



Board Meetings



ARCH CAPE WATER & SANITARY DISTRICTS
32065 E. Shingle Mill Lane, Arch Cape, OR 97102
(503) 436-2790

**THE PUBLIC IS INVITED, IF THEY WISH,
TO ATTEND IN PERSON:
THE FIRE HALL, 72979 US 101,
ARCH CAPE
BY TELEPHONE OR ZOOM LINK:**

To Join the **Zoom Video Meeting** Paste the following in your browser address window:
<https://us02web.zoom.us/j/82450898403>

Call:	669-900-6833
Meeting ID:	824 5089 8403
Meeting Passcode:	None Required
Assistance:	503-739-2348
Date:	Thursday 15 December 2022
Time:	6:00 PM
Agenda:	Posted in Board Packet

ARCH CAPE SANITARY DISTRICT
BOARD OF DIRECTORS MEETING
Arch Cape Fire Hall 79729 Hwy 101
Thursday December 15th, 2022
Following the Water Meeting
To Join Meeting by Video Link:
<https://us02web.zoom.us/j/82450898403>
Join by Telephone: 1-669-900-6833
Meeting ID: 824 5089 8403

- | | |
|---|----------------------------------|
| I. Call to Order | Darr Tindall, President |
| II. Public Comments | Darr |
| III. Agenda Approval | Darr |
| IV. Consent Agenda (Action) | Darr |
| A. Approve Minutes – November 17th Regular Meeting | |
| B. Accept November Budget and Finance Reports | |
| C. Authorize Payment of Accounts | |
| D. Accept Correspondence Requiring No Action | |
| V. Old Business | |
| A. Wastewater Facilities Plan (Information) | Phil Chick |
| B. UBMax Billing System (Information) | Teri Fladstol, Jigsaw Consulting |
| C. Long Range Financial Plan (Information) | Phil |
| VI. New Business | |
| A. Low Income Household Water Assistance Program (Action) | Darr |
| B. Access to District Consultants (Information) | Darr |
| VII. Reports (Information) | |
| A. Accounts Receivable Report | Teri Fladstol, Jigsaw Consulting |
| B. District Manager’s Report and Correspondence for Action | Phil Chick |
| C. Board Members’ Comments and Reports | Darr |
| VIII. January Agenda Items (Information) | Darr |
| IX. Public Comments | Darr |
| XI. Adjourn | Darr |

Arch Cape Sanitary District

Balance Sheet

November 30, 2022

ASSETS

Checking/Savings	
1000 · Columbia Bank #1218	\$ 212,081.84
1100 · Local Government Pool	\$ 346,005.50
Total Checking/Savings	<u>\$ 558,087.34</u>
Total Current Assets	<u>\$ 558,087.34</u>
TOTAL ASSETS	<u>\$ 558,087.34</u>

LIABILITIES & EQUITY

Liabilities	
Current Liabilities	
Total Liabilities	<u>\$ -</u>
Equity	<u>\$ 558,087.34</u>
TOTAL LIABILITIES & EQUITY	<u>\$ 558,087.34</u>

ARCH CAPE SANITARY DISTRICT BVA FY 2022/2023

GENERAL FUND		Budget	Jul 22	Aug 22	Sep 22	Oct 22	22-Nov	Year to Date	%
Beginning Balance	\$	154,726.00							
· WD Facilities Use Charges	\$	3,750.00						\$ -	0.0%
4300 · Interest Income	\$	4,000.00						\$ -	0.0%
· T.A.G. Facility Plan Update	\$	7,400.00				\$ 5,400.00		\$ 5,400.00	72.97%
4601 · User Fees	\$	328,008.00	\$ 15,710.88	\$ 8,430.00	\$ 31,887.89	\$ 19,831.94		\$ 75,860.71	23.13%
4604 · Excess Usage Charges	\$	15,000.00	\$ 307.27	\$ 79.53	\$ 1,230.79	\$ 384.42		\$ 2,002.01	13.35%
4605 · Debt Service	\$	37,368.00	\$ 2,218.00	\$ 1,326.00	\$ 3,544.52	\$ 1,862.25		\$ 8,950.77	23.95%
Total Income	\$	395,526.00	\$ 18,236.15	\$ 9,835.53	\$ 36,663.20	\$ 27,478.61	\$ -	\$ 92,213.49	23.31%
Total Resources:	\$	550,252.00	\$ 18,236.15	\$ 9,835.53	\$ 36,663.20	\$ 27,478.61	\$ -	\$ 92,213.49	16.76%
· Water District IGA Charges	\$	150,000.00	\$ 8,142.13	\$ 8,250.20	\$ 7,198.05	\$ 9,398.43	\$ 10,634.05	\$ 43,622.86	29.08%
6103 · Liability & Property Insurance	\$	14,850.00	\$ 2,228.00					\$ 2,228.00	15.0%
6104 · Licenses	\$	3,500.00						\$ -	0.0%
6105 · Dues & Taxes	\$	1,200.00	\$ 8.25	\$ 8.25	\$ 3,106.25	\$ 1,029.21	\$ 8.25	\$ 4,160.21	346.68%
6106 · Professional Services	\$	5,000.00				\$ 495.00	\$ 82.50	\$ 577.50	11.55%
6107 · Auditing Service	\$	10,000.00						\$ -	0.0%
6108 · Legal Services	\$	5,000.00						\$ -	0.0%
6109 · Notices	\$	700.00						\$ -	0.0%
6110 · Utilities	\$	46,000.00	\$ 3,458.34	\$ 3,014.77	\$ 2,504.06	\$ 2,396.12	\$ 2,593.03	\$ 13,966.32	30.36%
6200 · Maintenance	\$	100,000.00	\$ 323.76	\$ 4,258.57	\$ 5,716.56	\$ 3,007.51	\$ 5,316.35	\$ 18,622.75	18.62%
6201 · Chemicals	\$	7,000.00	\$ 921.88		\$ 1,106.25	\$ 3,887.86		\$ 5,915.99	84.51%
· Inflow & Infiltration	\$	1,000.00						\$ -	
Total 6000 · Materials & Services	\$	344,250.00	\$ 15,082.36	\$ 15,531.79	\$ 19,631.17	\$ 20,214.13	\$ 18,634.18	\$ 89,093.63	25.88%
Total Operating Expenses	\$	344,250.00	\$ 15,082.36	\$ 15,531.79	\$ 19,631.17	\$ 20,214.13	\$ 18,634.18	\$ 89,093.63	25.88%
Grant Expenditures									
T.A.G. Facility Plan Upgrade	\$	7,400.00		\$ 2,000.00		\$ 5,400.00		\$ 7,400.00	100.0%
Total Grant Expenditures	\$	7,400.00	\$ -	\$ 2,000.00	\$ -	\$ 5,400.00	\$ -	\$ 7,400.00	100.0%
7500 · Debt Service									
QDEQ - Irrigation Site Loan	\$	7,753.00	\$ -	\$ -	\$ -	\$ -		\$ -	0.0%
OECD - Facility Engineering Loan	\$	19,319.00	\$ -	\$ -	\$ -	\$ -	\$ 19,319.09	\$ 19,319.09	0.0%
IFA Loan/Grant - Facility Improvement	\$	19,383.00	\$ -	\$ -	\$ -	\$ -	\$ 19,383.23	\$ 19,383.23	0.0%
Total 7500 · Debt Service	\$	46,455.00	\$ -	\$ -	\$ -	\$ -	\$ 38,702.32	\$ 38,702.32	0.0%
TOTAL GENERAL FUND EXPENDITURES	\$	398,105.00	\$ 15,082.36	\$ 17,531.79	\$ 19,631.17	\$ 25,614.13	\$ 57,336.50	\$ 135,195.95	33.96%
CONTINGENCY & ENDING BALANCES									
Contingency: Irrigation Site Loan Reserve	\$	7,753.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Contingency: USDA Loan Reserve	\$	6,923.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
8002 · Operating Reserve	\$	63,697.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
8003 · Undesignated	\$	14,058.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
CONTINGENCY & ENDING BALANCES	\$	92,431.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	

CAPITAL FUND		Budget	Jul 22	Aug 22	Sep 22	Oct 22	22-Nov	Year to Date	%
Beginning Balance	\$	107,414.00							
4550 · SDC Revenue	\$	19,124.00	\$ -	\$ 19,124.00	\$ 9,562.00	\$ -	\$ -	\$ 28,686.00	150.0%
4900 · Transfer from General Fund	\$		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total Income	\$	19,124.00	\$ -	\$ 19,124.00	\$ 9,562.00	\$ -	\$ -	\$ 28,686.00	150.0%
Total Resources:	\$	126,538.00							

Capital Outlay		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total 7000 · Capital Outlay	\$	-						
8000 · Contingency	\$	126,538.00					\$ -	
CONTINGENCY & ENDING BALANCES	\$	126,538.00						

SD GO BOND DEBT FUND		Budget	Jul 22	Aug 22	Sep 22	Oct 22	22-Nov	Year to Date	%
Beginning Balance	\$	1,073.00							
Bond Proceeds	\$	144,600.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%
Total Income	\$	144,600.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%
Total Resources:	\$	145,673.00		\$ -	\$ -	\$ -	\$ -	\$ -	
Capital Outlay									
USDA Plant Upgrade Payments	\$	144,600.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%
Total 7000 · Capital Outlay	\$	144,600.00							
Unappropriated Balance	\$	1,073.00							
CONTINGENCY & ENDING BALANCES	\$	145,673.00							

ARCH CAPE SANITARY DISTRICT

Check Detail

November 2022

Type	Num	Date	Name	Item	Account	Paid Amount	Original Amount
Check	8616	11/03/2022	Peterson - CAT		Sanitary Distri		-2,760.00
				Maint		-2,760.00	2,760.00
TOTAL						-2,760.00	2,760.00
Check	8617	11/03/2022	A-Boy Electric & Pl...		Sanitary Distri		-34.11
				Maint		-34.11	34.11
TOTAL						-34.11	34.11
Check	8618	11/03/2022	Pacific Power		Sanitary Distri		-2,537.25
				Util		-183.63	183.63
				Util		-167.74	167.74
				Util		-46.22	46.22
				Util		-41.17	41.17
				Util		-84.86	84.86
				Util		-2,013.63	2,013.63
TOTAL						-2,537.25	2,537.25
Check	8621	11/10/2022	Peterson - CAT		Sanitary Distri		-1,365.00
				Maint		-1,365.00	1,365.00
TOTAL						-1,365.00	1,365.00
Check	8622	11/10/2022	Peterson - CAT		Sanitary Distri		-970.00
				Maint		-970.00	970.00
TOTAL						-970.00	970.00
Check	8623	11/10/2022	NAPA Auto Parts		Sanitary Distri		0.00
TOTAL						0.00	0.00
Check	8624	11/10/2022	Curran-McLeod		Sanitary Distri		-82.50
				Professional Se		-82.50	82.50
TOTAL						-82.50	82.50
Check	8625	11/10/2022	Recology Western ...		Sanitary Distri		-55.78
				Util		-55.78	55.78
TOTAL						-55.78	55.78
Check	8626	11/10/2022	State Forester		Sanitary Distri		-185.25
				Maint		-185.25	185.25
TOTAL						-185.25	185.25
Bill Pmt -Check	8627	11/17/2022	IFA		Sanitary Distri		0.00
TOTAL						0.00	0.00

ARCH CAPE SANITARY DISTRICT
Check Detail
November 2022

Type	Num	Date	Name	Item	Account	Paid Amount	Original Amount
Bill Pmt -Check	8630	11/17/2022	IFA		Sanitary Distri		-19,383.23
Bill		11/17/2022		Loan		-19,383.23	19,383.23
TOTAL						-19,383.23	19,383.23
Bill Pmt -Check	8633	11/17/2022	IFA		Sanitary Distri		-19,319.09
Bill		11/17/2022		Loan		-19,319.09	19,319.09
TOTAL						-19,319.09	19,319.09
Check	EFT	11/22/2022	Microsoft		Sanitary Distri		-8.25
				Dues - Taxes - Fees		-8.25	8.25
TOTAL						-8.25	8.25
Check	EFT	11/23/2022	Google		Sanitary Distri		-1.99
				Maint		-1.99	1.99
TOTAL						-1.99	1.99



Community Action Team

Serving Columbia, Clatsop, and Tillamook Counties

phone (503) 397-3511

fax (503) 397-3290

www.cat-team.org

November 4, 2022

Dear Water Supplier,

We look forward to collaborating with you in our 2022-2023 Low-Income Household Water Assistance (LIHWA) Program. We appreciate your partnership with our agencies in providing water assistance to low-income families with help on their water/waste bills.

In preparation, we are required to collect Vendor Contracts. This program year will run from November 1, 2022 through September 30, 2023 (or until we exhaust our funding for the year). Please complete the enclosed information and mail the original as soon as possible.

Again, thank you for your assistance and partnership in providing low-income energy assistance in our region. If you have any questions, you can reach me at 503-366-6546.

Sincerely,

Katie May, Energy Assistance Programs Manager

Community Action Team, Inc.

125 N. 17th Street

St. Helens, OR 97051

E-mail: kmay@cat-team.org

Phone: 503-366-6546

FAX: 503-397-3290

*Clatsop Community
ACTION for
APP.*

Family Resource Center
125 North 17th Street
Saint Helens, OR 97051

Fiscal Office
124 North 18th Street
Saint Helens, OR 97051

Child & Family Programs
108 West B Street
Rainier, OR 97048

Low-Income Household Water Assistance (LIHWA) Program



The temporary Low-Income Household Water Assistance (LIHWA) Program was established through the passing of the Consolidated Appropriations and American Rescue Plan Acts of 2021. Contained within the U.S. Health and Human Services' Office of Community Services (OCS), OHCS has been designated as the State of Oregon Grantee.

OHCS will receive a total of \$13.8 million that must be awarded by September 30, 2023.

The LIHWA Program target population and priorities include:

- Low-income households with high water burdens,
- Households who are disconnected, pending for disconnection, and who have arrearages, as well as those households who are current.

Nearly parallel to the Low-Income Home Energy Assistance Program (LIHEAP), program highlights include:

- Eligible utilities – public and private water and/or wastewater utilities that serve permanent residential communities
- Eligible households – those with household income at or below 60% State Median Income (SMI) and with service provided from an eligible water and/or wastewater utility
- Local operation – the Community Action Agency (CAA) network through partnership with the utilities and culturally responsive organizations
- Application process – through the local CAA office that administers LIHEAP
- Assistance payment process – all payments go directly to the utility

Households with water/wastewater service managed by their landlords or management companies may still be eligible for LIHWA Program assistance. Those households will require a landlord authorization form included with their application.

OHCS received approval on its LIHWA Program State Plan for the State of Oregon. Anticipating several weeks to initiate grant agreements with CAAs and vendor agreements with water/wastewater utilities, OHCS expects LIHWA assistance should be available in January 2022.

For additional program information and updates, please visit the [OHCS LIHWA Program website](https://www.oregon.gov/ohcs/energy-weatherization/Pages/Low-Income-Household-Water-Assistance-Program.aspx) for updates (<https://www.oregon.gov/ohcs/energy-weatherization/Pages/Low-Income-Household-Water-Assistance-Program.aspx>) or correspond with the LIHWA Program Analyst, Joy Aldrich, at joy.aldrich@oregon.gov or 503-986-0973.

CONTRACT FOR WATER ASSISTANCE PROVISIONS
BETWEEN

COMMUNITY ACTION TEAM, INC

AND

Arch Cape Water District

This Low-Income Housing Water Assistance (LIHWA) Program Agreement (“Agreement”) is entered into by and between the Community Action Team (“Agency”), Arch Cape Water District (“Vendor”), and the Oregon Housing and Community Services Department, together with its successors and assigns (“Department”), (each a “Party” and collectively the “Parties”) under the following terms:

1. Entire Contract

- a) This Agreement is the mechanism by which all Parties can carry out the provisions of the Low-Income Household Water Assistance (LIHWA) Program.
- b) It is understood and agreed that the entire contract between the Parties is contained in this Agreement.
- c) This Agreement supersedes all previous commitments, promises, representations either oral or written, between the Parties relating to the subject matter hereof.
- d) The person signing this Agreement on behalf of the Vendor certifies and attests that the Vendor has the power and authority to enter into and perform this Agreement, and that the signor has full and complete authority to bind the Vendor.
- e) All the words and phrases used in this Agreement shall have the meanings given herein or as used in the LIHWA Program Requirements and other related requirements unless the context clearly requires otherwise.

2. Definitions

- a) Authorization means a form that contains the Eligible Household’s account number, name of person applying for LIHWA assistance, name on the account, address of Eligible Household, and amount of the LIHWA Payment to be applied to the Eligible Household’s account.
- b) Commitment means the initial communication that an Eligible Household has qualified for LIHWA Payments and serves as notice of the forthcoming Authorization.
- c) Eligible Household means a household receiving services from the Vendor that has been determined, by the Agency in accordance with LIHWA eligibility guidelines, to be eligible for a LIHWA Payment.
- d) LIHWA Payment(s) includes regular and crisis payments made by the Agency to the Vendor on behalf of Eligible Households for eligible drinking water and/or wastewater service charges (including reconnection charges, fees, penalties, or reduction of current charges and fees).

3. The Agency agrees to do the following:

- a) To assign a vendor number/business code to each Vendor after the Agreement is fully executed.
- b) To obtain an Eligible Household’s consent through a Release of Information in order for the Agency to initiate two-way communication with the Vendor regarding Account information (such as current amount owed, status of service, and crisis situation indicators).
- c) To effectuate LIHWA Payments to the Vendor on behalf of Eligible Households, including:
 - i. Notifying the Vendor of Commitments through an agreed-upon format (i.e., direct portal input, written, oral, etc.),
 - ii. Notifying the Eligible Household of Commitments made to Vendor,
 - iii. Pursuant to Commitment, submitting payment to the Vendor promptly and no later than 45 days after Commitment issued, and
 - iv. Prior to receipt of payment, notifying Vendor of any changes to Commitments caused by federal or state law.
- d) To issue to Vendor a single check or Automated Clearing House (ACH) payment that includes benefits for all Eligible Households. A payment register precedes the check or ACH deposit. The register includes the names of the Eligible Households, the account names and numbers, the amounts to be applied to each account, and the addresses and counties of residence of the Eligible Households.

- e) To inform the Vendor in the case an Eligible Household is in crisis or life-threatening situation and speaking to the Vendor on behalf of the Eligible Household when a member of the Eligible Household is not present or does not have accessibility to such a discussion.

4. The Vendor agrees to do the following:

- a) To refer its customers to the Agency for assistance.
- b) To charge all Eligible Households using the Vendor's normal billing process.
- c) To charge all Eligible Households the price normally charged for drinking water and/or wastewater services supplied to non-eligible households, except for other billing assistance and/or discount programs.
- d) Not to exclude or discriminate against any Eligible Households with respect to cost of services, terms, deferred payment plans, credit, conditions of sale, or discounts and programs offered to non-eligible households.
- e) Not to treat any Eligible Households adversely because of receipt of LIHWA assistance.
- f) To continue to apply the regular drinking water and/or wastewater service charges and credits of payments in regular fashion, even in consideration of a Commitment or LIHWA Payment.
- g) To process all LIHWA Payments, on behalf of Eligible Households from the Agency, including:
 - i. Applying a credit notation to the Eligible Household's account as soon as the Vendor receives a LIHWA Authorization from the Agency.
 - 1. This credit can only be applied to water and wastewater related charges and fees.
 - 2. This credit cannot be applied to charges and fees including but not limited to police, streetlights, and garbage service.
 - ii. Applying and itemizing LIHWA Payments for all Eligible Households identified in the LIHWA Payment Register as directed by the Agency.
 - iii. Posting all payments to Eligible Household accounts promptly after being received, no later than the next billing cycle.
 - iv. If a LIHWA Payment cannot be credited to the Eligible Household's account, processing a refund, according to the Oregon LIHWA Vendor Refund Policies, directly to the Eligible Household within thirty (30) days.
- h) To discuss the Eligible Household's crisis or life-threatening situation with the Agency, speaking on behalf of the Eligible Household when a member of the Eligible Household is not present or does not have accessibility to the discussion.
- i) To cooperate with the Agency, once informed of the crisis or life-threatening situation and in receipt of a Commitment, to resolve the Eligible Household's situation related to drinking water and/or wastewater services with urgency.
- j) To comply with Oregon LIHWA Vendor Refund Policies, as described below in this Agreement.
- k) To maintain an accounting system and supporting fiscal records that represent the amounts and billing of drinking water and/or wastewater services provided to Eligible Households.
- l) To fully cooperate with the Department's and Agency's monitoring practices, including but not limited to providing requested documentation for Federal representatives or Oregon Secretary of State representatives within set time frames, as well as communicating with Department or Agency staff.
- m) To provide at no cost to the Department, Eligible Household, or Agency, written information on an Eligible Household's drinking water and/or wastewater services costs, bill payment history, and/or arrearage history for no more than the previous 12 monthly billing periods, even when it may be from a prior occupant household.
- n) To provide at no cost to the Department or Agency, or an authorized agent to the Department or Agency, for the purposes of research, evaluation, and analysis, information on household drinking water and/or wastewater services costs and usage for Eligible Households.
- o) **Program Requirements:** Vendor agrees to timely satisfy all requirements of this Agreement, including all LIHWA Regulations or other forms of LIHWA federal guidance, as applicable, and all other applicable federal, state, and local statutes, rules, regulations, ordinances, and orders (all of the foregoing, as amended from time to time, collectively, the "Program Requirements") to the satisfaction of Department or Agency.

5. Termination

- a) This Agreement shall terminate upon the earliest to occur of the following events:

- i. A change in the requirements of applicable Federal or State regulations for LIHWA administration,
 - ii. A change in the state plan for administering LIHWA that affects the terms and conditions of this Agreement,
 - iii. Thirty (30) days' written notice of termination by any Party,
 - iv. Mutual consent of all Parties,
 - v. Any license or certificate required by law or regulation to be held by the Vendor to provide services outlined in this Agreement is denied, revoked, or not renewed, or
 - vi. The end of the LIHWA program year, which begins on January 1, 2022 and ends on September 30, 2023.
- b) This Agreement will terminate effective immediately upon determination by the Department that the Vendor is not in compliance with the terms of this Agreement, including the Program Requirements. The Vendor will be notified within ten (10) days of termination.
 - c) Termination by any Party shall not discharge any obligations owed by any Party to another or to an Eligible Household or any liability, which has accrued prior to termination.
 - d) The rights and remedies of any Party provided in this Agreement shall not be exclusive and are in addition to any other rights and remedies provided by law.

6. Miscellaneous

- a) **Subcontracts:** The Vendor shall not enter into any subcontracts, beyond those already in place for normal and current billing operations, for any of the services provided under this Agreement without obtaining prior consent from the Department or Agency. The Vendor shall also provide the subcontract agreement(s) with this Vendor Agreement (see Attachment A).
- b) **Amendments:** The terms of this Agreement shall not be waived, altered, modified, supplemented or amended, in any manner whatsoever, except by written instrument between the Parties.
- c) **Execution and Counterparts:** This Agreement may be executed in counterparts, each of which shall be an original, all of which shall constitute but one and the same instrument.
- d) **Severability:** If any court of competent jurisdiction shall hold any provision of this Agreement invalid or unenforceable, such holding shall not invalidate or render unenforceable any other provision hereof.
- e) **Assignment:** The Vendor shall not assign or transfer its interest in this Assignment without the express written consent of the Department and Agency.
- f) **Waiver:** The failure by any Party to enforce any provision of this Agreement shall not constitute a waiver by another Party of that or any other provision.
- g) **Independent Contractors/Workers' Compensation Coverage:** Vendor and Agency are independent contractors under this Agreement and both covenant, warrant, and affirm that neither they nor any of their agents, representatives or employees are an officer, employee, or agent of the other party. Vendor and Agency further covenant, warrant and affirm that they shall provide Workers' Compensation insurance for their prospective employees and require such by their subcontractors.
- h) **Indemnity:** Subject to any applicable limitations in the Oregon Constitution and the Oregon Tort Claims Act, each Party (the "Indemnifying Party") shall save, defend (consistent with ORS chapter 180), indemnify and hold harmless the other Party, the Department and each of their officers, agents, employees and members (the "Indemnified Parties") from all claims, suits or actions of whatsoever nature (collectively, "Claims") to the extent resulting from or arising out of the negligent or wrongful acts or omissions of the Indemnifying Party or its subcontractors, agents, or employees in its performance or non-performance of its obligations under this Agreement unless such Claims primarily result from the Indemnified Party or Parties' negligence, gross negligence or willful misconduct. In no event shall either Party be liable to the other for Claims in an amount more than \$50,000 per event.
- i) **Successors in Interest:** The provisions of this Agreement shall be binding upon and shall inure to the benefit of the Parties hereto, and their respective successors and assigns, if any.
- j) **Force Majeure:** A Party shall not be held responsible for delay or default as a result of an event or action beyond its reasonable control, including without limitation, fire, riots, acts of God or war.
- k) **Governing Law:** This Agreement is governed by and construed in accordance with the laws of the State of Oregon without regard to principles of conflicts of law.
- l) **Merger:** This Agreement constitutes the entire Agreement between the Parties. No waiver, consent, modification or change of terms of this Agreement shall bind either Party unless in writing and signed by both Parties.

- m) **Mediation:** In the case the Parties become involved in a dispute regarding any part of this Agreement, the Parties shall submit to mediation prior to the commencement of litigation to enforce this Agreement. The mediator shall be an individual mutually acceptable to all Parties. Each Party shall pay its own cost for the time and effort involved in mediation and agrees to split equally the cost of the mediator. All Parties agree to exercise best efforts and act in good faith to resolve all disputes.
- n) **Eligible Household Information Confidentiality:** Due to the obligations outlined in this Agreement, all Parties will have access to Confidential Information of Eligible Households, including but not limited to household member names, social security numbers, addresses, account numbers, account payments and balances, and income information. All Parties shall use appropriate safeguards to prevent the disclosure of Confidential Information to unauthorized third parties (which excludes, for example, compliance with applicable Public Records Laws or as required by an official court order), and shall prevent employees, agents or subcontractors from accessing, copying, disclosing or using any such Confidential Information.
- o) **Red Flag Rules:** All Parties agree to establish, maintain, and abide by reasonable policies and procedures designed to detect, prevent, and mitigate the risk of identity theft related to Eligible Households through the administration of LIHWA.
- p) **Funds Available and Authorized:** The Vendor understands and agrees that payment of amounts under this Agreement is contingent on the Department receiving appropriations or other expenditure authority sufficient to allow the Department and Agency to continue to make payments under this Agreement.
- q) **Effective Date and Duration:** This Agreement shall be effective upon execution by all Parties and shall remain in effect until terminated as described in the "Termination" section herein.
- r) **Further Acts:** Vendor will do, make, execute, and deliver all such further acts or writings as Department or Agency may require to protect the Department or Agency's rights under this Agreement.
- s) **False Claims Act:** The Parties acknowledge the Oregon False Claims Act, ORS 180.750 to 180.785, applies to any "claim" (as defined by ORS 180.750) made by (or caused by) a Party that pertains to this Agreement or LIHWA Payments for Eligible Households. The Parties certify that no claim is or will be a "false claim" (as defined by ORS 180.750) or an act prohibited by ORS 180.755. Each Party further acknowledge, in addition to the remedies under this Agreement, if it makes (or causes to be made) a false claim or performs (or causes to be performed) an act prohibited under the Oregon False Claims Act, the Oregon Attorney General may enforce the liabilities and penalties provided by the Oregon False Claims Act against the Party.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be signed by their duly authorized representatives as of the date(s) written below.

VENDOR:

By: _____ Date: _____

Print: _____

Title: _____

Vendor Name: _____

AGENCY:

By: _____ Date: _____

Print: _____

Title: _____

Agency Name: Community Action Team, Inc

Oregon's Low-Income Household Water Assistance (LIHWA) Program Vendor Refund Policy

1. Credit Balances – Unless there is an event otherwise noted in this Refund Policy, all LIHWA Payments that create a credit balance remain on the Eligible Household's account until exhausted.
2. Ineligible Credit Balances - In the event that a LIHWA Payment cannot be applied to the Eligible Household's account, the remaining balance shall be returned to the Eligible Household within thirty (30) days after the Vendor receives the LIHWA Payment.
3. Deposits – All deposits and accrued interest become the property of the Eligible Household and shall be returned to the Eligible Household at the time specified in the deposit agreement in a manner consistent with applicable administrative rules, approved tariffs and other law.
4. Voluntary Closure and Moves - If the Eligible Household voluntarily closes the account that received a LIHWA Payment or moves to another service address that the Vendor does not represent, any credit balances resulting from a LIHWA Payment shall be refunded to the Eligible Household. If the Eligible Household moves to another service address by which the Vendor does represent, any credit balances resulting from a LIHWA Payment shall be transferred to the new address.
5. Inability to Locate Eligible Household – In the event that the Vendor is unable to locate the Eligible Household within one (1) year after service has been discontinued for any reason, any unused portion of a LIHWA Payment shall be returned to the Oregon Department of State Lands as unclaimed property.
6. Deceased Eligible Household – In the event a LIHWA Payment remains on the Eligible Household's account and the account is closed, the Vendor shall return the LIHWA Payment credit balance to the Department no later than the end of the program year. The Vendor shall submit a check to the Department with the notation of number six of this Refund Policy.
7. Return Address for Refunds to the State of Oregon – Mail refunds to:

OREGON HOUSING AND COMMUNITY SERVICES, ENERGY SERVICES SECTION
ATTN: LIHWA PROGRAM REFUND
725 SUMMER ST NE, SUITE B
SALEM, OR 97301

Refunds must include the following information: Eligible Household name, Eligible Household address, Name of Agency that provided LIHWA Payment to Eligible Household, Date of LIHWA Payment to Vendor, Reason for the return.

8. Incorrect Payments – All Agencies and Vendors are required to review the LIHWA Payments register for accuracy. In the event an Agency makes a payment in error, the Agency must correct the error within thirty (30) days of the error's discovery and the Agency is responsible for any applicable late charges, interest, or other penalties that cannot be waived in good faith. LIHWA Payments made in error must be corrected by the Agency and will be refunded from subsequent LIHWA Payments made to the Vendor. In the event the Vendor credits an account in error due to causes other than Agency error or otherwise misappropriates LIHWA Payments, the Vendor must correct the error within thirty (30) days of the error's discovery and is responsible for any applicable late charges, interest, or other penalties that cannot be waived in good faith.

Drinking Water and/or Wastewater Utility Vendor Information

Vendor Name		
Primary Contact Name	Primary Contact Phone	Customer Service Phone
Primary Contact Mailing Address	Primary Contact Fax	Primary Contact Email
Payment Contact Name	Payment Contact Phone	
Payment Contact Mailing Address	Payment Contact Fax	Payment Contact Email

Legal Name (For tax purposes)		
Taxpayer Identification Number (TIN)		
Type of TIN		
Employer ID Number (FEIN)		Social Security Number (SSN)
Individual Taxpayer ID Number (ITIN)		
Type of Entity		
Individual/Sole Proprietor		Limited Liability Company
Corporation		Government Entity

Counties served (Please check all that apply)			
<input type="checkbox"/>	Baker	<input type="checkbox"/>	Douglas
<input type="checkbox"/>	Benton	<input type="checkbox"/>	Gilliam
<input type="checkbox"/>	Clackamas	<input type="checkbox"/>	Grant
<input type="checkbox"/>	Clatsop	<input type="checkbox"/>	Harney
<input type="checkbox"/>	Columbia	<input type="checkbox"/>	Hood River
<input type="checkbox"/>	Coos	<input type="checkbox"/>	Jackson
<input type="checkbox"/>	Crook	<input type="checkbox"/>	Jefferson
<input type="checkbox"/>	Curry	<input type="checkbox"/>	Josephine
<input type="checkbox"/>	Deschutes	<input type="checkbox"/>	Klamath
<input type="checkbox"/>		<input type="checkbox"/>	Lake
<input type="checkbox"/>		<input type="checkbox"/>	Lane
<input type="checkbox"/>		<input type="checkbox"/>	Lincoln
<input type="checkbox"/>		<input type="checkbox"/>	Malheur
<input type="checkbox"/>		<input type="checkbox"/>	Marion
<input type="checkbox"/>		<input type="checkbox"/>	Morrow
<input type="checkbox"/>		<input type="checkbox"/>	Multnomah
<input type="checkbox"/>		<input type="checkbox"/>	Polk
<input type="checkbox"/>		<input type="checkbox"/>	Sherman
<input type="checkbox"/>		<input type="checkbox"/>	Tillamook
<input type="checkbox"/>		<input type="checkbox"/>	Umatilla
<input type="checkbox"/>		<input type="checkbox"/>	Union
<input type="checkbox"/>		<input type="checkbox"/>	Wallowa
<input type="checkbox"/>		<input type="checkbox"/>	Wasco
<input type="checkbox"/>		<input type="checkbox"/>	Washington
<input type="checkbox"/>		<input type="checkbox"/>	Wheeler
<input type="checkbox"/>		<input type="checkbox"/>	Yamhill

Tribes served (Please check all that apply)			
<input type="checkbox"/>	Burns Paiute	<input type="checkbox"/>	Confederated Tribes of Warm Springs
<input type="checkbox"/>	Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians	<input type="checkbox"/>	Cow Creek Band of Umpqua Indians
<input type="checkbox"/>	Confederated Tribes of Grand Ronde	<input type="checkbox"/>	Coquille Indian Tribe
<input type="checkbox"/>	Confederated Tribes of Siletz	<input type="checkbox"/>	Klamath Tribes
<input type="checkbox"/>	Confederated Tribes of Umatilla Reservation	<input type="checkbox"/>	

WATER DISTRICT:

The Water plant distributed 1.6 million gallons to town in November.

We've received the new Kamstrup water meters. Staff will begin the installation process in January, and have the new system online by spring.

A new water service was installed at 32060 Hemlock. We can expect to get 2-4 new connections in 2023.

There is correspondence from North Coast Land Conservancy in the board packet regarding NCLC's donated service of being the Water District's fiscal agent for Arch Cape Forest project donations for the past few years. With acquisition now completed by the District, NCLC has also completed its service of providing fiscal and communications support to the District. This donated service was especially helpful to the District during our fundraising campaign. NCLC and the District will remain in partnership around stewardship and management of the Arch Cape Forest and Rainforest Reserve.

MONTHLY LOG : ARCH CAPE WATER & SANITARY DISTRICTS

November 2022

Total Hours	353.00	166.00	187.00
Percentage Split		47%	53%
Total Accounts	641	295	346
Percentage Split		46%	54%

SANITARY DISTRICT:

We received 14" of rainfall in November and the plant received 5 million gallons of influent.

Maintenance of all major equipment in the control room was completed this month.

A new sewer service was installed at 32060 Hemlock. We can expect to get 2-4 new connections in 2023.

Drying Beds have been filled for the winter season.

Curran-McLeod Inc. is working on finishing up the District's FEMA grant application for the Webb Lift Station upgrade.

ARCH CAPE SANITARY DISTRICT

Wastewater Treatment Plant Facility Plan Update



Clatsop County, Oregon

November, 2022

PRELIMINARY

CURRAN-McLEOD, INC., Consulting Engineers
6655 SW Hampton Street, Suite 210
Portland, OR 97223



**ARCH CAPE SANITARY DISTRICT
WASTEWATER TREATMENT PLANT
FACILITY PLAN UPDATE**

Clatsop County, Oregon

November 2022

**CURRAN-McLEOD, INC., Consulting Engineers
6655 SW Hampton Street, Suite 210
Portland, OR 97223
(503) 684-3478**

**ARCH CAPE SANITARY DISTRICT
WASTEWATER FACILITY PLAN UPDATE
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ARCH CAPE SANITARY DISTRICT
WASTEWATER FACILITY PLAN UPDATE

November 2022

1. INTRODUCTION

The Arch Cape Sanitary District contracted with CURRAN-MCLEOD, INC. to evaluate the condition of the collection system and the process equipment and systems at the wastewater treatment facility. The plant has substantial capacity remaining, therefore the primary purpose of this study is to update the capital improvement plan and address waste sludge processing.

The information in the previously approved 2005 Wastewater Facilities Plan provided a guideline for development of the wastewater system through buildout of the entire service district, and is still applicable today. Future improvements will primarily be required only to maintain and improve operations. As equipment reaches the end of its service life, newer technology should always be evaluated for its replacement.

2. EXISTING FACILITIES

A. LOCATION

The Sanitary District serves the unincorporated community of Arch Cape located in southwest Clatsop County bounded on the east by the Coast Range Mountains and to the west by the Pacific Ocean.

The collection system consists of approximately 19,000 feet of gravity sewer lines, four pump station and 4,700 feet of pressure main piping. Wastewater is collected in four pump stations. One pump station is located at the north end of the District and one each at Asbury Creek, Sally’s Alley, and Webb Avenue. All sewage flows from the collection system to the Webb Avenue pump station and is then pumped to the treatment plant.

The treatment facility is located near the south end of the District, one-half mile east of the Highway 101, at the end of East Shingle Mill Lane.

B. HISTORY

The original treatment facility was constructed in 1975 as a conventional package wastewater treatment facility with a permit that allowed treated discharge to Arch Cape Creek November 1 through April 30. During May 1 – October 31 effluent is required to be land applied.

In 2009, the treatment process was converted to a membrane bioreactor process with fine screening, flow equalization, UV disinfection and improved sludge handling and

drying facilities. Improvements were also made to the reclaimed water system with a new irrigation pump station at the application site. In 2011, a 4th cassette was added to each cell of the two MBRs to fully populate the MBRs and increase the plant capacity by 33%. Subsequently, in 2019 all flexible membranes replaced.

C. SERVICE POPULATION

The ACSD currently serves 346 domestic connections which includes 2 commercial connections and 1 institutional connection, each contributing the equivalent of a single-family residence. The service district is limited by Clatsop County to a total of 485 connections at full buildout of the community.

3. WASTEWATER TREATMENT PLANT EVALUATION

A. TREATMENT FACILITY DESIGN LOADINGS

The September 2006 Wastewater Treatment Plant Pre-Design Report identified the design loadings for the wastewater treatment facility at full buildout, with 485 connections. The design loadings are shown in the following table.

<i>Design Event</i>	<i>Flow (MGD)</i>
<i>ADWF</i>	0.112
<i>AWWF</i>	0.186
<i>MMDWF</i>	0.116
<i>MMWWF</i>	0.176
<i>PDAF</i>	0.336
<i>PIF</i>	0.586

B. HEADWORKS SCREENING

The head works screening system consists of two 2 mm fine bar screens mounted in a common metal basin and a single compactor. Each Screen has a peak flow capacity of 522 gpm (0.75 mgd). After the initial construction, a minor modification was made to the screenings discharge to prevent screenings from sluffing off into the screened effluent. Although old, the screening system does not appear to have any mechanical issues and is functioning as per the design.



Headworks Raw Screening

C. ANOXIC BASIN

The anoxic basin has a volume of 25,700 gallons and is equipped with two 1,175 gpm submersible pumps (one in service and one standby) to circulate mixed liquor to the MBR process and an 1,890 gpm submersible mixer to keep the basin contents suspended. The basin is covered to prevent debris from entering the basin. At the design $MMWWF_5$ of 0.176 MGD, the basin has a detention time of 3.5 hours.

Waste activated sludge (WAS) is pumped directly from the basin by a 75 gpm submersible pump to one of the two aerobic digesters.

The anoxic zone is designed for nitrogen removal to reduce ammonia concentrations in the treated effluent. The NPDES permit includes a daily limitation of 11.0 mg/l and a monthly limit of 7.5 mg/l for Ammonia as Nitrogen. Review of the 2021 DMRs showed no detectible concentrations of Ammonia as Nitrogen in the treated effluent. The anoxic zone is functioning as intended and there are no known operational deficiencies.

D. EQUALIZATION BASIN

The Equalization Basin is designed to receive the overflow from the Anoxic Zone Basin during a high influent flow event. The basin has a volume of approximately 25,600 gallons and is aerated by a coarse bubble diffuser system. A 250 cfm variable speed blower provides air to the system. The basin has a detention time of 3.5 hours at the MMWWF₅.

The contents of the basin can be pumped back to the headworks screen and returned to the Anoxic Zone Basin by one of two 127 gpm equalization pumps or by relocating one of the two Anoxic Zone Basin transfer pumps in the basin to discharge the contents directly to the MBR basins. There appears to be no operational deficiencies and the basin has functioned as intended during high flow events.



Equalization Basin

E. MBR FILTRATION

The MBR filtration system consist of two basins with a volume of 21,000 gallons per basin. The basins are aerated by one of two 40 hp 877 cfm blowers.

Permeate is pumped from the basins by two positive displacement pumps. Each pump has a maximum capacity of 525 gpm (0.75 mgd). In the event of a failure of one pump, a single pump can be used to pump permeate from both basins.



Membrane Filtration System

The MBR was sized to process the design loadings to the treatment facility. The design is based on the flux rates, or gallons per day per square foot loading, specific to the duration of loading. The flux rate is temperature dependent with a minimum design of 10°C. The higher the temperature, the higher the allowable flux rate.

The KUBOTA USA membranes are a flexible flat plate membrane with the design criteria listed below. The table shows the initial design in 2009 with 6 cassettes and the increased capacity that was added in 2011 with two additional cassettes. The design flux rates, and design capacities are listed for 10°C, 11°C reflecting the DMR minimum temperatures, and 15°C. Each cassette has an area of 3,444 square feet.

Table 2 – Flux Rates and Design Capacity								
Flow Criteria	2007		2019					
	At 10°C		At 10°C		At 11°C		At 15°C	
	gpd/sf	MGD	gpd/sf	MGD	gpd/sf	MGD	gsf/d	MGD
Average Annual	11.0	0.227	11.0	0.305	12.5	0.345	13.0	0.379
Max Month	12.5	0.258	12.5	0.345	14.0	0.386	15.5	0.426
Peak Daily	17.0	0.351	17.0	0.468	19.2	0.528	22.1	0.609
Peak Hourly (4hr)	14.0	0.496	14.0	0.656	26.8	0.738	30.0	0.825
No. of Cassettes	6		8					
Membrane Area Per Cassette (sq ft)	3444							

Since the temperature of the incoming wastewater has a significant influence on performance of the MBR treatment process, the temperature of the incoming wastewater was reviewed. The permit does not have an excess thermal load limitations but the District is required to monitor effluent temperature. Temperature data obtained from the DMRs is shown in the following table:

Table 3 – Average Wastewater Temperature, °C										
Month	2018		2019		2020		2021		2022	
	Min	Avg	Min	Avg	Min	Avg	Min	Avg	Min	Avg
Jan	12.0	13	12	12.6	12	12.6	12.4	13.1	10.8	12
Feb	11.5	12	11.5	12.2	11.3	11.7	12.1	12.4	10.7	11.5
Mar	11.8	12	11.8	12.3	10.8	11.6	11.5	12.4	11.5	12.1
Apr	11.9	12	11.8	12.3	11.3	12.2	11.7	12.8	11.3	12.3
May	12.4	14	12.4	13.5	13.4	14	13.3	13.9	12.9	13.5
Jun	14.1	15	14.1	14.8	13.9	15.2	14.0	15.4	14.3	15.0
Jul	16.0	17	16	16.9	15.8	16.7	16.3	17.4	16.7	17.6
Aug	16.3	17	16.3	17.3	16.7	17.3	16.0	17.1	17.9	18.5
Sept	15.5	17	15.5	17	16.3	17	16.3	16.8	17.7	18.4
Oct	15.4	16	15.4	16	14.3	15.9	15.1	15.7	16.1	17.3
Nov	13.3	15	13.3	14.6	13.7	14.5	14.0	14.6		
Dec	12.9	13	12.4	13.3	12.4	13.3	11.1	12.7		
Avg Annual	13.6	14.4	13.5	14.4	13.49	14.3	13.7	14.5	14.0	14.8
WW Avg	11.8	12.4	12.2	12.9	11.9	12.7	12.3	13.1	11.6	12.5
DW Avg	15.0	15.9	15.0	15.9	15.1	16.0	15.2	16.1	15.9	16.7

The temperature of the incoming wastewater is lowest in January, February, and March, during the wet weather period, but higher than the minimum design temperature of 10° C, with the average temperatures of 12 to 13° C. Dry weather temperatures exceed the minimum design temperature with average ranges of between 15 and 16° C. The higher the temperature, the greater the MBRs capacity to treat higher wastewater flows received at the facility.

NPDES Permit places limitations for BOD and TSS on the MBR treatment system as shown in the following table:

Table 4 - NPDES PERMIT BOD & TSS CONDITIONS					
May 1 – October 31: No discharge to waters of the State					
November 1 – April 30:					
Parameter	Average Effluent Concentrations		Monthly* Average lb/day	Weekly* Average lb/day	Daily* Maximum lbs
	Monthly	Weekly			
BOD ₅	20 mg/L	30 mg/L	25	37.5	50
TSS	20 mg/L	30 mg/L	25	37.5	50

* Maximum month wet weather flow to the facility equals 0.18 mgd, however mass loads were retained from prior NPDES permits.

A summary of the treatment facility's performance meeting BOD₅ and TSS Monthly Average concentration and pound/day effluent limitations for 2021 was obtained from the DMRs and is shown in the following table:

Table 5 - WWTP 2021 MONTHLY AVERAGE BOD & TSS					
Month	Effluent flow Monthly Average (mgd)	BOD ₅		TSS	
		mg/L	Lb/day	mg/L	Lb/day
January	0.228	1.19	3.15	0.07	0.15
February	0.222	1.00	1.78	0.08	0.13
March	0.143	1.75	1.72	0.10	0.10
April	0.090	1.12	0.74	0.10	0.68
May	0.080	1.27	0.74	0.09	0.55
June	0.080	1.69	1.08	0.16	0.11
July	0.070	2.16	1.25	0.28	0.16
August	0.060	1.48	0.77	0.06	0.03
September	0.070	1.97	1.06	0.10	0.06
October	0.150	1.24	1.30	0.11	0.11
November	0.240	1.06	1.37	0.09	0.13
December	0.200	0.62	1.07	0.08	0.13

As can be seen from the data for 2021, the MBR treatment system is producing effluent well below the NPDES effluent limitations and is expected to do so at full buildout of the community due to the design of the treatment process. A copy of the NPDES permit is bound in the appendix of this report.

F. UV DISINFECTION SYSTEM

The UV disinfection system consists of two closed vessel, medium pressure, high intensity systems with a design capacity of 0.72 mgd each. Flow is split between the two systems. Permeate is pumped through the vessels by the two permeate pumps. When there is no flow from the treatment system, a recirculation pump is called on to pump water back through the vessels to cool the lamps.



UV Disinfection System

The system is designed to meet NPDES permit limits for *E. coli* Bacteria of 126 organisms per 100 ml monthly geometric mean and no single sample to exceed 406 organisms per 100 ml. A summary of discharge monitoring report results for *E. coli* and Total Coliform Bacteria for 2021 is shown in the following table (Note: May – October effluent is land applied).

Table 6 - 2021 DMR <i>E. coli</i> and Total Coliform Reporting				
Month	<i>E. coli</i> Coliform Bacteria (organisms/100 ml)		Total Coliform Bacteria (organisms/100 ml)	
	Monthly Geometric Mean	Single Sample	Monthly Geometric Mean	Single Sample
January	<1	<1		
February	<1	<1		
March	<1	<1		
April	<1	<1		
May			<1	13
June			<1	<1
July			1.38	5
August			2.37	8
September			1.55	9
October			<1	1
November	<1	<1		
December	<1	<1		

G. RECYCLED WATER SYSTEM

In accordance with the facility's NPDES permit discharge to Arch Cape Creek is prohibited from May 1 through October 31. During this time, the disinfected effluent is to be land applied as recycled water. The recycled water system consists of two submersible turbine pumps with a capacity of 150 gpm (0.21 mgd) at 250 feet of head each. The pumps are located at the treatment plant in the reclaimed water basin along with the UV recirculation pump.



Reclaimed Water Pump Station

The treated and disinfected effluent is pumped to an irrigation pond located offsite. An irrigation pump station is located adjacent to the pond and discharges effluent to a series of irrigation sets located in a wooded area east of the treatment plant site. The irrigation system is fully functional and does not appear to have any deficiencies. Pump capacity is adequate for the full buildout of the District.



Irrigation Pump Station

H. AEROBIC DIGESTER

Waste Activated Sludge is stored in two aerobic digester basins, a 25,400 gallon basin and 24,500 gallon basin. The basins are aerated by individual coarse air diffusers. A 20 hp blower can provide up to 250 SCFM of air to the basins. A 50 gpm submersible pump in each basin is used to transfer the basin contents to the sludge drying bed or wet sludge loadout. There are no known deficiencies associated with operation of the digesters.



Aerobic Digester No. 1



Aerobic Digester No. 2

I. SLUDGE DRYING BEDS

Gravity drying beds provide dewatering and storage of biosolids generated by the treatment process. There are two beds each with 3 bays, sand and gravel filtration systems, and a 4" underdrain, with a total of 2,685 square feet. Operational practice indicates the beds require 6 to 8 weeks to dewater depending on the season, for a maximum of approximately 7-8 cycles per year. Following the dewatering process, the biosolids are spread on approved fields owned by the District.

The beds are capable of dewatering approximately 12,500 gallons per batch for a total of 90,000 to 100,000 gallons of 1.5 to 2% waste sludge per year. This process is labor intensive, and disposal on the District's approved fields is more challenging each year. Although the District has sufficient lands, concerns by neighboring properties and new regulations such as are contemplated with EPA's new action plan for per- and poly-fluoroalkyl substances (PFAS), make land application more challenging and costly each year.

Due to the waste sludge production, the drying beds must be operational year-round and loaded to their maximum capacity. Even loaded to the maximum, the drying beds have not been capable of processing the volume of sludge created for the past few years. The volume of waste sludge has increase by more than 12% per year for the past five years and totaled more than 135,000 gallons in 2021. The District has

contacted with the City of Seaside to dispose of a portion of the liquid sludge for the past three years.



Sludge Drying Beds

Sludge processing is the largest deficiency at the treatment facility. Although the drying beds can produce a well dewatered biosolid, the capacity of the beds and the cost of in-house biosolids processing make continuing this current process less feasible. There is insufficient storage and in-house treatment is likely not the most cost-effective option.

Waste sludge hauled to the City of Seaside currently cost a total of approximately \$0.40 per gallon, including the \$0.17 per gallon charged by the City and approximately \$0.23 per gallon for hauling costs.

If the sludge is processed in-house and field applied, labor efforts are estimated at 50 man-hours per 6 weeks to process and spread a 12,500 gallon batch. Additionally, testing costs amount to approximately \$600 per batch before land application.

Processing sludge in-house with District staff costs approximately \$0.25 per gallon. Considering the cost of equipment required for hauling and spreading the biosolids, the District's current cost is comparable or more than the cost to haul to the City of Seaside.

The bigger issue for biosolids treatment is lack of capacity. To continue to process sludge in-house, the District will need to install additional sludge processing facilities. This could be additional drying beds, although this would increase the labor requirements and the site is very limited.

Installing dewatering equipment, such as a centrifuge or screw press, and associated building structure, would provide sufficient capacity but would be very expensive. A screw press or centrifuge is estimated at \$400,000, and the support building and facilities another \$400,000 - \$500,000. Debt service for a loan to construct these facilities is estimated \$55,000 to \$60,000 per year. Additionally, the District would need to continue to fund testing and labor efforts to land apply the biosolids.

In total, installation of dewatering equipment, support facilities, testing, and labor for land disposal is estimated to cost approximately \$0.60 per gallon. The District is effectively too big for continued use of the drying beds, but too small for a biosolids processing operation. These operating costs should also be expected to increase with time.

The City of Seaside has invested in sludge processing equipment that has sufficient capacity to accommodate the District's waste, and has encouraged surrounding communities to use the City's capacity. Hauling and disposal to the City of Seaside is the most cost effective and feasible alternative to provide the needed capacity at a reasonable cost. Current cost is estimated at \$0.40 per gallon for hauling and disposal and can be used in conjunction with continued use of the drying beds.

J. CAPACITY AND PERFORMANCE ANALYSIS

Discharge monitoring reports (DMRs) were reviewed to provide information on the wastewater flows to the treatment facility and determine the remaining capacity. The monthly Influent flow data from the last 5-years of DMRs is summarized in the following table:

Table 7 - Arch Cape WWTP Daily Influent Flow (MGD)															
Month	2018			2019			2020			2021			2022		
	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max
Jan	0.106	0.124	0.279	0.078	0.119	0.196	0.129	0.245	0.413	0.108	0.228	0.499	0.130	0.230	0.530
Feb	0.084	0.124	0.189	0.075	0.135	0.362	0.087	0.189	0.468	0.111	0.222	0.417	0.100	0.120	0.140
Mar	0.079	0.124	0.242	0.066	0.084	0.123	0.079	0.114	0.212	0.098	0.143	0.248	0.110	0.170	0.420
Apr	0.088	0.164	0.376	0.081	0.119	0.216	0.068	0.094	0.181	0.070	0.090	0.109	0.110	0.140	0.200
May	0.053	0.078	0.105	0.057	0.075	0.106	0.069	0.098	0.145	0.070	0.080	0.100	0.107	0.168	0.235
Jun	0.054	0.033	0.087	0.054	0.063	0.071	0.073	0.105	0.137	0.070	0.080	0.120	0.100	0.155	0.287
Jul	0.053	0.061	0.083	0.058	0.075	0.104	0.080	0.075	0.126	0.060	0.070	0.100	0.064	0.092	0.119
Aug	0.042	0.054	0.066	0.040	0.061	0.190	0.064	0.073	0.085	0.050	0.060	0.080	0.058	0.073	0.092
Sept	0.041	0.055	0.107	0.041	0.078	0.142	0.040	0.083	0.268	0.040	0.070	0.130	0.047	0.058	0.084
Oct	0.044	0.077	0.170	0.061	0.120	0.274	0.085	0.136	0.217	0.090	0.150	0.350	0.049	0.065	0.099
Nov	0.074	0.132	0.312	0.062	0.089	0.139	0.106	0.200	0.329	0.140	0.240	0.550			
Dec	0.087	0.156	0.372	0.070	0.136	0.444	0.110	0.170	0.370	0.140	0.200	0.320			
AWWF	0.089	0.134	0.272	0.077	0.124	0.264	0.083	0.145	0.310	0.101	0.176	0.329	0.122	0.183	0.360
" gpm	62	93	189	53	86	183	57	100	215	70	122	228	85	127	250
ADWF	0.048	0.060	0.103	0.052	0.079	0.148	0.069	0.095	0.163	0.063	0.085	0.147	0.071	0.102	0.153
" gpm	33	41	72	36	55	103	48	66	113	44	59	102	49	71	106
Avg Annual		0.099			0.096			0.132			0.136			0.127	
MMDWF		0.078			0.120			0.136			0.150			0.168	
MMWWF		0.164			0.136			0.245			0.228			0.230	
PDF			0.376			0.444			0.468			0.550			0.530

The design criteria from the MBR manufacturer are based on four events: Average annual flow, MMWWF, PDAF and a Peak Hourly flow (for 4 hours) as shown in Table 2.

Monthly minimum and average flows and Peak Day flows are shown in the preceding table. The monthly average wet weather flows (AWWF) have shown a relatively steady increase from 0.134 mg to 0.183 MGD with dry weather average flows (ADWF) increasing from 0.060 to 0.102 MGD. These are well within the 0.345 MGD annual average design criteria for the MBR treatment process.

The maximum month wet weather (MMWWF) flows during the last 5-year period have increased with an MMWWF of 0.245 MGD in January of 2020. 2022 recorded a maximum flow of 0.230. The maximum month dry weather flows (MMDWF) increased from 0.078 to 0.15 MGD during this period. The critical wet weather flows are currently less than 60% of the 0.386 MBR maximum month design at 11°C.

The MBR is designed for a peak day flow of 0.528 MGD at 11°C. A peak day flow of 0.55 MGD was recorded in November of 2021 with 0.53 MGD occurring in January of 2022. To attenuate peak flow events, the MBR process is preceded by a 26,000 gallon equalization basin. Flows are diverted to this basin when peak day flows occur.

The MBR process is capable of treating peak hour flows of 0.738 MGD for 4 hours. PIF is not a factor in the capacity of the system since the PIF is attenuated by detention in the collection system, the pump station capacity, and detention in the equalization basin.

Based on the current flows the treatment facility has adequate capacity to treat existing ADWF, AWWF, MMWWF₅ and MMDWF₁₀. PDAF flow are being handled by a combination of the equalization basin and the ability of the MBR to treat a peak hour flow of 0.738 MGD.

The following table summarizes the existing flows and MBR design capacity:

Table 8 - WWTF Existing Flows and MBR treatment Capacity			
<i>Design Event</i>	<i>2006 Design Loading, MGD</i>	<i>Existing Flows, MGD</i>	<i>2022 MBR Design Capacity, MGD (1)</i>
Average Annual Flow	0.114	0.127	0.345
ADWF	0.112	0.102	NA
MMDWF₁₀	0.186	0.168	NA
AWWF	0.116	0.183	NA
MMWWF₅	0.176	0.230	0.386
PDAF	0.336	0.530	0.528
PIF	0.586	0.586	0.738(2)

(1) At 11° C (2) Peak Hourly flow for 4-hours

From the preceding table it can be noted that the existing 2022 ADWF and MMDWF₁₀ are less than the 2006 design loadings to the treatment facility. However, the average annual and wet weather flows are exceeding the original design loadings.

The ratio of the existing PDF to ADWF is 6.5:1. This increase between the wet weather and dry weather flows is attributed to inflow and infiltration (I/I) into the collection system during wet weather. This indicates that the amount of I/I entering the collection system has increased over time.

Removal of any I/I from the collection system will augment the wet weather treatment capacity of the treatment facility. In addition, reduction in the PDAF associated with I/I is much needed to prevent oversizing the Webb Avenue pump station and potentially exceeding the MBR PDAF treatment capacity.

4. WASTEWATER COLLECTION SYSTEM EVALUATION

As documented in the 2005 Wastewater Facilities Plan, the District’s collection system consists of approximately 19,000 feet of gravity sewer, four pump stations and 4,700 feet of force mains. One pump station is located at the north end of the District, and one each at Asbury Creek, Salley’s Alley and Webb Avenue. All wastewater from the outlying pump stations and the gravity collection systems flow to the Webb Avenue pump station where is it pumped to the wastewater treatment facility headworks.

In 2014, Inflow and Infiltration (I/I) Improvements were made to approximately 5,000 feet of the collection system, most of this work consisted of in situ repairs. Repairs were made from manhole E-8 to E-4, A7-1 to A-17, A17 to A-16, A-11 to A-7 and from A-7 to A1-6.

In March 2022, approximately 3,400 feet of gravity sewer lines were inspected. The inspection revealed deficiencies in several sections of the collection system including leaking laterals, cracked joints, missing sections of pipe, debris/blockage as well root penetrations. Summaries of identified deficiencies are shown in the following table and the field reports are attached in Appendix B:

Table 9 - Pipe Inspection Report Summary			
Manholes		Length (feet)	Observations
From	To		
A9.1	A19	305	Water leaking from lateral. Dirt/debris blocking 40% of pipe.
A19	A20	237	Water Leaking from lateral.
A21	A20	218	Water pulsing out from lateral.
A22	A21	394	Water leaking form three (3) laterals. Roots protruding from joint in lateral.
B2	B1	140	Water leaking from pipe in lateral. Unable to proceed due to rock/debris blockage.
C2	C1	145	
C1.1	C2	331	Water leaking from lateral. Roots protruding from lateral.
C3	C2	279	Water leaking from joint in lateral.
C4	C3	144	Water Dripping from crack.
E2	E1	63	Water Leaking into pipe.
E3	E2	234	Chunk of pipe broken/missing. 50% dirt/debris blockage
Total		3436	

With base dry weather flows in the range of 0.06 to 0.085 MGD in 2021 and a peak flow during the wet weather of 0.55 MGD, there are significant sources of I/I. It should also be noted that the wet weather base flow occurs during typically low seasonal population. As the District evolves to have more year round occupancy, the District should embark on an aggressive program to locate, identify, and make repairs to the collection system, to reduce I/I into the remaining 10,600 feet of the collection system that has not been inspected.

A. Pump Stations

1) North Pump Station

The North pump station receives wastewater from the far north end of Arch Cape Sanitary District and serves an estimated 75 homes. According to literature provided by the District, the pump station consists of two 7 1/2 Hp self-priming Smith & Loveless pumps each with a design capacity of 200 gpm @ 60 feet of head. Flow is discharge from the station through an 890 foot long 4" force main to manhole E-11 at the intersection of Larch Street and Pacific Road. The S & L packaged pump station sets over a 14.5 foot deep 6-foot diameter wet well.



North End Pump Station

A review recent the pump runtime records for June through August 2021 shows the pumps are operating 1 hour per day or less during dry weather. Increased wet weather flows and storm events were noted to increase flows to the pump station. An example of the rainfall recorded between January 10th and 18th 2022 is shown in the following table where the run times increased to 22 hours or an average of approximately 3 hour per day.

Table 10 - January 2022 Rainfall Storm Event	
Date	Rainfall (inches)
1/10	0.30
1/11	1.23
1/12	2.71
1/13	1.03
1/14	0.50
1/15	0
1/16	0
1/17	0
1/18	0.22

Since daily readings of pump run times are not recorded, the actual hours of operation each day cannot be determined. However, the storm events were followed by no rain on the following 3-days so longer run times per day were likely to have resulted at the beginning of the time frame.

In an effort to determine the actual pump discharge flow, a drawdown of the pump station was to be performed with the assistance of the Arch Cape Sanitary District staff. Upon inspection of the station, it was determined that this approach was not feasible due to the submergence of the inlet sewer line, and shallow depth of the wet well from the sewer line invert.

There are no critical deficiencies associated with the operation of the pump station, however, it was installed in 2005 and is beginning to show signs of deterioration due to the coastal environment and is also reaching the end of its projected 20- year service life.

2) Asbury Pump station

The Asbury pump station is located on Pacific Road just east of Asbury Creek. The pump station serves an estimated 68 home. The pump station also receives flows from the North Pump Station. It is similar to the North station in that it is also a S & L station with the same design and performance, 200 gpm @ 60 feet. Flow is discharged from the pump station through a 380 foot long 4" force main to manhole C-3 at the intersection of Pacific Road and Shanks Avenue. The S & L packaged pump station sets over a 15 foot deep 6 foot diameter wet well.



Asbury Pump Station

Pump runtime records for June through August 2021 shows the pumps are operating 2 - 3 hour per day or less during dry weather. The January 10th through 18th 2022 time frame was again reviewed. From January 10th to January 14th the pump station ran a total of 68 hours or an average of 17 hours per day, and from January 14th to January 18th 34 hours or an average of 8.5 hours per day.

As with the North End Pump Station a determination of the pump discharge flow could also not be performed at this station due to the submergence of the inlet sewer line, and shallow depth of the wet well from the sewer line invert.

There are no critical deficiencies associated with the operation of the pump station, however, it was installed at the same time as the North end pump station and is also beginning to show signs of deterioration due to the coastal environment and is also reaching the end of its anticipated 20-year service life.

3) Sally's Alley Pump Station

The Sally's Alley Pump Station is located at the intersection of Pacific Road and Sally's Alley. The pump station serves an estimated 41 homes and receives wastewater from the gravity collection system in the area as well as wastewater from the North End and Asbury pump stations. The pump station was rebuilt in 2015 as a submersible pump station with two 5 Hp pumps with a design of 220 gpm at 37 feet installed in a 14 foot deep 6 foot diameter wet well. Flow is discharged from the wet well pumps through a 4" 320-foot-long force main to manhole A-21 at the intersection of Pacific Road and Montbrecia Lane.



Sally's Alley Pump Station Control building

Sally's Alley is the only station with remote telemetry. The telemetry system monitors several system parameters including wet well level and pump runtimes. This information should be useful in analyzing the existing performance and capacity of the pump station through a snapshot of the online data.

August 2021 and June 2022, runtime records show pump runtimes during dry weather of approximately 3 hours per day. January 10th through 14th 2022 runtimes totaled 105 hours over the 4-day period. This indicates that both pumps were on at some time during this event to handle the flows into the pump station. From January 14th through the 18th a total of 53 hours were recorded with an average run time of 13.25 hours per day. In total, the pump station ran a total of 158 hours over an 8-day period with an average run time of 15.8 hours.

Inspection of the pump operation at Sally's Alley revealed that the submersible pumps are not seating on the base elbows. This is allowing sewage to be recirculated back in to the wet well. Consequently, resulting in longer run times and an inability to confirm the actual pump discharge rate by performing a drawdown test.

In the absence of test data, the station capacity is anticipated to match the published performance of the pump.

4) Webb Avenue Influent Pump Station

The Webb Avenue pump station is located at the intersection of East Beach Road and Webb Avenue, approximately 240 feet east of Highway 101, and receives wastewater from approximately 166 homes in the south end of Arch Cape. All wastewater enters the station through a single 8-inch gravity sewer line.

The station consists of a wet well with duplex submersible pumps and a standby generator housed in a wooden structure. The pump station serves as the influent pump station to the District's wastewater treatment facility. Sewage is pumped to the WWTF headworks through a 6" diameter 2,150 foot long force main.



Webb Avenue Pump Station

In 1999, the pump station equipment was rebuilt with new pumps, valving, piping, and control system. The submersible pump impellers were replaced in August 2014 increasing pump capacity to 300 gpm (0.432 MGD) utilizing the available remaining pump horsepower without overloading the motor. With both pumps running the pump station is capable of discharging 0.583 MGD (405 gpm) according to the District.

August 2021 runtime records show pump runtimes during dry weather of approximately 3 hours per day. January 10th through 14th 2022 runtimes totaled 79 hours over the 4-day period or an average of 20 hours per day. From January 14th

through the 18th a total of 48 hours were recorded with an average run time of 12 hours per day. In total the pump station ran a total of 158 hours over an 8-day period with an average run time of 15.9 hours.

DMR records show daily average wet weather flows from the pump station to the treatment plant increased over a 5-year period from 0.134 MGD to 0.176 MGD (122 gpm). In addition, the peak day flow increased from 0.372 MGD to 0.55 MGD (382 gpm) in November of 2021 and 0.53 MGD (368 gpm) in January 2022 requiring both pumps to be in service to meet flow to the pump station. This demonstrates existing reliable pump capacity is inadequate to meet existing or future flows with additional development in the District.

5. RECOMMENDATIONS

A. Treatment Facility

Existing treatment facility has been well maintained and there are no deficiencies related to any of the treatment process equipment. The systems were design for the full buildout of the District and have surplus capacity. No improvements are needed to the headworks screening, aeration systems, membranes, or pumping systems.

The treatment facility has adequate capacity to treat the projected ADWF, AWWF and MMWWF at full buildout of the District. PDAF exceeds the membrane capacity but is effectively treated with the use of the existing equalization basin storage capacity, excess Anoxic Zone Basin volume and the buffering capacity of the pump stations and collection system.

Flux rates for the MBR are higher than the original design parameters due to the higher operating temperature demonstrated in the DMR records and the addition of the additional cassettes. This permits the MBR to treat the existing higher flows during the winter wet weather period. The summer water temperatures are significant higher and result in the treatment facility having a significant increase in treatment capacity during warmer periods.

Waste sludge processing is recommended to continue the use of the drying beds, if desired, with excess flow delivered to the City of Seaside. Discontinuing the use of the drying beds entirely only adds a small increment in operating costs and restores manpower capacity for the plant operators. Operators currently expend approximately 300 hours per year processing waste sludge. These manhours would be efficiently utilized in other system operations as the system grows.

B. Collection System

The District made repairs to sections of the collection in 2014 with in situ lining of approximately 5,400 feet of sewer line along with other miscellaneous repairs. In 2022, 3,400 feet of the collection system was inspected and cleaned revealing damage or missing pipe and leaking laterals as well as intrusion of roots. The collection system sections where repairs are needed are shown in the following table

<i>Manholes</i>		<i>Length (feet)</i>	<i>Observations</i>
<i>From</i>	<i>To</i>		
A9.1	A19	305	Water leaking from lateral. Dirt/debris blocking 40% of pipe.
A19	A20	237	Water Leaking from lateral.
A21	A20	218	Water pulsing out from lateral.
A22	A21	394	Water leaking from three (3) laterals. Roots protruding from joint in lateral.
B2	B1	140	Water leaking from pipe in lateral. Unable to proceed due to rock/debris blockage.
C1.1	C2	331	Water leaking from lateral. Roots protruding from lateral.
C3	C2	279	Water leaking from joint in lateral.
C4	C3	144	Water Dripping from crack.
E2	E1	63	Water Leaking into pipe.
E3	E2	234	Pipe broken/missing. 50% dirt/debris blockage

The location of the leakage and damages can be found in the report provided to the District by Spartan Environmental Services bound in the appendices but appear to be primarily in the lateral connections. The District should proceed with the necessary repairs to the collection system and laterals as funding is available. Collection system repairs are estimated as:

Lateral Connection Repair, 10 ES @ \$2,500	\$25,000
Lateral Relining/Bursting, 200 LF @ \$60/LF	\$12,000
Mainline 8" Spot Repairs, 6 @ \$3,000	\$18,000
Subtotal	\$55,000
Engineering & Contingency 25%	\$15,000
Total	\$70,000
Collection Clean & TV, 10,900 LF @ \$4/LF	\$44,000
Engineering & Contingency 25%	\$11,000
Total	\$55,000

Repairs to laterals are difficult to fund and to construct due to the laterals being on private property. The Capital Improvement Plan recommends the lateral connections and short portions of the leaking laterals repaired by relining or pipe bursting to minimize disturbance on private property. The District could develop a program for private property owners to fund a portion of the improvements with a low interest load or subsidy.

In addition to the To provide additional ability to meet future peak day flows, an aggressive collection system I/I reduction program needs to be implemented. This should include inspecting the remaining 10,900 feet of the collection system to locate and identify other deficiencies in the collection system that contribute to I/I. A program of annual inspections needs to be in place until the remaining sewer lines are inspected and repaired.

C. Pump Stations

1) North and Asbury Pump Stations

Both stations have a current design of 200 gpm. Both stations have adequate capacity to serve the District, however, the stations are 17 years old and will need to be replaced in the relatively near future.

Conversion to submersible type pump stations is recommended when they are replaced to minimize exposure of equipment to the marine environment and make the stations similar to the Sally’s Alley and Webb Avenue pump stations. The estimated cost of replacing each pump station is shown in the following table.

Table 13 – North and Asbury Pump Stations Cost Estimate	
North and Asbury Pump Stations	Cost Each
Pumping Equipment	\$40,000
Mechanical Piping Modifications	20,000
Control Panel & Wiring Improvements	40,000
Disconnect Enclosure/electrical	25,000
Auxiliary Power Plug & Transfer Switch	15,000
Miscellaneous Improvements	20,000
Remote telemetry unit (RTU)	10,000
Temporary Bypass Pumping	<u>5,000</u>
Subtotal	\$175,000
Engineering & Contingency 40%	<u>75,000</u>
Total	\$250,000

Backup power systems are not being proposed at either station. The short run times as seen from the pump station runtime documentation does not warrant the added expense of a standby generator at these two sites. However, each station should be equipped with a generator plug to allow the District to move their standby generators to each site to provide backup power in the event of a power outage.

2) Sally's Alley Pump Station

Overall, the pump station is in good condition, but an estimation of the pump station performance based on actual wet well levels and runtimes from the Mission telemetry system show pump performance of approximately 90 gpm rather than the 220 gpm design. With two pumps on, the records indicate the pump station only discharges 120 gpm. The telemetry also recorded numerous events and extended runtimes when both pumps were in operation during wet weather storms. If in fact two pumps are required to operate during storm events, the station does not have reliable capacity.

Field inspection of this station revealed that the metal-to-metal face of the pump discharge was not seating, and a substantial amount of the pump discharge was recirculated back into the wet well. Ensuring the pump seat seal should provide the needed capacity with 100% redundancy.

If this resolution does not provide the needed reliable capacity, one option would be to increase pump flow by replacing the pump impellers with a larger diameter impeller to increase the design flow. This increase would be limited to the available horsepower but is a very cost effective option. A careful calculation of the system/pump performance would need to be completed to ensure that the pump would not be overloaded. Replacing the impellers is estimated to cost \$5,000 - \$6,000 for the two pumps.

An alternative to increasing the impeller size would be to replace the existing 4" force main with a 6" force main. This would reduce the pumping head, reduce power costs, and increase the existing pump capacity by approximately 50%. The existing force main is 320' long and estimated to cost \$25,000 - \$30,000 to replace. This option would restore the pump station reliability and increase each pump's capacity to approximately 300 gpm due to the reduced system head.

3) Web Avenue Pump Station

The deteriorated building structure and limited capacity pumping equipment mandate a major renovation of this station. Pump station improvements should include:

- Installation of new submersible pumps
- New pump station controls with variable frequency drives (AFDs)
- Standby generator with automatic transfer switch,
- New control/generator wood-framed building.

The existing wetwell should be inspected for deterioration, repaired as needed and reused. The existing discharge valve vault should be sufficient for continued use.

The tentative pump selection for this station has a flow range of approximately 200 gpm (0.287 MGD) to 500 gpm (720,000 gpd) when operated with an adjustable frequency drive. This will result in some pump cycling during low dry weather flows.

The existing 6-inch force main would have a maximum velocity of 5.7 fps at 500 gpm, however, this would only occur during a peak flow event, which would be very infrequent. A moderate pump flow of 300 gpm would have a velocity of approximately 3.4 ft/sec.

Preliminary design calculations indicate the increase in dynamic losses will require pump horsepower to be increased from 10 Hp to approximately 40 Hp at PDAF. However, the power consumption would only need to match the operating flow horsepower requirement, which would be less than 15 hp. This justifies continued use of the 6" force main.

The estimated cost of the pump station improvements is shown in the following table.

Table 13 – Webb Ave Pump Station Cost Estimate	
Webb Avenue Pump Station	Cost
Pumping Equipment	\$40,000
Mechanical Piping Modifications	10,000
Control Panel & Wiring Improvements	40,000
Electrical Disconnect Enclosure	10,000
Standby Generator & ATS	65,000
Miscellaneous Improvements	10,000
Generator/Control Building	75,000
New Electrical Service	15,000
Remote telemetry unit (RTU)	5,000
Temporary Bypass Pumping	<u>5,000</u>
Subtotal	\$275,000
Engineering & Contingency 25%	<u>75,000</u>
Total	\$350,000

6. CAPITAL IMPROVEMENT PLAN

A. Plan Summary

The Arch Cape Sanitary District Treatment facilities are in good condition with adequate capacity excepting sludge processing. The cost-effective solution to sludge processing is continued use of the drying beds as supplemented by hauling and disposal at the Seaside Wastewater facility if feasible arrangements can be negotiated. No capital improvements are proposed at the plant.

Infiltration and Inflow are the largest concern in the collection system and warrants repair as soon as funding is available. The collection system has several defects identified in the most recent video inspection that needs repairs and long-term the District should budget for inspection of the remaining collection system.

Pump Station replacement and upgrades are the most pressing issue for the District. The Webb Avenue station has no redundancy and in the event of a pump failure during peak flows, would very quickly result in overflows to Arch Cape Creek and the Pacific Ocean. Improvements to the Webb Avenue Pump Station are critical and need to be completed as soon as possible. The current operations violate DEQ guidelines and will resort in a DEQ order if allowed to continue.

The remaining pump stations continue to operate acceptable and do not pose concerns. The District should anticipate replacing the North and Asbury stations in the 6-10 year time frame. This should help permit generating the funds to complete that work.

Table 14 - Capital Improvement Plan Summary		
Capital Improvement	Estimated Cost	Priority
1. Collection System Repairs	\$70,000	1-5 yrs
2. Webb Avenue PS Improvements	<u>350,000</u>	1-5 yrs
Total 1 – 5 Years	\$420,000	
3. Collection system TV Inspection	\$55,000	6 - 10 yrs
4. North Pump Station Upgrade	250,000	6 - 10 yrs
5. Asbury Pump Station	250,000	6 - 10 yrs
Total 6 – 10 Years	\$555,000	

B. Funding Program

The Arch Cape Sanitary District current user rates are \$264 per quarter per equivalent dwelling unit, and they serve 346 current users. That quarterly revenue is used to service two current debt obligations to Business Oregon, amounting to approximately \$38,000 debt service per year.

In addition, the District uses property tax revenues to retire a general obligation bond debt to USDA Rural Services for construction of the Wastewater Treatment Plant. Annual debt service to USDA RS is approximately \$150,000.

User rates are anticipated to service debt incurred to complete the capital improvement plan. To complete all 1 – 5 year priority projects totaling \$420,000, would require increasing quarterly user rates by approximately \$22 per EDU to provide the estimated \$30,000 annual debt service. If the District intends to incur debt for these projects, there are several programs available through Business Oregon that could serve the District well.

APPENDIX A

Expiration Date: March 31, 2011
Permit Number: 100967
File Number: 3300
Page 1 of 22 Pages

**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
WASTE DISCHARGE PERMIT**

Department of Environmental Quality
Northwest Region – Portland Office
2020 SW 4th Ave., Suite 400, Portland, OR 97201
Telephone: (503) 229-5263

Issued pursuant to ORS 468B.050 and The Federal Clean Water Act

ISSUED TO:

Arch Cape Sanitary District
32065 E. Shingle Mill Lane
Arch Cape, OR 97102

SOURCES COVERED BY THIS PERMIT:

Type of Waste	Outfall Number	Outfall Location
Treated Wastewater	001	R.M. 0.5
Reclaimed Water Reuse	002	Irrigation
Emergency Overflow Mahole #A-7	003	Indirect to Arch Cape Creek
Emergency Overflow Asbury Creek Pump Station	004	Asbury Creek
Emergency Overflow Webb Ave. Pump Station	005	Arch Cape Creek
Emergency Overflow Sally's Alley Pump Station	006	Indirect to Pacific Ocean

FACILITY TYPE AND LOCATION:

Activated Sludge
32065 E. Shingle Mill Lane
Arch Cape

Treatment System Class: Level III
Collection System Class: Level II

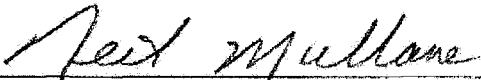
RECEIVING STREAM INFORMATION:

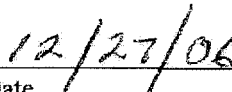
Basin: Northern Oregon Coastal
Sub-Basin: Necanicum
Receiving Stream: Arch Cape Creek
LLID: 1239669458034 0.5 D
County: Clatsop

EPA REFERENCE NO: OR-002749-9

Issued in response to Application No. 977895 received June 13, 2006.

This permit is issued based on the land use findings in the permit record.


Neil Mullane, Water Quality Manager
Northwest Region


Date

PERMITTED ACTIVITIES

Until this permit expires or is modified or revoked, the permittee is authorized to construct, install, modify, or operate a wastewater collection, treatment, control and disposal system and discharge to public waters adequately treated

wastewaters only from the authorized discharge point or points established in Schedule A and only in conformance with all the requirements, limitations, and conditions set forth in the attached schedules as follows:

	Page
Schedule A - Waste Discharge Limitations not to be Exceeded	3
Schedule B - Minimum Monitoring and Reporting Requirements.....	6
Schedule C - Compliance Conditions and Schedules.....	11
Schedule D - Special Conditions	12
Schedule F - General Conditions	14

Unless specifically authorized by this permit, by another NPDES or WPCF permit, or by Oregon Administrative Rule, any other direct or indirect discharge of waste is prohibited, including discharge to waters of the state or an underground injection control system.

SCHEDULE A

1. Waste Discharge Limitations not to be exceeded after permit issuance.

a. Treated Effluent Outfall 001

(1) May 1 - October 31: No discharge to waters of the State (unless approved in writing by the Department)

(2) November 1 - April 30:

Parameter	Average Effluent Concentrations		Monthly* Average lb/day	Weekly* Average lb/day	Daily* Maximum lbs
	Monthly	Weekly			
BOD ₅	20 mg/L	30 mg/L	25	37.5	50
TSS	20 mg/L	30 mg/L	25	37.5	50

*The maximum month wet weather flow to the facility equals 0.18 MGD. Mass load limits have been individually assigned and are based upon prior permit.

(3)

Other parameters	Minimum Dilution (See Note 1)	Limitations
Total Chlorine Residual	NA	Shall not exceed a maximum daily limit of 0.03 mg/L and a monthly average of 0.01 mg/L (See Note 2)
Ammonia as Nitrogen (NH ₃ as N)	4	Shall not exceed a maximum daily limit of 11.0 mg/L or a monthly limit of 7.5 mg/L.(See Note 3)

(4)

Other parameters	Limitations
<i>E. coli</i> Bacteria	Shall not exceed 126 organisms per 100 mL monthly geometric mean. No single sample shall exceed 406 organisms per 100 mL. (See Note 4)
pH	Shall be within the range of 6.0 - 9.0
BOD ₅ and TSS Removal Efficiency	Shall not be less than 65% monthly average for BOD ₅ and 65% monthly for TSS.

(5) No wastes may be discharged or activities conducted that cause or contribute to a violation of water quality standards in OAR 340-041 applicable to the Northern Oregon Coastal basin except as provided for in OAR 340-045-0080 and the following regulatory mixing zone:

The allowable mixing zone is that portion of Arch Cape Creek, which shall not exceed fifty (50) feet downstream from the outfall. The zone of immediate dilution (ZID) shall be defined as that portion of the allowable mixing zone that is within five (5) feet of the point of discharge.

(6) After the start-up of UV disinfection, chlorine and chlorine compounds shall not be used as disinfecting agent of the treated effluent and no chlorine residual shall be allowed in the discharged effluent due to chlorine used for maintenance purposes. (See Note 2)

b. Reclaimed Wastewater Outfall 002

- (1) No discharge to state waters is permitted. All reclaimed water shall be distributed on land, for dissipation by evapotranspiration and controlled seepage by following sound irrigation practices so as to prevent:
 - a. Prolonged ponding of treated reclaimed water on the ground surface;
 - b. Surface runoff or subsurface drainage through drainage tile;
 - c. The creation of odors, fly and mosquito breeding or other nuisance conditions;
 - d. The overloading of land with nutrients, organics, or other pollutant parameters; and,
 - e. Impairment of existing or potential beneficial uses of groundwater.
- (2) Prior to the land application of the reclaimed water, it shall receive a minimum of level of treatment so as to reduce total coliform to a 7 day median of 23 organisms per 100 mL and a maximum of 240 for any 2 consecutive samples.
- (3) Irrigation shall conform to the irrigation management plan approved by the Department.

c. Emergency Overflow Outfall 003, 004, 005 and 006

- (1) No wastes shall be discharged from these outfalls, unless the cause of the discharge is due to storm events as allowed under OAR 340-041-0009 (6) or (7) as follows:
 - (2) No wastes shall be discharged from these outfalls except as allowed in Schedule F, Section B, Condition 6 of this permit. If an overflow occurs between May 22 and June 1, and if the permittee demonstrates to the Department's satisfaction that no increase in risk to beneficial uses occurred because of the overflow, no violation shall be triggered if the storm associated with the overflow was greater than the one-in-five-year, 24-hour duration storm. The one-in-five-year, 24-hour duration storm event is defined in the September 2005 facility plan (figure 7) as 1.3 inches in one day. The one-in-10-year, 24-hour storm event is defined in the September 2005 facility plan as 0.5 inches in one day.
- d. No activities shall be conducted that could cause an adverse impact on existing or potential beneficial uses of groundwater. All wastewater shall be managed and disposed in a manner that will prevent a violation of the Groundwater Quality Protection Rules (OAR 340-040).

NOTES:

1. Dilution is calculated as follows: $(Q_e(1.547) + Q_r(0.065)) / (Q_e(1.547))$; where Q_e = Effluent flow mgd and Q_r = Stream flow cfs (for example with a Q_e of 0.15 mgd the flow in the river would have to be 10.7 cfs to obtain a dilution of 4.). The factor of 0.065 represents 25% of the stream flow and 26% of the effective mixing determined during the mixing zone study. A minimum dilution of 4 shall be maintained until the results of the metals sampling are complete and have been reviewed.
2. After completion of the MBR facilities with UV disinfection, only Condition a.(6) shall apply.
3. The ammonia limits in this permit are applicable after completion of the proposed MBR facilities. The State of Oregon has adopted the EPA 1999 ammonia criteria. Upon approval of the new standard by EPA, the following limits based on the EPA 1999 ammonia criteria with early life stages will be applied to the discharge without a permit modification if the 1999 ammonia criteria have not been modified such that a new permit limit is required.

Other parameters (Nov. 1 to Apr. 30)	Minimum Dilution	Limitations
Ammonia as Nitrogen (NH ₃ as N)	NA	Shall not exceed a maximum daily limit of 44.0 mg/L or a monthly limit of 30 mg/L

4. If a single sample exceeds 406 organisms per 100 mL, then five consecutive re-samples may be taken at four-hour intervals beginning within 28 hours after the original sample was taken. If the log mean of the five re-samples is less than or equal to 126 organisms per 100 mL, a violation shall not be triggered.

SCHEDULE B

1. **Minimum Monitoring and Reporting Requirements** (unless otherwise approved in writing by the Department).

The permittee shall monitor the parameters as specified below at the locations indicated. The laboratory used by the permittee to analyze samples shall have a quality assurance/quality control (QA/QC) program to verify the accuracy of sample analysis. If QA/QC requirements are not met for any analysis, the results shall be included in the report, but not used in calculations required by this permit. When possible, the permittee shall re-sample in a timely manner for parameters failing the QA/QC requirements, analyze the samples, and report the results.

a. Influent

The facility influent samples are taken at the headworks.

Item or Parameter	Minimum Frequency	Type of Sample
BOD ₅	Weekly	Composite
TSS	Weekly	Composite
pH	2/Week	Grab

b. Treated Effluent Outfall (001)

The facility effluent sampling locations are the following:

*Effluent grab samples for bacteria are taken after disinfection. Composite samples are taken prior to discharge through the outfall.

Item or Parameter	Minimum Frequency	Type of Sample
Total Flow (MGD)	Daily	Measurement
Flow Meter Calibration	Annual	Verification
BOD ₅	Weekly	Composite
TSS	Weekly	Composite
pH	2/Week	Grab
<i>E. coli</i>	Weekly	Grab (See Note 1)
UV Intensity	Daily	Reading (See Note 2)
Quantity Chlorine used	Daily	Measurement (See Note 2)
Chlorine Residual	Daily	Grab (See Note 2)
Pounds Discharged (BOD ₅ and TSS)	Weekly	Calculation
Average Percent Removed (BOD ₅ and TSS)	Monthly	Calculation
Ammonia as Nitrogen	2/Month	Composite
Temperature	2/Week	Grab (See Note 3)
Metals ug/L (Cu, Fe, Pb, Ag, Zn)	Annually	Composite (See Note 4)
Hardness as CaCO ₃ , total recoverable	Annually	Composite (See Note 4)

c. Reclaimed Wastewater Outfall 002

Item or Parameter	Minimum Frequency	Type of Sample
Total Flow (MGD)	Daily	Totalizer
Quantity Irrigated (inches/acre)	Monthly	Calculation (See Note 5)
Quantity Chlorine Used	Daily	Measurement (See Note 6)
Chlorine Residual	Daily	Grab (See Note 6)
UV Intensity	Daily	Reading (See Note 6)
TKN	Annually	Grab
NO ₂ +NO ₃ -N	Annually	Grab
Total Phosphorus	Annually	Grab

d. Arch Cape Creek upstream of Outfall 001 November 1 to April 30

Item or Parameter	Minimum Frequency	Type of Sample
Stream Flow (cfs)	Monthly	Measurement
Dilution	Monthly	Calculation
Temperature	Monthly	Grab

e. Biosolids Management

Item or Parameter	Minimum Frequency	Type of Sample
Sludge Analysis including: Total Solids (% dry wt.) Volatile Solids (% dry wt.) Biosolids nitrogen for: NH ₃ -N; NO ₃ -N; & TKN (% dry wt.) Phosphorus (% dry wt.) Potassium (%dry wt.) pH (standard units) Sludge metals content for: As, Cd, Cu, Hg, Mo, Ni, Pb, Se & Zn, measured as total in mg/kg	Annually	Composite sample from sludge drying beds to be representative of the product to be land applied from the sludge drying beds (See Note 7)
Pathogen Reduction Alternative 1 Fecal coliform per gram total solids (dry weight basis) or Salmonella sp. bacteria per four grams total solids (dry weight basis)	Prior to land application	At least seven (7) individual samples representative of the product to be land applied from the sludge drying beds (See Note 8)
PSRP Alternative 2 Quantity and type of alkaline product used to stabilize biosolids (when required to meet federal pathogen and vector attraction reduction requirements in 40 CFR 503.32(b)(3) and 40	Each occurrence	Measurement

CFR 503.33(b)(6))		
Initial time when solids that received alkaline agent ascended to pH ≥ 12	Each batch	Date, time, and actual pH measurement (corrected to standard at 25 °C)
2 hours after initial alkaline addition and sustained at pH ≥ 12	Each batch	Date, time, and actual pH measurement (corrected to standard at 25 °C)
Vector Attraction Reduction		
24 hours after initial alkaline addition and pH ≥ 11.5 was sustained	Each batch	Date, time, and actual pH measurement (corrected to standard at 25 °C)
% Volatile Solids Reduction accomplished through digestion and drying beds	Annually	Calculation (see Note 9)
Application		
Record of locations where biosolids are applied on each DEQ approved site. (Site location maps to be maintained at treatment facility for review upon request by DEQ)	Each Occurrence	Date, volume & locations where sludges were applied recorded on site location map.

f. Emergency Overflow Outfalls 003, 004, 005 and 006

Item or Parameter	Minimum Frequency	Type of Sample
Flow	Daily (during each occurrence)	Estimate duration and volume

2. **Reporting Procedures**

- a. Monitoring results shall be reported on approved forms. The reporting period is the calendar month. Reports must be submitted to the Department's Northwest Region - Portland office by the 15th day of the following month.
- b. State monitoring reports shall identify the name, certificate classification and grade level of each principal operator designated by the permittee as responsible for supervising the wastewater collection and treatment systems during the reporting period. Monitoring reports shall also identify each system classification as found on page one of this permit.
- c. Monitoring reports shall also include a record of the quantity and method of use of all sludge removed from the treatment facility and a record of all applicable equipment breakdowns and bypassing.

3. **Report Submittals**

- a. The permittee shall have in place a program to identify and reduce inflow and infiltration into the sewage collection system. An annual report shall be submitted to the Department by **June 1** each year which details sewer collection maintenance activities that reduce inflow and infiltration. The report shall state those activities that have been done in the previous year and those activities planned for the following year.
- b. For any year in which biosolids are land applied, a report shall be submitted to the Department by **February 19** of the following year that describes solids handling activities for the previous year and includes, but is not limited to, the required information outlined in OAR 340-050-0035(6)(a)-(e).
- c. By no later than **January 15** of each year, the permittee shall submit to the Department an annual report describing the effectiveness of the reclaimed water system to comply with approved reclaimed water use plan, the rules of Division 55, and the limitations and conditions of this permit applicable to reuse of reclaimed water. Reporting shall begin after approval of the Reclaim Water Use Plan is approved.

NOTES:

1. *E. coli* monitoring must be conducted according to any of the following test procedures as specified in **Standard Methods for the Examination of Water and Wastewater, 19th Edition**, or according to any test procedure that has been authorized and approved in writing by the Director or an authorized representative:

Method	Reference	Page	Method Number
mTEC agar, MF	Standard Methods, 18th Edition	9-29	9213 D
NA-MUG, MF	Standard Methods, 19th Edition	9-63	9222 G
Chromogenic Substrate, MPN	Standard Methods, 19th Edition	9-65	9223 B
Colilert QT	Idexx Laboratories, Inc.		

2. After the start up of the upgraded facility, UV intensity monitoring shall replace chlorine use and total chlorine residual monitoring. The intensity of the UV radiation passing through the water column will affect the systems ability to kill organisms. The UV intensity shall be determined by reading the meter each day. If more than one meter is used, the daily recording will be an average of all meter readings each day.
3. The grab sample will be representative of the daily maximum temperature. If the grab sample is taken then the grab samples will be used for the 7-day moving average. For effluent samples, report the results with each month's DMR.
4. This sampling is to begin in the first wet weather season (Nov1-Apr 30) after the completion of the MBR facilities. The analysis performed must meet a limit of quantitation level as shown in the table below. This is because the analysis of the effluent will be compared to the water quality criteria for that parameter. The water quality criteria for these parameters are very low. Consider for example the water quality criteria for silver which is 0.12 ug/L.

Parameter	Method Ref.	Limit of Quantitation
Hardness as CaCO ₃ , total recoverable	3120B	0.70 mg/l
Iron, total recoverable	3120B	100 ug/l
Arsenic, total recoverable	200.8	1.0 ug/l
Cadmium, total recoverable	200.8	1 ug/l
Chromium, total recoverable	200.8	1.0 ug/l
Copper, total recoverable	200.8	2 ug/l
Lead, total recoverable	200.8	1 ug/l
Nickel, total recoverable	200.8	2.0 ug/l
Silver, total recoverable	200.8	0.12 ug/l
Zinc, total recoverable	200.8	5.0 ug/l

5. An example of the calculation for inches per acre is as follows:
average million gallons/day x 3.07 acre-feet/million gallons x day/28 acres x 12 inches/foot
6. If chlorine will continue to be used for disinfection prior to land application then the Quality of Chlorine Used and the Chlorine Residual will be monitored instead of the UV Intensity.
7. Composite samples from the Sludge drying bed shall be taken from reference areas in the Sludge drying bed pursuant to Test Methods for Evaluating Solid Waste, Volume 2; Field Manual, Physical/Chemical Methods, November 1986, Third Edition, Chapter 9.

Inorganic pollutant monitoring must be conducted according to Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Second Edition (1982) with Updates I and II and third Edition (1986) with Revision I.

8. Analyze and report fecal coliform result for each sample separately. Calculate and report the geometric mean of all the samples.
9. Calculation of the % volatile solids reduction is to be based on comparison of a representative grab sample of total and volatile solids entering each digester (a weighted blend of the primary and secondary clarifier solids) and a representative composite sample of solids exiting each digester withdrawal line (as defined in note 3 above).

SCHEDULE C

Compliance Schedules and Conditions

1. By no later than ninety (90) days after permit issuance, the permittee shall submit to the Department a revised biosolids management plan developed in accordance with Oregon Administrative Rule 340, Division 50, "Land Application of Domestic Wastewater Treatment Facility Biosolids, Biosolids Derived Products, and Domestic Septage". If the Department requires further revisions, the permittee shall submit the revisions no more than 2 weeks from the date the Department's request for the revisions is communicated. The 2 week turnaround will continue until the Biosolids Management Plan is approved.
2. By no later than ninety (90) days after permit issuance, the permittee shall submit to the Department a revised reclaimed water reuse plan developed in accordance with Oregon Administrative Rule 340, Division 55, "Regulation pertaining to the use of reclaimed water (treated effluent) from sewage treatment plants". Upon approval of the plan by the Department, the plan shall be implemented by the permittee.
3. By no later than ninety (90) days after permit issuance, the permittee shall submit to the Department a report which either identifies known sewage overflow locations and a plan for estimating the frequency, duration and quantity of sewage overflowing, or confirms that there are no overflow points. The report shall also provide a schedule to eliminate the overflow(s), if any.
4. The permittee is expected to meet the compliance dates which have been established in this schedule. Either prior to or no later than 14 days following any lapsed compliance date, the permittee shall submit to the Department a notice of compliance or noncompliance with the established schedule. The Director may revise a schedule of compliance if he/she determines good and valid cause resulting from events over which the permittee has little or no control.
5. By no later than the start up of the MBR facilities, the permittee shall have its wastewater treatment system supervised by one or more operators who are certified in a classification and grade level that is equal to or greater than the wastewater treatment classification on the face page of this permit.

SCHEDULE D

Special Conditions

1. All biosolids shall be managed in accordance with the Federal (40 CFR, Part 503) and Oregon Administrative Rules Chapter 340 Division 50 and the current Department approved biosolids management plan, land application plan and the site authorization letters issued by the Department. Any changes in solids management activities that significantly differ from operations specified under the approved plans and authorization letters requires the prior written approval of the Department.
2. This permit may be modified to incorporate any applicable standard for biosolids use or disposal promulgated under section 405(d) of the Clean Water Act, if the standard for biosolids use or disposal is more stringent than any requirements for biosolids use or disposal in the permit, or controls a pollutant or practice not limited in this permit.
3. The permittee shall meet the requirements for use of reclaimed water under Division 55, including the following:
 - a. All reclaimed water shall be managed in accordance with the approved Reclaimed Water Use Plan. No substantial changes shall be made in the approved plan without written approval of the Department.
 - b. No reclaimed water shall be released by the permittee to another person, as defined in Oregon Revised Statute (ORS) 468.005, for use unless there is a valid contract between the permittee and that person that meets the requirements of OAR 340-055-0015(9).
 - c. The permittee shall notify the Department within 24 hours if it is determined that the treated effluent is being used in a manner not in compliance with OAR 340-055. When the Department offices are not open, the permittee shall report the incident of noncompliance to the Oregon Emergency Response System (Telephone Number 1-800-452-0311).
 - d. No reclaimed water shall be made available to a person proposing to recycle unless that person certifies in writing that they have read and understand the provisions in these rules. This written certification shall be kept on file by the sewage treatment system owner and be made available to the Department for inspection.
4. The permittee shall comply with Oregon Administrative Rules (OAR), Chapter 340, Division 49, "Regulations Pertaining To Certification of Wastewater System Operator Personnel" and accordingly:
 - a. The permittee shall have its wastewater system supervised by one or more operators who are certified in a classification and grade level (equal to or greater) that corresponds with the classification (collection and/or treatment) of the system to be supervised as follows: treatment system class Level II and the collection system class Level II applies for the existing facility and treatment system class Level III and the collection system class is Level II applies on an after the start up of the MBR facilities,

Note: A "supervisor" is defined as the person exercising authority for establishing and executing the specific practice and procedures of operating the system in accordance with the policies of the permittee and requirements of the waste discharge permit. "Supervise" means responsible for the technical operation of a system, which may affect its performance or the quality of the effluent produced. Supervisors are not required to be on-site at all times.

- b. The permittee's wastewater system may not be without supervision (as required by Special Condition 4.a. above) for more than thirty (30) days. During this period, and at any time that the supervisor is

not available to respond on-site (i.e. vacation, sick leave or off-call), the permittee must make available another person who is certified in the proper classification and at grade level I or higher.

- c. The permittee is responsible for ensuring the wastewater system has a properly certified supervisor available at all times to respond on-site at the request of the permittee and to any other operator.
 - d. The permittee shall notify the Department of Environmental Quality in writing within thirty (30) days of replacement or redesignation of certified operators responsible for supervising wastewater system operation. The notice shall be filed with the Water Quality Division, Operator Certification Program, 400 East Scenic Drive, Suite 307, The Dalles, OR 97058. This requirement is in addition to the reporting requirements contained under Schedule B of this permit.
 - e. Upon written request, the Department may grant the permittee reasonable time, not to exceed 120 days, to obtain the services of a qualified person to supervise the wastewater system. The written request must include justification for the time needed, a schedule for recruiting and hiring, the date the system supervisor availability ceased and the name of the alternate system supervisor(s) as required by 4.b. above.
5. The permittee shall notify the DEQ Northwest Region - Portland Office (phone: (503) 229-5263) in accordance with the response times noted in the General Conditions of this permit, of any malfunction so that corrective action can be coordinated between the permittee and the Department.
 6. An adequate contingency plan for prevention and handling of spills and unplanned discharges shall be in force at all times. A continuing program of employee orientation and education shall be maintained to ensure awareness of the necessity of good inplant control and quick and proper action in the event of a spill or accident.
 7. Prior to permit renewal, the permittee shall have gathered the information necessary and conduct sampling required to fill out the renewal form EPA Form 3510-2A(Rev. 1-99). In Section B.6. Effluent Testing Data for facilities greater than 0.1 MGD, a minimum of three samples no more than four and one-half years old must be provided for Ammonia (as N), Chlorine (total residual, TRC), Dissolved Oxygen, Total Kjeldahl Nitrogen (TKN), Nitrate Plus Nitrite Nitrogen, Oil & Grease, Phosphorus (Total), Total Dissolved Solids (TDS).

**SCHEDULE F
NPDES GENERAL CONDITION – DOMESTIC FACILITIES**

SECTION A. STANDARD CONDITIONS

1. Duty to Comply with Permit

The permittee must comply with all conditions of this permit. Failure to comply with any permit condition is a violation of the Clean Water Act, Oregon Revised Statutes (ORS) 468B.025, and 40 Code of Federal Regulations (CFR) Section 122.41(a), and grounds for an enforcement action. Failure to comply is also grounds for the Department to modify, revoke, or deny renewal of a permit.

2. Penalties for Water Pollution and Permit Condition Violations

ORS 468.140 allows the Department to impose civil penalties up to \$10,000 per day for violation of a term, condition, or requirement of a permit. Additionally 40 CFR 122.41 (A) provides that any person who violates any permit condition, term, or requirement may be subject to a federal civil penalty not to exceed \$25,000 per day for each violation.

Under ORS 468.943 and 40 CFR 122.41(a), unlawful water pollution, if committed by a person with criminal negligence, is punishable by a fine of up to \$25,000 imprisonment for not more than one year, or both. Each day on which a violation occurs or continues is a separately punishable offense.

Under ORS 468.946, a person who knowingly discharges, places, or causes to be placed any waste into the waters of the state or in a location where the waste is likely to escape into the waters of the state is subject to a Class B felony punishable by a fine not to exceed \$200,000 and up to 10 years in prison. Additionally, under 40 CFR 122.41(a) any person who knowingly discharges, places, or causes to be placed any waste into the waters of the state or in a location where the waste is likely to escape into the waters of the state is subject to a federal civil penalty not to exceed \$100,000, and up to 6 years in prison.

3. Duty to Mitigate

The permittee must take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment. In addition, upon request of the Department, the permittee must correct any adverse impact on the environment or human health resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

4. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and have the permit renewed. The application must be submitted at least 180 days before the expiration date of this permit.

The Department may grant permission to submit an application less than 180 days in advance but no later than the permit expiration date.

5. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause including, but not limited to, the following:

- a. Violation of any term, condition, or requirement of this permit, a rule, or a statute
- b. Obtaining this permit by misrepresentation or failure to disclose fully all material facts
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge

- d. The permittee is identified as a Designated Management Agency or allocated a wasteload under a Total Maximum Daily Load (TMDL)
- e. New information or regulations
- f. Modification of compliance schedules
- g. Requirements of permit reopener conditions
- h. Correction of technical mistakes made in determining permit conditions
- i. Determination that the permitted activity endangers human health or the environment
- j. Other causes as specified in 40 CFR 122.62, 122.64, and 124.5

The filing of a request by the permittee for a permit modification, revocation or reissuance, termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

6. Toxic Pollutants

The permittee must comply with any applicable effluent standards or prohibitions established under Oregon Administrative Rules (OAR) 340-041-0033 for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

7. Property Rights and Other Legal Requirements

The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege, or authorize any injury to persons or property or invasion of any other private rights, or any infringement of federal, tribal, state, or local laws or regulations.

8. Permit References

Except for effluent standards or prohibitions established under OAR 340-041-0033 for toxic pollutants and standards for sewage sludge use or disposal established under Section 405(d) of the Clean Water Act, all rules and statutes referred to in this permit are those in effect on the date this permit is issued.

9. Permit Fees

The permittee must pay the fees required by Oregon Administrative Rules.

SECTION B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

The permittee must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

2. Need to Halt or Reduce Activity Not a Defense

For industrial or commercial facilities, upon reduction, loss, or failure of the treatment facility, the permittee must, to the extent necessary to maintain compliance with its permit, control production or all discharges or both until the facility is restored or an alternative method of treatment is provided. This requirement applies, for example, when the primary source of power of the treatment facility fails or is reduced or lost. It is not a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3. Bypass of Treatment Facilities

- a. Definitions

- (1) "Bypass" means intentional diversion of waste streams from any portion of the treatment facility. The term "bypass" does not apply if the diversion does not cause effluent limitations to be exceeded, provided the diversion is to allow essential maintenance to assure efficient operation or the diversion is due to nonuse of nonessential treatment units or processes at the treatment facility.
- (2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities or treatment processes that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Prohibition of bypass.

- (1) Bypass is prohibited unless:
 - (a) Bypass was necessary to prevent loss of life, personal injury, or severe property damage;
 - (b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventative maintenance; and
 - (c) The permittee submitted notices and requests as required under General Condition B.3.c.
- (2) The Department may approve an anticipated bypass, after considering its adverse effects and any alternatives to bypassing, when the Department determines that it will meet the three conditions listed above in General Condition B.3.b.(1).

c. Notice and request for bypass.

- (1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, a written notice must be submitted to the Department at least ten days before the date of the bypass.
- (2) Unanticipated bypass. The permittee must submit notice of an unanticipated bypass as required in General Condition D.5.

4. Upset

- a. Definition. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operation error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.
- b. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of General Condition B.4.c are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
- c. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - (1) An upset occurred and that the permittee can identify the causes(s) of the upset;
 - (2) The permitted facility was at the time being properly operated;

- (3) The permittee submitted notice of the upset as required in General Condition D.5, hereof (24-hour notice); and
 - (4) The permittee complied with any remedial measures required under General Condition A.3 hereof.
- d. Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

5. Treatment of Single Operational Upset

For purposes of this permit, A Single Operational Upset that leads to simultaneous violations of more than one pollutant parameter will be treated as a single violation. A single operational upset is an exceptional incident that causes simultaneous, unintentional, unknowing (not the result of a knowing act or omission), temporary noncompliance with more than one Clean Water Act effluent discharge pollutant parameter. A single operational upset does not include Clean Water Act violations involving discharge without a NPDES permit or noncompliance to the extent caused by improperly designed or inadequate treatment facilities. Each day of a single operational upset is a violation.

6. Overflows from Wastewater Conveyance Systems and Associated Pump Stations

a. Definitions

- (1) "Overflow" means the diversion and discharge of waste streams from any portion of the wastewater conveyance system including pump stations, through a designed overflow device or structure, other than discharges to the wastewater treatment facility.
- (2) "Severe property damage" means substantial physical damage to property, damage to the conveyance system or pump station which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of an overflow.
- (3) "Uncontrolled overflow" means the diversion of waste streams other than through a designed overflow device or structure, for example to overflowing manholes or overflowing into residences, commercial establishments, or industries that may be connected to a conveyance system.

b. Prohibition of storm related overflows. Storm related overflows of raw sewage are prohibited to waters of the State. However, the Environmental Quality Commission (EQC) recognizes that it is impossible to design and construct a conveyance system that will prevent overflows under all storm conditions. The State of Oregon has determined that all wastewater conveyance systems should be designed to transport storm events up to a specific size to the treatment facility. Therefore, such storm related overflows will not be considered a violation of this permit if:

- (1) The permittee has conveyance and treatment facilities adequate to prevent overflows except during a storm event greater than the one-in-five-year, 24-hour duration storm from November 1 through May 21 and except during a storm event greater than the one-in-ten-year, 24-hour duration storm from May 22 through October 31. However, overflows during a storm event less than the one-in-five-year, 24-hour duration storm from November 1 through May 21 are also not permit violations if, the permittee had separate sanitary and storm sewers on January 10, 1996, had experienced sanitary sewer overflows due to inflow and infiltration problems, and has submitted an acceptable plan to the Department to address these sanitary sewer overflows by January 1, 2010;
- (2) The permittee has provided the highest and best practicable treatment and/or control of wastes, activities, and flows and has properly operated the conveyance and treatment facilities in compliance with General Condition B.1.;
- (3) The permittee has minimized the potential environmental and public health impacts from the overflow; and
- (4) The permittee has properly maintained the capacity of the conveyance system.

- c. Prohibition of other overflows. All overflows other than stormwater-related overflows (discussed in Schedule F, Section B, Condition 6.b.) are prohibited unless:
 - (1) Overflows were unavoidable to prevent an uncontrolled overflow, loss of life, personal injury, or severe property damage;
 - (2) There were no feasible alternatives to the overflows, such as the use of auxiliary pumping or conveyance systems, or maximization of conveyance system storage; and
 - (3) The overflows are the result of an upset as defined in General Condition B.4. and meeting all requirements of this condition.
- d. Uncontrolled overflows are prohibited where wastewater is likely to escape or be carried into the waters of the State by any means.
- e. Reporting required. Unless otherwise specified in writing by the Department, all overflows and uncontrolled overflows must be reported orally to the Department within 24 hours from the time the permittee becomes aware of the overflow. Reporting procedures are described in more detail in General Condition D.5. Reports concerning storm related overflows must include information about the amount and intensity of the rainfall event causing the overflow.

7. Public Notification of Effluent Violation or Overflow

If effluent limitations specified in this permit are exceeded or an overflow occurs, upon request by the Department, the permittee must take such steps as are necessary to alert the public about the extent and nature of the discharge. Such steps may include, but are not limited to, posting of the river at access points and other places, news releases, and paid announcements on radio and television.

8. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters must be disposed of in such a manner as to prevent any pollutant from such materials from entering waters of the state, causing nuisance conditions, or creating a public health hazard.

SECTION C. MONITORING AND RECORDS

1. Representative Sampling

Sampling and measurements taken as required herein must be representative of the volume and nature of the monitored discharge. All samples must be taken at the monitoring points specified in this permit, and shall be taken, unless otherwise specified, before the effluent joins or is diluted by any other waste stream, body of water, or substance. Monitoring points may not be changed without notification to and the approval of the Department.

2. Flow Measurements

Appropriate flow measurement devices and methods consistent with accepted scientific practices must be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices must be installed, calibrated and maintained to insure that the accuracy of the measurements is consistent with the accepted capability of that type of device. Devices selected must be capable of measuring flows with a maximum deviation of less than ± 10 percent from true discharge rates throughout the range of expected discharge volumes.

3. Monitoring Procedures

Monitoring must be conducted according to test procedures approved under 40 CFR part 136, unless other test procedures have been specified in this permit.

4. Penalties of Tampering

The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit may, upon conviction, be punished by a fine of not more than \$10,000 per violation, imprisonment for not more than two years, or both. If a conviction of a person is for a violation committed after a first conviction of such person, punishment is a fine not more than \$20,000 per day of violation, or by imprisonment of not more than four years, or both.

5. Reporting of Monitoring Results

Monitoring results must be summarized each month on a Discharge Monitoring Report form approved by the Department. The reports must be submitted monthly and are to be mailed, delivered or otherwise transmitted by the 15th day of the following month unless specifically approved otherwise in Schedule B of this permit.

6. Additional Monitoring by the Permittee

If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR part 136 or as specified in this permit, the results of this monitoring must be included in the calculation and reporting of the data submitted in the Discharge Monitoring Report. Such increased frequency must also be indicated. For a pollutant parameter that may be sampled more than once per day (e.g., Total Chlorine Residual), only the average daily value must be recorded unless otherwise specified in this permit.

7. Averaging of Measurements

Calculations for all limitations that require averaging of measurements must utilize an arithmetic mean, except for bacteria which shall be averaged as specified in this permit.

8. Retention of Records

Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR part 503). The permittee must retain records of all monitoring information, including: all calibration, maintenance records, all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of the Department at any time.

9. Records Contents

Records of monitoring information must include:

- a. The date, exact place, time, and methods of sampling or measurements;
- b. The individual(s) who performed the sampling or measurements;
- c. The date(s) analyses were performed;
- d. The individual(s) who performed the analyses;
- e. The analytical techniques or methods used; and
- f. The results of such analyses.

10. Inspection and Entry

The permittee must allow the Department representative upon the presentation of credentials to:

- a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit, and
- d. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by state law, any substances or parameters at any location.

SECTION D. REPORTING REQUIREMENTS

1. Planned Changes

The permittee must comply with OAR chapter 340, division 52, "Review of Plans and Specifications" and 40 CFR Section 122.41(l) (1). Except where exempted under OAR chapter 340, division 52, no construction, installation, or modification involving disposal systems, treatment works, sewerage systems, or common sewers may be commenced until the plans and specifications are submitted to and approved by the Department. The permittee must give notice to the Department as soon as possible of any planned physical alternations or additions to the permitted facility.

2. Anticipated Noncompliance

The permittee must give advance notice to the Department of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements.

3. Transfers

This permit may be transferred to a new permittee provided the transferee acquires a property interest in the permitted activity and agrees in writing to fully comply with all the terms and conditions of the permit and the rules of the Commission. No permit may be transferred to a third party without prior written approval from the Department. The Department may require modification, revocation, and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Clean Water Act (see 40 CFR Section 122.61; in some cases, modification or revocation and reissuance is mandatory).. The permittee must notify the Department when a transfer of property interest takes place.

4. Compliance Schedule

Reports of compliance or noncompliance with, or any progress reports on interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date. Any reports of noncompliance must include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirements.

5. Twenty-Four Hour Reporting

The permittee must report any noncompliance that may endanger health or the environment. Any information must be provided orally (by telephone) within 24 hours, unless otherwise specified in this permit, from the time the permittee becomes aware of the circumstances. During normal business hours, the Department's Regional office must be called. Outside of normal business hours, the Department must be contacted at 1-800-452-0311 (Oregon Emergency Response System).

A written submission must also be provided within 5 days of the time the permittee becomes aware of the circumstances. Pursuant to ORS 468.959 (3) (a), if the permittee is establishing an affirmative defense of upset or bypass to any offense under ORS 468.922 to 468.946, delivered written notice must be made to the Department or other agency with regulatory jurisdiction within 4 (four) calendar days of the time the permittee becomes aware of the circumstances. The written submission must contain:

- a. A description of the noncompliance and its cause;
- b. The period of noncompliance, including exact dates and times;
- c. The estimated time noncompliance is expected to continue if it has not been corrected;
- d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and
- e. Public notification steps taken, pursuant to General Condition B.7

The following must be included as information that must be reported within 24 hours under this paragraph:

- f. Any unanticipated bypass that exceeds any effluent limitation in this permit;
- g. Any upset that exceeds any effluent limitation in this permit;
- h. Violation of maximum daily discharge limitation for any of the pollutants listed by the Department in this permit; and

- i. Any noncompliance that may endanger human health or the environment.

The Department may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

6. Other Noncompliance

The permittee must report all instances of noncompliance not reported under General Condition D.4 or D.5, at the time monitoring reports are submitted. The reports must contain:

- a. A description of the noncompliance and its cause;
- b. The period of noncompliance, including exact dates and times;
- c. The estimated time noncompliance is expected to continue if it has not been corrected; and
- d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

7. Duty to Provide Information

The permittee must furnish to the Department within a reasonable time any information that the Department may request to determine compliance with this permit. The permittee must also furnish to the Department, upon request, copies of records required to be kept by this permit.

Other Information: When the permittee becomes aware that it has failed to submit any relevant facts or has submitted incorrect information in a permit application or any report to the Department, it must promptly submit such facts or information.

8. Signatory Requirements

All applications, reports or information submitted to the Department must be signed and certified in accordance with 40 CFR Section 122.22.

9. Falsification of Information

Under ORS 468.953, any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, is subject to a Class C felony punishable by a fine not to exceed \$100,000 per violation and up to 5 years in prison. Additionally, according to 40 CFR 122.41(k)(2), any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a federal civil penalty not to exceed \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

10. Changes to Indirect Dischargers

The permittee must provide adequate notice to the Department of the following:

- a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of the Clean Water Act if it were directly discharging those pollutants and;
- b. Any substantial change in the volume or character of pollutants being introduced into the POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
- c. For the purposes of this paragraph, adequate notice shall include information on (i) the quality and quantity of effluent introduced into the POTW, and (ii) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

SECTION E. DEFINITIONS

1. *BOD* means five-day biochemical oxygen demand.
2. *CBOD* means five day carbonaceous biochemical oxygen demand
3. *TSS* means total suspended solids.
4. "*Bacteria*" includes but is not limited to fecal coliform bacteria, total coliform bacteria, and *E. coli* bacteria.

5. *FC* means fecal coliform bacteria.
6. *Total residual chlorine* means combined chlorine forms plus free residual chlorine
7. *Technology based permit effluent limitations* means technology-based treatment requirements as defined in 40 CFR Section 125.3, and concentration and mass load effluent limitations that are based on minimum design criteria specified in OAR Chapter 340, Division 41.
8. *mg/l* means milligrams per liter.
9. *kg* means kilograms.
10. *m³/d* means cubic meters per day.
11. *MGD* means million gallons per day.
12. *24-hour Composite sample* means a sample formed by collecting and mixing discrete samples taken periodically and based on time or flow. The sample must be collected and stored in accordance with 40 CFR part 136.
13. *Grab sample* means an individual discrete sample collected over a period of time not to exceed 15 minutes.
14. *Quarter* means January through March, April through June, July through September, or October through December.
15. *Month* means calendar month.
16. *Week* means a calendar week of Sunday through Saturday.
17. *POTW* means a publicly owned treatment works

APPENDIX B

Pipeline Inspection Report

Asset Information

Upstream MH:

Rim to Invert:

Rim to Grade:

Downstream MH:

Rim to Invert:

Rim to Grade:

PSR:

Pipe Size:

Material:

Street:

City:

System Owner:

Drainage Area:

Sewer Use:

Lining Method:

Length:

Year Built:

Location Code:

Project Information

Project:

Work Order:

Survey Customer:

PO Number:

Additional Info:

Inspection Information

Date:

Surveyed By:

Certificate #:

Camera Direction:

Purpose:

Pre-Cleaning:

Date Cleaned:

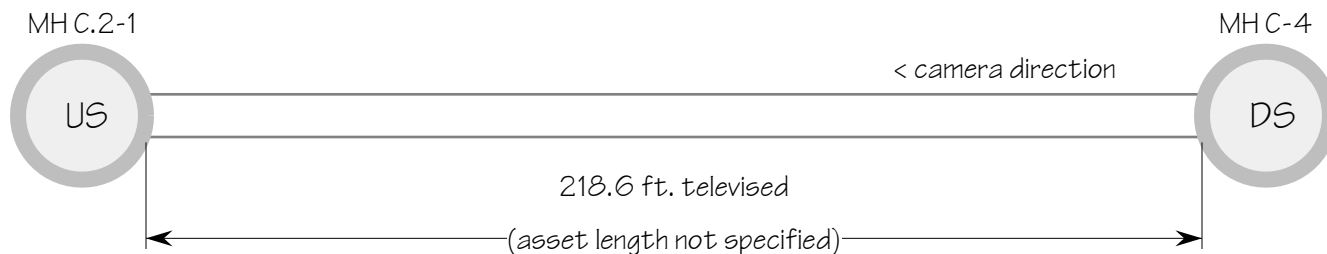
Flow Control:

Length Surveyed:

Weather:

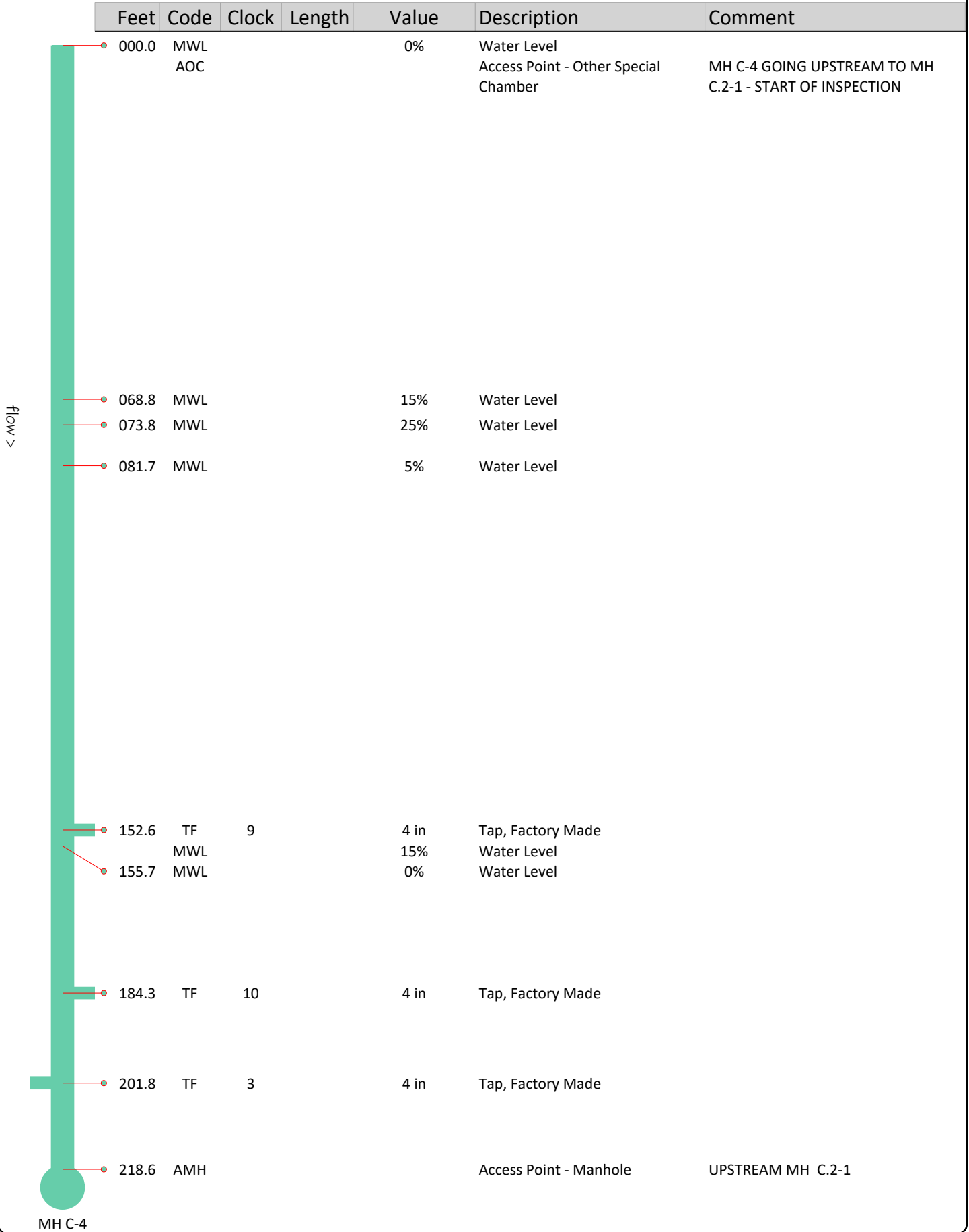
Location Details:

Sketch



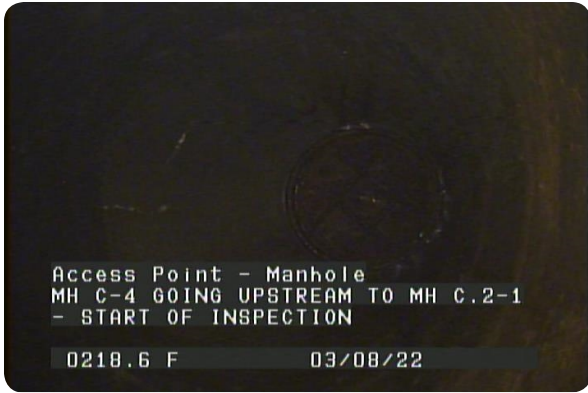
Schematic Top View

MH C.2-1



MH C-4

Snapshots



Access Point - Other Special Chamber at 000.0 feet | MH C-4 GOING UPSTREAM TO MH C.2-1 - START OF INSPECTION



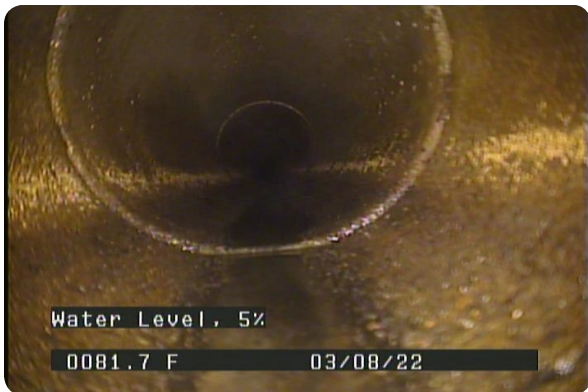
Water Level at 000.0 feet, 0%



Water Level at 068.8 feet, 15%



Water Level at 073.8 feet, 25%



Water Level at 081.7 feet, 5%



Water Level at 152.6 feet, 15%



Tap, Factory Made at 152.6 feet, 9 o'clock, 4 in

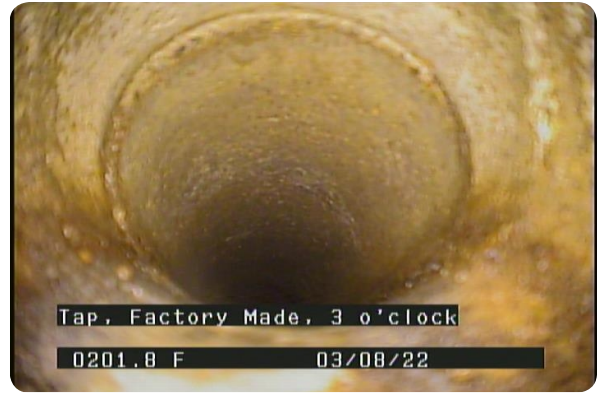


Water Level at 155.7 feet, 0%

Snapshots (continued)



Tap, Factory Made at 184.3 feet, 10 o'clock, 4 in



Tap, Factory Made at 201.8 feet, 3 o'clock, 4 in



Access Point - Manhole at 218.6 feet | UPSTREAM MH C.2-

Pipeline Inspection Report

Asset Information

Upstream MH:

Rim to Invert:

Rim to Grade:

Downstream MH:

Rim to Invert:

Rim to Grade:

PSR:

Pipe Size:

Material:

Street:

City:

System Owner:

Drainage Area:

Sewer Use:

Lining Method:

Length:

Year Built:

Location Code:

Project Information

Project:

Work Order:

Survey Customer:

PO Number:

Additional Info:

Inspection Information

Date:

Surveyed By:

Certificate #:

Camera Direction:

Purpose:

Pre-Cleaning:

Date Cleaned:

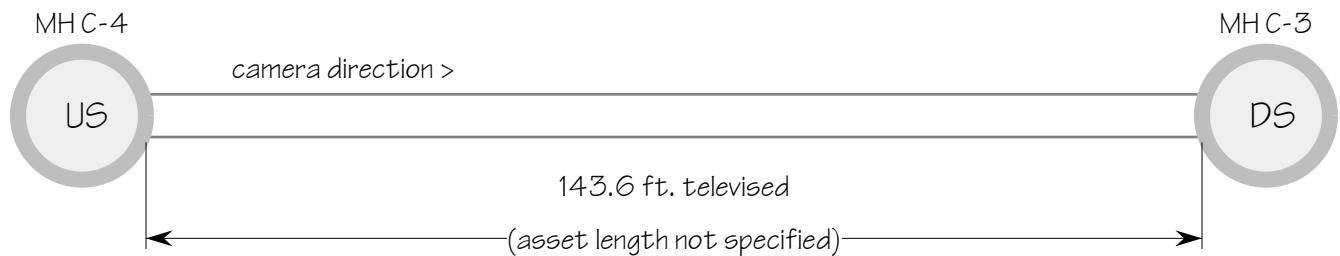
Flow Control:

Length Surveyed:

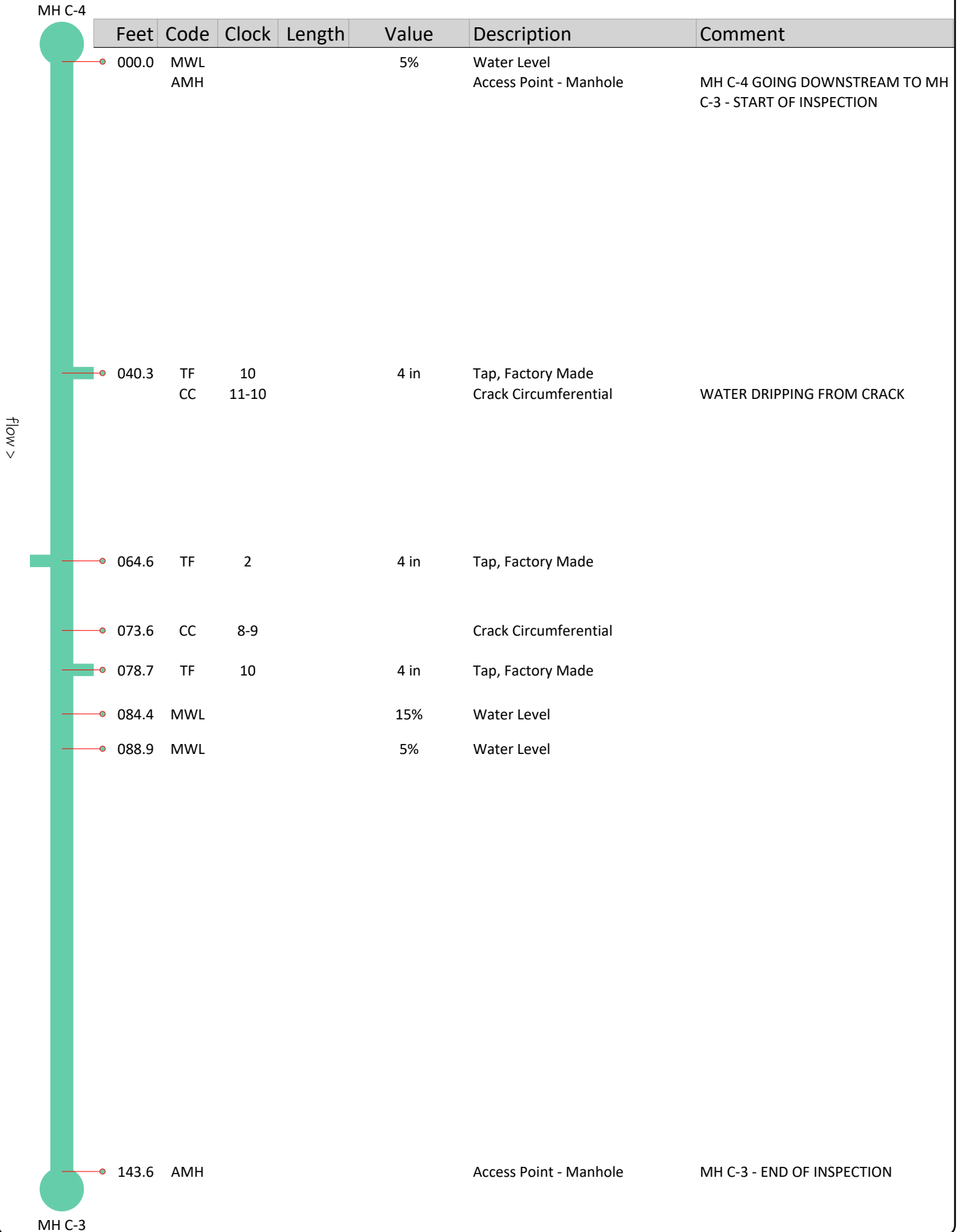
Weather:

Location Details:

Sketch



Schematic Top View



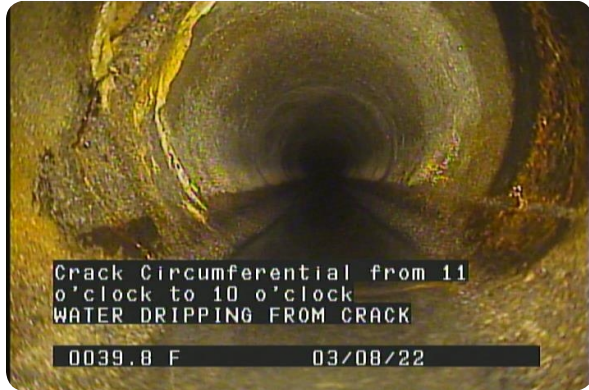
Snapshots



Access Point - Manhole at 000.0 feet | MH C-4 GOING DOWNSTREAM TO MH C-3 - START OF INSPECTION



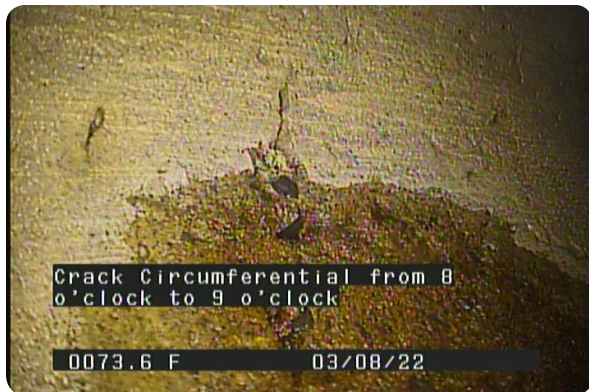
Water Level at 000.0 feet, 5%



Crack Circumferential at 040.3 feet, 11-10 o'clock | WATER DRIPPING FROM CRACK



Tap, Factory Made at 064.6 feet, 2 o'clock, 4 in



Crack Circumferential at 073.6 feet, 8-9 o'clock



Tap, Factory Made at 078.7 feet, 10 o'clock, 4 in



Water Level at 084.4 feet, 15%



Water Level at 088.9 feet, 5%

Snapshots (continued)



Access Point - Manhole at 143.6 feet | MH C-3 - END OF INSPECTION

Pipeline Inspection Report

Asset Information

Upstream MH: MH C-5

Rim to Invert:

Rim to Grade:

Downstream MH: MH C-4

Rim to Invert:

Rim to Grade:

PSR:

Pipe Size: 8 in. | Circular

Material: Reinforced Concrete Pipe

Street: SHANKS AVE

City: ARCH CAPE

System Owner:

Drainage Area:

Sewer Use: Sanitary

Lining Method:

Length: (unspecified)

Year Built:

Location Code: Other

Project Information

Project: E 8165-1

Work Order:

Survey Customer: CITY OF ARCH CAPE

PO Number:

Additional Info: SHT 3

Inspection Information

Date: 20220308 15:51

Surveyed By: JUAN FLORES

Certificate #: U-217-00065617

Camera Direction: Upstream

Purpose: Pre-Acceptance

Pre-Cleaning: Jetting

Date Cleaned: 20220308

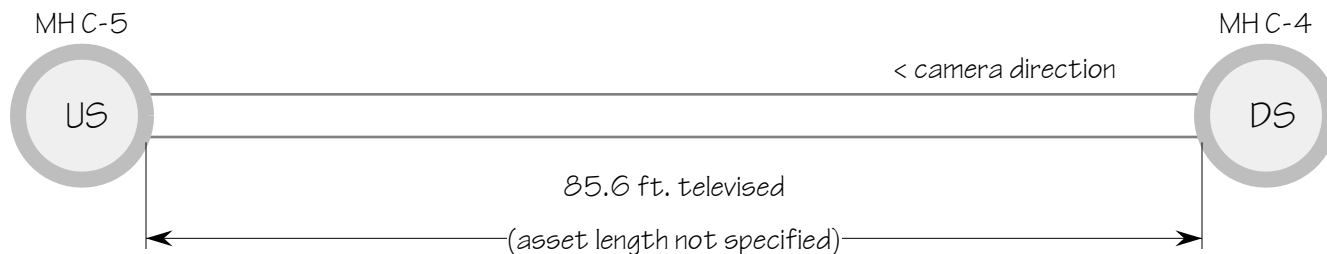
Flow Control: Not Controlled

Length Surveyed:

Weather:

Location Details:

Sketch



Schematic Top View



Snapshots



Water Level at 003.4 feet, 20%



Water Level: Sag at 008.3 feet, 35%



Water Level at 014.1 feet, 0%



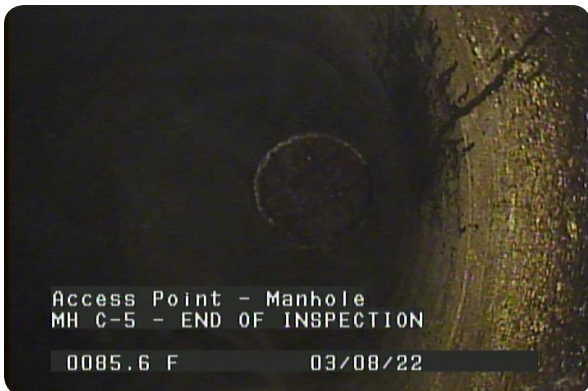
Tap, Factory Made at 037.3 feet, 9 o'clock, 4 in



Water Level at 076.8 feet, 15%



Water Level at 083.7 feet, 5%



Access Point - Manhole at 085.6 feet | MH C-5 - END OF INSPECTION

Pipeline Inspection Report

Asset Information

Upstream MH:

Rim to Invert:

Rim to Grade:

Downstream MH:

Rim to Invert:

Rim to Grade:

PSR:

Pipe Size:

Material:

Street:

City:

System Owner:

Drainage Area:

Sewer Use:

Lining Method:

Length:

Year Built:

Location Code:

Project Information

Project:

Work Order:

Survey Customer:

PO Number:

Additional Info:

Inspection Information

Date:

Surveyed By:

Certificate #:

Camera Direction:

Purpose:

Pre-Cleaning:

Date Cleaned:

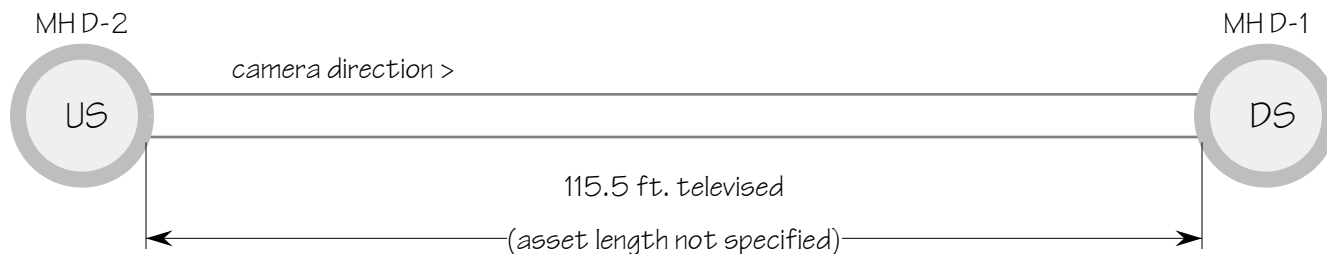
Flow Control:

Length Surveyed:

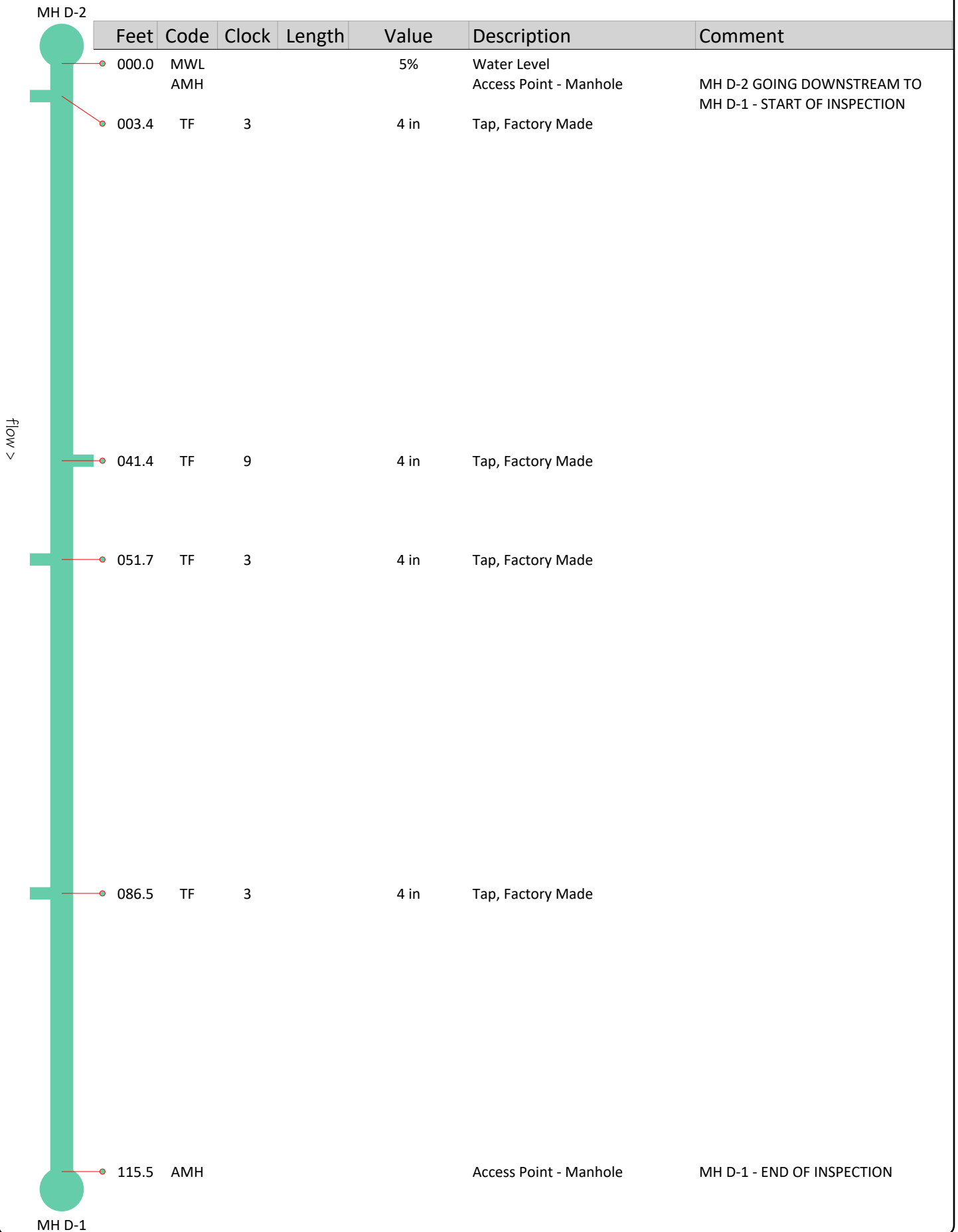
Weather:

Location Details:

Sketch



Schematic Top View



Snapshots



Access Point - Manhole at 000.0 feet | MH D-2 GOING DOWNSTREAM TO MH D-1 - START OF INSPECTION



Water Level at 000.0 feet, 5%



Tap, Factory Made at 003.4 feet, 3 o'clock, 4 in



Tap, Factory Made at 041.4 feet, 9 o'clock, 4 in



Tap, Factory Made at 051.7 feet, 3 o'clock, 4 in



Tap, Factory Made at 086.5 feet, 3 o'clock, 4 in



Access Point - Manhole at 115.5 feet | MH D-1 - END OF INSPECTION

Pipeline Inspection Report

Asset Information

Upstream MH:

Rim to Invert:

Rim to Grade:

Downstream MH:

Rim to Invert:

Rim to Grade:

PSR:

Pipe Size:

Material:

Street:

City:

System Owner:

Drainage Area:

Sewer Use:

Lining Method:

Length:

Year Built:

Location Code:

Project Information

Project:

Work Order:

Survey Customer:

PO Number:

Additional Info:

Inspection Information

Date:

Surveyed By:

Certificate #:

Camera Direction:

Purpose:

Pre-Cleaning:

Date Cleaned:

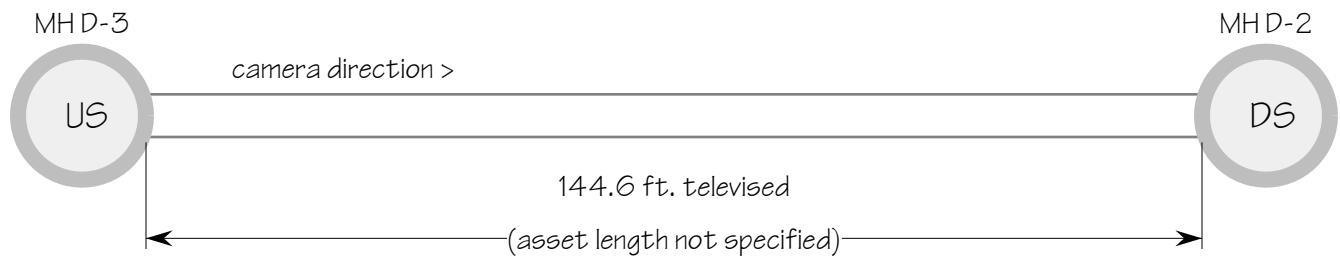
Flow Control:

Length Surveyed:

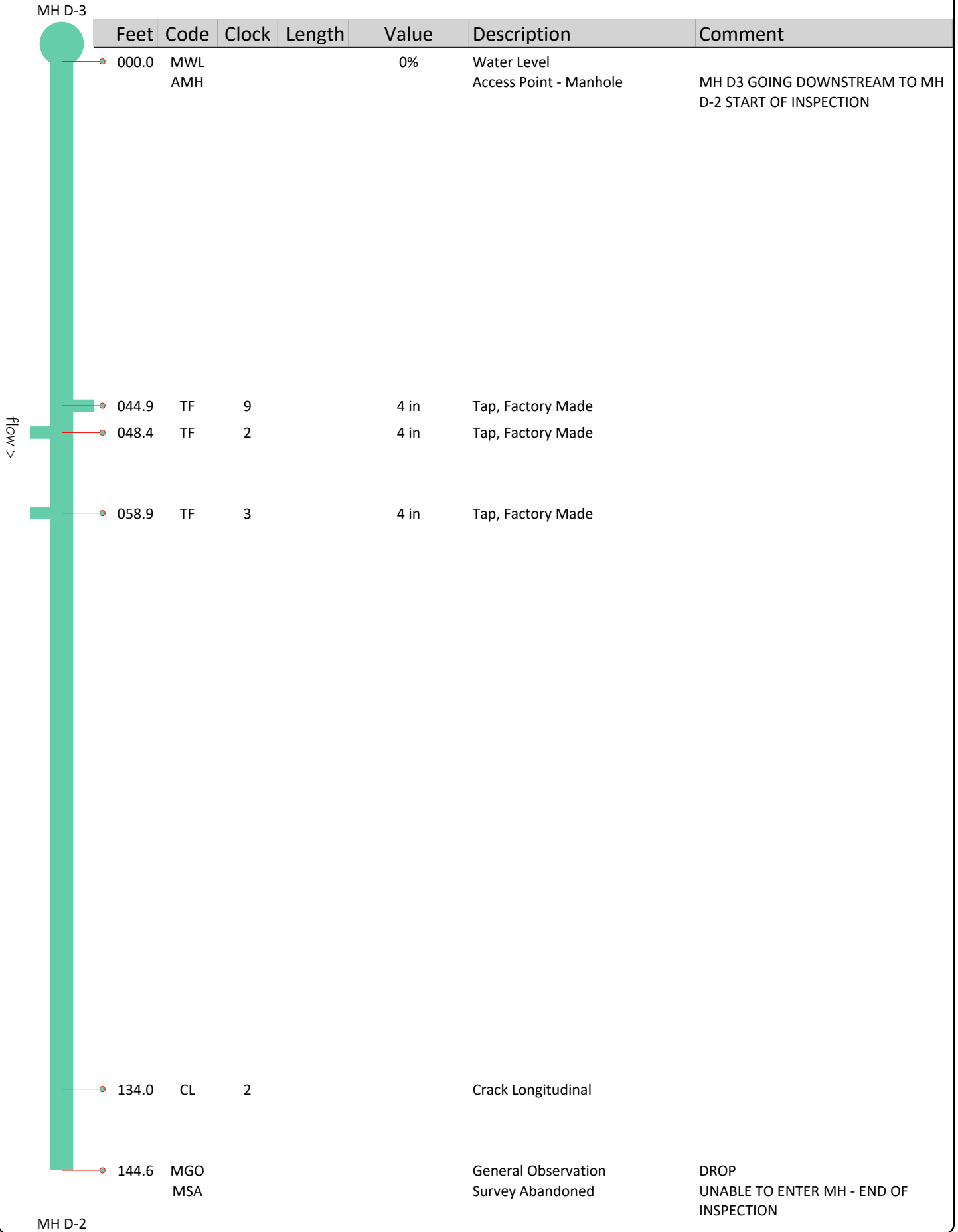
Weather:

Location Details:

Sketch



Schematic Top View



Snapshots



Access Point - Manhole at 000.0 feet | MH D3 GOING DOWNSTREAM TO MH D-2 START OF INSPECTION



Water Level at 000.0 feet, 0%



Tap, Factory Made at 044.9 feet, 9 o'clock, 4 in



Tap, Factory Made at 048.4 feet, 2 o'clock, 4 in



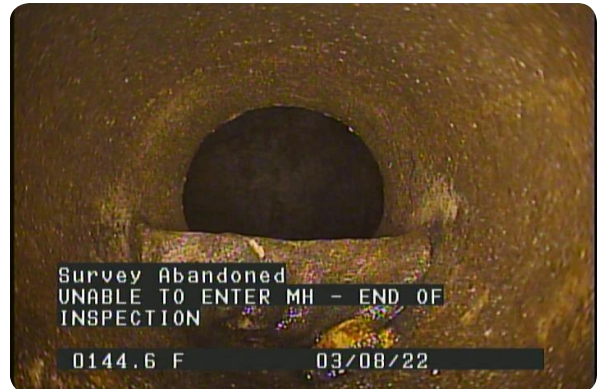
Tap, Factory Made at 058.9 feet, 3 o'clock, 4 in



Crack Longitudinal at 134.0 feet, 2 o'clock



General Observation at 144.6 feet | DROP



Survey Abandoned at 144.6 feet | UNABLE TO ENTER MH - END OF INSPECTION

Pipeline Inspection Report

Asset Information

Upstream MH:

Rim to Invert:

Rim to Grade:

Downstream MH:

Rim to Invert:

Rim to Grade:

PSR:

Pipe Size:

Material:

Street:

City:

System Owner:

Drainage Area:

Sewer Use:

Lining Method:

Length:

Year Built:

Location Code:

Project Information

Project:

Work Order:

Survey Customer:

PO Number:

Additional Info:

Inspection Information

Date:

Surveyed By:

Certificate #:

Camera Direction:

Purpose:

Pre-Cleaning:

Date Cleaned:

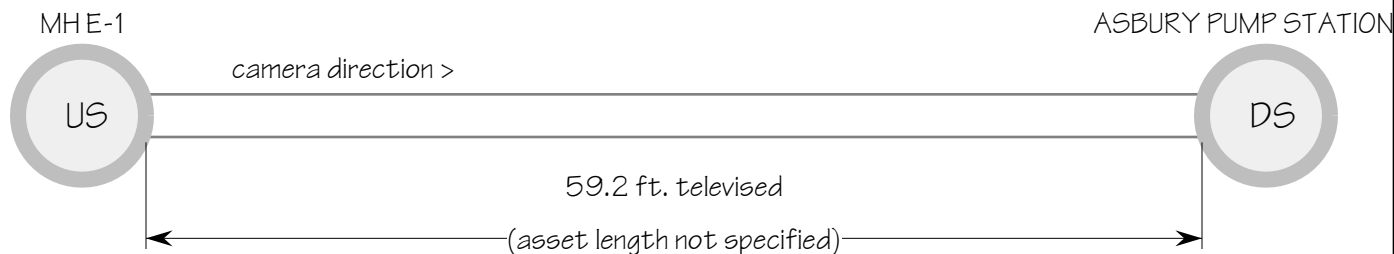
Flow Control:

Length Surveyed:

Weather:

Location Details:

Sketch



Schematic Top View

MH E-1

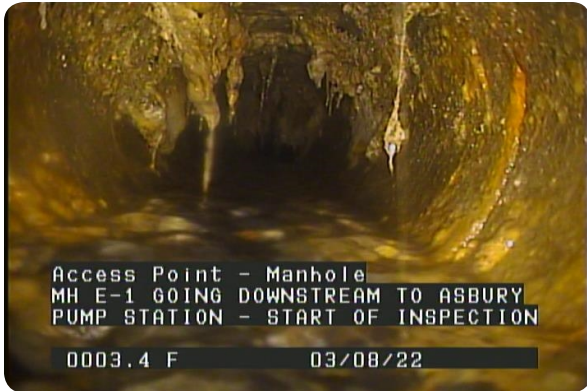


Feet	Code	Clock	Length	Value	Description	Comment
000.0	AMH				Access Point - Manhole	MH E-1 GOING DOWNSTREAM TO ASBURY PUMP STATION - START OF INSPECTION
	MWL			15%	Water Level	
059.2	AOC				Access Point - Other Special Chamber	ASBURY PUMP STATION

flow >

ASBURY PUMP STATION

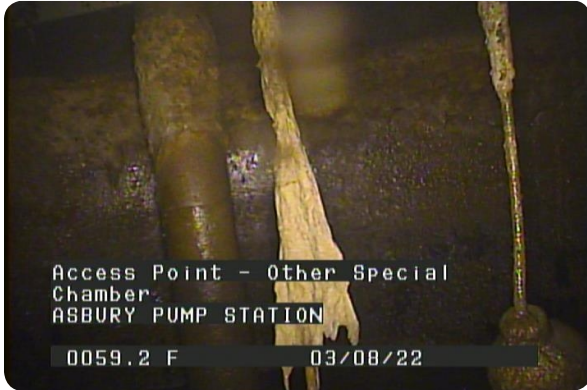
Snapshots



Access Point - Manhole at 000.0 feet | MH E-1 GOING
DOWNSTREAM TO ASBURY PUMP STATION - START OF



Water Level at 000.0 feet, 15%



Access Point - Other Special Chamber at 059.2 feet |
ASBURY PUMP STATION

Pipeline Inspection Report

Asset Information

Upstream MH:

Rim to Invert:

Rim to Grade:

Downstream MH:

Rim to Invert:

Rim to Grade:

PSR:

Pipe Size:

Material:

Street:

City:

System Owner:

Drainage Area:

Sewer Use:

Lining Method:

Length:

Year Built:

Location Code:

Project Information

Project:

Work Order:

Survey Customer:

PO Number:

Additional Info:

Inspection Information

Date:

Surveyed By:

Certificate #:

Camera Direction:

Purpose:

Pre-Cleaning:

Date Cleaned:

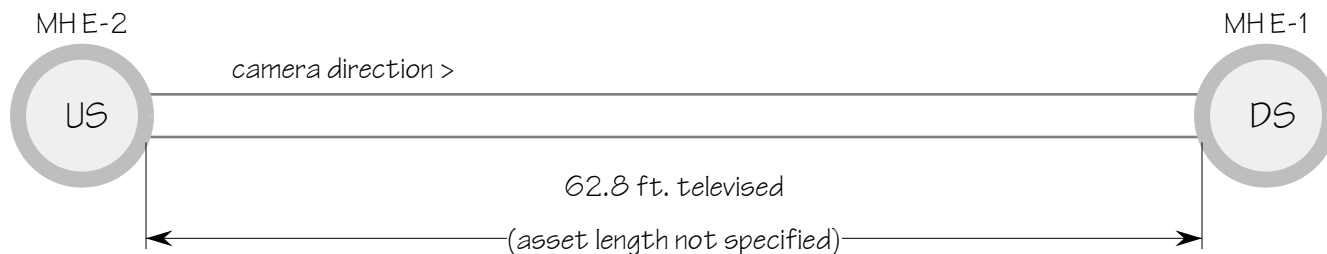
Flow Control:

Length Surveyed:

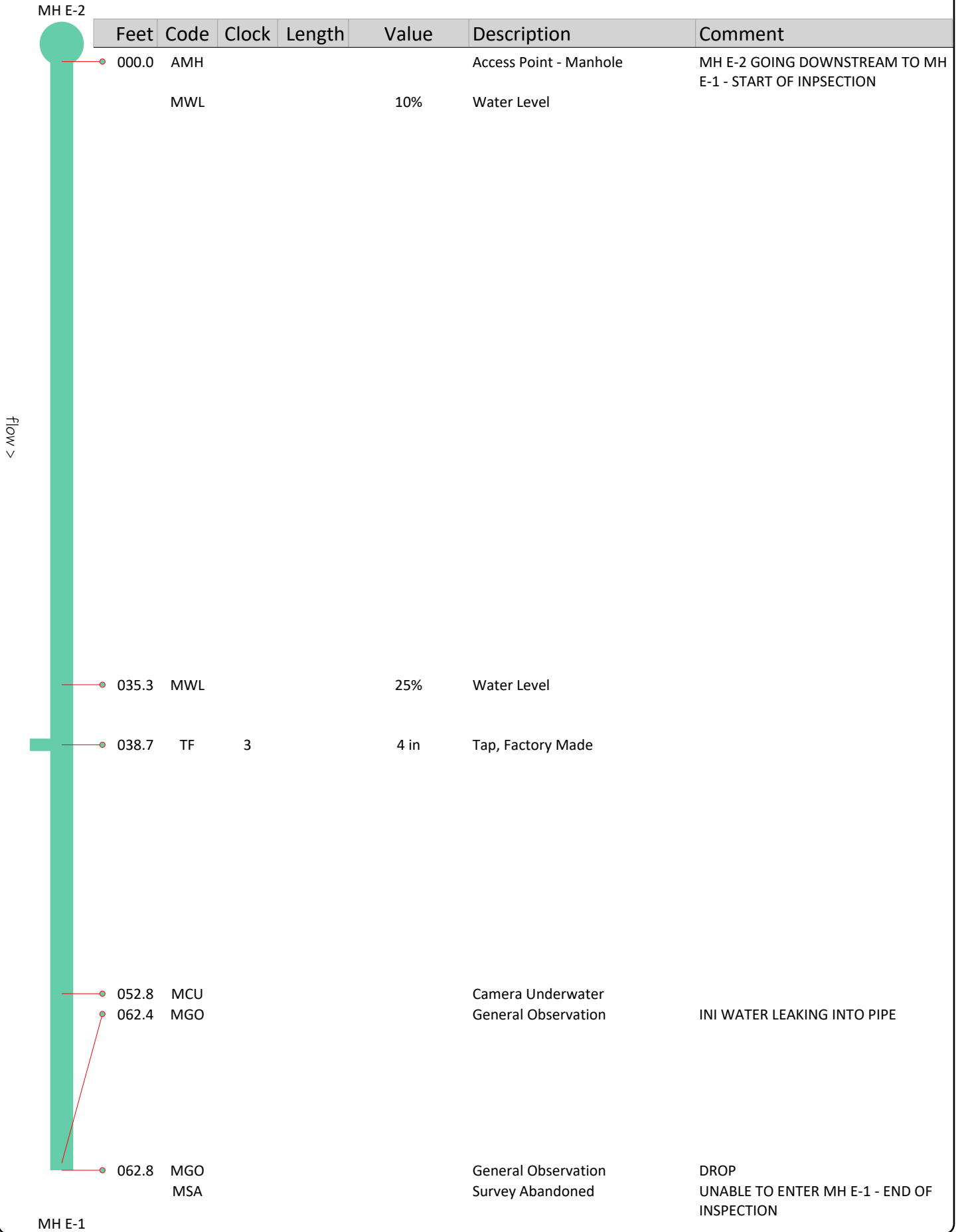
Weather:

Location Details:

Sketch



Schematic Top View



Snapshots



Access Point - Manhole at 000.0 feet | MH E-2 GOING DOWNSTREAM TO MH E-1 - START OF INPSECTION



Water Level at 000.0 feet, 10%



Water Level at 035.3 feet, 25%



Tap, Factory Made at 038.7 feet, 3 o'clock, 4 in



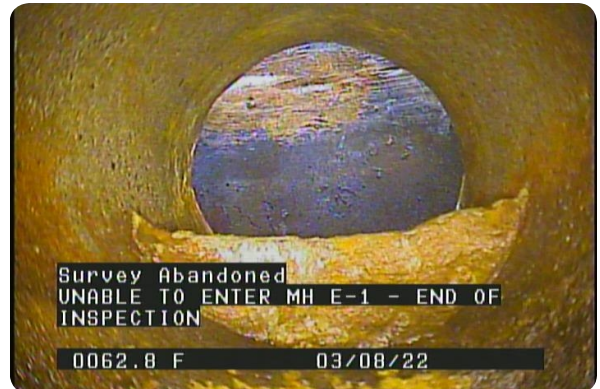
Camera Underwater at 052.8 feet



General Observation at 062.4 feet | INI WATER LEAKING INTO PIPE



General Observation at 062.8 feet | DROP



Survey Abandoned at 062.8 feet | UNABLE TO ENTER MH E-1 - END OF INSPECTION

Pipeline Inspection Report

Asset Information

Upstream MH: MH E-3
Rim to Invert:
Rim to Grade:
Downstream MH: MH E-2
Rim to Invert:
Rim to Grade:
PSR:
Pipe Size: 8 in. | Circular
Material: Reinforced Concrete Pipe
Street: PACIFIC ST
City: ARCH CAPE
System Owner:
Drainage Area:
Sewer Use: Sanitary
Lining Method:
Length: (unspecified)
Year Built:
Location Code: Other

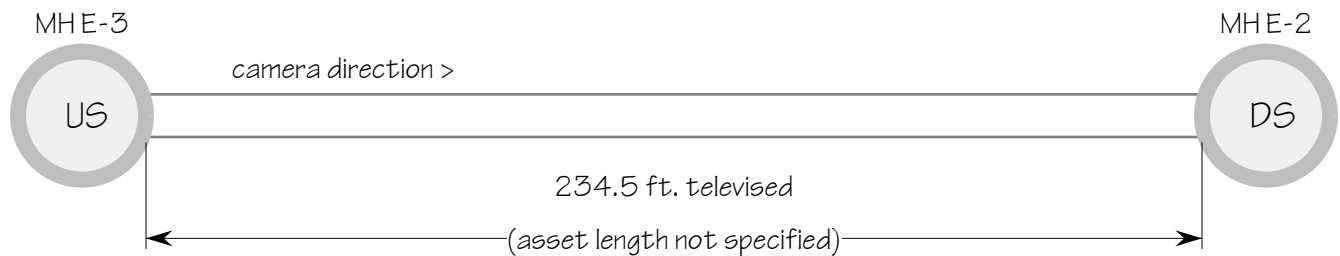
Project Information

Project: E 8165-1
Work Order:
Survey Customer: CITY OF ARCH CAPE
PO Number:
Additional Info: SHT 1

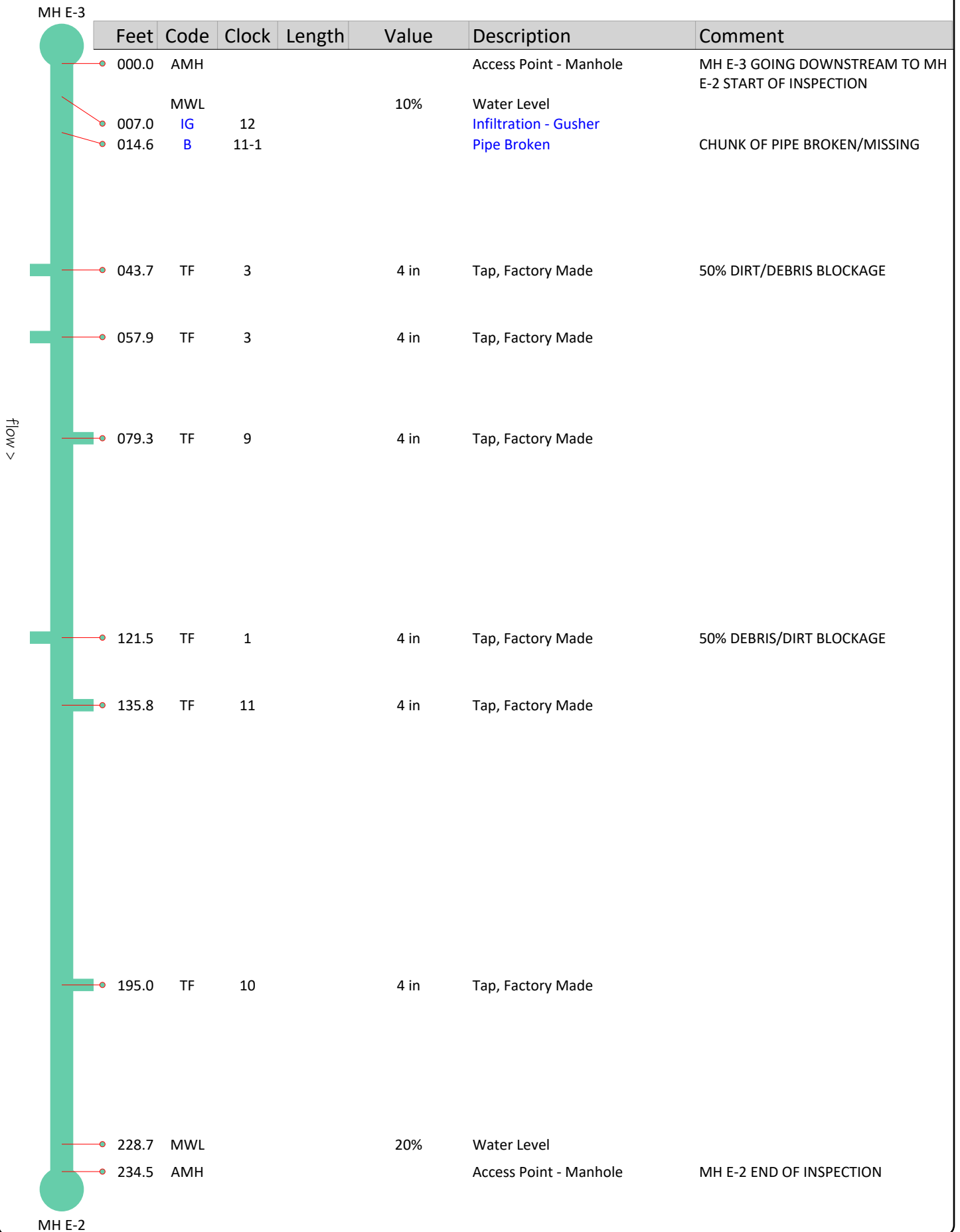
Inspection Information

Date: 20220308 09:56
Surveyed By: JUAN FLORES
Certificate #: U-217-00065617
Camera Direction: Downstream
Purpose: Pre-Acceptance
Pre-Cleaning: Jetting
Date Cleaned: 20220308
Flow Control: Not Controlled
Length Surveyed:
Weather:
Location Details:

Sketch



Schematic Top View



Snapshots



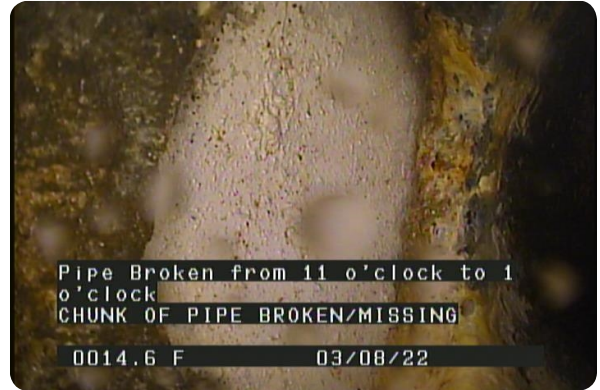
Access Point - Manhole at 000.0 feet | MH E-3 GOING DOWNSTREAM TO MH E-2 START OF INSPECTION



Water Level at 000.0 feet, 10%



Infiltration - Gusher at 007.0 feet, 12 o'clock



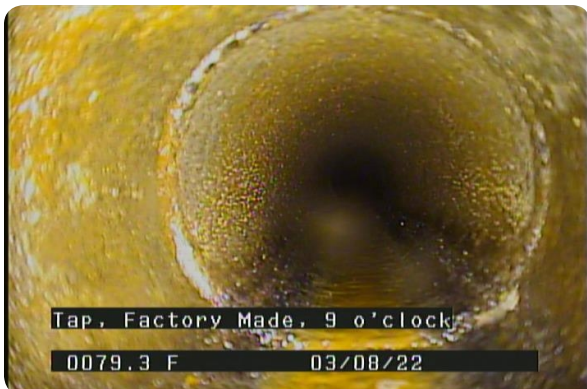
Pipe Broken at 014.6 feet, 11-1 o'clock | CHUNK OF PIPE BROKEN/MISSING



Tap, Factory Made at 043.7 feet, 3 o'clock, 4 in | 50% DIRT/DEBRIS BLOCKAGE



Tap, Factory Made at 057.9 feet, 3 o'clock, 4 in



Tap, Factory Made at 079.3 feet, 9 o'clock, 4 in

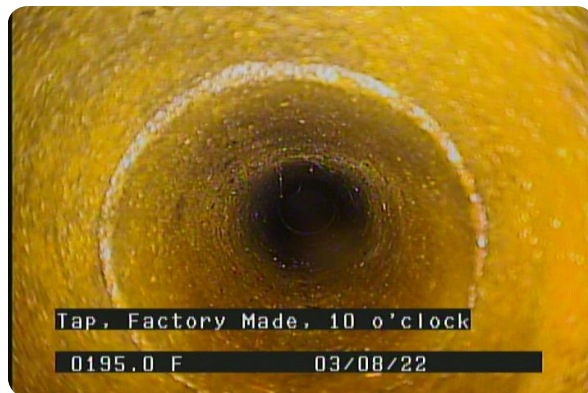


Tap, Factory Made at 121.5 feet, 1 o'clock, 4 in | 50% DEBRIS/DIRT BLOCKAGE

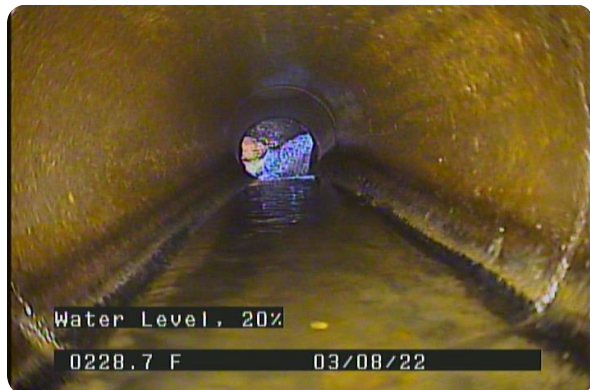
Snapshots (continued)



Tap, Factory Made at 135.8 feet, 11 o'clock, 4 in



Tap, Factory Made at 195.0 feet, 10 o'clock, 4 in



Water Level at 228.7 feet, 20%



Access Point - Manhole at 234.5 feet | MH E-2 END OF INSPECTION

Pipeline Inspection Report

Asset Information

Upstream MH: MARSHAL TOP MH

Rim to Invert:

Rim to Grade:

Downstream MH: MH A-20

Rim to Invert:

Rim to Grade:

PSR:

Pipe Size: 8 in. | Circular

Material: Reinforced Concrete Pipe

Street: PACIFIC ST

City: ARCH CAPE

System Owner:

Drainage Area:

Sewer Use: Sanitary

Lining Method:

Length: (unspecified)

Year Built:

Location Code: Other

Project Information

Project: E 8165-1

Work Order:

Survey Customer: CITY OF ARCH CAPE

PO Number:

Additional Info: SHT 3

Inspection Information

Date: 20220309 14:25

Surveyed By: JUAN FLORES

Certificate #: U-217-00065617

Camera Direction: Downstream

Purpose: Pre-Acceptance

Pre-Cleaning: Jetting

Date Cleaned: 20220309

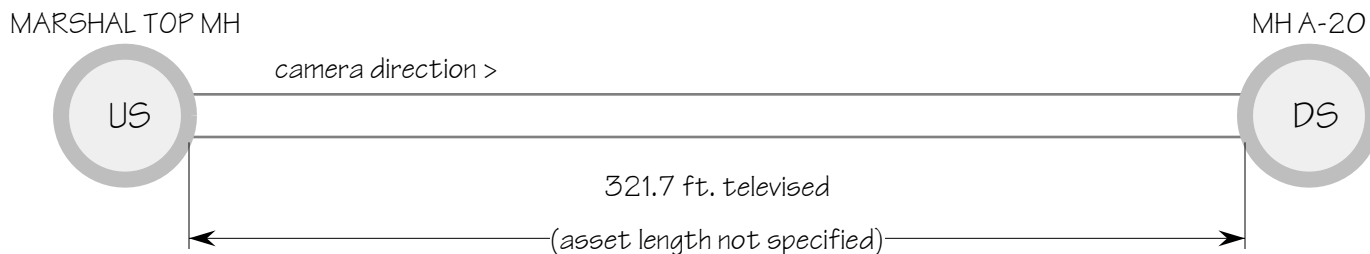
Flow Control: Not Controlled

Length Surveyed:

Weather:

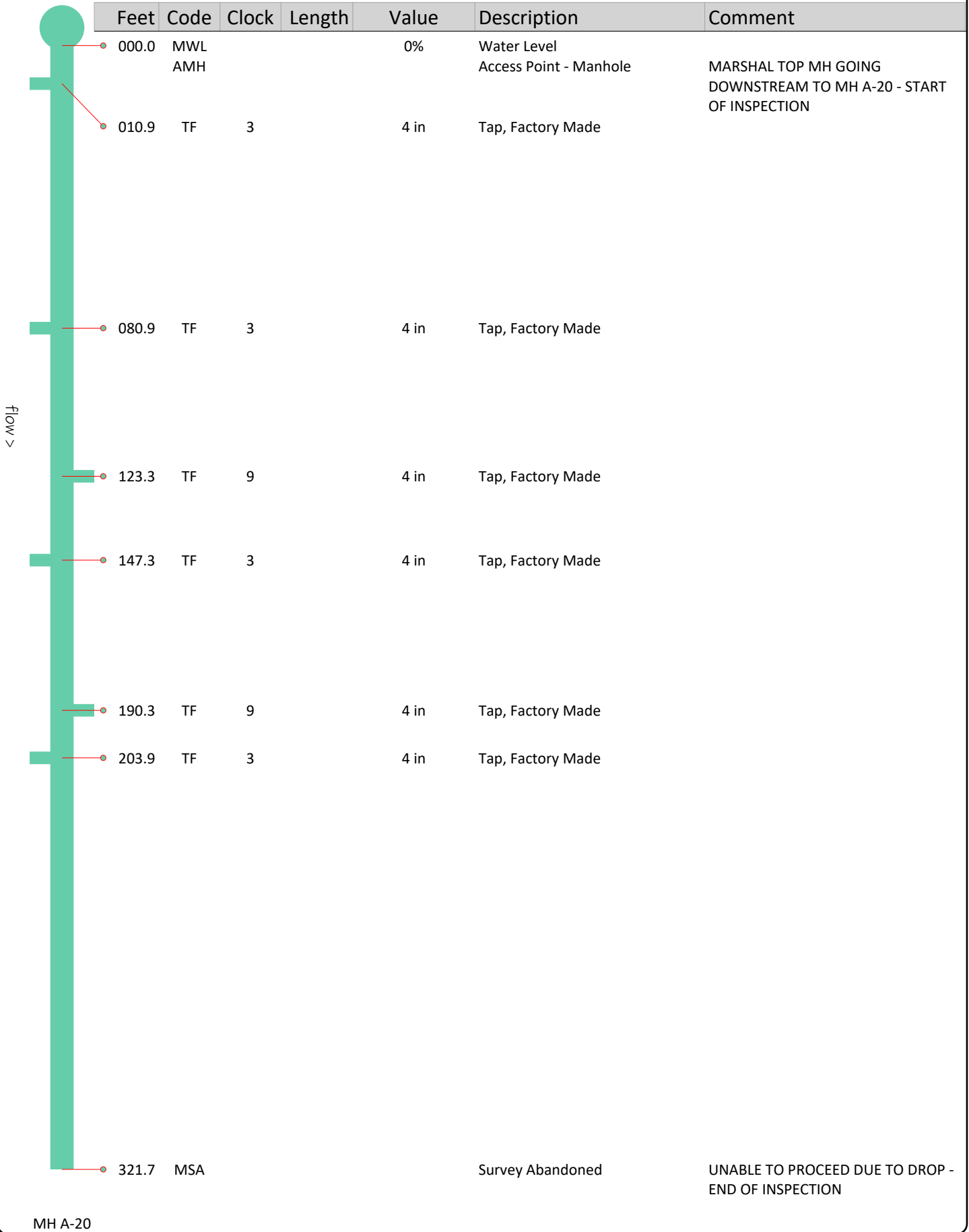
Location Details:

Sketch



Schematic Top View

MARSHAL TOP MH



Flow >

MH A-20

Snapshots



Access Point - Manhole at 000.0 feet | MARSHAL TOP MH GOING DOWNSTREAM TO MH A-20 - START OF INSPECTION



Water Level at 000.0 feet, 0%



Tap, Factory Made at 010.9 feet, 3 o'clock, 4 in



Tap, Factory Made at 080.9 feet, 3 o'clock, 4 in



Tap, Factory Made at 123.3 feet, 9 o'clock, 4 in



Tap, Factory Made at 147.3 feet, 3 o'clock, 4 in

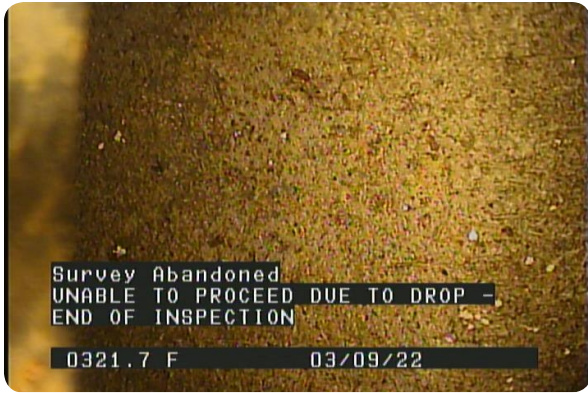


Tap, Factory Made at 190.3 feet, 9 o'clock, 4 in



Tap, Factory Made at 203.9 feet, 3 o'clock, 4 in

Snapshots (continued)



Survey Abandoned at 321.7 feet | UNABLE TO PROCEED
DUE TO DROP - END OF INSPECTION

Pipeline Inspection Report

Asset Information

Upstream MH: MH A-20

Rim to Invert:

Rim to Grade:

Downstream MH: MH A-19

Rim to Invert:

Rim to Grade:

PSR:

Pipe Size: 8 in. | Circular

Material: Reinforced Concrete Pipe

Street: PACIFIC ST

City: ARCH CAPE

System Owner:

Drainage Area:

Sewer Use: Sanitary

Lining Method:

Length: (unspecified)

Year Built:

Location Code: Other

Project Information

Project: E 8165-1

Work Order:

Survey Customer: CITY OF ARCH CAPE

PO Number:

Additional Info: SHT 3

Inspection Information

Date: 20220309 15:30

Surveyed By: JUAN FLORES

Certificate #: U-217-00065617

Camera Direction: Downstream

Purpose: Pre-Acceptance

Pre-Cleaning: Jetting

Date Cleaned: 20220309

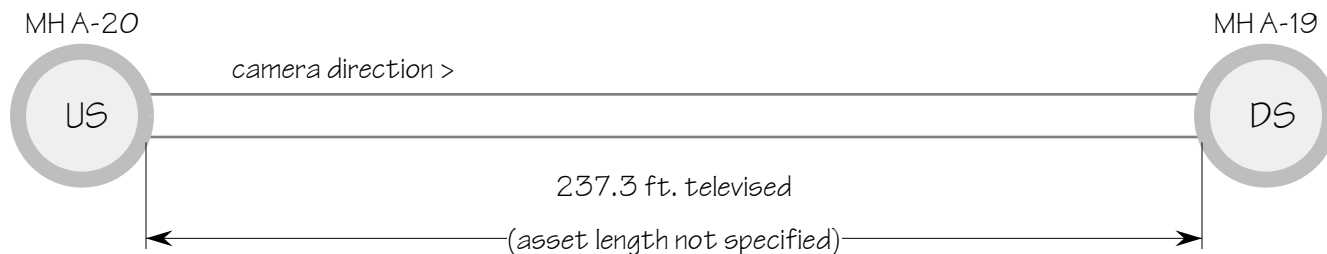
Flow Control: Not Controlled

Length Surveyed:

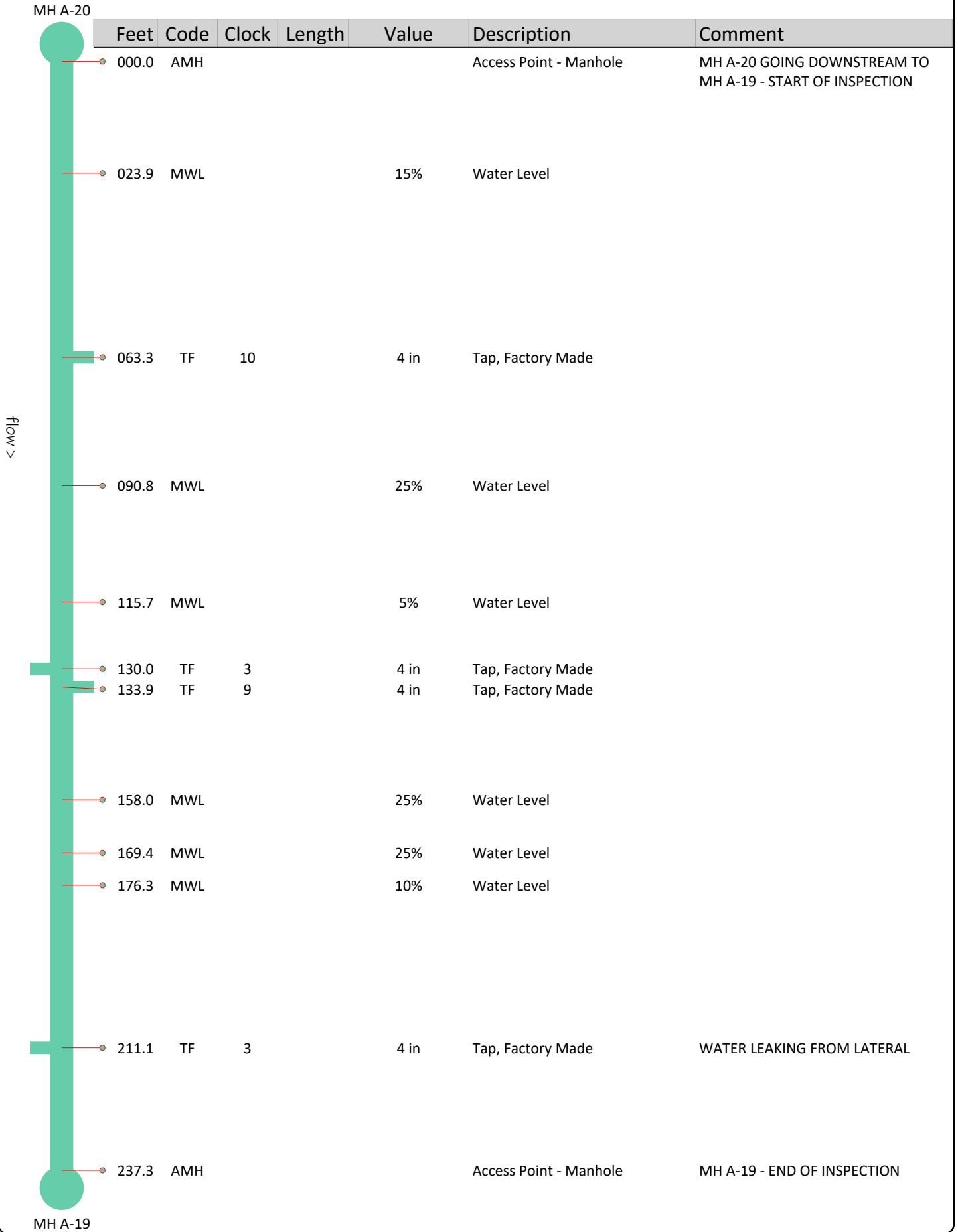
Weather:

Location Details:

Sketch



Schematic Top View



Snapshots



Access Point - Manhole at 000.0 feet | MH A-20 GOING DOWNSTREAM TO MH A-19 - START OF INSPECTION



Water Level at 023.9 feet, 15%



Tap, Factory Made at 063.3 feet, 10 o'clock, 4 in



Water Level at 090.8 feet, 25%



Water Level at 115.7 feet, 5%



Tap, Factory Made at 130.0 feet, 3 o'clock, 4 in



Tap, Factory Made at 133.9 feet, 9 o'clock, 4 in



Water Level at 158.0 feet, 25%

Snapshots (continued)



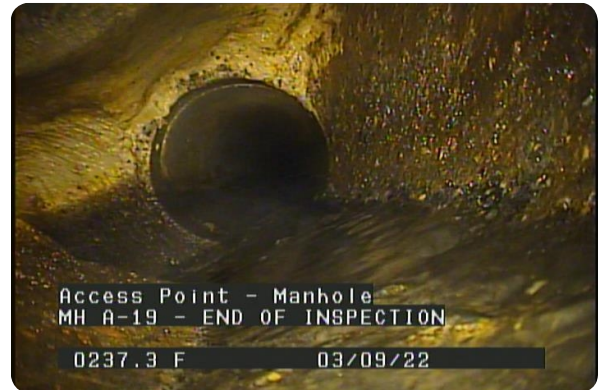
Water Level at 169.4 feet, 25%



Water Level at 176.3 feet, 10%



Tap, Factory Made at 211.1 feet, 3 o'clock, 4 in | WATER LEAKING FROM LATERAL



Access Point - Manhole at 237.3 feet | MH A-19 - END OF INSPECTION

Pipeline Inspection Report

Asset Information

Upstream MH: MH A-21
Rim to Invert:
Rim to Grade:
Downstream MH: MH A-20
Rim to Invert:
Rim to Grade:
PSR:
Pipe Size: 8 in. | Circular
Material: Reinforced Concrete Pipe
Street: PACIFIC ST
City: ARCH CAPE
System Owner:
Drainage Area:
Sewer Use: Sanitary
Lining Method:
Length: (unspecified)
Year Built:
Location Code: Other

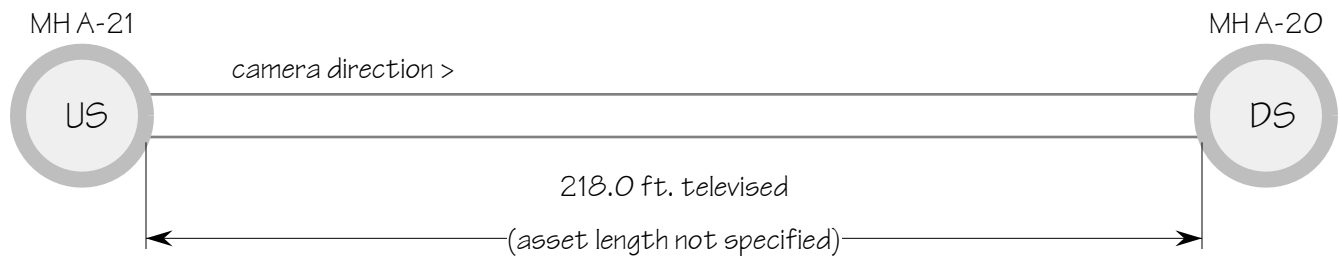
Project Information

Project: E 8165-1
Work Order:
Survey Customer: CITY OF ARCH CAPE
PO Number:
Additional Info: SHT 3

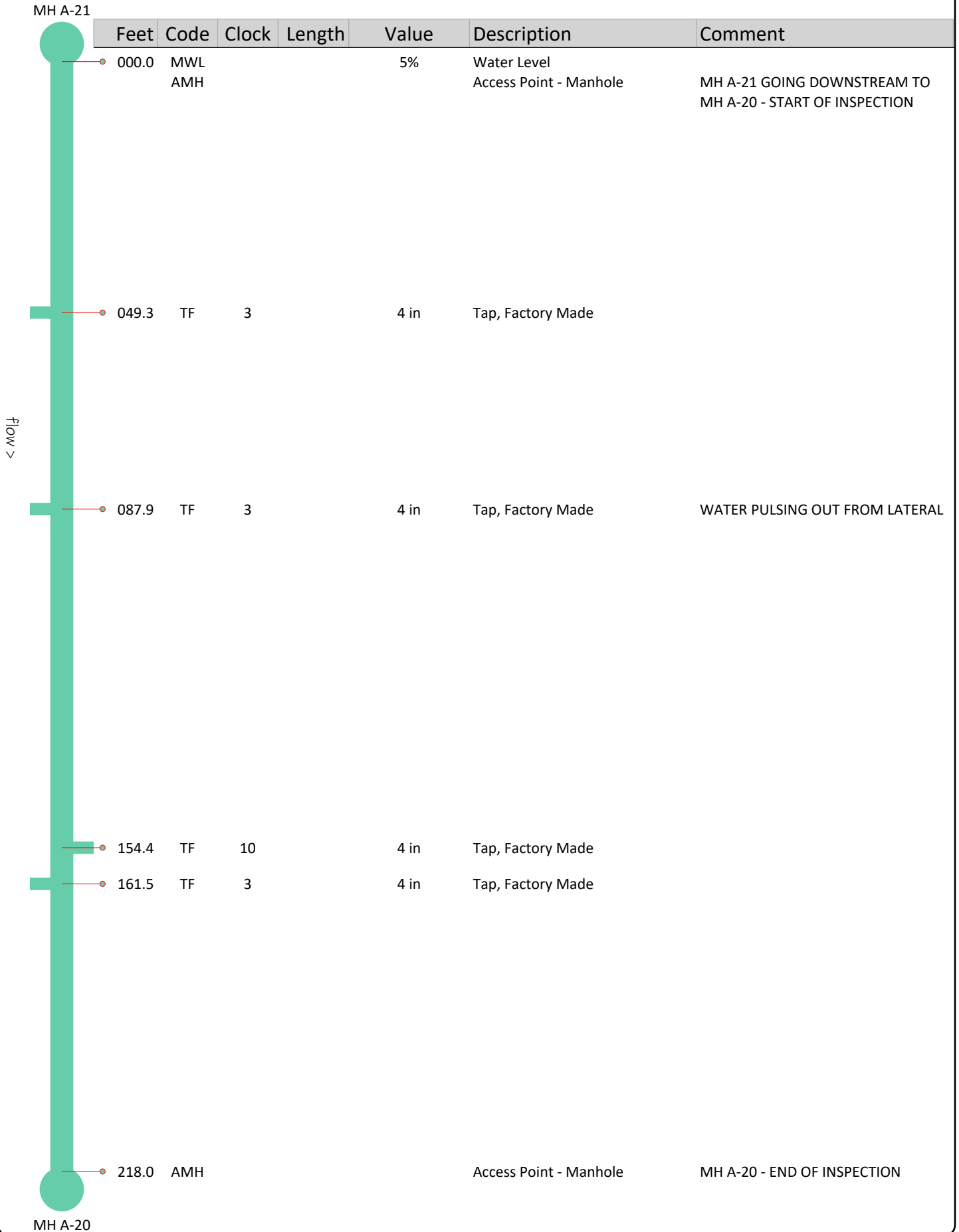
Inspection Information

Date: 20220309 13:14
Surveyed By: JUAN FLORES
Certificate #: U-217-00065617
Camera Direction: Downstream
Purpose: Pre-Acceptance
Pre-Cleaning: Jetting
Date Cleaned: 20220309
Flow Control: Not Controlled
Length Surveyed:
Weather:
Location Details:

Sketch



Schematic Top View



Snapshots



Access Point - Manhole at 000.0 feet | MH A-21 GOING DOWNSTREAM TO MH A-20 - START OF INSPECTION



Water Level at 000.0 feet, 5%



Tap, Factory Made at 049.3 feet, 3 o'clock, 4 in



Tap, Factory Made at 087.9 feet, 3 o'clock, 4 in | WATER PULSING OUT FROM LATERAL



Tap, Factory Made at 154.4 feet, 10 o'clock, 4 in



Tap, Factory Made at 161.5 feet, 3 o'clock, 4 in



Access Point - Manhole at 218.0 feet | MH A-20 - END OF INSPECTION

Pipeline Inspection Report

Asset Information

Upstream MH:

Rim to Invert:

Rim to Grade:

Downstream MH:

Rim to Invert:

Rim to Grade:

PSR:

Pipe Size:

Material:

Street:

City:

System Owner:

Drainage Area:

Sewer Use:

Lining Method:

Length:

Year Built:

Location Code:

Project Information

Project:

Work Order:

Survey Customer:

PO Number:

Additional Info:

Inspection Information

Date:

Surveyed By:

Certificate #:

Camera Direction:

Purpose:

Pre-Cleaning:

Date Cleaned:

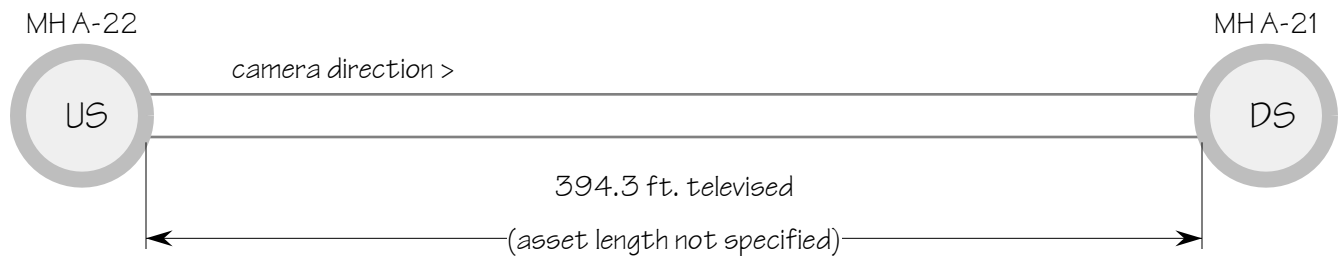
Flow Control:

Length Surveyed:

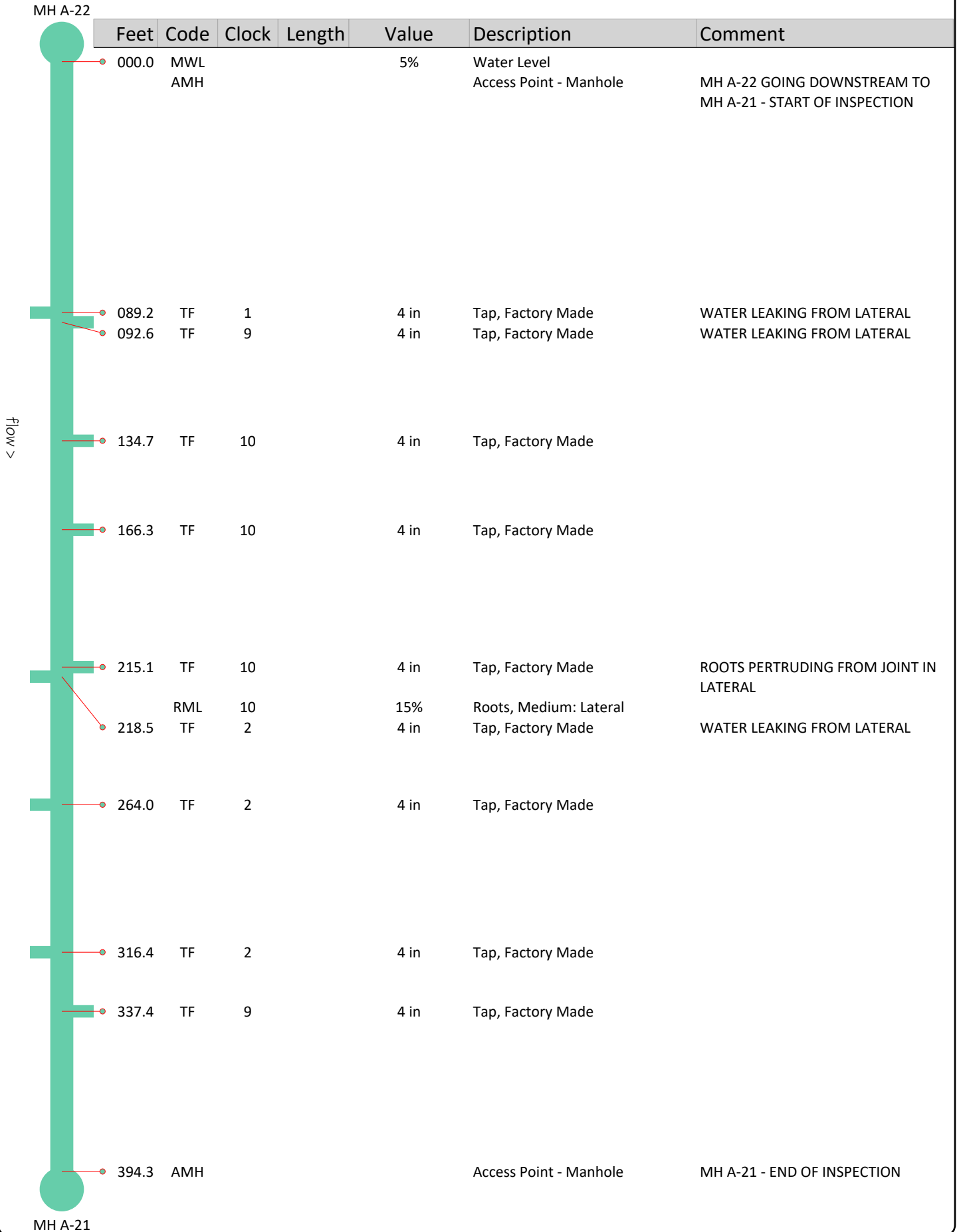
Weather:

Location Details:

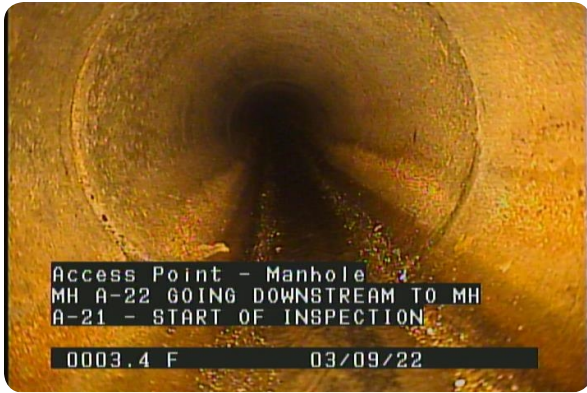
Sketch



Schematic Top View



Snapshots



Access Point - Manhole at 000.0 feet | MH A-22 GOING DOWNSTREAM TO MH A-21 - START OF INSPECTION



Water Level at 000.0 feet, 5%



Tap, Factory Made at 089.2 feet, 1 o'clock, 4 in | WATER LEAKING FROM LATERAL



Tap, Factory Made at 092.6 feet, 9 o'clock, 4 in | WATER LEAKING FROM LATERAL



Tap, Factory Made at 134.7 feet, 10 o'clock, 4 in



Tap, Factory Made at 166.3 feet, 10 o'clock, 4 in



Roots, Medium: Lateral at 215.1 feet, 10 o'clock, 15%

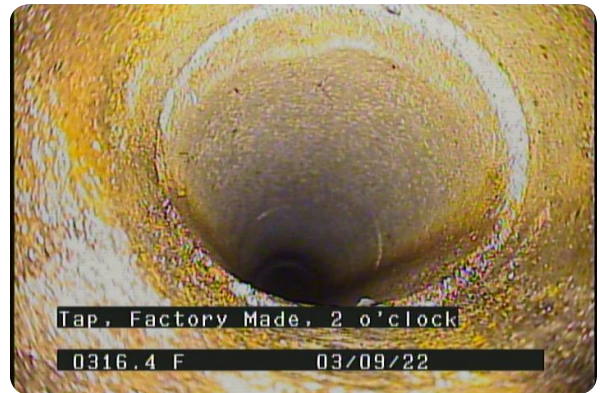


Tap, Factory Made at 218.5 feet, 2 o'clock, 4 in | WATER LEAKING FROM LATERAL

Snapshots (continued)



Tap, Factory Made at 264.0 feet, 2 o'clock, 4 in



Tap, Factory Made at 316.4 feet, 2 o'clock, 4 in



Tap, Factory Made at 337.4 feet, 9 o'clock, 4 in



Access Point - Manhole at 394.3 feet | MH A-21 - END OF INSPECTION

Pipeline Inspection Report

Asset Information

Upstream MH:

Rim to Invert:

Rim to Grade:

Downstream MH:

Rim to Invert:

Rim to Grade:

PSR:

Pipe Size:

Material:

Street:

City:

System Owner:

Drainage Area:

Sewer Use:

Lining Method:

Length:

Year Built:

Location Code:

Project Information

Project:

Work Order:

Survey Customer:

PO Number:

Additional Info:

Inspection Information

Date:

Surveyed By:

Certificate #:

Camera Direction:

Purpose:

Pre-Cleaning:

Date Cleaned:

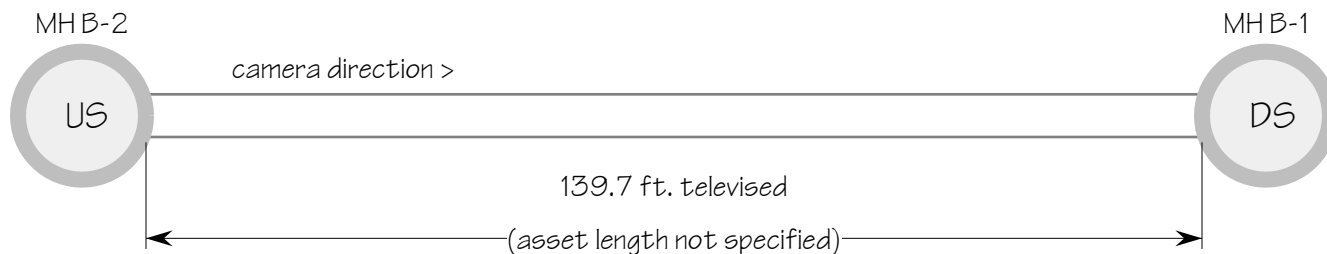
Flow Control:

Length Surveyed:

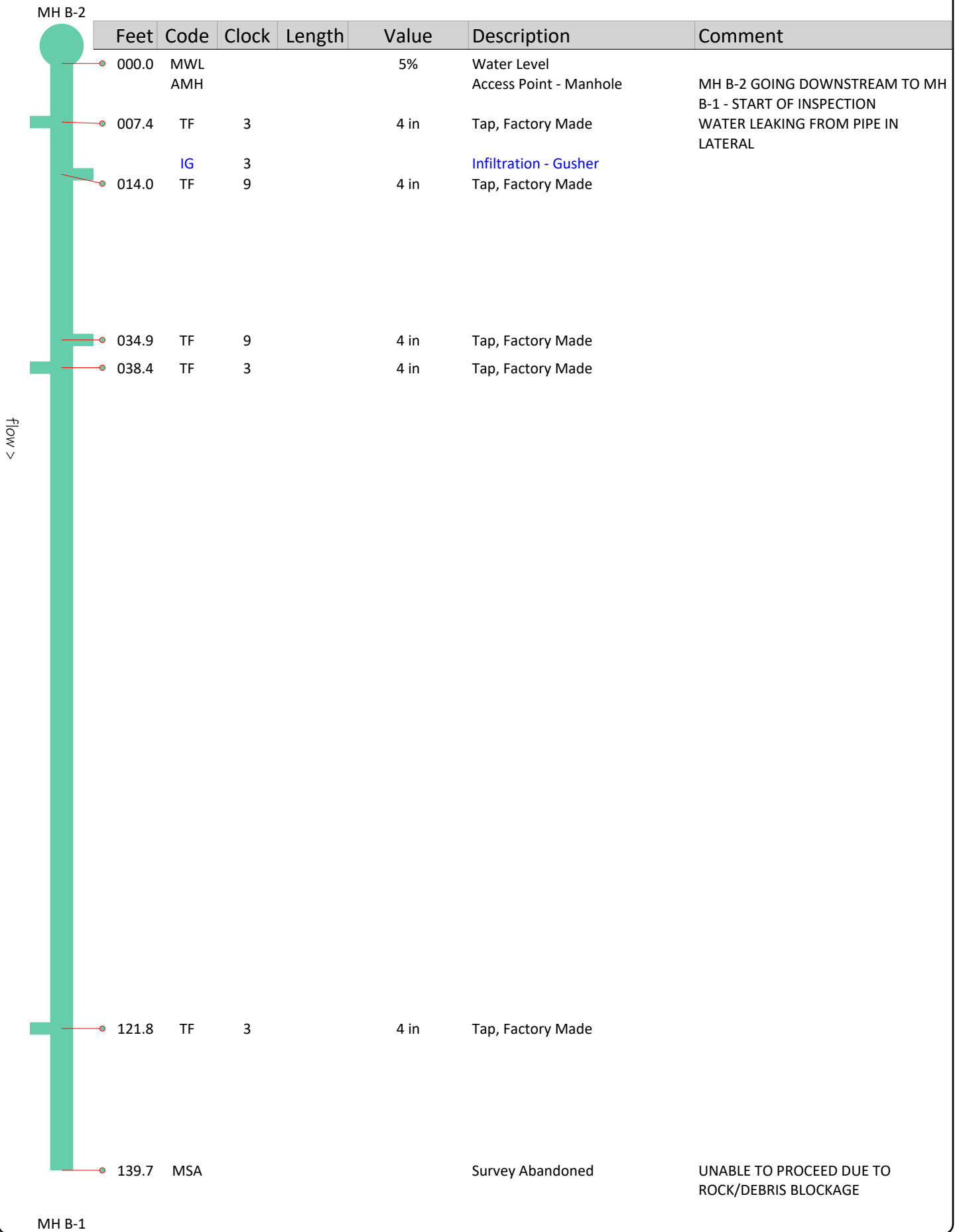
Weather:

Location Details:

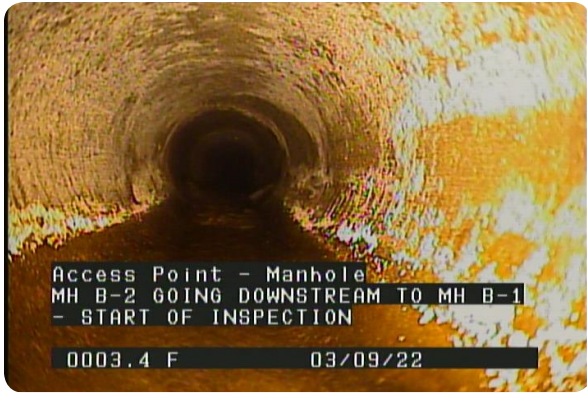
Sketch



Schematic Top View



Snapshots



Access Point - Manhole at 000.0 feet | MH B-2 GOING DOWNSTREAM TO MH B-1 - START OF INSPECTION



Water Level at 000.0 feet, 5%



Infiltration - Gusher at 007.4 feet, 3 o'clock



Tap, Factory Made at 014.0 feet, 9 o'clock, 4 in



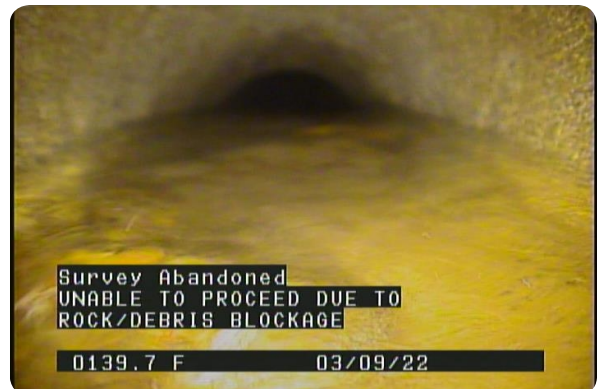
Tap, Factory Made at 034.9 feet, 9 o'clock, 4 in



Tap, Factory Made at 038.4 feet, 3 o'clock, 4 in



Tap, Factory Made at 121.8 feet, 3 o'clock, 4 in



Survey Abandoned at 139.7 feet | UNABLE TO PROCEED DUE TO ROCK/DEBRIS BLOCKAGE

Pipeline Inspection Report

Asset Information

Upstream MH: MH C.1-1

Rim to Invert:

Rim to Grade:

Downstream MH: MH C-2

Rim to Invert:

Rim to Grade:

PSR:

Pipe Size: 8 in. | Circular

Material: Reinforced Concrete Pipe

Street: PACIFIC ST

City: ARCH CAPE

System Owner:

Drainage Area:

Sewer Use: Sanitary

Lining Method:

Length: (unspecified)

Year Built:

Location Code: Other

Project Information

Project: E 8165-1

Work Order:

Survey Customer: CITY OF ARCH CAPE

PO Number:

Additional Info: SHT 3

Inspection Information

Date: 20220309 10:00

Surveyed By: JUAN FLORES

Certificate #: U-217-00065617

Camera Direction: Downstream

Purpose: Pre-Acceptance

Pre-Cleaning: Jetting

Date Cleaned: 20220309

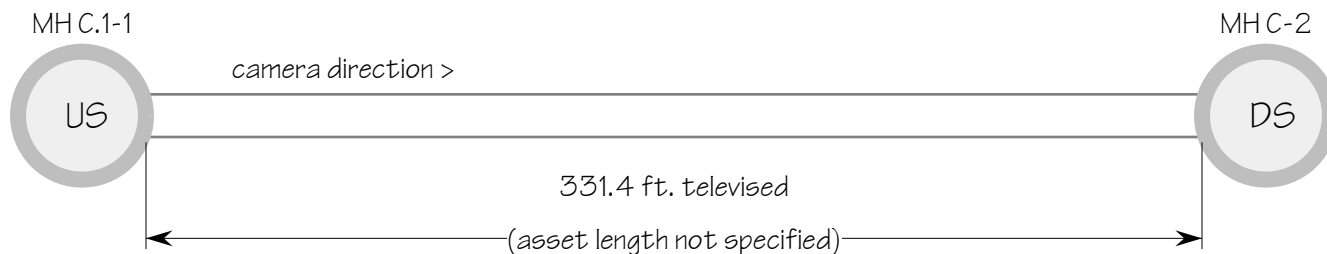
Flow Control: Not Controlled

Length Surveyed:

Weather:

Location Details:

Sketch



Schematic Top View

MH C.1-1

Feet	Code	Clock	Length	Value	Description	Comment
000.0	AMH				Access Point - Manhole	MH C.1-1 GOING DOWNSTREAM TO MH C-2 - START OF INSPECTION
003.5	TF	3		4 in	Tap, Factory Made	
031.7	TF	9		4 in	Tap, Factory Made	
038.7	TF	3		4 in	Tap, Factory Made	ROOTS PERTRUDING FROM LATERAL
	RML	3		15%	Roots, Medium: Lateral	
087.8	TF	9		4 in	Tap, Factory Made	
147.6	TF	9		4 in	Tap, Factory Made	
168.6	TF	9		4 in	Tap, Factory Made	
182.6	TF	3		4 in	Tap, Factory Made	WATER LEAKING FROM LATERAL
245.9	TF	9		4 in	Tap, Factory Made	
331.4	AMH				Access Point - Manhole	MH C-2 - END OF INSPECTION

Flow >

MH C-2

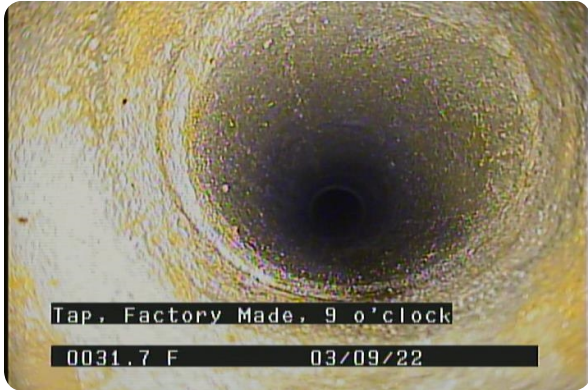
Snapshots



Access Point - Manhole at 000.0 feet | MH C.1-1 GOING DOWNSTREAM TO MH C-2 - START OF INSPECTION



Tap, Factory Made at 003.5 feet, 3 o'clock, 4 in



Tap, Factory Made at 031.7 feet, 9 o'clock, 4 in



Roots, Medium: Lateral at 038.7 feet, 3 o'clock, 15%



Tap, Factory Made at 038.7 feet, 3 o'clock, 4 in | ROOTS PERTRUDING FROM LATERAL



Tap, Factory Made at 087.8 feet, 9 o'clock, 4 in



Tap, Factory Made at 147.6 feet, 9 o'clock, 4 in



Tap, Factory Made at 168.6 feet, 9 o'clock, 4 in

Snapshots (continued)



Tap, Factory Made at 182.6 feet, 3 o'clock, 4 in | WATER LEAKING FROM LATERAL



Tap, Factory Made at 245.9 feet, 9 o'clock, 4 in



Access Point - Manhole at 331.4 feet | MH C-2 - END OF INSPECTION

Pipeline Inspection Report

Asset Information

Upstream MH: MH C.2
Rim to Invert:
Rim to Grade:
Downstream MH: MH C-1
Rim to Invert:
Rim to Grade:
PSR:
Pipe Size: 8 in. | Circular
Material: Reinforced Concrete Pipe
Street: PACIFIC ST
City: ARCH CAPE
System Owner:
Drainage Area:
Sewer Use: Sanitary
Lining Method:
Length: (unspecified)
Year Built:
Location Code: Other

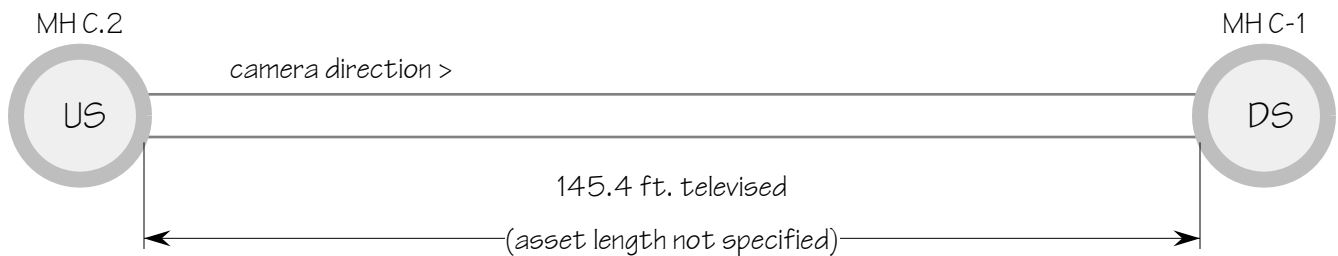
Project Information

Project: E 8165-1
Work Order:
Survey Customer: CITY OF ARCH CAPE
PO Number:
Additional Info: SHT 3

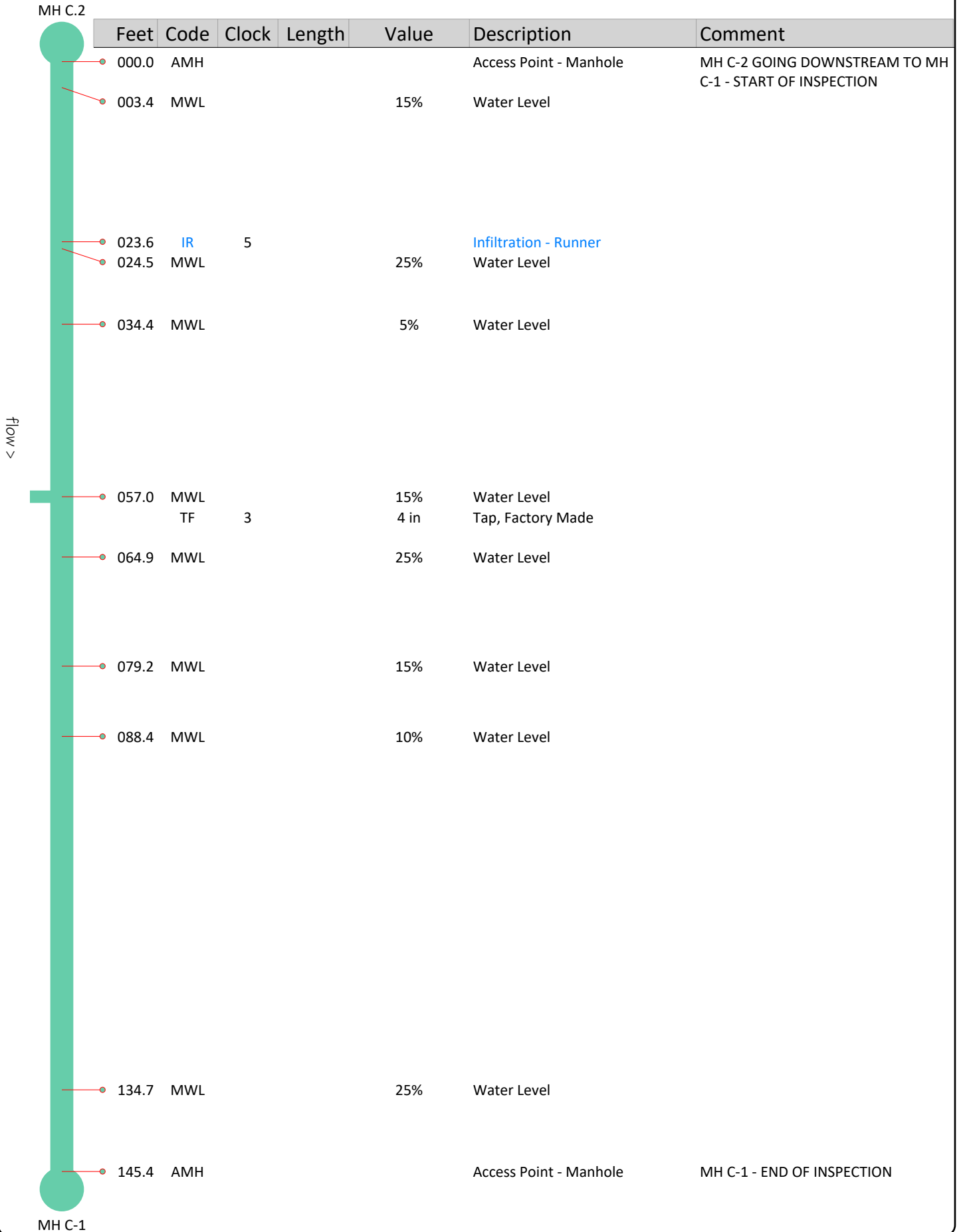
Inspection Information

Date: 20220309 10:38
Surveyed By: JUAN FLORES
Certificate #: U-217-00065617
Camera Direction: Downstream
Purpose: Pre-Acceptance
Pre-Cleaning: Jetting
Date Cleaned: 20220309
Flow Control: Not Controlled
Length Surveyed:
Weather:
Location Details:

Sketch



Schematic Top View



Snapshots



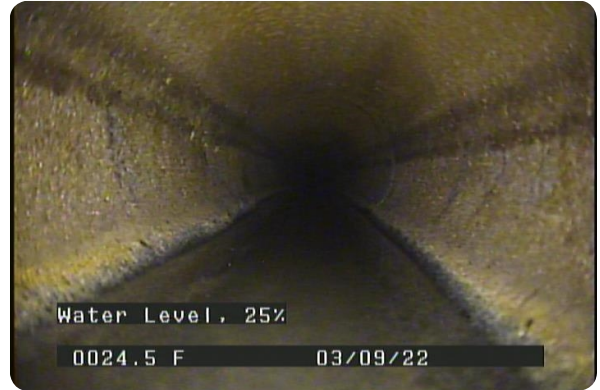
Access Point - Manhole at 000.0 feet | MH C-2 GOING DOWNSTREAM TO MH C-1 - START OF INSPECTION



Water Level at 003.4 feet, 15%



Infiltration - Runner at 023.6 feet, 5 o'clock



Water Level at 024.5 feet, 25%



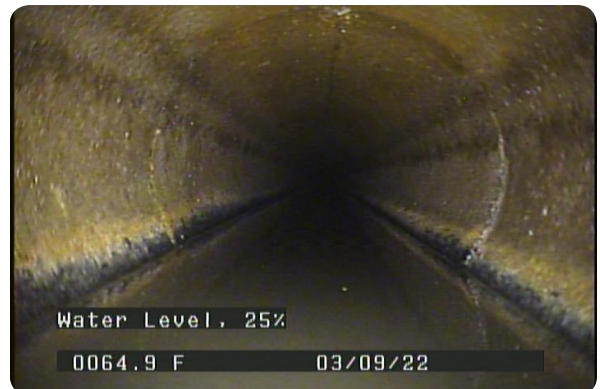
Water Level at 034.4 feet, 5%



Water Level at 057.0 feet, 15%



Tap, Factory Made at 057.0 feet, 3 o'clock, 4 in

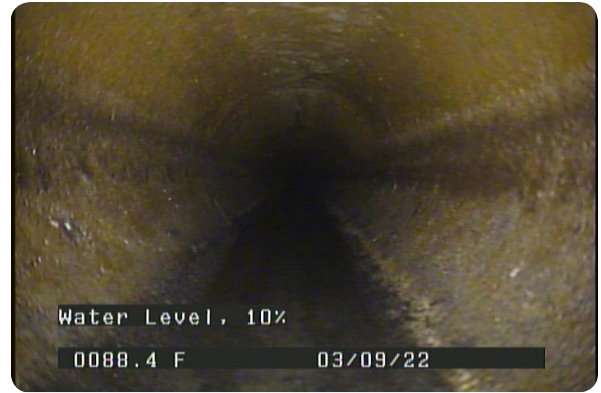


Water Level at 064.9 feet, 25%

Snapshots (continued)



Water Level at 079.2 feet, 15%



Water Level at 088.4 feet, 10%



Water Level at 134.7 feet, 25%



Access Point - Manhole at 145.4 feet | MH C-1 - END OF INSPECTION

Pipeline Inspection Report

Asset Information

Upstream MH:

Rim to Invert:

Rim to Grade:

Downstream MH:

Rim to Invert:

Rim to Grade:

PSR:

Pipe Size:

Material:

Street:

City:

System Owner:

Drainage Area:

Sewer Use:

Lining Method:

Length:

Year Built:

Location Code:

Project Information

Project:

Work Order:

Survey Customer:

PO Number:

Additional Info:

Inspection Information

Date:

Surveyed By:

Certificate #:

Camera Direction:

Purpose:

Pre-Cleaning:

Date Cleaned:

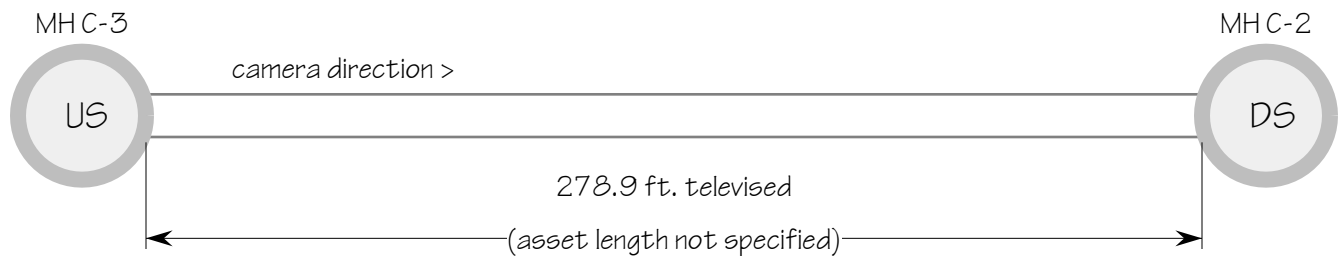
Flow Control:

Length Surveyed:

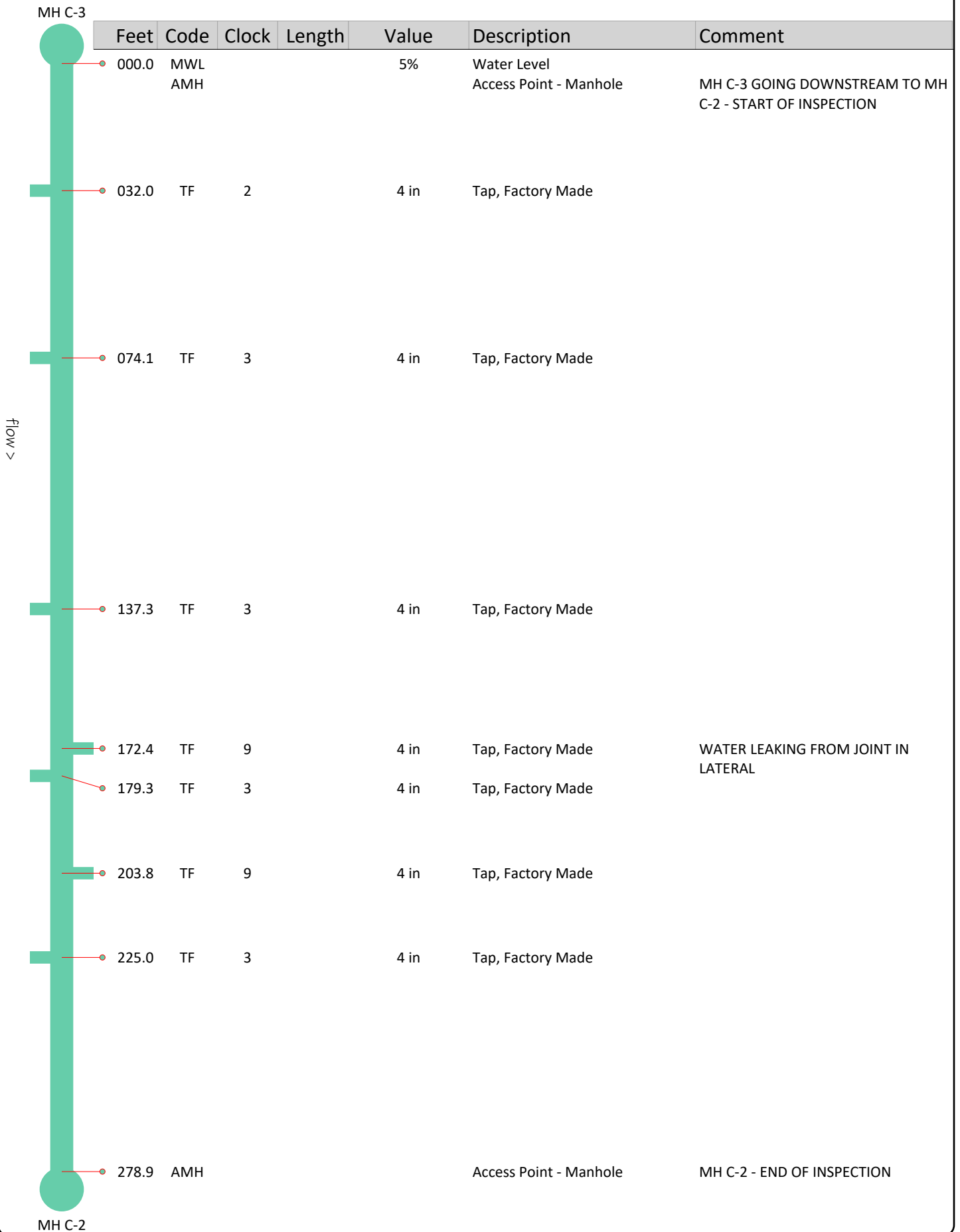
Weather:

Location Details:

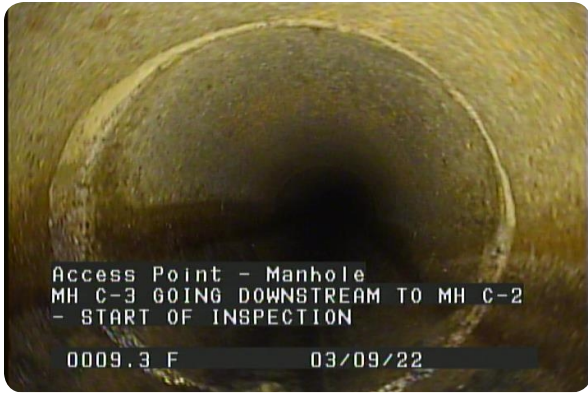
Sketch



Schematic Top View



Snapshots



Access Point - Manhole at 000.0 feet | MH C-3 GOING DOWNSTREAM TO MH C-2 - START OF INSPECTION



Water Level at 000.0 feet, 5%



Tap, Factory Made at 032.0 feet, 2 o'clock, 4 in



Tap, Factory Made at 074.1 feet, 3 o'clock, 4 in



Tap, Factory Made at 137.3 feet, 3 o'clock, 4 in



Tap, Factory Made at 172.4 feet, 9 o'clock, 4 in | WATER LEAKING FROM JOINT IN LATERAL



Tap, Factory Made at 179.3 feet, 3 o'clock, 4 in



Tap, Factory Made at 203.8 feet, 9 o'clock, 4 in

Snapshots (continued)



Tap, Factory Made at 225.0 feet, 3 o'clock, 4 in



Access Point - Manhole at 278.9 feet | MH C-2 - END OF INSPECTION

Pipeline Inspection Report

Asset Information

Upstream MH: STAR MOORING TOP MH

Rim to Invert:

Rim to Grade:

Downstream MH: MH A-19

Rim to Invert:

Rim to Grade:

PSR:

Pipe Size: 8 in. | Circular

Material: Reinforced Concrete Pipe

Street: PACIFIC ST

City: ARCH CAPE

System Owner:

Drainage Area:

Sewer Use: Sanitary

Lining Method:

Length: (unspecified)

Year Built:

Location Code: Other

Project Information

Project: E 8165-1

Work Order:

Survey Customer: CITY OF ARCH CAPE

PO Number:

Additional Info: SHT 3

Inspection Information

Date: 20220309 16:51

Surveyed By: JUAN FLORES

Certificate #: U-217-00065617

Camera Direction: Downstream

Purpose: Pre-Acceptance

Pre-Cleaning: Jetting

Date Cleaned: 20220309

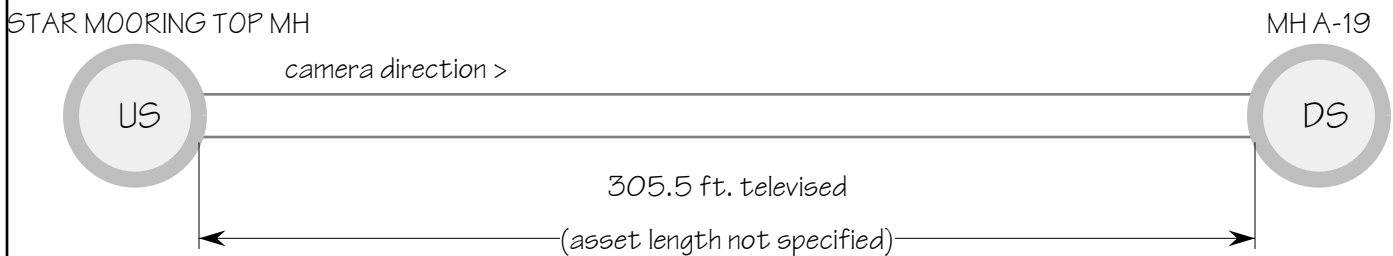
Flow Control: Not Controlled

Length Surveyed:

Weather:









Location Details:

Sketch



Schematic Top View

STAR MOORING TOP MH

	Feet	Code	Clock	Length	Value	Description	Comment
	000.0	MWL AMH			0%	Water Level Access Point - Manhole	STAR MOORING TOP MH GOING DOWNSTREAM TO MH A-19 - START OF INSPECTION
	037.6	TF	9		4 in	Tap, Factory Made	WATER LEAKING FROM LATERAL
	039.2	TF	9		4 in	Tap, Factory Made	
	079.8	TF	3		4 in	Tap, Factory Made	
	099.2	TF	1		4 in	Tap, Factory Made	
	153.1	TF	3		4 in	Tap, Factory Made	
	201.9	TF	9		4 in	Tap, Factory Made	
	243.7	TF	3		4 in	Tap, Factory Made	
	305.5	MGO				General Observation	DIRT/DEBRIS BLOCKING 40% OF PIPE
MH A-19		MSA				Survey Abandoned	UNABLE TO PROCEED TO MH DUE TO DROP - END OF INSPECTION

Flow >

Snapshots



Access Point - Manhole at 000.0 feet | STAR MOORING TOP MH GOING DOWNSTREAM TO MH A-19 -START OF



Water Level at 000.0 feet, 0%



Tap, Factory Made at 037.6 feet, 9 o'clock, 4 in



Tap, Factory Made at 039.2 feet, 9 o'clock, 4 in | WATER LEAKING FROM LATERAL



Tap, Factory Made at 079.8 feet, 3 o'clock, 4 in



Tap, Factory Made at 099.2 feet, 1 o'clock, 4 in



Tap, Factory Made at 153.1 feet, 3 o'clock, 4 in



Tap, Factory Made at 201.9 feet, 9 o'clock, 4 in

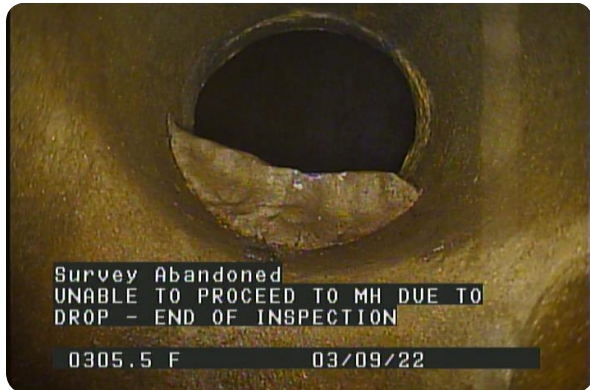
Snapshots (continued)



Tap, Factory Made at 243.7 feet, 3 o'clock, 4 in



General Observation at 305.5 feet | DIRT/DEBRIS BLOCKING 40% OF PIPE



Survey Abandoned at 305.5 feet | UNABLE TO PROCEED TO MH DUE TO DROP - END OF INSPECTION