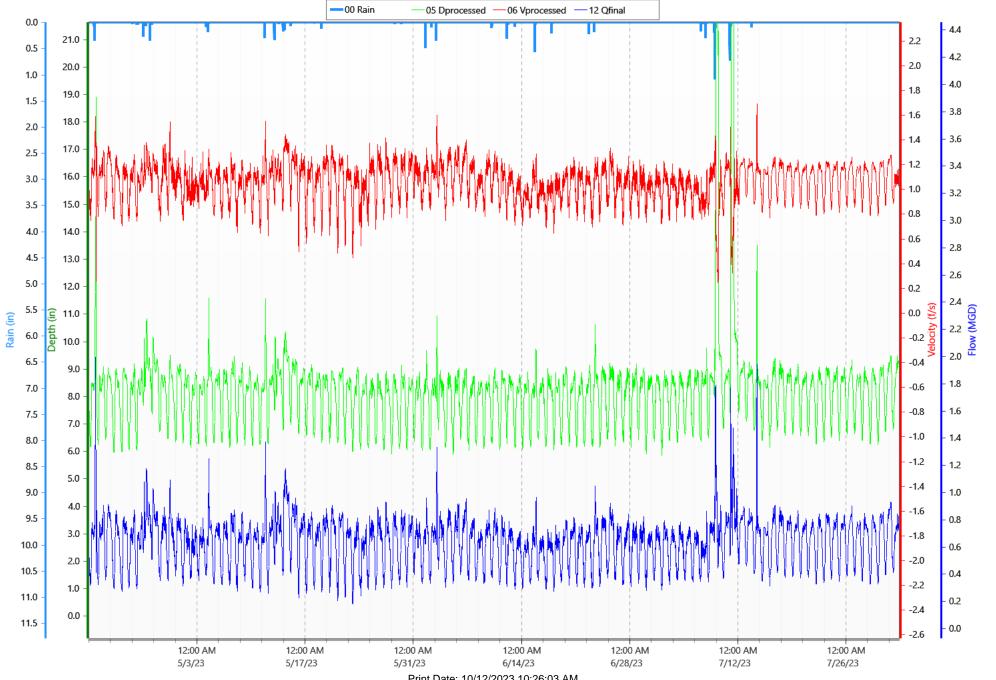
DVQ with Rain - Pipe Dia: 41.66 in.



Print Date: 10/12/2023 10:40:52 AM

WS-10 (4/19/2023 to 8/2/2023)

DVQ - Pipe Dia: 23.25 in.



Print Date: 10/12/2023 10:26:03 AM

WS-11 (4/19/2023 to 8/2/2023)

DVQ with Rain - Pipe Dia: 41.20 in.

