

**CITY OF BATON ROUGE
PARISH OF EAST BATON ROUGE
DEPARTMENT OF PUBLIC WORKS
SEWER ENGINEERING DIVISION**

December 22, 2020

ADDENDUM NO. 1

TO: ALL BIDDERS

SUBJECT: **ESSEN/STARING LARGE DIAMETER SEWER REHABILITATION
CITY-PARISH PROJECT NO. 20-AR-MS-0089**

ORIGINAL BID DATE: Tuesday, January 19, 2021 at 2:00 PM

CURRENT BID DATE: Tuesday, January 19, 2021 at 2:00 PM

The following revisions shall be incorporated in and take precedence over any conflicting part of the original contract document:

PART 1 – UNIFORM CONSTRUCTION BID FORMS:

1. For paper sealed bidders, with reference to page UCBF 1 of 4 of Part 1, Uniform Construction Bid Forms, the Bidder shall indicate the receipt of this addendum in the space provided. For online Bid Express bidders, an acknowledgement of this addendum will be prompted by the electronic bidding program prior to formally submitting the bid. Failure to indicate the receipt of this addendum shall be cause for the bid to be rejected.

PART 2 – SPECIAL PROVISIONS AND CONTRACT DOCUMENTS:

1. For paper sealed bidders, with reference to page UCBF 1 of 4 of Part 1, Uniform Construction Bid Forms, the Bidder shall indicate the receipt of this addendum in the space provided. For online Bid Express bidders, an acknowledgement of this addendum will be prompted by the electronic bidding program prior to formally submitting the bid. Failure to indicate the receipt of this addendum shall be cause for the bid to be rejected.

COMMENTS & QUESTIONS:

1. Can existing flow data and inspection data be made available?

Yes, USB hard drives with the existing flow data and Multi-Sensor Inspection data can be made available. The reports for the existing flow data are located in Appendix A of this addendum. The reports to the existing inspection data are located in Appendix B of this addendum. A USB hard drive with the raw data may be picked up at the address below by requesting a pickup time with Christine Daigle via email at cdaigle@brla.gov. The USB hard drive can also be requested by mail. If requested by mail a certified prepaid postage letter size envelope should be mailed to the address below and shall be received no later than fourteen (14) calendar days prior to bid opening.

**Christine Daigle
Department of Environmental Services – Sewer Engineering
1100 Laurel Street, Room 218
Baton Rouge, LA 70802**

2. Can the existing as-builts be made available?

Yes, the existing as-builts from the original construction are attached in Appendix C of this addendum. The as-builts are being provided for informational purposes only and are not warranted to be exact. It is the contractor's responsibility to field verify all information regarding the sewer pipeline and manholes prior to performing the work.

RECOMMENDED:

Joseph Young, P.E.

APPROVED:

Rickey Brouillette, P.E.

Appendix A:
Existing flow data
for the
Essen/Staring Sewer Rehabilitation
CP#: 20-AR-MS-0089

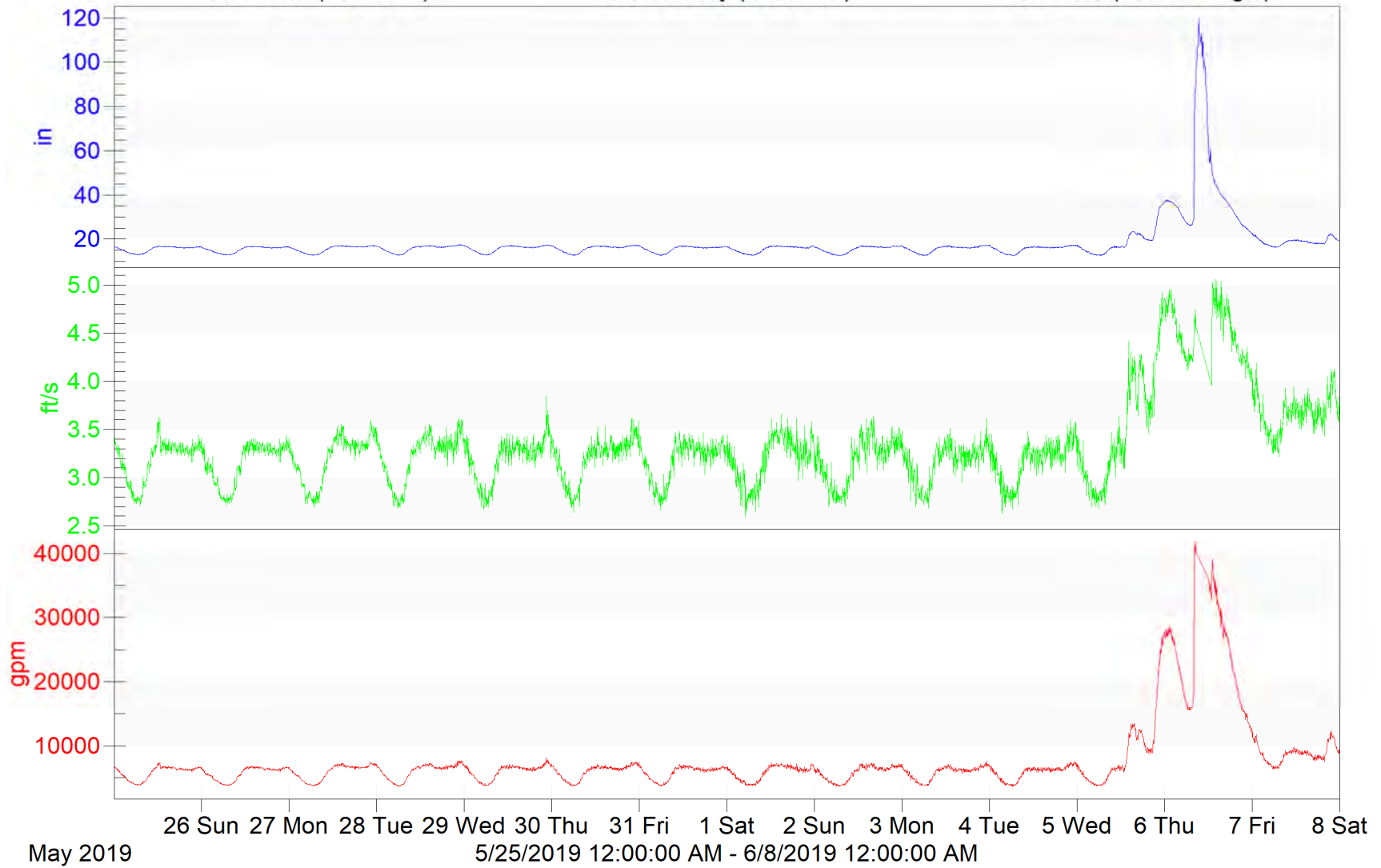
058-00004

Flowlink 5

360 Level (18.144 in)

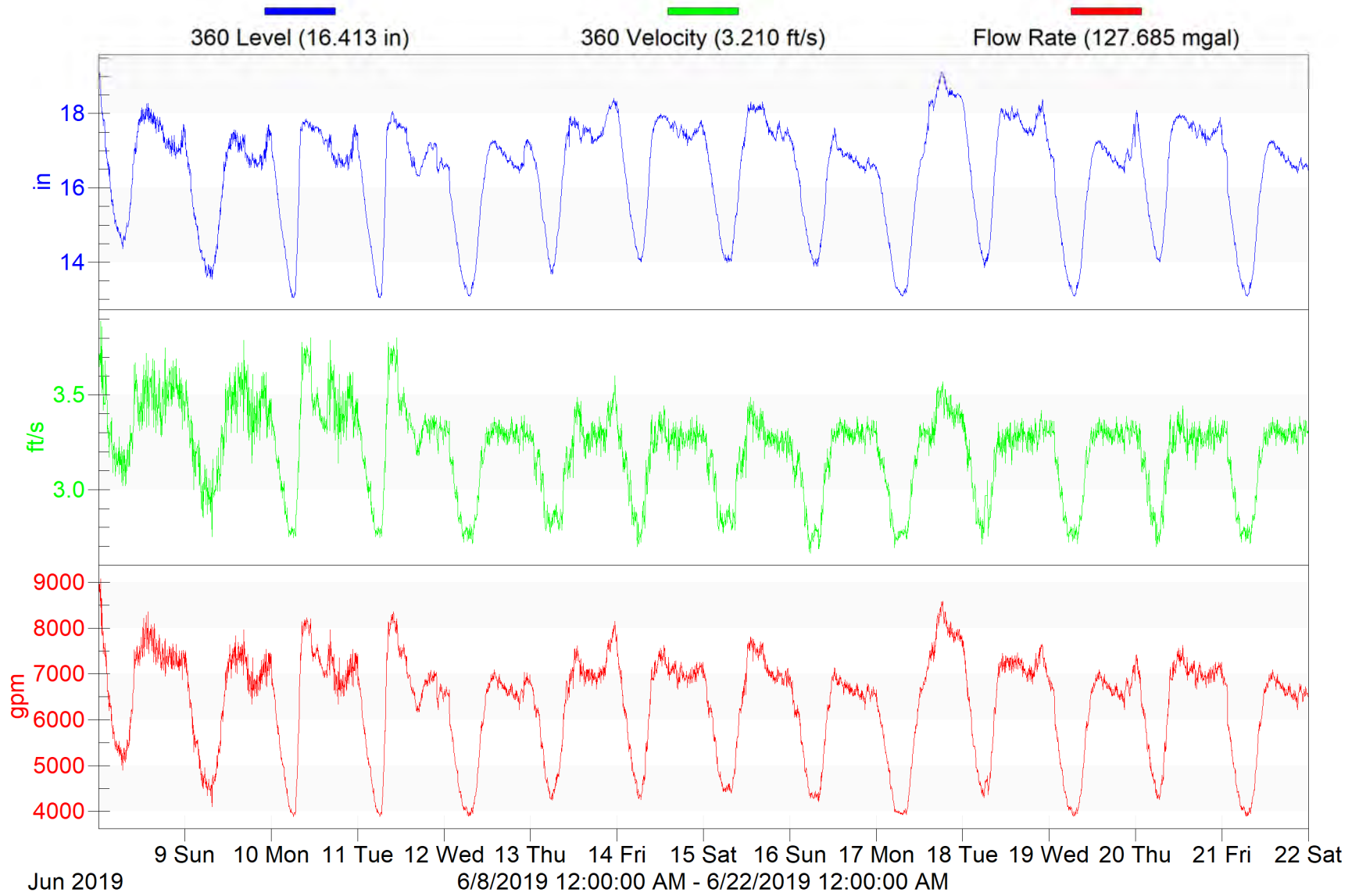
360 Velocity (3.331 ft/s)

Flow Rate (155.423 mgal)



058-00004

Flowlink 5



058-00004

Flowlink 5

360 Level (17.830 in)

360 Velocity (3.191 ft/s)

Flow Rate (104.562 mgal)



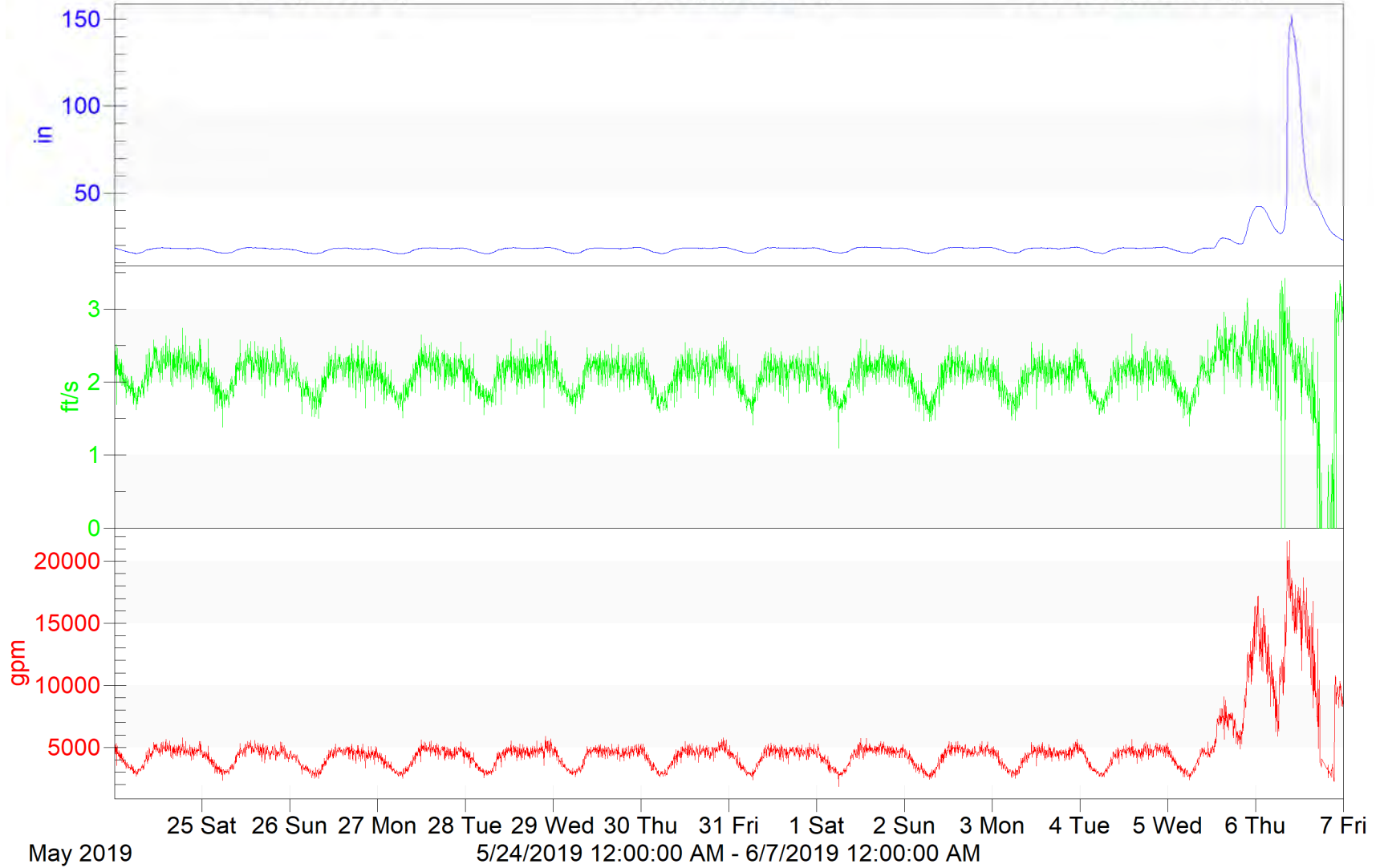
058-00721A Sensor 1

Flowlink 5

Level (20.332 in)

Velocity (2.092 ft/s)

Flow Rate (97.870 mgal)



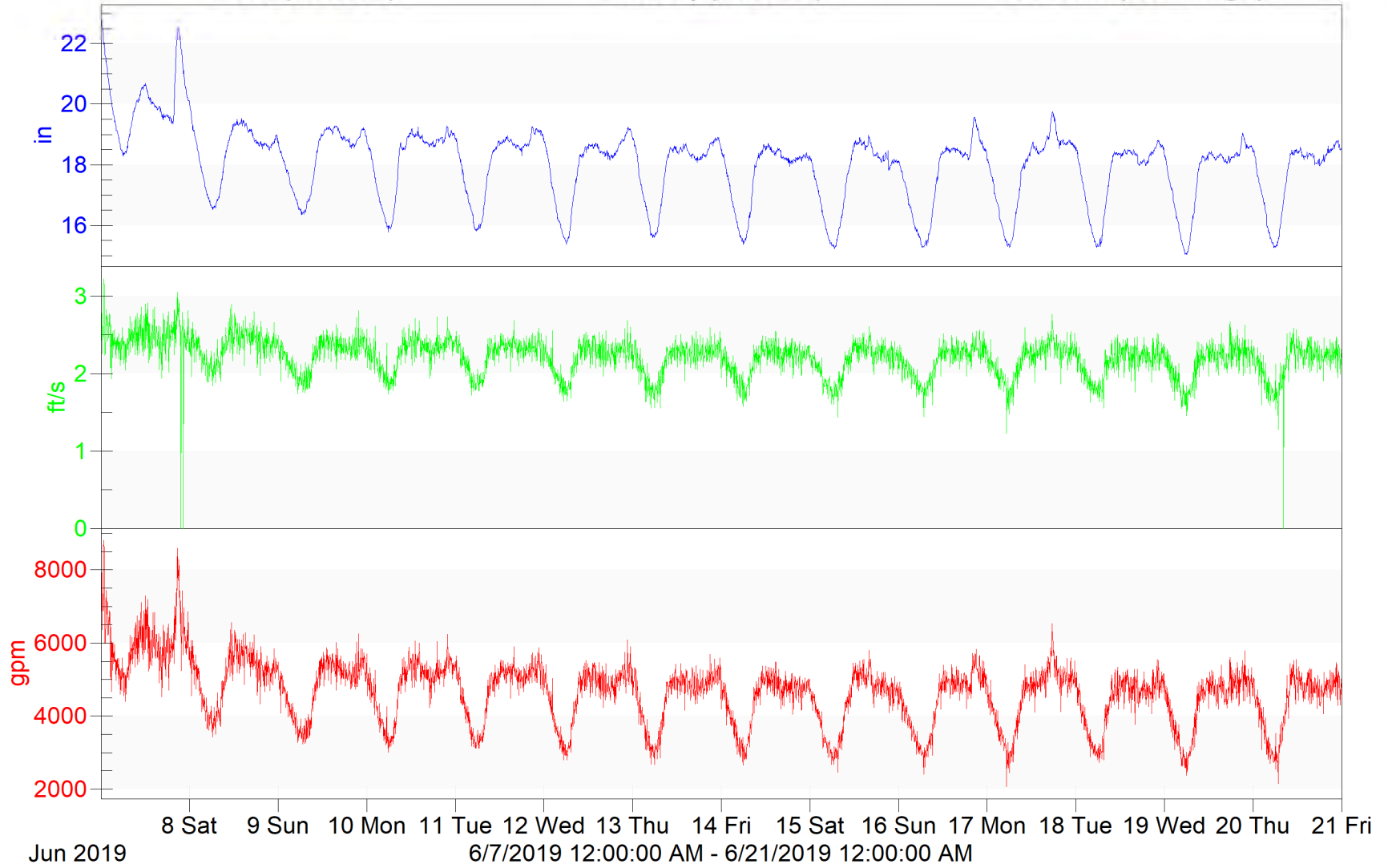
058-00721A Sensor 1

Flowlink 5

Level (18.033 in)

Velocity (2.210 ft/s)

Flow Rate (93.910 mgal)



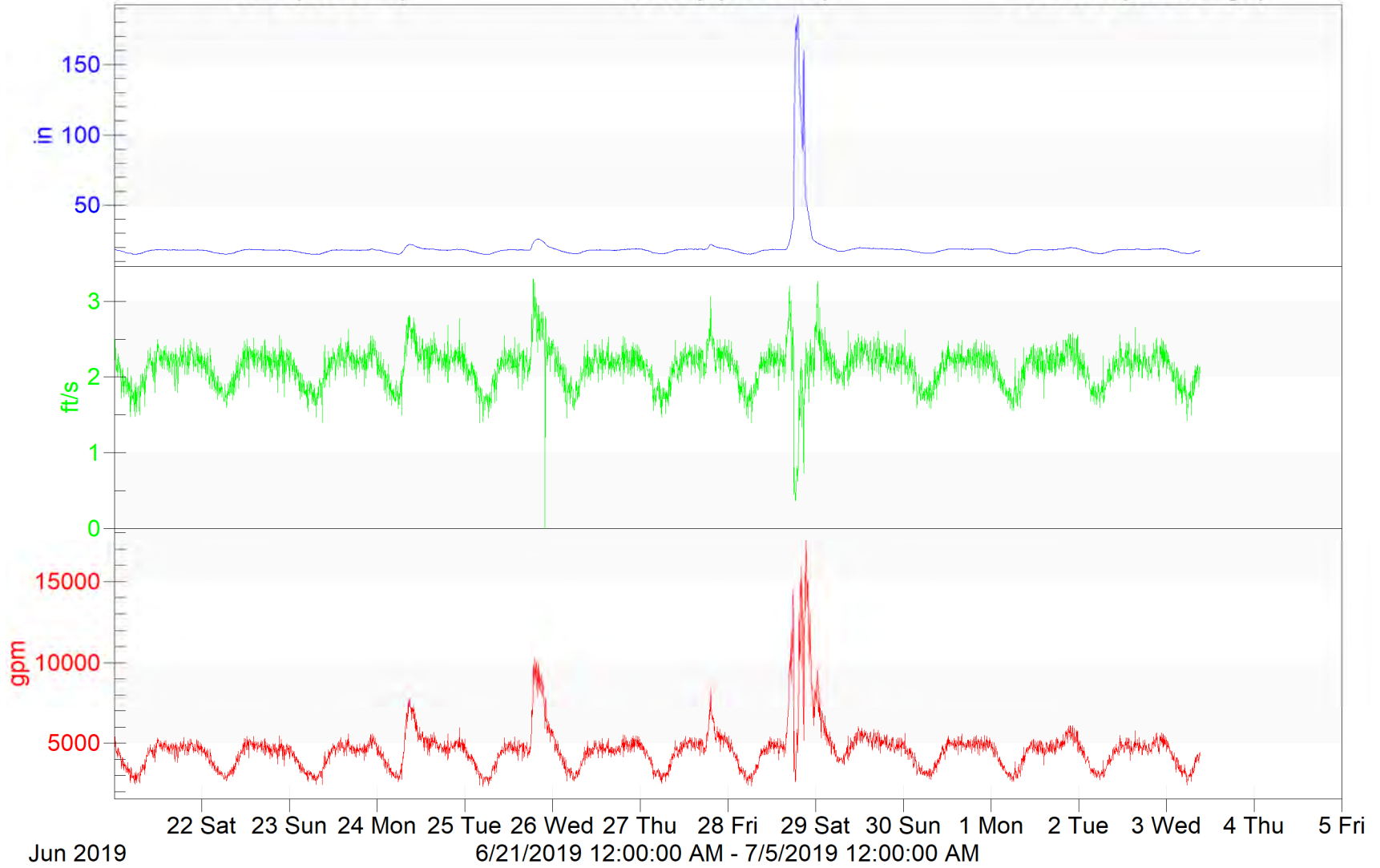
058-00721A Sensor 1

Flowlink 5

Level (19.433 in)

Velocity (2.124 ft/s)

Flow Rate (82.309 mgal)



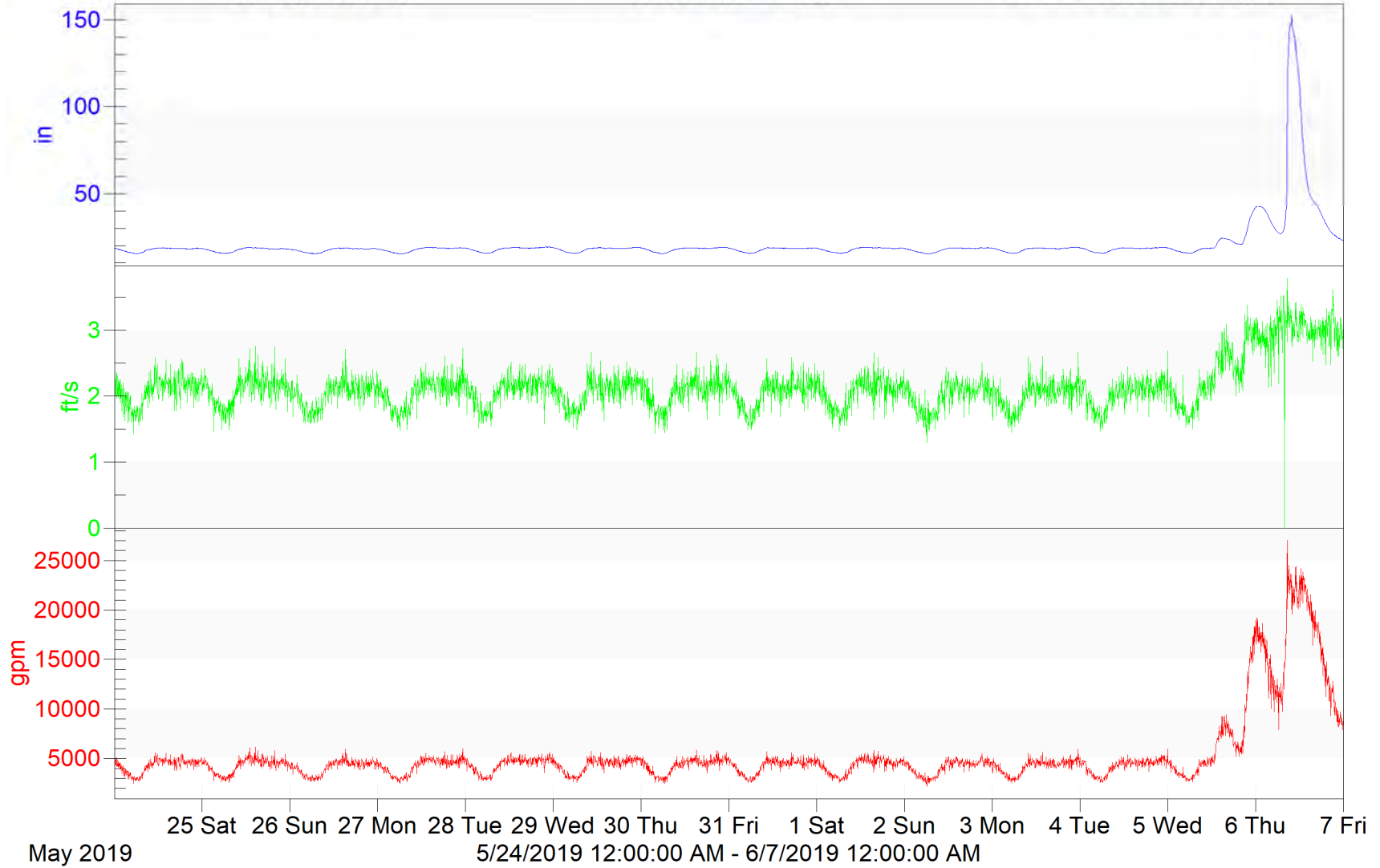
058-00721A Sensor 2

Flowlink 5

Level (20.569 in)

Velocity (2.127 ft/s)

Flow Rate (105.313 mgal)



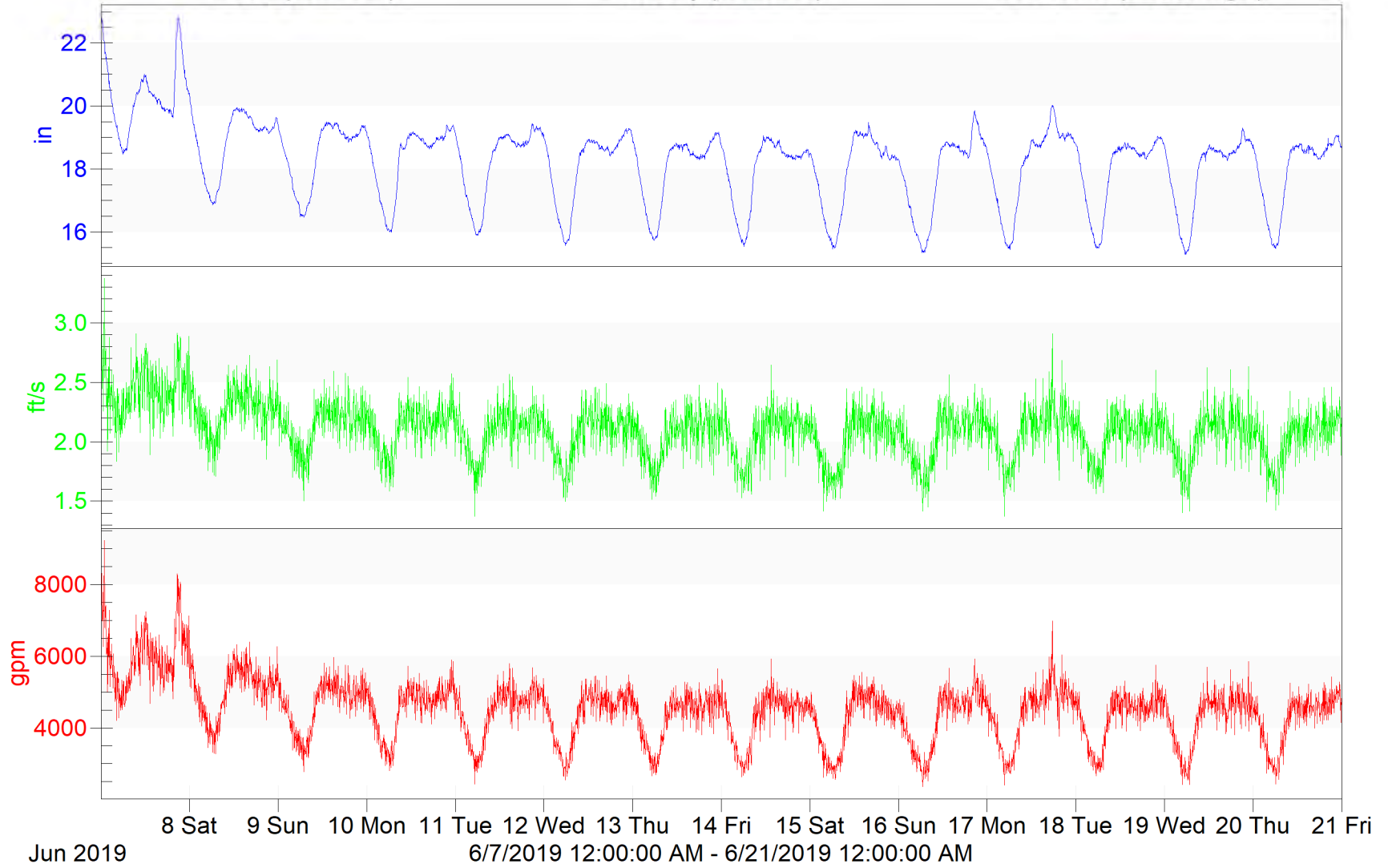
058-00721A Sensor 2

Flowlink 5

Level (18.279 in)

Velocity (2.100 ft/s)

Flow Rate (90.861 mgal)



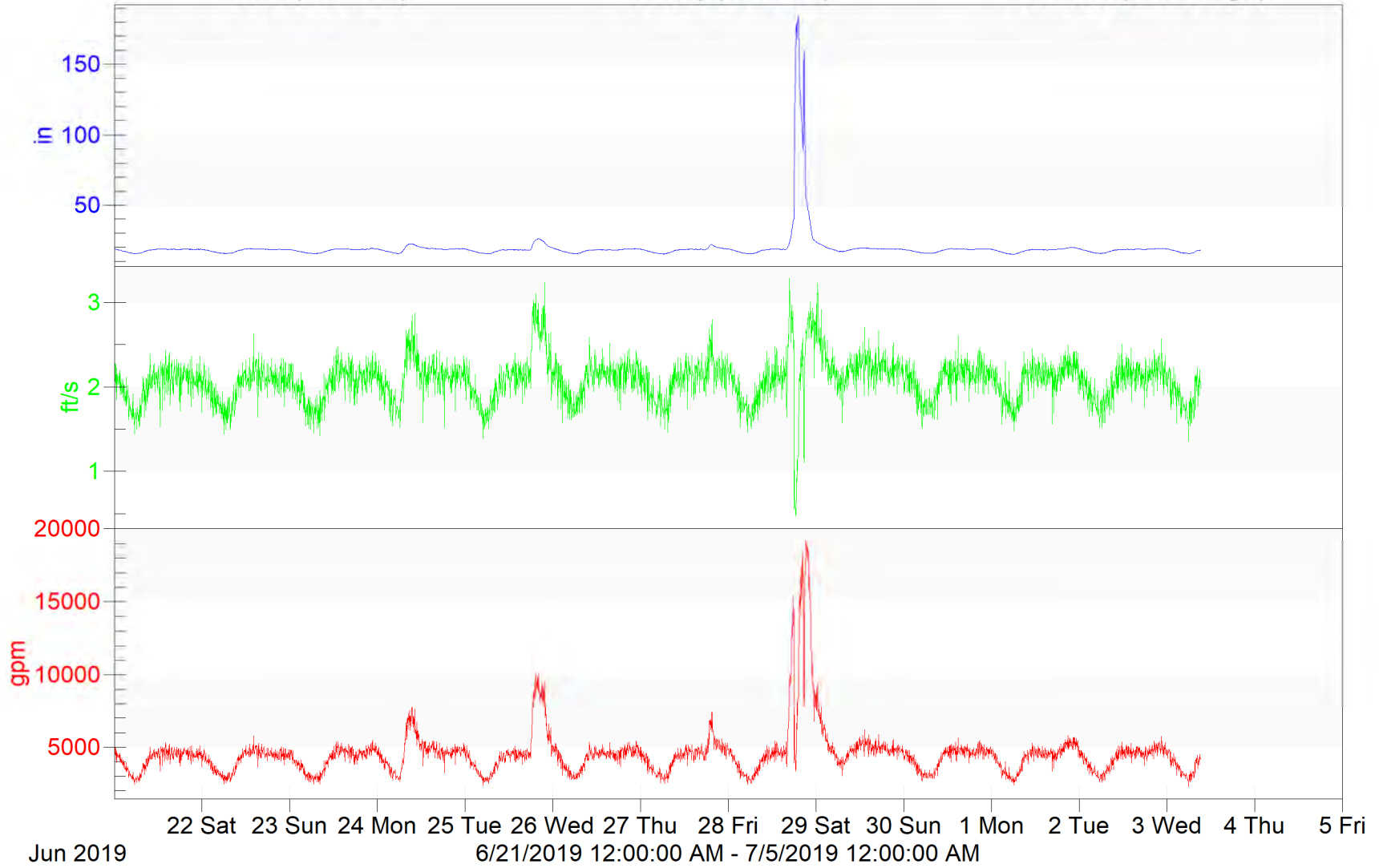
058-00721A Sensor 2

Flowlink 5

Level (19.464 in)

Velocity (2.071 ft/s)

Flow Rate (81.113 mgal)



Appendix B:
Existing inspection data
for the
Essen/Staring Sewer Rehabilitation
CP#: 20-AR-MS-0089

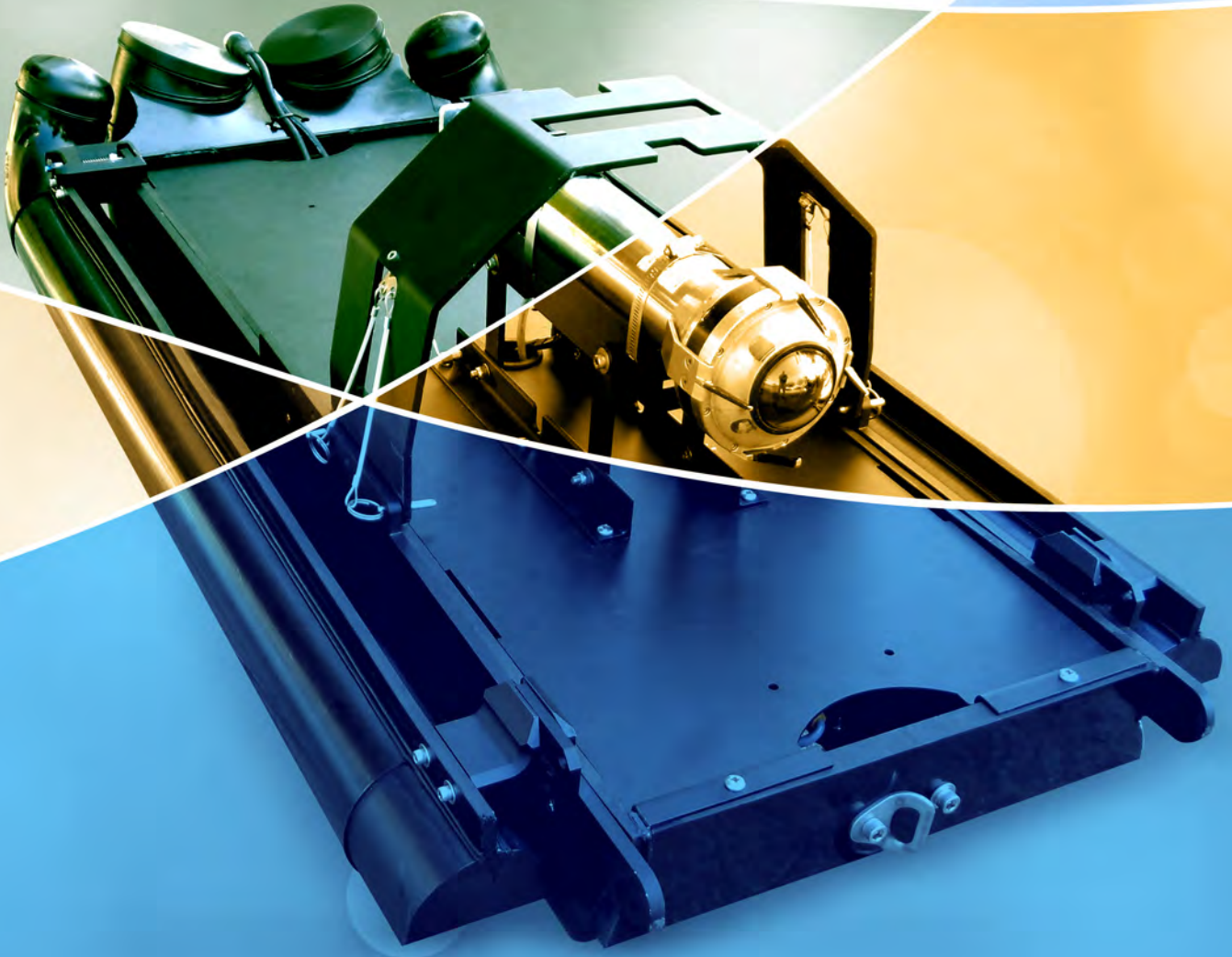


Pipeline Inspection Partners Corp.

SolidFX

Inspection Report

Prepared for



CES Baton Rouge
Inspected December 04, 2019



058-00014
058-00004

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Technology Comparison Analysis

Feature	SolidFX	Spinning Laser Profiling	Laser Profiling with Wand
Technology	LIDAR	Spinning Laser Profiling	Laser Profiling with Wand
Cross Sections Scan Rate	45 /second	1.25 /second	12 /sec 12 /second on
Cross Section Measurement Density	1080 points	20 -300 points	Function of Pipe diameter
Effective Range	6"- 30 meters	4" - 48"	18" - 100"
Accuracy	3 mm @ 10m	15mm @ 3m	3 mm @ 3mm
Resolution	1mm (constant)	+/- 0.5% (pipe diameter)	+/- 0.1% (pipe diameter)
Calibration	Precision Factory	Automatic	Factory
Limited by Shadowing	No	No	Yes
Requires Wand Change out	No	No	Yes
"Cork Screw" Distortion during Motion	No	Yes	No
Multiple Returns (fog resistance)	Yes	No	No
Sensor Cleaning during Inspection	Yes	No	No
Transport Mechanism	Tractor/Float	Tractor Only	Float Only
3D Option	Yes	No	No
Custom Reporting	Yes	No	No
Live Video	Yes	Yes	No
Sonar Available	Yes	No	Yes
Maximum Deployment Length (linear foot)	4000	2000	4000+
Made in USA	Yes	Yes	No
Data Viewable During Operations	Yes	Yes	No
Onsite PACP	Yes	Yes	No

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Inspection Information

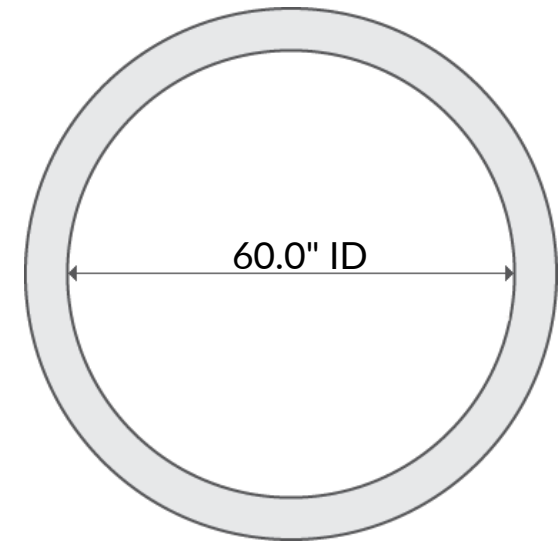
Transport

Float

Sensor(s)

LIDAR
 HD
 SONAR

As-Built Dimensions



Inspection Details

Service Area:	BATON ROUGE
Segment Reference:	2-1
Upstream Manhole:	058-00014
Downstream Manhole:	058-00004
Direction:	Upstream
Distance:	399.7
Scan Date:	December 04, 2019
Operator Notes:	None
Processing Notes:	None

Document Details

Report Prepared January 07, 2020
 Source Reference 14351

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Sediment and Corrosion Summary Metrics

Sediment/Sonar Metrics

Sediment Volume (cubic yard):	0.5
As-is Capacity/As-built Capacity (%):	99.8
Average cross-sectional restriction (%):	0.2

Corrosion/Lidar Metrics

Corroded Volume (cubic in):	79731.8
Wall/As-built (%):	98.7
Average Wall Loss (%):	1.3

Sediment and Corrosion Graphs(0'-200')

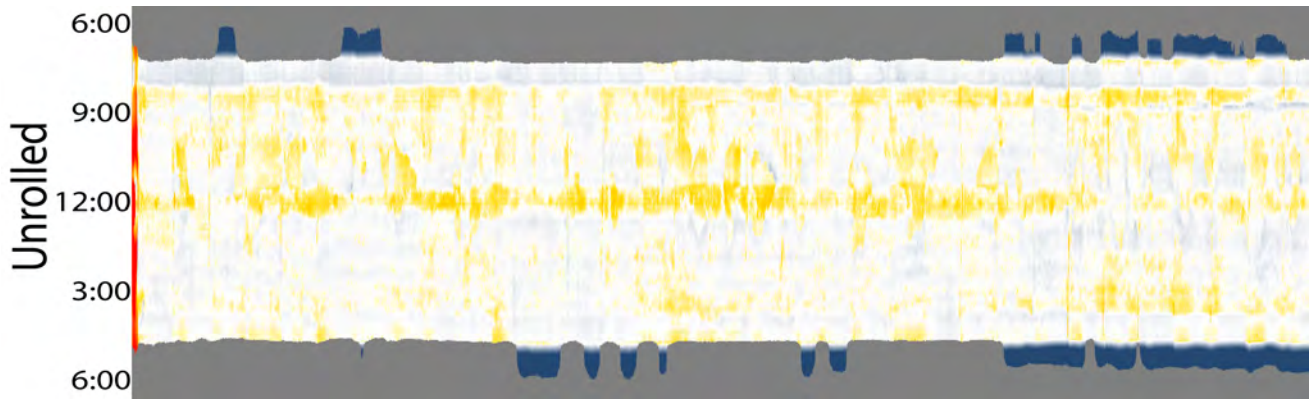
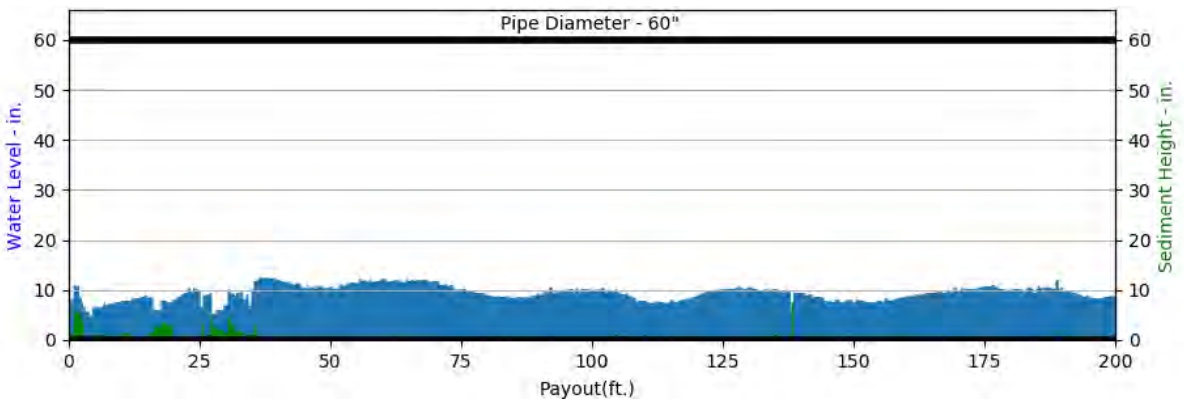
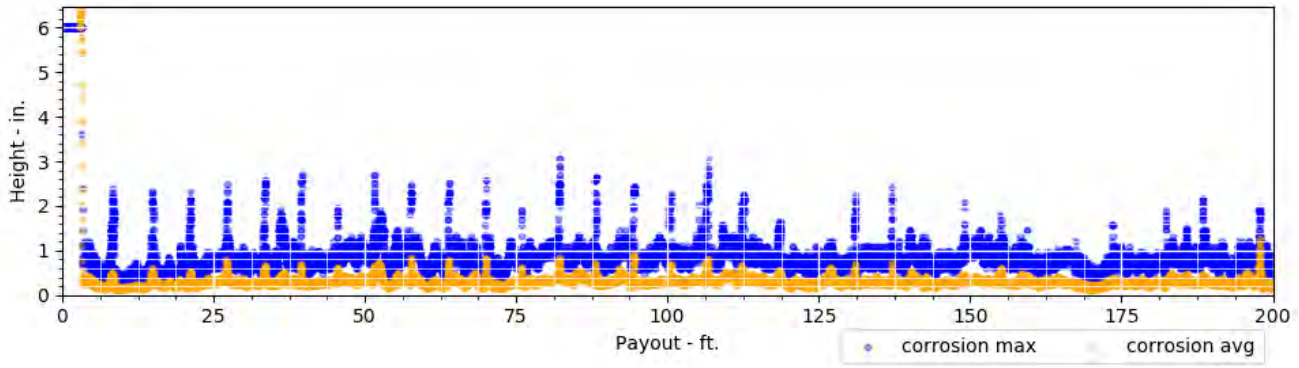
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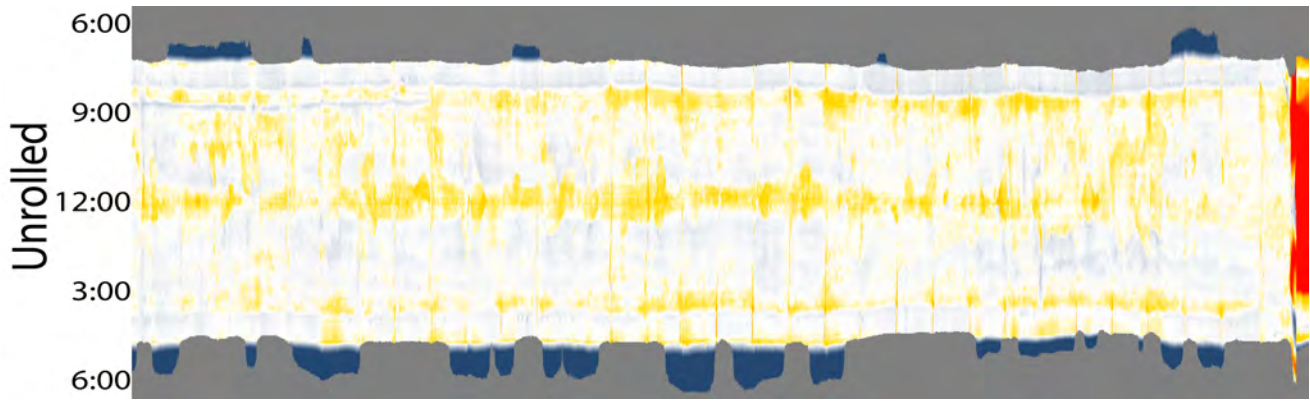
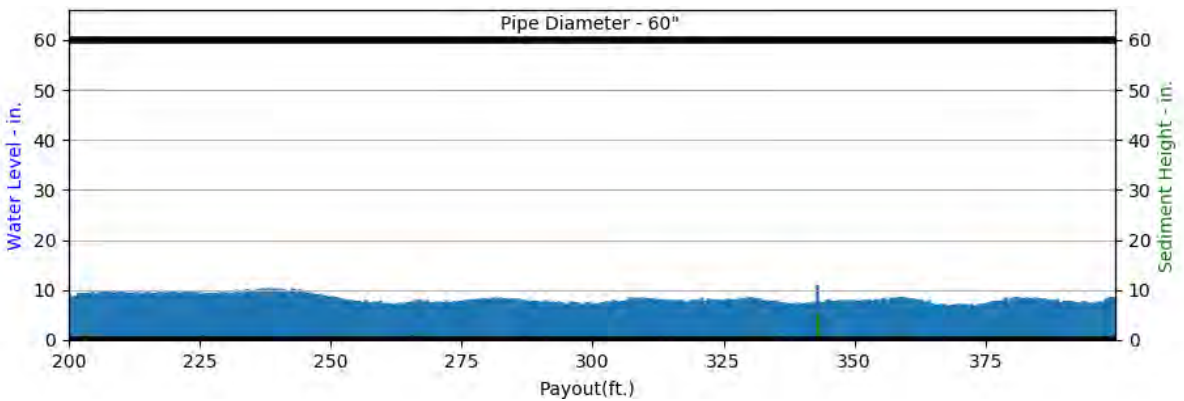
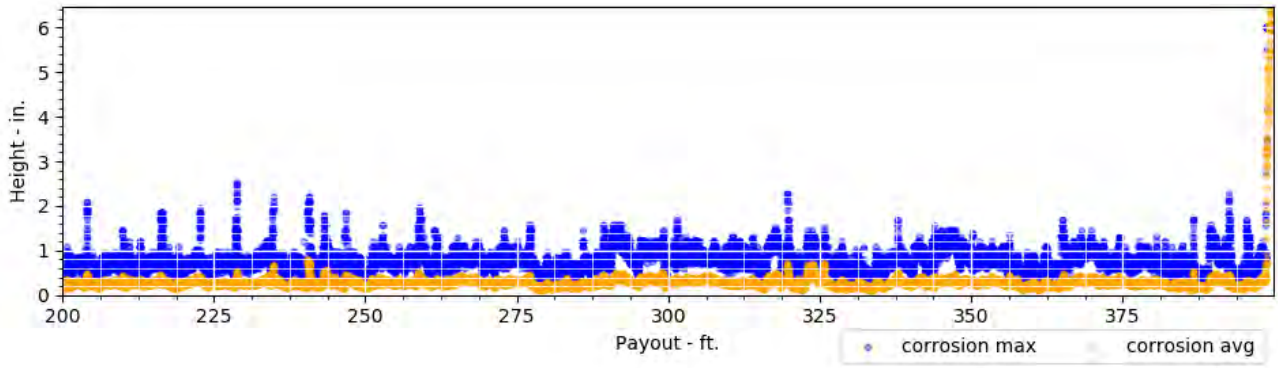


Sediment and Corrosion Graphs(200'-400')

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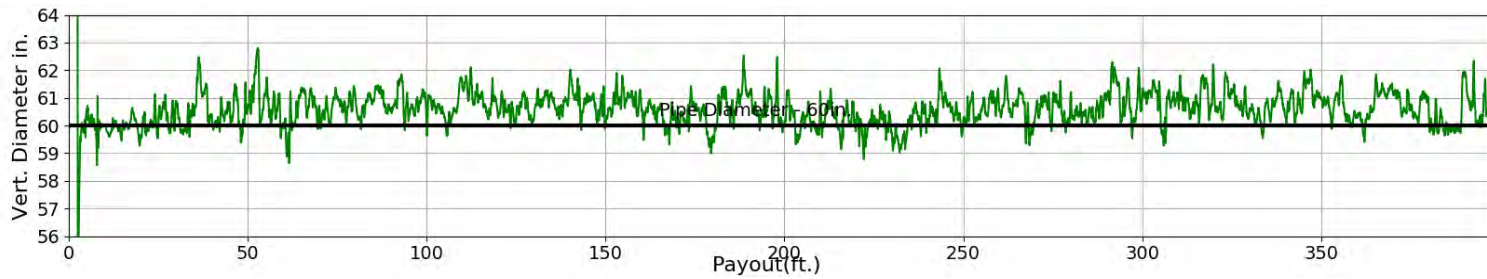
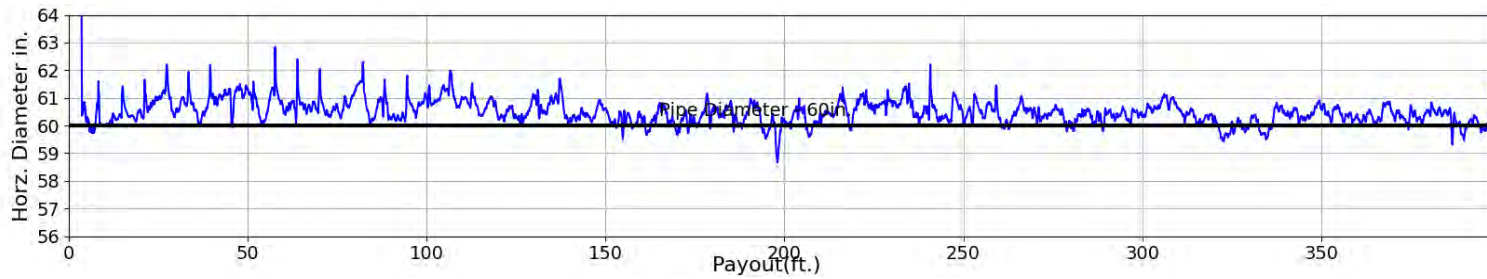
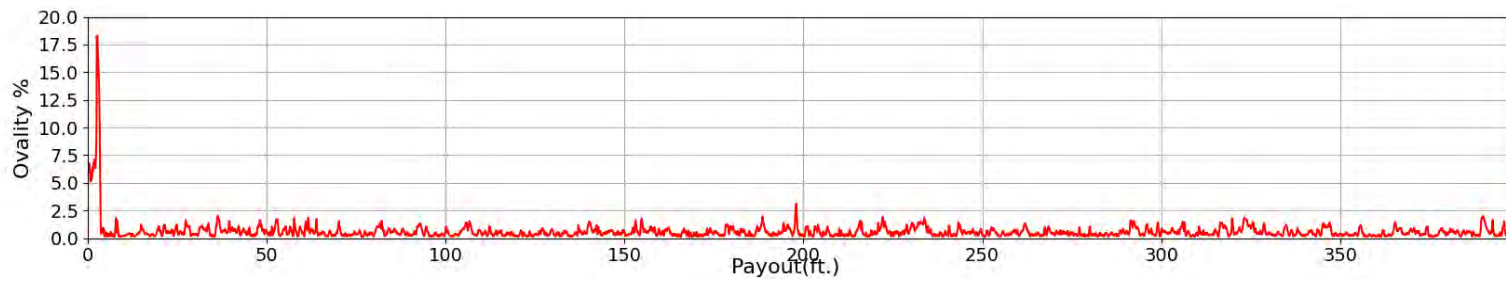


Pipe Ovality Graphs

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
0.0'	Start	Start of inspection	12.9"	6.0"	6.0"	0.9"	4.9"	6.4"	2.6%
1.4'	Hole	Incoming Lateral	12.0"	6.0"	6.0"	1.0"	5.0"	5.6"	3.3%
1.4'	Hole	Incoming Lateral	12.0"	6.0"	6.0"	1.0"	5.0"	5.6"	3.3%
8.3'	Material Loss	Material loss at joint	0.4"	1.4"	2.1"	0.2"	0.4"	0.7"	0.1%
15.0'	Material Loss	Material loss at joint	0.4"	0.8"	1.2"	1.6"	6.0"	0.4"	0.0%
21.1'	Material Loss	Material loss at joint	0.5"	1.4"	1.7"	1.6"	6.0"	0.5"	0.2%
25.0'	Regular Interval		0.3"	0.4"	0.7"	1.0"	6.0"	0.6"	0.0%
26.8'	Material Loss	Material loss at joint	0.3"	0.5"	0.8"	0.5"	0.9"	1.1"	0.1%
26.8'	Material Loss	Material loss at joint	0.3"	0.5"	0.8"	0.5"	0.9"	1.1"	0.1%
33.0'	Material Loss	Material loss at joint	0.3"	0.6"	0.8"	0.4"	1.1"	1.7"	0.6%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
39.5'	Material Loss	Material loss at joint	0.6"	2.3"	2.6"	0.3"	1.0"	0.7"	0.3%
45.6'	Material Loss	Material loss at joint	0.4"	0.6"	0.9"	1.3"	6.0"	0.5"	0.2%
50.0'	Regular Interval		0.4"	0.6"	0.8"	0.4"	1.0"	0.4"	0.1%
51.3'	Material Loss	Material loss at joint	0.4"	0.9"	1.1"	0.3"	1.1"	0.6"	0.2%
57.6'	Material Loss	Material loss at joint	0.5"	1.5"	2.2"	0.4"	1.2"	0.3"	0.2%
63.7'	Material Loss	Material loss at joint	0.4"	1.0"	1.4"	0.3"	1.4"	0.3"	0.1%
70.0'	Material Loss	Material loss at joint	0.7"	1.6"	2.0"	0.2"	0.4"	0.4"	0.1%
75.0'	Regular Interval		0.3"	0.5"	0.6"	0.3"	0.9"	0.3"	0.1%
76.0'	Material Loss	Material loss at joint	0.2"	0.4"	0.6"	0.3"	1.0"	0.8"	0.2%
81.9'	Material Loss	Material loss at joint	0.5"	1.1"	1.7"	2.7"	6.0"	0.8"	0.2%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
88.0'	Material Loss	Material loss at joint	0.5"	1.2"	1.7"	0.3"	0.5"	0.3"	0.0%
90.2'	Material Loss	Material loss at joint	0.3"	0.5"	0.8"	1.6"	6.0"	0.4"	0.1%
94.2'	Material Loss	Material loss at joint	0.5"	1.2"	2.0"	2.7"	6.0"	0.5"	0.1%
100.0'	Regular Interval		0.3"	0.5"	0.7"	0.3"	0.6"	0.5"	0.2%
100.0'	Material Loss	Material loss at joint	0.3"	0.5"	0.7"	0.3"	0.6"	0.5"	0.2%
106.3'	Material Loss	Material loss at joint	0.7"	1.5"	2.1"	2.9"	6.0"	0.8"	0.2%
110.3'	Material Loss	Material loss at joint	0.4"	0.7"	1.0"	0.4"	1.1"	1.1"	0.4%
112.3'	Material Loss	Material loss at joint	0.5"	0.8"	1.1"	0.4"	1.1"	0.6"	0.2%
118.4'	Material Loss	Material loss at joint	0.5"	0.8"	1.2"	0.4"	2.0"	0.8"	0.2%
124.4'	Material Loss	Material loss at joint	0.2"	0.3"	0.4"	1.7"	6.0"	0.5"	0.1%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
125.0'	Regular Interval		0.3"	0.6"	0.7"	1.8"	6.0"	0.5"	0.1%
130.4'	Material Loss	Material loss at joint	0.3"	0.5"	0.7"	0.3"	2.8"	0.6"	0.1%
130.9'	Material Loss	Material loss at joint	0.5"	1.3"	1.8"	0.7"	6.0"	0.5"	0.1%
137.0'	Material Loss	Material loss at joint	0.3"	0.5"	0.8"	2.5"	6.0"	0.5"	0.1%
143.0'	Material Loss	Material loss at joint	0.2"	0.4"	0.6"	2.0"	6.0"	0.5"	0.2%
148.8'	Material Loss	Material loss at joint	0.4"	0.8"	1.2"	0.3"	0.7"	0.9"	0.2%
150.0'	Regular Interval		0.4"	0.8"	1.0"	0.3"	1.0"	0.5"	0.1%
155.0'	Material Loss	Material loss at joint	0.6"	0.9"	1.4"	0.5"	1.2"	0.5"	0.1%
161.2'	Material Loss	Material loss at joint	0.3"	0.5"	0.7"	1.4"	6.0"	0.7"	0.1%
167.3'	Material Loss	Material loss at joint	0.2"	0.4"	0.7"	1.8"	6.0"	0.5"	0.1%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
172.9'	Material Loss	Material loss at joint	0.3"	0.7"	0.8"	0.4"	2.0"	0.4"	0.1%
175.0'	Regular Interval		0.3"	0.5"	0.8"	0.3"	1.3"	0.7"	0.1%
179.8'	Material Loss	Material loss at joint	0.3"	0.4"	0.7"	2.4"	6.0"	0.3"	0.0%
182.0'	Buildup	Buildup	0.2"	0.4"	0.7"	1.1"	6.0"	0.2"	0.0%
185.7'	Material Loss	Material loss at joint	0.3"	0.6"	0.9"	0.9"	6.0"	0.5"	0.1%
191.4'	Material Loss	Material loss at joint	0.3"	0.6"	0.8"	0.9"	6.0"	0.5"	0.1%
197.7'	Material Loss	Material loss at joint	0.7"	1.0"	1.2"	0.5"	1.9"	0.3"	0.1%
200.0'	Regular Interval		0.2"	0.3"	0.4"	1.3"	6.0"	0.8"	0.1%
204.0'	Material Loss	Material loss at joint	0.4"	1.4"	1.9"	3.2"	6.0"	0.5"	0.2%
210.0'	Material Loss	Material loss at joint	0.3"	0.5"	0.7"	1.6"	6.0"	0.5"	0.1%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
216.2'	Material Loss	Material loss at joint	0.4"	1.1"	1.7"	4.1"	6.0"	0.5"	0.1%
220.6'	Material Loss	Material loss at joint	0.3"	0.5"	0.6"	2.6"	6.0"	0.5"	0.1%
222.4'	Material Loss	Material loss at joint	0.3"	0.5"	0.8"	2.8"	6.0"	1.0"	0.2%
225.0'	Regular Interval		0.3"	0.4"	0.6"	2.3"	6.0"	0.3"	0.1%
228.3'	Material Loss	Material loss at joint	0.2"	0.4"	0.7"	1.0"	6.0"	0.4"	0.1%
234.6'	Material Loss	Material loss at joint	0.3"	0.6"	1.1"	3.4"	6.0"	0.3"	0.1%
240.4'	Material Loss	Material loss at joint	0.2"	0.4"	0.5"	1.8"	6.0"	0.3"	0.1%
240.4'	Material Loss	Material loss at joint	0.2"	0.4"	0.5"	1.8"	6.0"	0.3"	0.1%
240.8'	Material Loss	Material loss at joint	0.6"	1.4"	1.7"	2.6"	6.0"	0.4"	0.1%
246.5'	Material Loss	Material loss at joint	0.2"	0.3"	0.5"	1.1"	6.0"	0.4"	0.1%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
250.0'	Regular Interval		0.2"	0.3"	0.5"	1.8"	6.0"	0.3"	0.1%
258.8'	Material Loss	Material loss at joint	0.4"	0.7"	1.1"	0.3"	0.9"	0.3"	0.1%
260.9'	Material Loss	Material loss at joint	0.3"	0.5"	0.7"	0.4"	0.8"	0.5"	0.1%
264.9'	Material Loss	Material loss at joint	0.3"	0.5"	0.9"	0.3"	0.9"	0.3"	0.1%
270.8'	Material Loss	Material loss at joint	0.3"	0.6"	0.8"	0.3"	0.8"	0.3"	0.0%
275.0'	Regular Interval		0.3"	0.7"	1.0"	0.3"	1.0"	0.5"	0.1%
277.0'	Material Loss	Material loss at joint	0.4"	1.0"	1.4"	0.3"	1.0"	0.3"	0.1%
281.0'	Material Loss	Material loss at joint	0.2"	0.3"	0.5"	1.0"	6.0"	0.5"	0.2%
283.0'	Material Loss	Material loss at joint	0.3"	0.4"	0.6"	0.3"	0.9"	0.3"	0.0%
289.2'	Material Loss	Material loss at joint	0.4"	0.8"	1.1"	0.3"	0.6"	0.4"	0.1%

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058-00004

Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
295.2'	Material Loss	Material loss at joint	0.4"	0.7"	1.0"	0.3"	0.8"	0.3"	0.0%
300.0'	Regular Interval		0.3"	0.8"	1.1"	0.3"	1.0"	0.6"	0.1%
301.6'	Material Loss	Material loss at joint	0.3"	0.5"	0.8"	0.3"	0.5"	0.5"	0.1%
307.8'	Material Loss	Material loss at joint	0.3"	0.5"	0.9"	0.2"	0.5"	0.5"	0.2%
313.7'	Material Loss	Material loss at joint	0.3"	0.5"	0.8"	0.3"	0.9"	0.5"	0.2%
319.8'	Material Loss	Material loss at joint	0.4"	1.3"	1.7"	0.3"	0.7"	0.5"	0.2%
325.0'	Regular Interval		0.3"	0.7"	1.0"	0.3"	0.6"	0.4"	0.1%
325.7'	Material Loss	Material loss at joint	0.7"	1.0"	1.4"	0.5"	1.0"	0.6"	0.2%
331.8'	Material Loss	Material loss at joint	0.2"	0.3"	0.4"	1.6"	6.0"	0.6"	0.1%
336.1'	Material Loss	Material loss at joint	0.2"	0.5"	0.7"	0.3"	0.9"	0.9"	0.1%

CES Baton Rouge

Inspected December 04, 2019



058-00014

058-00004

Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
338.0'	Material Loss	Material loss at joint	0.3"	0.6"	0.8"	0.3"	1.0"	0.8"	0.2%
350.0'	Regular Interval		0.3"	0.6"	1.1"	0.3"	0.8"	0.3"	0.1%
350.1'	Material Loss	Material loss at joint	0.3"	0.8"	1.3"	0.3"	0.9"	0.3"	0.1%
356.2'	Material Loss	Material loss at joint	0.4"	0.8"	1.1"	0.4"	1.1"	0.6"	0.2%
362.2'	Material Loss	Material loss at joint	0.3"	0.6"	0.8"	1.4"	6.0"	0.5"	0.1%
368.2'	Material Loss	Material loss at joint	0.4"	0.7"	1.0"	0.3"	0.9"	0.6"	0.2%
374.4'	Material Loss	Material loss at joint	0.4"	0.8"	1.2"	0.4"	1.1"	0.3"	0.1%
375.0'	Regular Interval		0.3"	0.5"	0.8"	0.3"	0.9"	0.5"	0.1%
376.3'	Material Loss	Material loss at joint	0.3"	0.4"	0.7"	0.3"	1.0"	0.5"	0.1%
380.2'	Material Loss	Material loss at joint	0.3"	0.6"	0.8"	0.3"	1.0"	0.4"	0.1%

CES Baton Rouge

Inspected December 04, 2019



058-00014

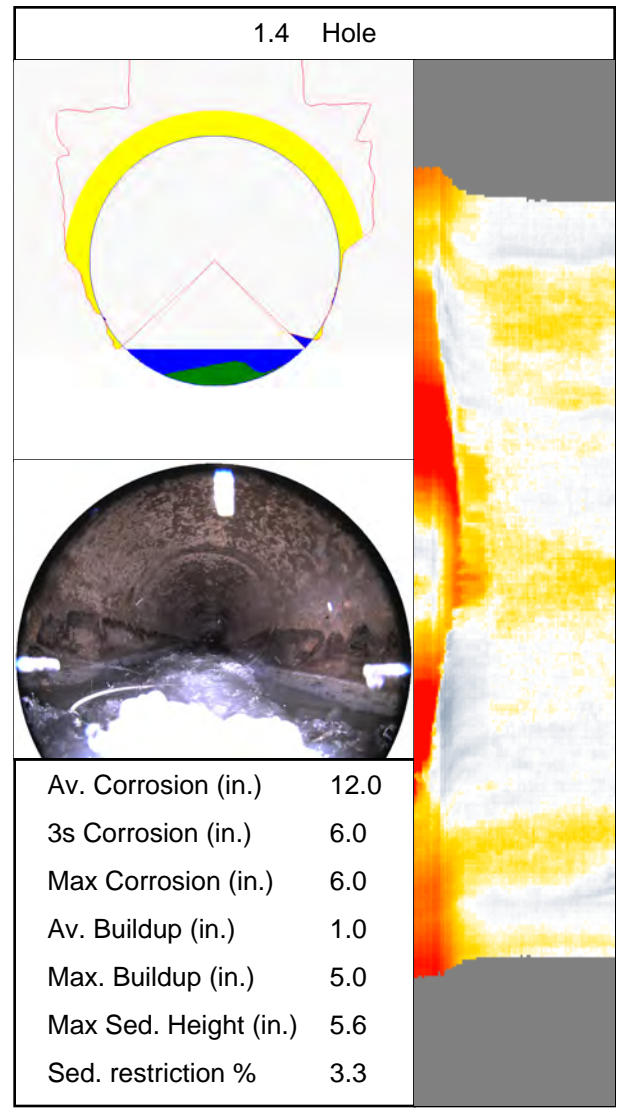
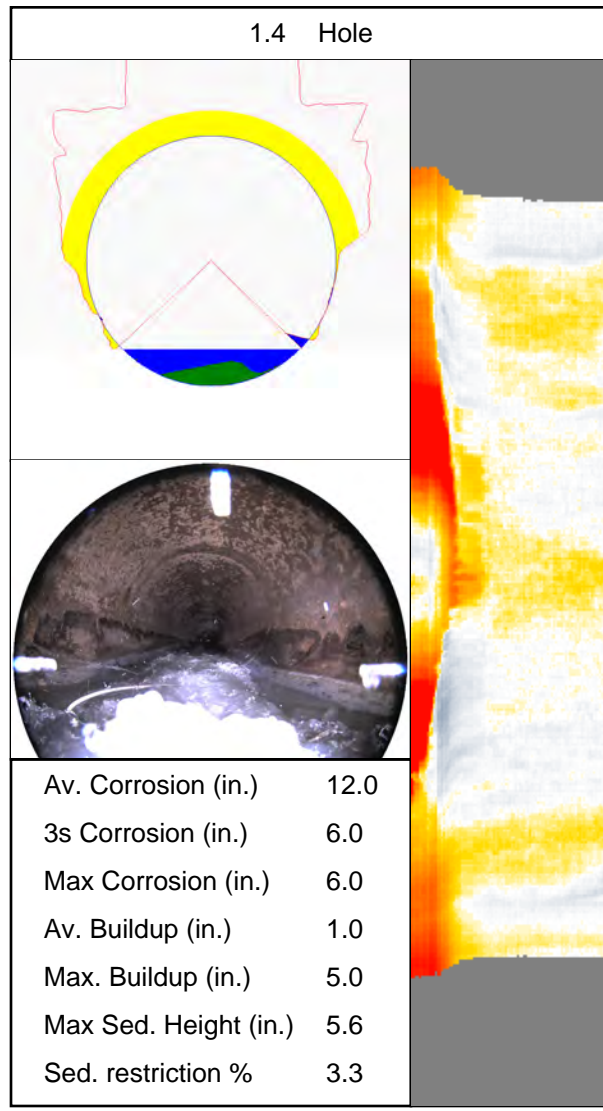
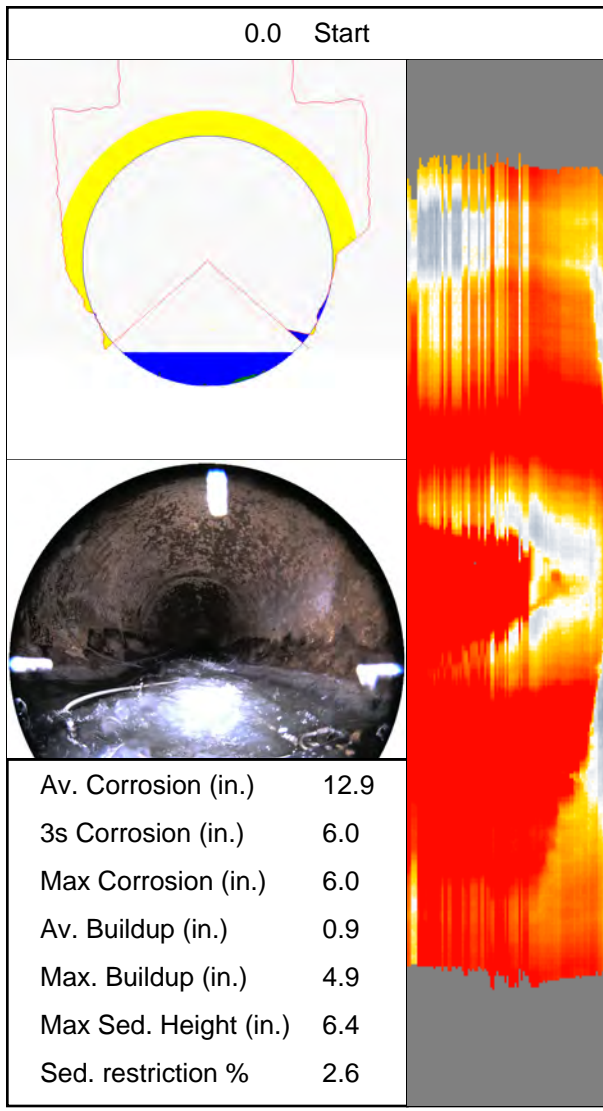
058-00004

Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
386.3'	Material Loss	Material loss at joint	0.1"	0.2"	0.3"	0.4"	1.4"	0.5"	0.1%
392.6'	Material Loss	Material loss at joint	0.4"	1.0"	1.4"	0.4"	1.0"	0.4"	0.1%
399.2'	Hole	Incoming Lateral	6.8"	6.0"	6.0"	1.3"	2.1"	0.6"	0.1%
399.8'	End	End of inspection	9.6"	6.0"	6.0"	0.8"	1.2"	0.6"	0.1%



Distributed Cross-Sections





Distributed Cross-Sections

8.3 Material Loss		15.0 Material Loss		21.1 Material Loss	
Av. Corrosion (in.)	0.4	Av. Corrosion (in.)	0.4	Av. Corrosion (in.)	0.5
3s Corrosion (in.)	1.4	3s Corrosion (in.)	0.8	3s Corrosion (in.)	1.4
Max Corrosion (in.)	2.1	Max Corrosion (in.)	1.2	Max Corrosion (in.)	1.7
Av. Buildup (in.)	0.2	Av. Buildup (in.)	1.6	Av. Buildup (in.)	1.6
Max. Buildup (in.)	0.4	Max. Buildup (in.)	6.0	Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.7	Max Sed. Height (in.)	0.4	Max Sed. Height (in.)	0.5
Sed. restriction %	0.1	Sed. restriction %	0.0	Sed. restriction %	0.2



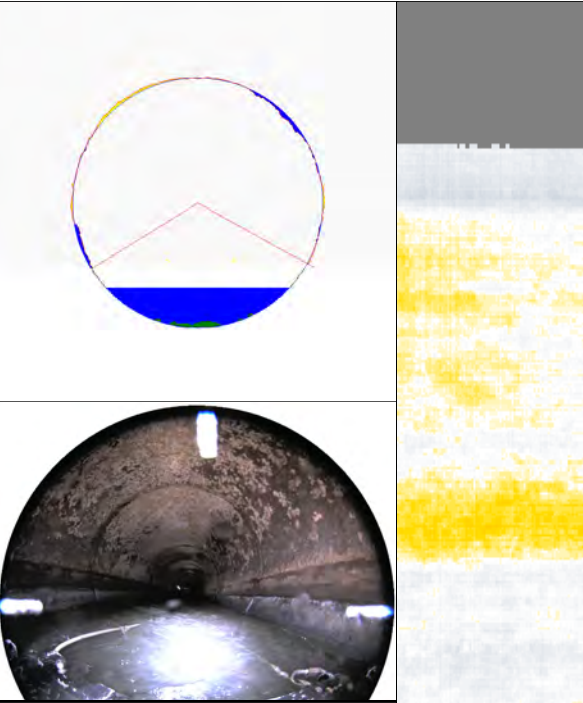
Distributed Cross-Sections

25.0 Regular Interval		26.8 Material Loss		26.8 Material Loss	
Av. Corrosion (in.)	0.3	Av. Corrosion (in.)	0.3	Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.4	3s Corrosion (in.)	0.5	3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.7	Max Corrosion (in.)	0.8	Max Corrosion (in.)	0.8
Av. Buildup (in.)	1.0	Av. Buildup (in.)	0.5	Av. Buildup (in.)	0.5
Max. Buildup (in.)	6.0	Max. Buildup (in.)	0.9	Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.6	Max Sed. Height (in.)	1.1	Max Sed. Height (in.)	1.1
Sed. restriction %	0.0	Sed. restriction %	0.1	Sed. restriction %	0.1



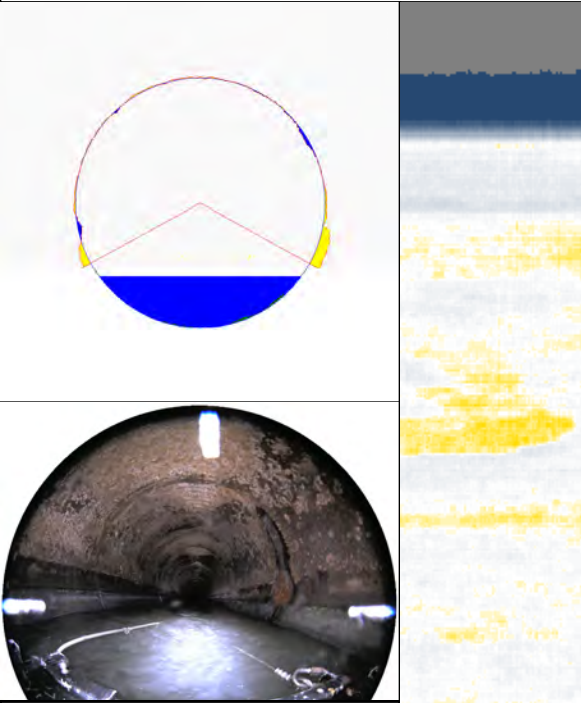
Distributed Cross-Sections

33.0 Material Loss



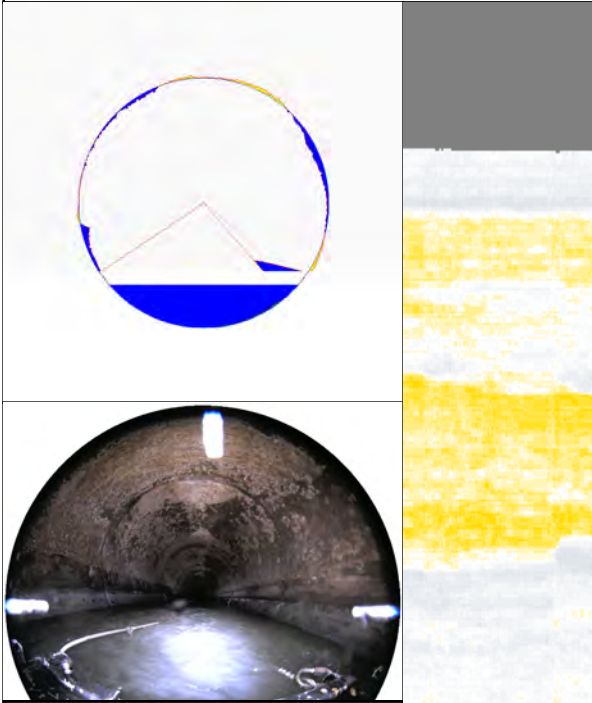
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.1
Max Sed. Height (in.)	1.7
Sed. restriction %	0.6

39.5 Material Loss



Av. Corrosion (in.)	0.6
3s Corrosion (in.)	2.3
Max Corrosion (in.)	2.6
Av. Buildup (in.)	0.3
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.7
Sed. restriction %	0.3

45.6 Material Loss



Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.9
Av. Buildup (in.)	1.3
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.5
Sed. restriction %	0.2



Distributed Cross-Sections

50.0 Regular Interval		51.3 Material Loss		57.6 Material Loss	
Av. Corrosion (in.)	0.4	Av. Corrosion (in.)	0.4	Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.6	3s Corrosion (in.)	0.9	3s Corrosion (in.)	1.5
Max Corrosion (in.)	0.8	Max Corrosion (in.)	1.1	Max Corrosion (in.)	2.2
Av. Buildup (in.)	0.4	Av. Buildup (in.)	0.3	Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.0	Max. Buildup (in.)	1.1	Max. Buildup (in.)	1.2
Max Sed. Height (in.)	0.4	Max Sed. Height (in.)	0.6	Max Sed. Height (in.)	0.3
Sed. restriction %	0.1	Sed. restriction %	0.2	Sed. restriction %	0.2



Distributed Cross-Sections

63.7 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	1.0
Max Corrosion (in.)	1.4
Av. Buildup (in.)	0.3
Max. Buildup (in.)	1.4
Max Sed. Height (in.)	0.3
Sed. restriction %	0.1

70.0 Material Loss

Av. Corrosion (in.)	0.7
3s Corrosion (in.)	1.6
Max Corrosion (in.)	2.0
Av. Buildup (in.)	0.2
Max. Buildup (in.)	0.4
Max Sed. Height (in.)	0.4
Sed. restriction %	0.1

75.0 Regular Interval

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.6
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.3
Sed. restriction %	0.1



Distributed Cross-Sections

76.0 Material Loss	
Av. Corrosion (in.)	0.2
3s Corrosion (in.)	0.4
Max Corrosion (in.)	0.6
Av. Buildup (in.)	0.3
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.8
Sed. restriction %	0.2

81.9 Material Loss	
Av. Corrosion (in.)	0.5
3s Corrosion (in.)	1.1
Max Corrosion (in.)	1.7
Av. Buildup (in.)	2.7
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.8
Sed. restriction %	0.2

88.0 Material Loss	
Av. Corrosion (in.)	0.5
3s Corrosion (in.)	1.2
Max Corrosion (in.)	1.7
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.5
Max Sed. Height (in.)	0.3
Sed. restriction %	0.0



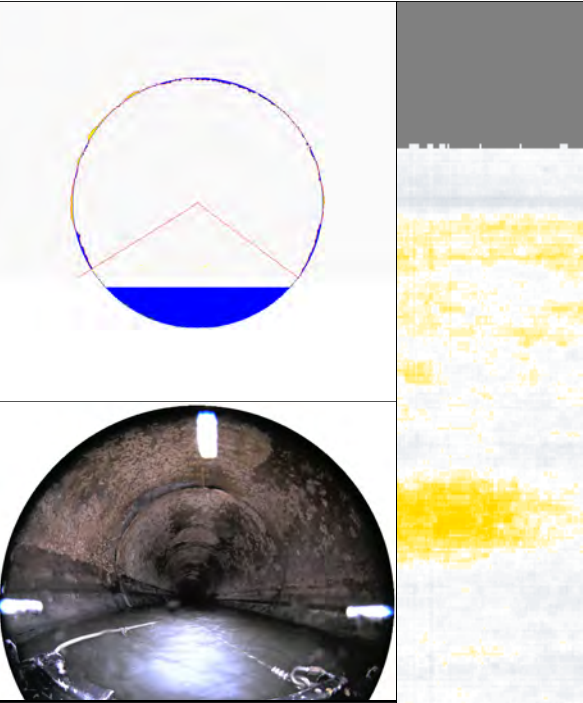
Distributed Cross-Sections

90.2 Material Loss		94.2 Material Loss		100.0 Regular Interval	
Av. Corrosion (in.)	0.3	Av. Corrosion (in.)	0.5	Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5	3s Corrosion (in.)	1.2	3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.8	Max Corrosion (in.)	2.0	Max Corrosion (in.)	0.7
Av. Buildup (in.)	1.6	Av. Buildup (in.)	2.7	Av. Buildup (in.)	0.3
Max. Buildup (in.)	6.0	Max. Buildup (in.)	6.0	Max. Buildup (in.)	0.6
Max Sed. Height (in.)	0.4	Max Sed. Height (in.)	0.5	Max Sed. Height (in.)	0.5
Sed. restriction %	0.1	Sed. restriction %	0.1	Sed. restriction %	0.2



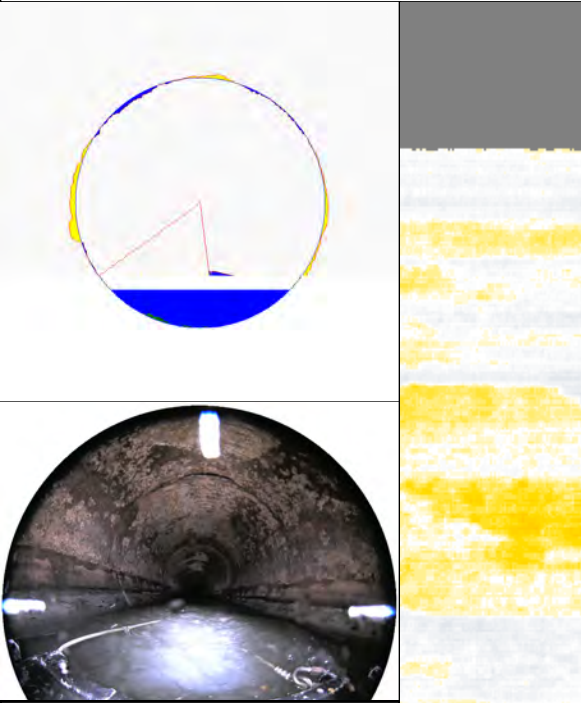
Distributed Cross-Sections

100.0 Material Loss



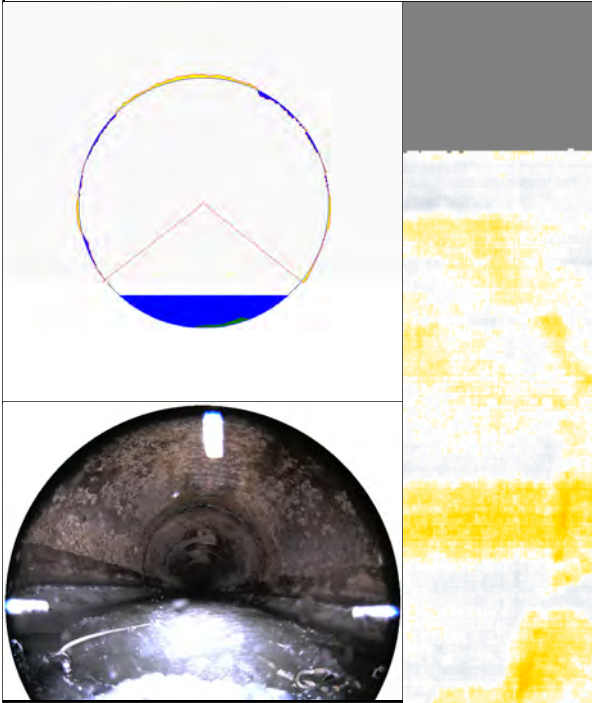
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.7
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.6
Max Sed. Height (in.)	0.5
Sed. restriction %	0.2

106.3 Material Loss



Av. Corrosion (in.)	0.7
3s Corrosion (in.)	1.5
Max Corrosion (in.)	2.1
Av. Buildup (in.)	2.9
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.8
Sed. restriction %	0.2

110.3 Material Loss



Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.1
Max Sed. Height (in.)	1.1
Sed. restriction %	0.4



Distributed Cross-Sections

112.3 Material Loss

Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.1
Max Sed. Height (in.)	0.6
Sed. restriction %	0.2

118.4 Material Loss

Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.2
Av. Buildup (in.)	0.4
Max. Buildup (in.)	2.0
Max Sed. Height (in.)	0.8
Sed. restriction %	0.2

124.4 Material Loss

Av. Corrosion (in.)	0.2
3s Corrosion (in.)	0.3
Max Corrosion (in.)	0.4
Av. Buildup (in.)	1.7
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1



Distributed Cross-Sections

125.0 Regular Interval	130.4 Material Loss	130.9 Material Loss																																										
<table border="0"> <tr><td>Av. Corrosion (in.)</td><td>0.3</td></tr> <tr><td>3s Corrosion (in.)</td><td>0.6</td></tr> <tr><td>Max Corrosion (in.)</td><td>0.7</td></tr> <tr><td>Av. Buildup (in.)</td><td>1.8</td></tr> <tr><td>Max. Buildup (in.)</td><td>6.0</td></tr> <tr><td>Max Sed. Height (in.)</td><td>0.5</td></tr> <tr><td>Sed. restriction %</td><td>0.1</td></tr> </table>	Av. Corrosion (in.)	0.3	3s Corrosion (in.)	0.6	Max Corrosion (in.)	0.7	Av. Buildup (in.)	1.8	Max. Buildup (in.)	6.0	Max Sed. Height (in.)	0.5	Sed. restriction %	0.1	<table border="0"> <tr><td>Av. Corrosion (in.)</td><td>0.3</td></tr> <tr><td>3s Corrosion (in.)</td><td>0.5</td></tr> <tr><td>Max Corrosion (in.)</td><td>0.7</td></tr> <tr><td>Av. Buildup (in.)</td><td>0.3</td></tr> <tr><td>Max. Buildup (in.)</td><td>2.8</td></tr> <tr><td>Max Sed. Height (in.)</td><td>0.6</td></tr> <tr><td>Sed. restriction %</td><td>0.1</td></tr> </table>	Av. Corrosion (in.)	0.3	3s Corrosion (in.)	0.5	Max Corrosion (in.)	0.7	Av. Buildup (in.)	0.3	Max. Buildup (in.)	2.8	Max Sed. Height (in.)	0.6	Sed. restriction %	0.1	<table border="0"> <tr><td>Av. Corrosion (in.)</td><td>0.5</td></tr> <tr><td>3s Corrosion (in.)</td><td>1.3</td></tr> <tr><td>Max Corrosion (in.)</td><td>1.8</td></tr> <tr><td>Av. Buildup (in.)</td><td>0.7</td></tr> <tr><td>Max. Buildup (in.)</td><td>6.0</td></tr> <tr><td>Max Sed. Height (in.)</td><td>0.5</td></tr> <tr><td>Sed. restriction %</td><td>0.1</td></tr> </table>	Av. Corrosion (in.)	0.5	3s Corrosion (in.)	1.3	Max Corrosion (in.)	1.8	Av. Buildup (in.)	0.7	Max. Buildup (in.)	6.0	Max Sed. Height (in.)	0.5	Sed. restriction %	0.1
Av. Corrosion (in.)	0.3																																											
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Av. Corrosion (in.)	0.5																																											
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Av. Buildup (in.)	0.7																																											
Max. Buildup (in.)	6.0																																											
Max Sed. Height (in.)	0.5																																											
Sed. restriction %	0.1																																											



Distributed Cross-Sections

137.0 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.8
Av. Buildup (in.)	2.5
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1

143.0 Material Loss

Av. Corrosion (in.)	0.2
3s Corrosion (in.)	0.4
Max Corrosion (in.)	0.6
Av. Buildup (in.)	2.0
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.5
Sed. restriction %	0.2

148.8 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.2
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.7
Max Sed. Height (in.)	0.9
Sed. restriction %	0.2



Distributed Cross-Sections

150.0 Regular Interval

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.3
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1

155.0 Material Loss

Av. Corrosion (in.)	0.6
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.4
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.2
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1

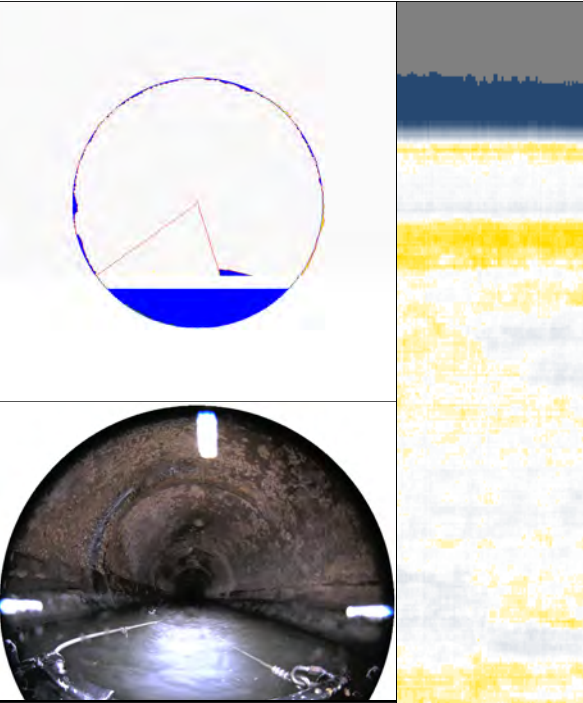
161.2 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.7
Av. Buildup (in.)	1.4
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.7
Sed. restriction %	0.1



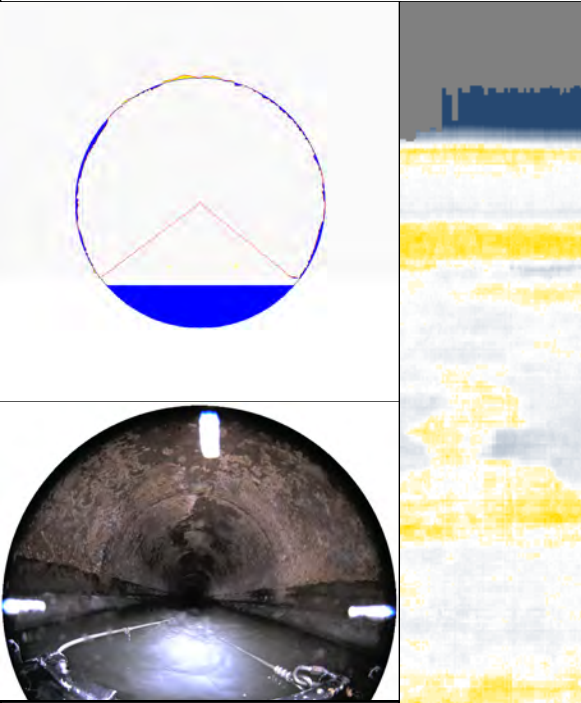
Distributed Cross-Sections

167.3 Material Loss



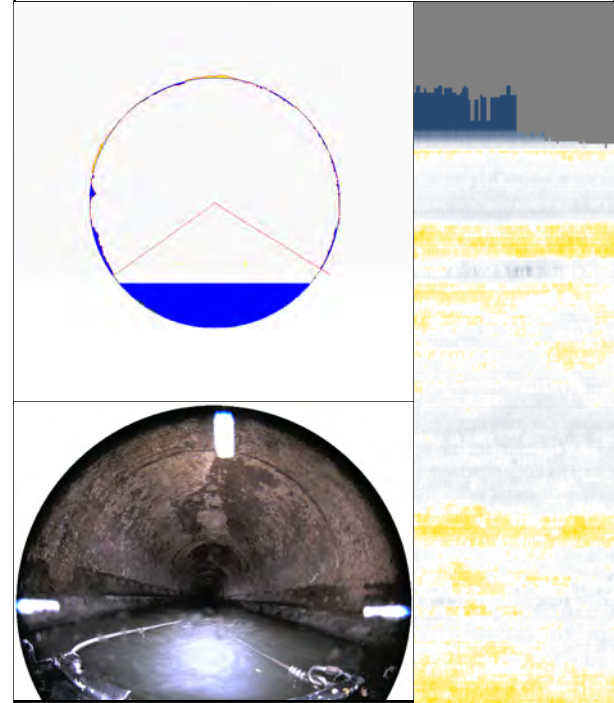
Av. Corrosion (in.)	0.2
3s Corrosion (in.)	0.4
Max Corrosion (in.)	0.7
Av. Buildup (in.)	1.8
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1

172.9 Material Loss



Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.7
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.4
Max. Buildup (in.)	2.0
Max Sed. Height (in.)	0.4
Sed. restriction %	0.1

175.0 Regular Interval



Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.3
Max. Buildup (in.)	1.3
Max Sed. Height (in.)	0.7
Sed. restriction %	0.1



Distributed Cross-Sections

179.8 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.4
Max Corrosion (in.)	0.7
Av. Buildup (in.)	2.4
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.3
Sed. restriction %	0.0

182.0 Buildup

Av. Corrosion (in.)	0.2
3s Corrosion (in.)	0.4
Max Corrosion (in.)	0.7
Av. Buildup (in.)	1.1
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.2
Sed. restriction %	0.0

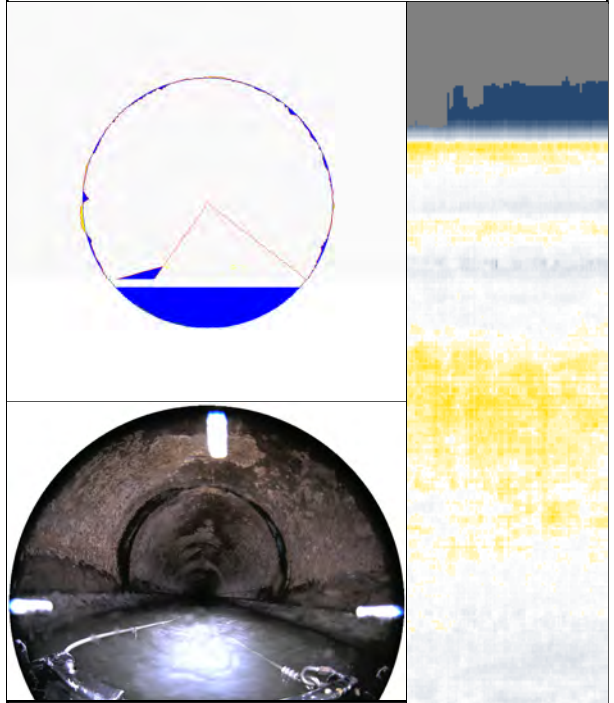
185.7 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.9
Av. Buildup (in.)	0.9
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1



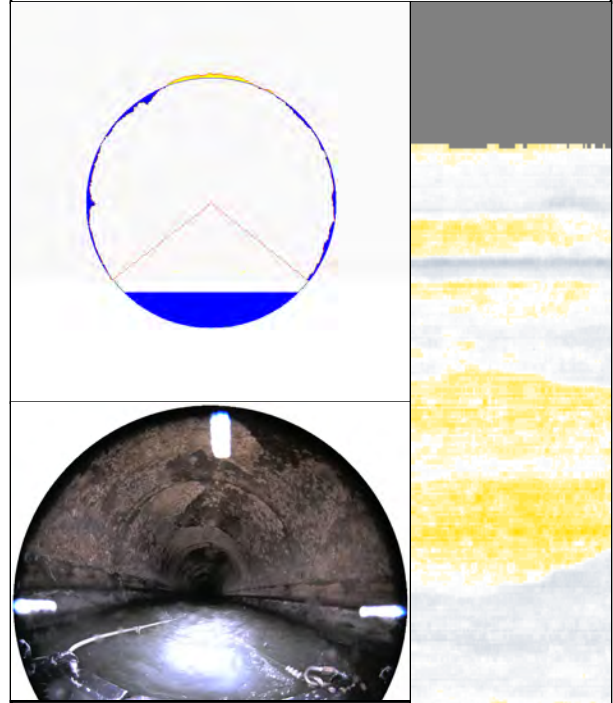
Distributed Cross-Sections

191.4 Material Loss



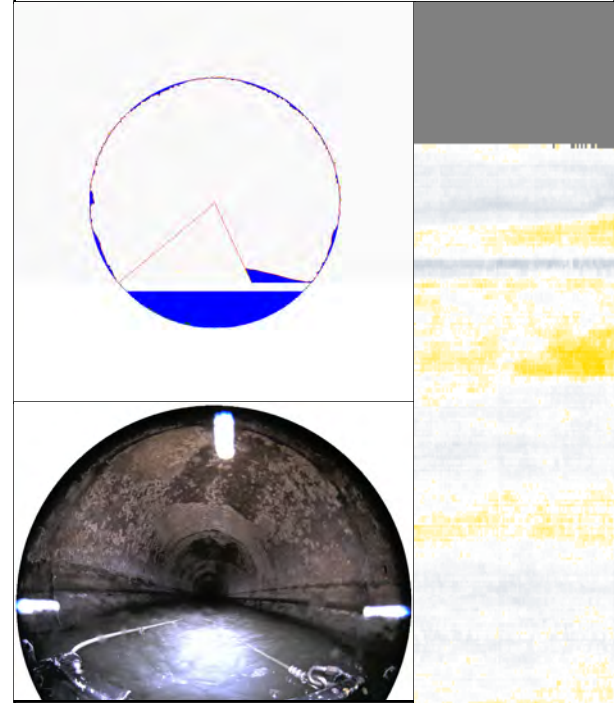
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.9
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1

197.7 Material Loss



Av. Corrosion (in.)	0.7
3s Corrosion (in.)	1.0
Max Corrosion (in.)	1.2
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.9
Max Sed. Height (in.)	0.3
Sed. restriction %	0.1

200.0 Regular Interval



Av. Corrosion (in.)	0.2
3s Corrosion (in.)	0.3
Max Corrosion (in.)	0.4
Av. Buildup (in.)	1.3
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.8
Sed. restriction %	0.1



Distributed Cross-Sections

204.0 Material Loss		210.0 Material Loss		216.2 Material Loss	
Av. Corrosion (in.)	0.4	Av. Corrosion (in.)	0.3	Av. Corrosion (in.)	0.4
3s Corrosion (in.)	1.4	3s Corrosion (in.)	0.5	3s Corrosion (in.)	1.1
Max Corrosion (in.)	1.9	Max Corrosion (in.)	0.7	Max Corrosion (in.)	1.7
Av. Buildup (in.)	3.2	Av. Buildup (in.)	1.6	Av. Buildup (in.)	4.1
Max. Buildup (in.)	6.0	Max. Buildup (in.)	6.0	Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.5	Max Sed. Height (in.)	0.5	Max Sed. Height (in.)	0.5
Sed. restriction %	0.2	Sed. restriction %	0.1	Sed. restriction %	0.1



Distributed Cross-Sections

220.6 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.6
Av. Buildup (in.)	2.6
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1

222.4 Material Loss

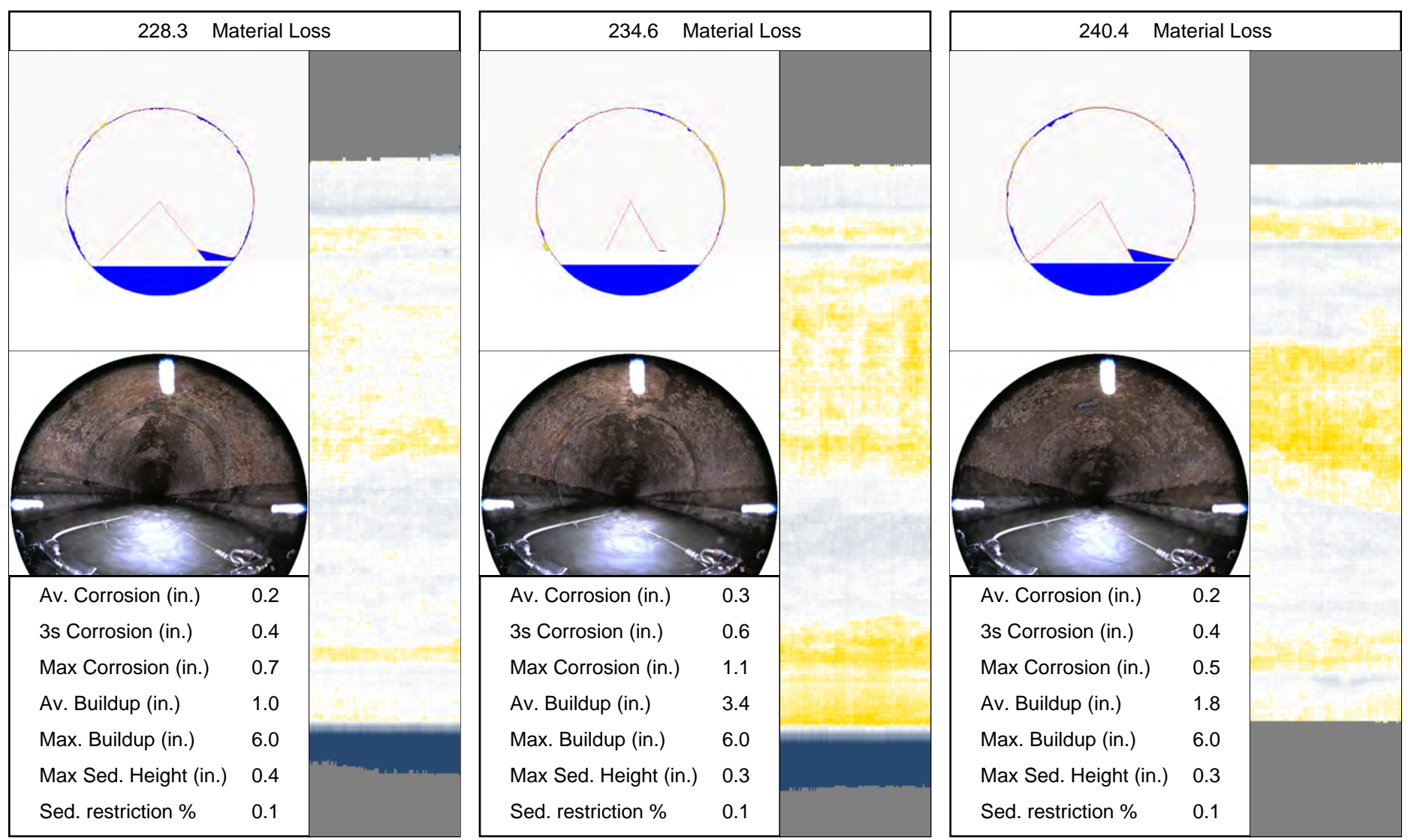
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.8
Av. Buildup (in.)	2.8
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	1.0
Sed. restriction %	0.2

225.0 Regular Interval

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.4
Max Corrosion (in.)	0.6
Av. Buildup (in.)	2.3
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.3
Sed. restriction %	0.1



Distributed Cross-Sections





Distributed Cross-Sections

240.4 Material Loss		240.8 Material Loss		246.5 Material Loss	
Av. Corrosion (in.)	0.2	Av. Corrosion (in.)	0.6	Av. Corrosion (in.)	0.2
3s Corrosion (in.)	0.4	3s Corrosion (in.)	1.4	3s Corrosion (in.)	0.3
Max Corrosion (in.)	0.5	Max Corrosion (in.)	1.7	Max Corrosion (in.)	0.5
Av. Buildup (in.)	1.8	Av. Buildup (in.)	2.6	Av. Buildup (in.)	1.1
Max. Buildup (in.)	6.0	Max. Buildup (in.)	6.0	Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.3	Max Sed. Height (in.)	0.4	Max Sed. Height (in.)	0.4
Sed. restriction %	0.1	Sed. restriction %	0.1	Sed. restriction %	0.1



Distributed Cross-Sections

250.0 Regular Interval	
Av. Corrosion (in.)	0.2
3s Corrosion (in.)	0.3
Max Corrosion (in.)	0.5
Av. Buildup (in.)	1.8
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.3
Sed. restriction %	0.1

258.8 Material Loss	
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.3
Sed. restriction %	0.1

260.9 Material Loss	
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.7
Av. Buildup (in.)	0.4
Max. Buildup (in.)	0.8
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1



Distributed Cross-Sections

264.9 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.9
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.3
Sed. restriction %	0.1

270.8 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.8
Max Sed. Height (in.)	0.3
Sed. restriction %	0.0

275.0 Regular Interval

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.3
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1



Distributed Cross-Sections

277.0 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	1.0
Max Corrosion (in.)	1.4
Av. Buildup (in.)	0.3
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.3
Sed. restriction %	0.1

281.0 Material Loss

Av. Corrosion (in.)	0.2
3s Corrosion (in.)	0.3
Max Corrosion (in.)	0.5
Av. Buildup (in.)	1.0
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.5
Sed. restriction %	0.2

283.0 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.4
Max Corrosion (in.)	0.6
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.3
Sed. restriction %	0.0



Distributed Cross-Sections

289.2 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.6
Max Sed. Height (in.)	0.4
Sed. restriction %	0.1

295.2 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.8
Max Sed. Height (in.)	0.3
Sed. restriction %	0.0

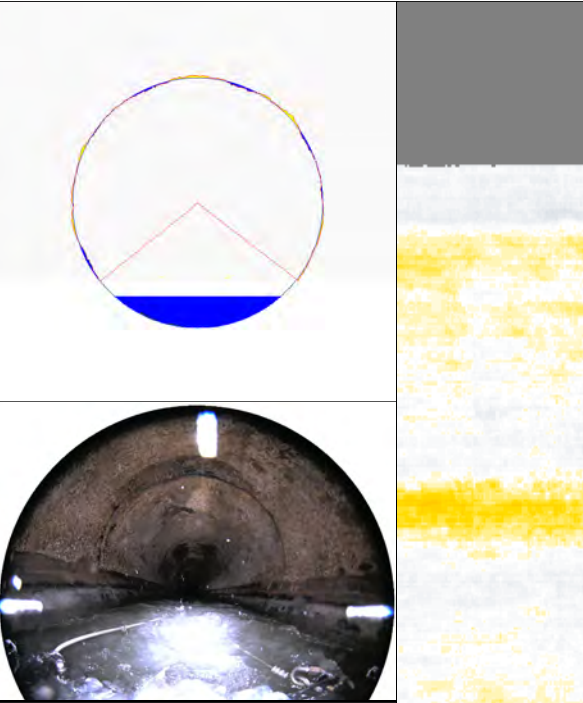
300.0 Regular Interval

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.3
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.6
Sed. restriction %	0.1



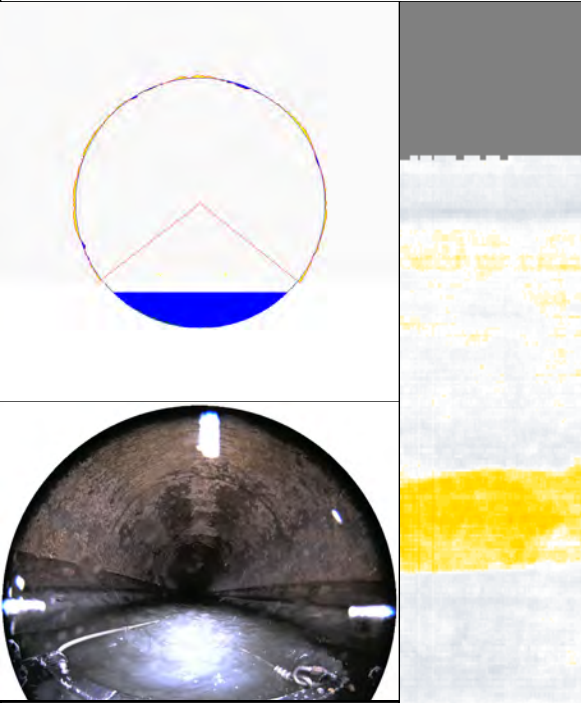
Distributed Cross-Sections

301.6 Material Loss



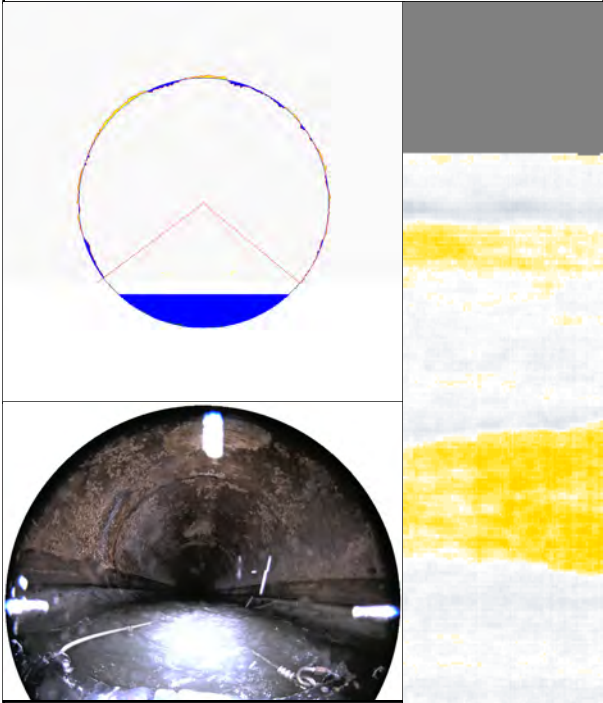
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.5
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1

307.8 Material Loss



Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.9
Av. Buildup (in.)	0.2
Max. Buildup (in.)	0.5
Max Sed. Height (in.)	0.5
Sed. restriction %	0.2

313.7 Material Loss



Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.5
Sed. restriction %	0.2



Distributed Cross-Sections

319.8 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	1.3
Max Corrosion (in.)	1.7
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.7
Max Sed. Height (in.)	0.5
Sed. restriction %	0.2

325.0 Regular Interval

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.6
Max Sed. Height (in.)	0.4
Sed. restriction %	0.1

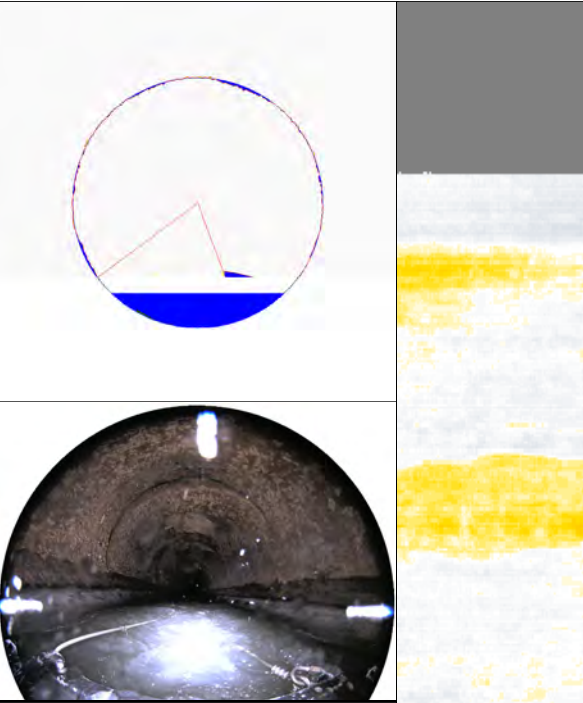
325.7 Material Loss

Av. Corrosion (in.)	0.7
3s Corrosion (in.)	1.0
Max Corrosion (in.)	1.4
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.6
Sed. restriction %	0.2



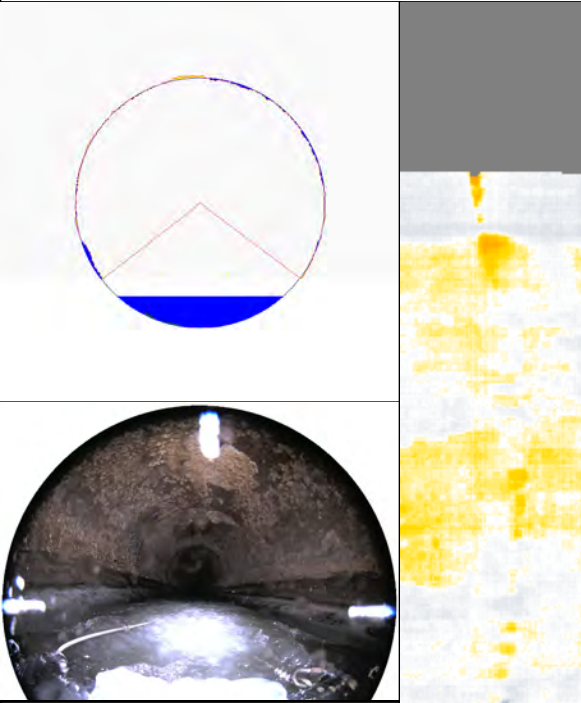
Distributed Cross-Sections

331.8 Material Loss



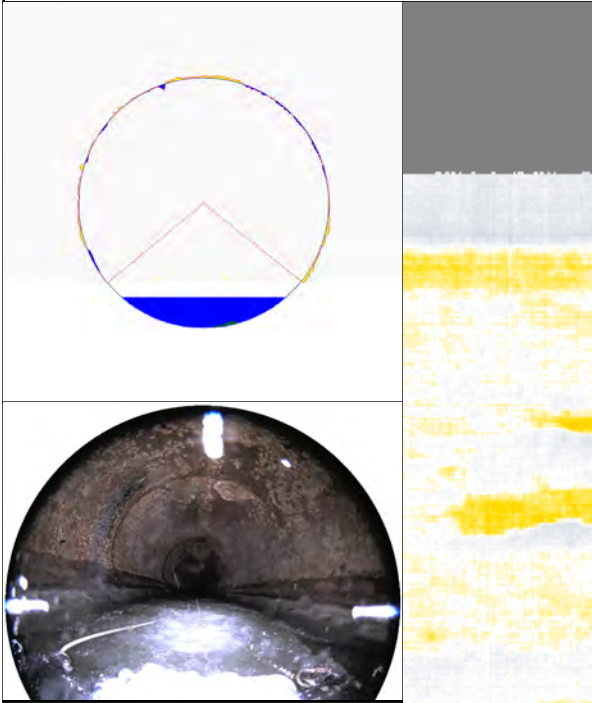
Av. Corrosion (in.)	0.2
3s Corrosion (in.)	0.3
Max Corrosion (in.)	0.4
Av. Buildup (in.)	1.6
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.6
Sed. restriction %	0.1

336.1 Material Loss



Av. Corrosion (in.)	0.2
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.7
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.9
Sed. restriction %	0.1

338.0 Material Loss



Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.3
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.8
Sed. restriction %	0.2



Distributed Cross-Sections

350.0 Regular Interval		350.1 Material Loss		356.2 Material Loss	
Av. Corrosion (in.)	0.3	Av. Corrosion (in.)	0.3	Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.6	3s Corrosion (in.)	0.8	3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.1	Max Corrosion (in.)	1.3	Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.3	Av. Buildup (in.)	0.3	Av. Buildup (in.)	0.4
Max. Buildup (in.)	0.8	Max. Buildup (in.)	0.9	Max. Buildup (in.)	1.1
Max Sed. Height (in.)	0.3	Max Sed. Height (in.)	0.3	Max Sed. Height (in.)	0.6
Sed. restriction %	0.1	Sed. restriction %	0.1	Sed. restriction %	0.2



Distributed Cross-Sections

362.2 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.8
Av. Buildup (in.)	1.4
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1

368.2 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.6
Sed. restriction %	0.2

374.4 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.2
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.1
Max Sed. Height (in.)	0.3
Sed. restriction %	0.1



Distributed Cross-Sections

375.0 Regular Interval	
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1

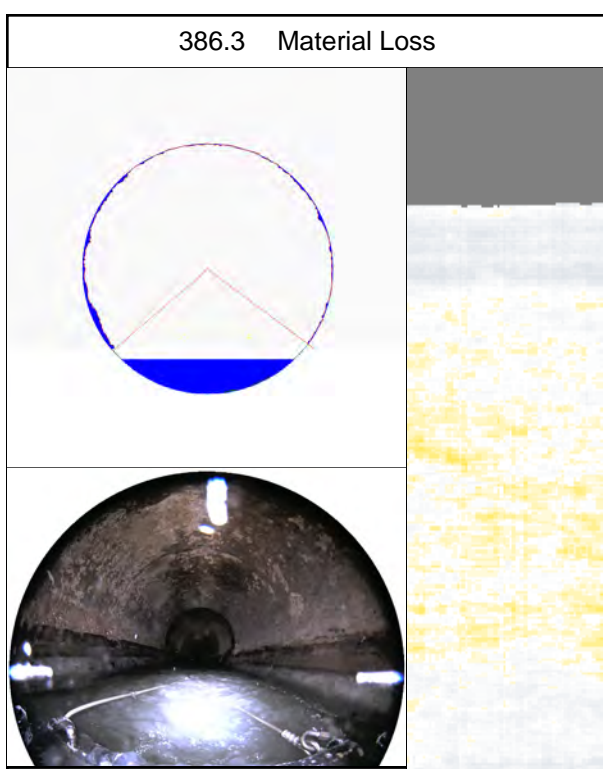
376.3 Material Loss	
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.4
Max Corrosion (in.)	0.7
Av. Buildup (in.)	0.3
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1

380.2 Material Loss	
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.3
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.4
Sed. restriction %	0.1



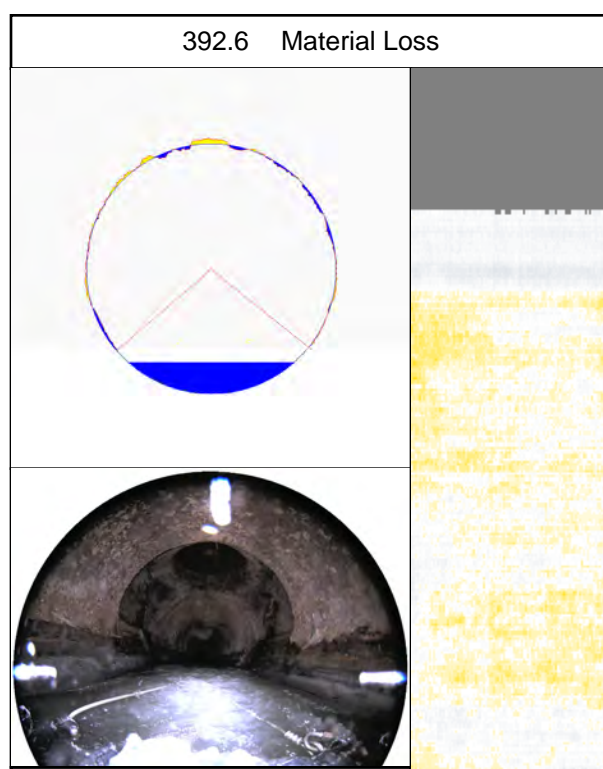
Distributed Cross-Sections

386.3 Material Loss



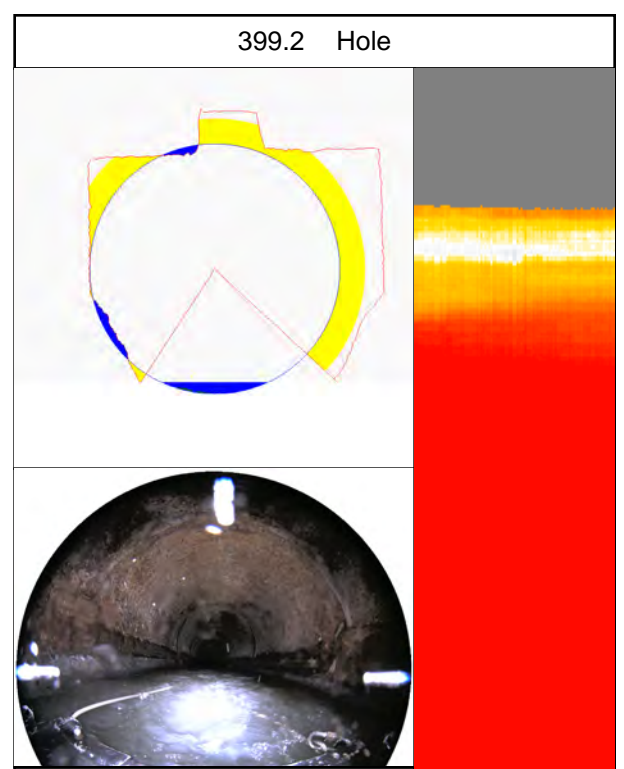
Av. Corrosion (in.)	0.1
3s Corrosion (in.)	0.2
Max Corrosion (in.)	0.3
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.4
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1

392.6 Material Loss



Av. Corrosion (in.)	0.4
3s Corrosion (in.)	1.0
Max Corrosion (in.)	1.4
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.4
Sed. restriction %	0.1

399.2 Hole



Av. Corrosion (in.)	6.8
3s Corrosion (in.)	6.0
Max Corrosion (in.)	6.0
Av. Buildup (in.)	1.3
Max. Buildup (in.)	2.1
Max Sed. Height (in.)	0.6
Sed. restriction %	0.1

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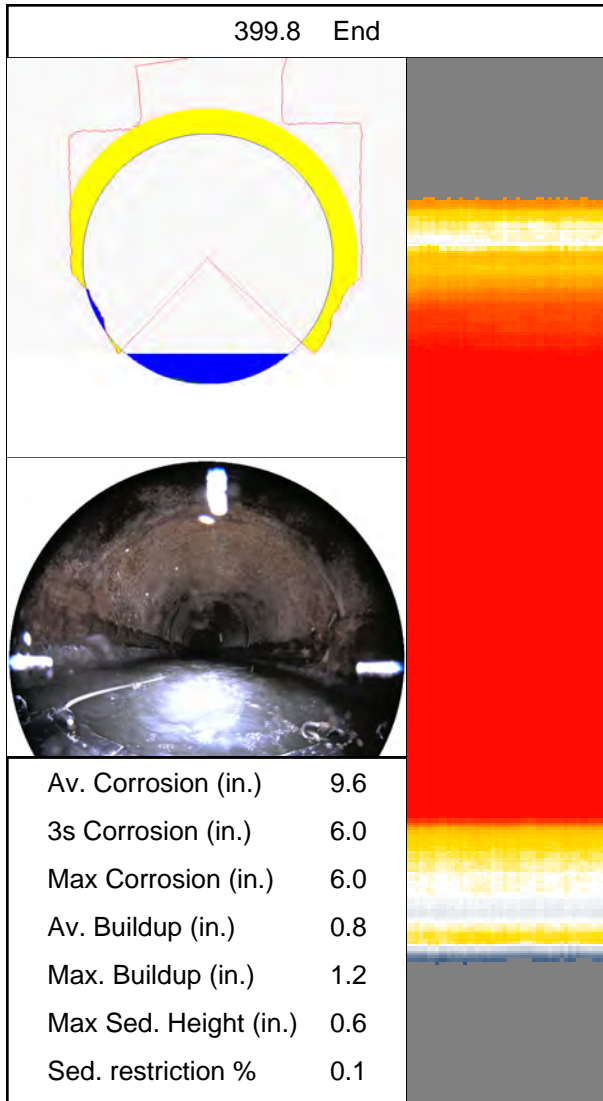
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Distributed Cross-Sections



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Pipeline Inspection Partners Corp.

3600 Rio Vista Avenue
Orlando Florida 32805
Phone: 800.327.7791
Fax: 407.425.1569

Ed Diggs
800.327.7791
ediggs@cuesinc.com

Scott Thayer
412.839.1100
sthayer@cuesinc.com

Adam Slifko
412-656-5636
aslifko@cuesinc.com

Michelle Joy
724-601-1728
mjoy@cuesinc.com

Josh Graham
1401 Seaboard Dr.
Baton Rouge, LA 70810
Phone: 985.502.5667
jgraham@ces-ses.com

This report presents internal pipeline condition data collected by the CUES Multi Sensor Inspection (MSI) technology platform and is being provided to individuals who have experience with MSI data and civil engineering principles. Information provided within this report is not to take the place of or be a substitute for professional civil engineering advice and/or recommendations.

It is the sole responsibility of the client in regards to the following: Interpretation of the MSI data results provided within this report; evaluation of the pipeline segment; any remedial/rehabilitation procedures or processes; post MSI inspection decisions and processes such as additional investigations and/or subsequent cleaning operations.

Some information provided and utilized within this report for this specific pipeline segment such as distance and dimensions may incorporate or have been provided by others. Because this information may not always be accurate and complete the project engineer should confirm this information through their own assessments in regards to such information.

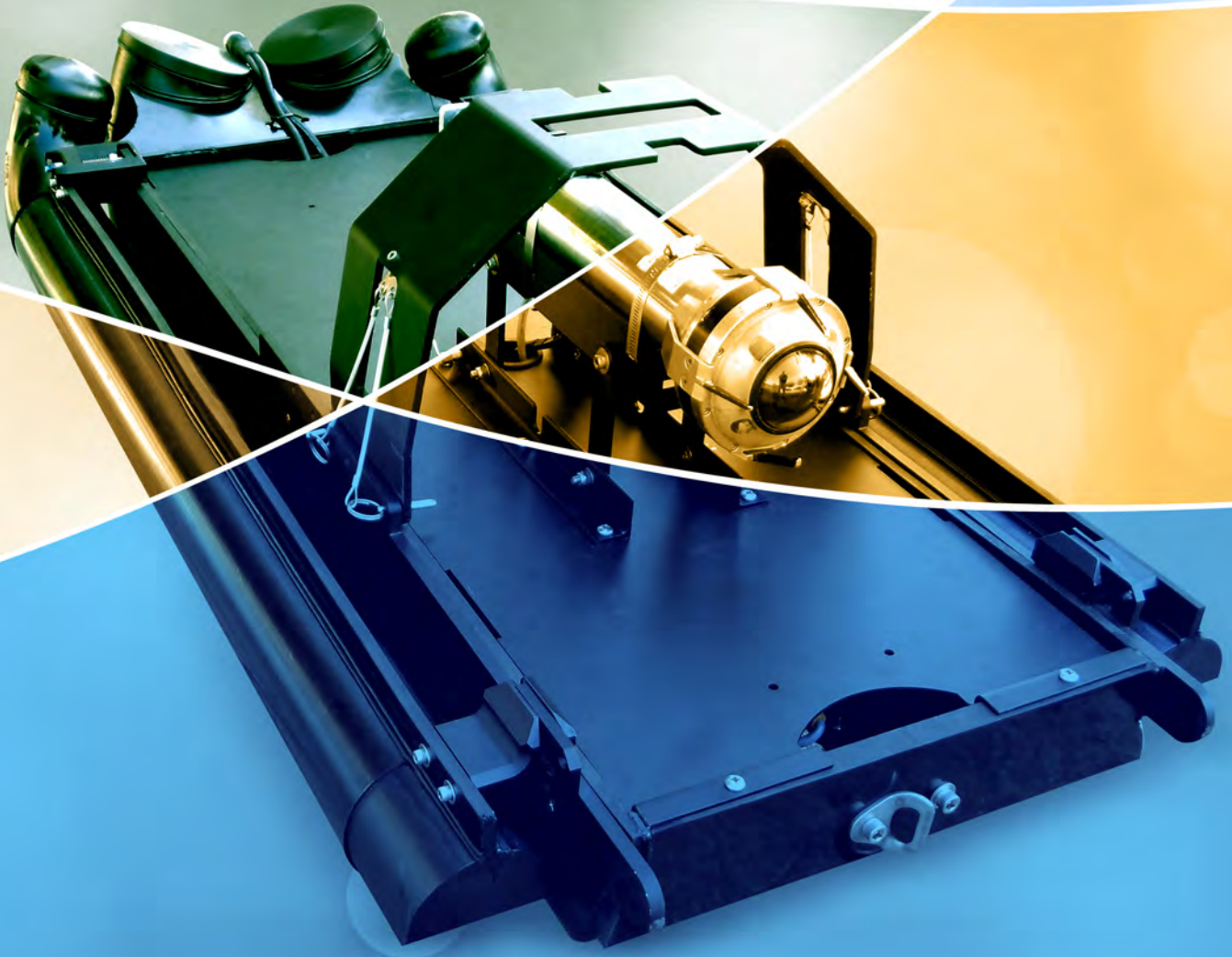


Pipeline Inspection Partners Corp.

SolidFX

Inspection Report

Prepared for



CES Baton Rouge
Inspected December 04, 2019



058-00015K
058-00014

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Technology Comparison Analysis

Feature	SolidFX	Spinning Laser Profiling	Laser Profiling with Wand
Technology	LIDAR	Spinning Laser Profiling	Laser Profiling with Wand
Cross Sections Scan Rate	45 /second	1.25 /second	12 /sec 12 /second on
Cross Section Measurement Density	1080 points	20 -300 points	Function of Pipe diameter
Effective Range	6"- 30 meters	4" - 48"	18" - 100"
Accuracy	3 mm @ 10m	15mm @ 3m	3 mm @ 3mm
Resolution	1mm (constant)	+/- 0.5% (pipe diameter)	+/- 0.1% (pipe diameter)
Calibration	Precision Factory	Automatic	Factory
Limited by Shadowing	No	No	Yes
Requires Wand Change out	No	No	Yes
"Cork Screw" Distortion during Motion	No	Yes	No
Multiple Returns (fog resistance)	Yes	No	No
Sensor Cleaning during Inspection	Yes	No	No
Transport Mechanism	Tractor/Float	Tractor Only	Float Only
3D Option	Yes	No	No
Custom Reporting	Yes	No	No
Live Video	Yes	Yes	No
Sonar Available	Yes	No	Yes
Maximum Deployment Length (linear foot)	4000	2000	4000+
Made in USA	Yes	Yes	No
Data Viewable During Operations	Yes	Yes	No
Onsite PACP	Yes	Yes	No

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Inspection Information

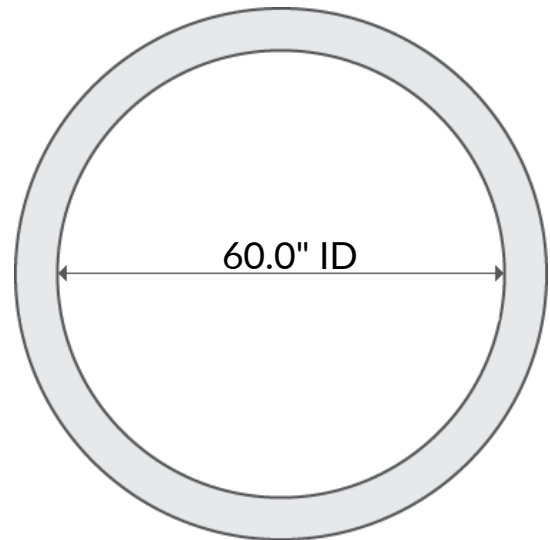
Transport

Float

Sensor(s)

LIDAR
 HD
 SONAR

As-Built Dimensions



Inspection Details

Service Area:	BATON ROUGE
Segment Reference:	2
Upstream Manhole:	058-00015K
Downstream Manhole:	058-00014
Direction:	Upstream
Distance:	582.7
Scan Date:	December 04, 2019
Operator Notes:	None
Processing Notes:	Advanced Corrosion presnet

Document Details

Report Prepared January 07, 2020
 Source Reference 14384



Sediment and Corrosion Summary Metrics

Sediment/Sonar Metrics

Sediment Volume (cubic yard):	0.0
As-is Capacity/As-built Capacity (%):	100.0
Average cross-sectional restriction (%):	0.0

Corrosion/Lidar Metrics

Corroded Volume (cubic in):	255432.9
Wall/As-built (%):	97.1
Average Wall Loss (%):	2.9

Sediment and Corrosion Graphs(9'-209')

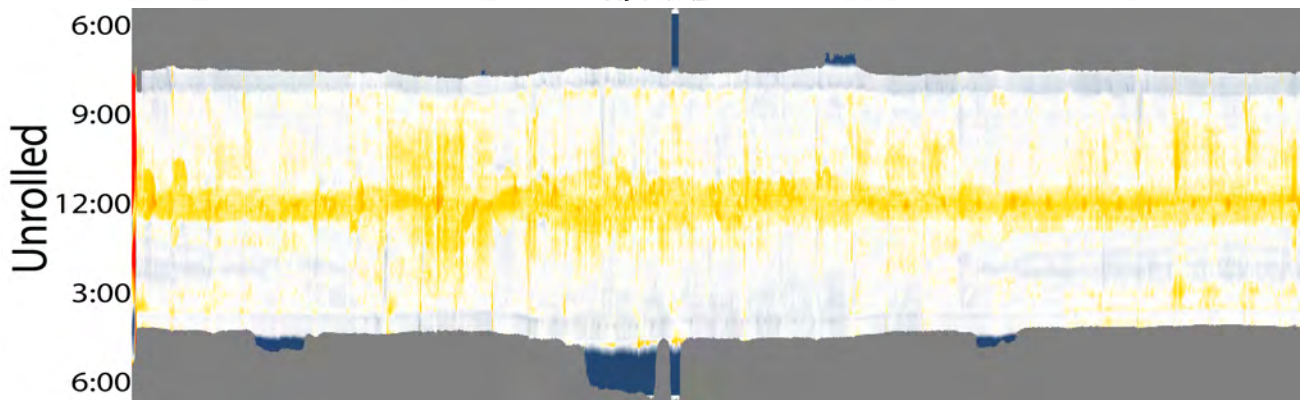
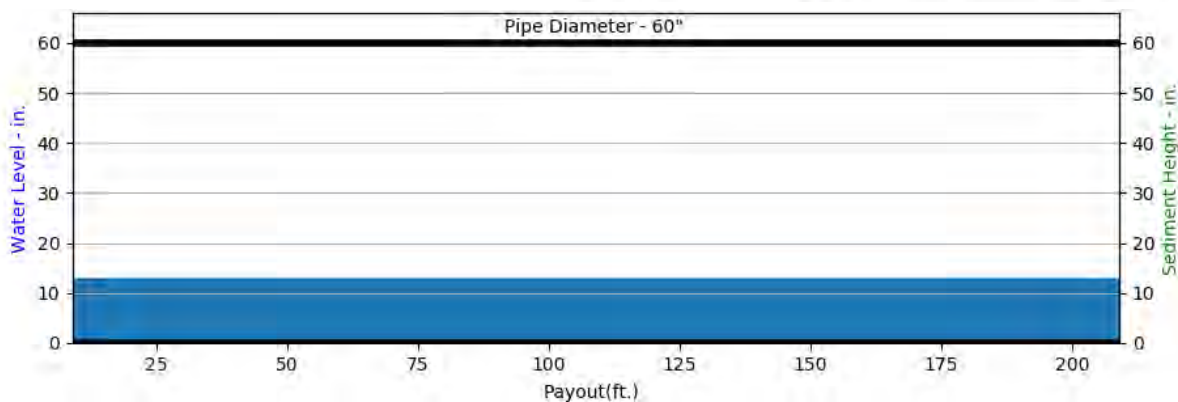
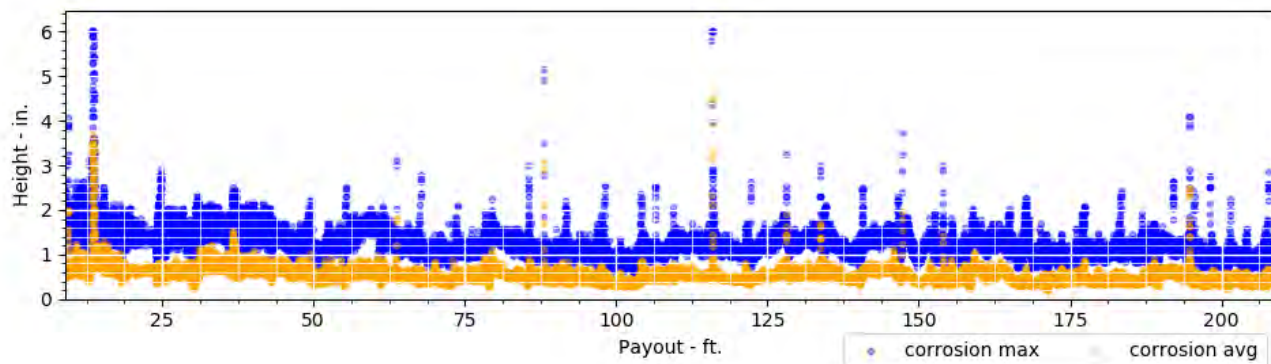
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Sediment and Corrosion Graphs(209'-409')

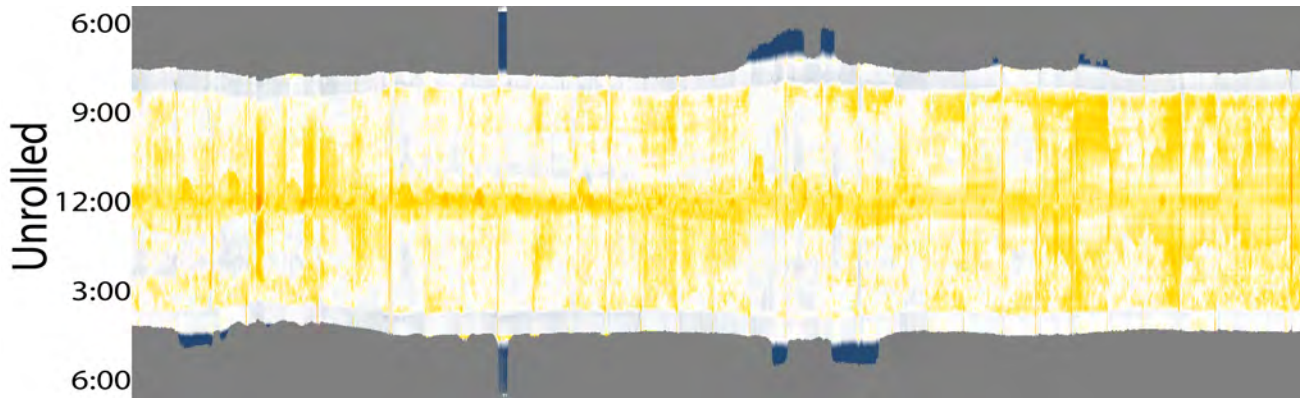
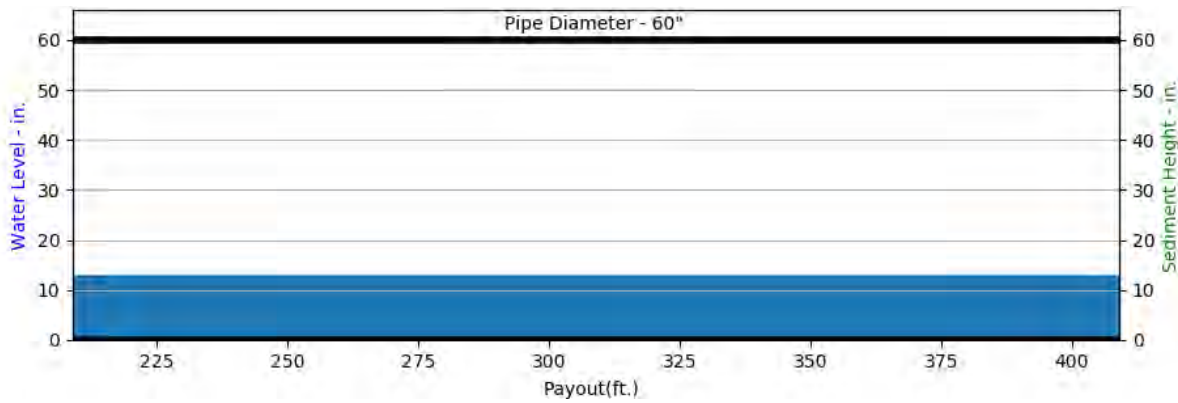
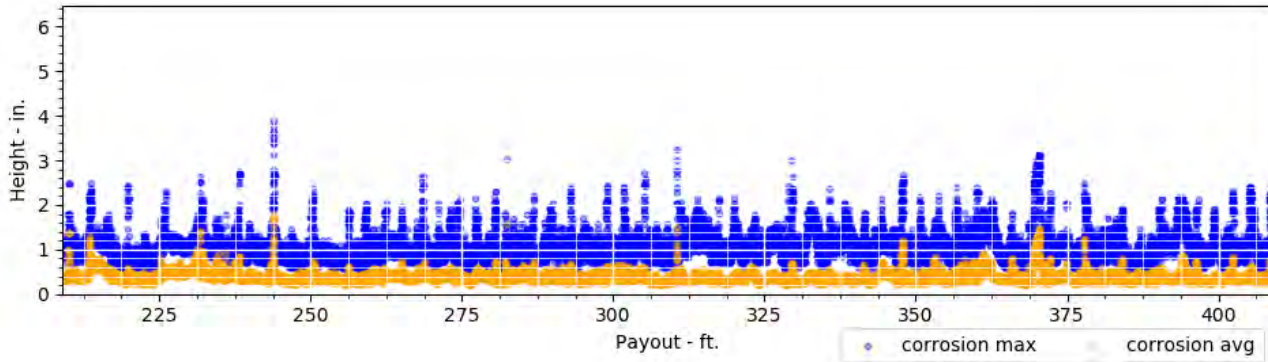
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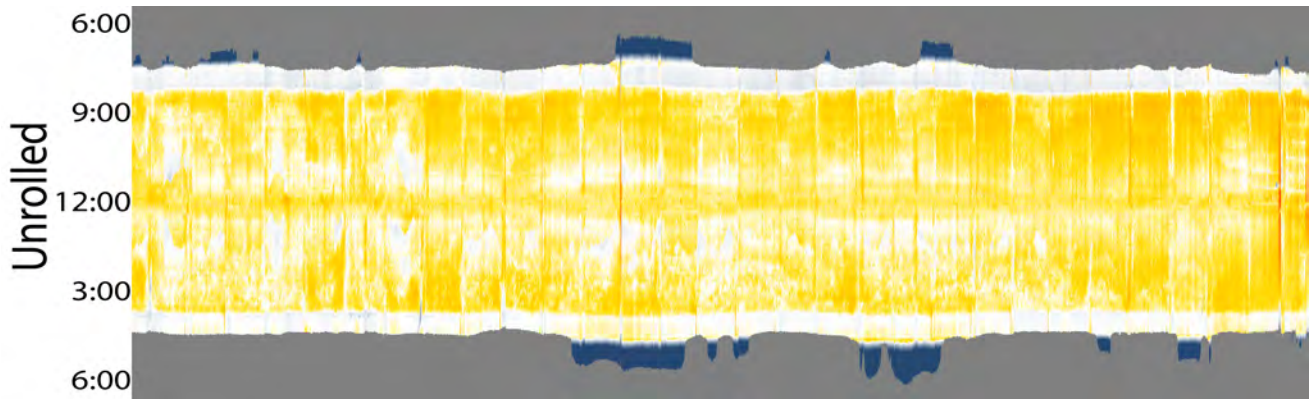
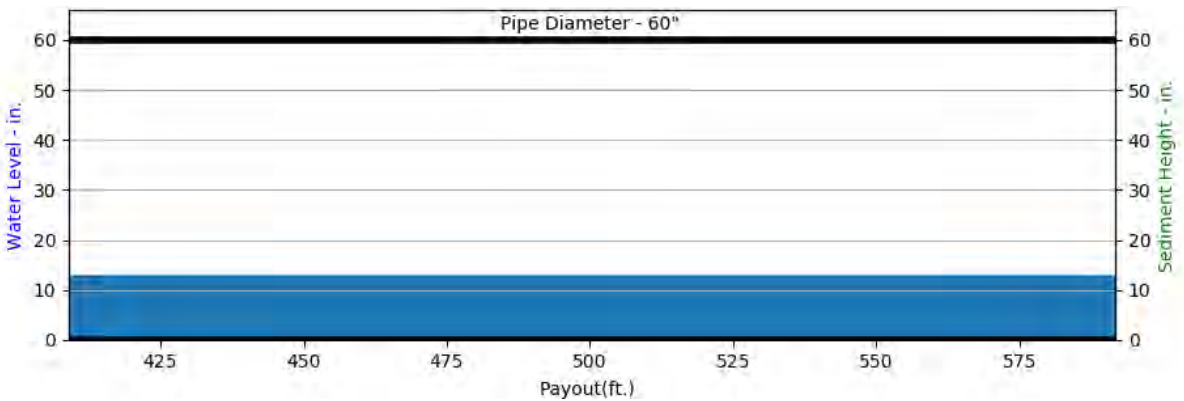
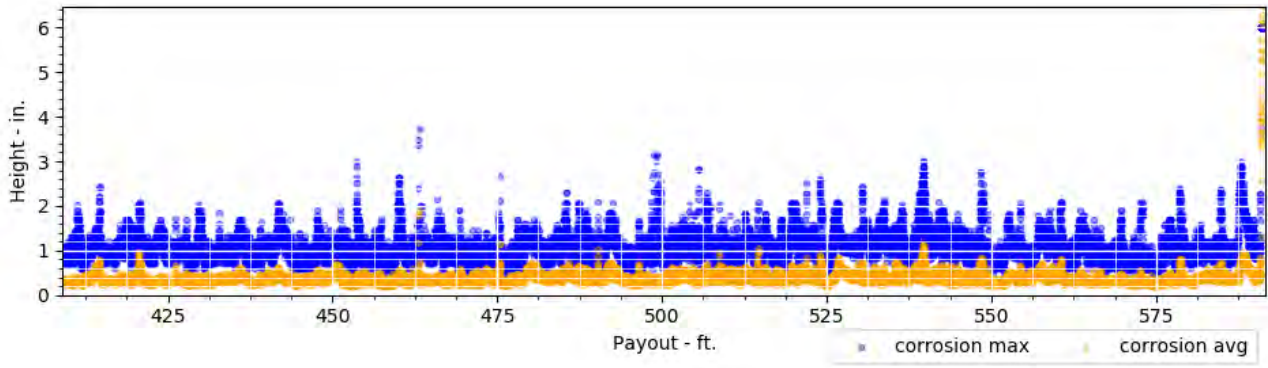


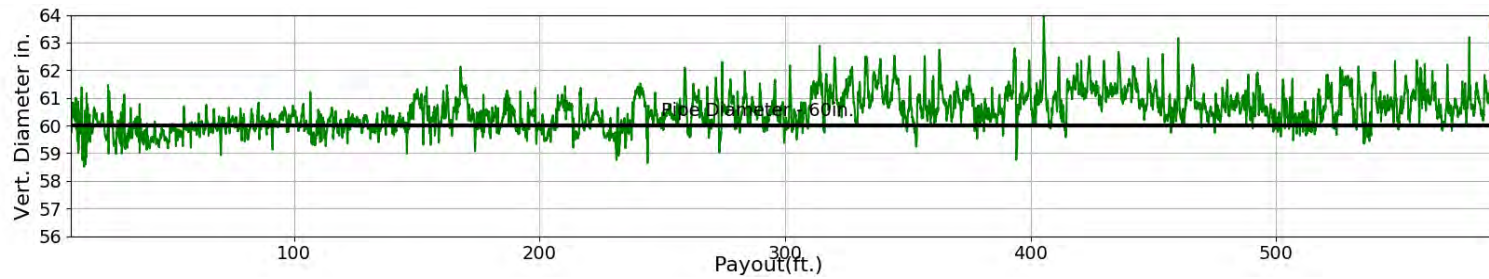
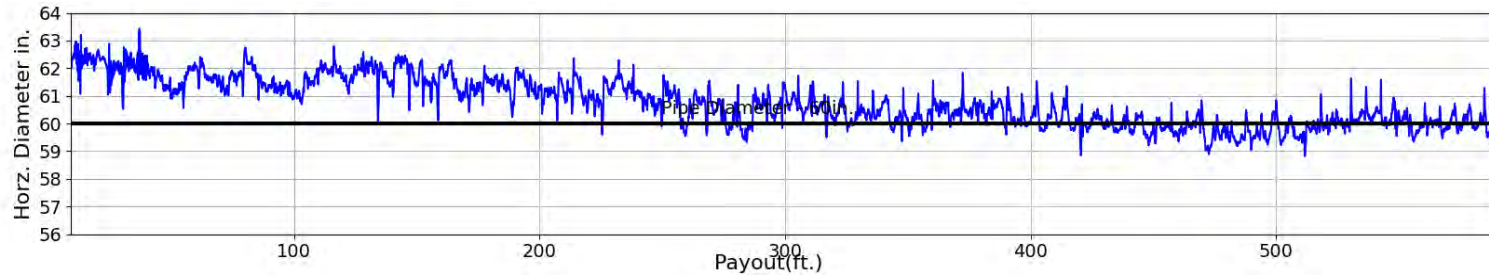
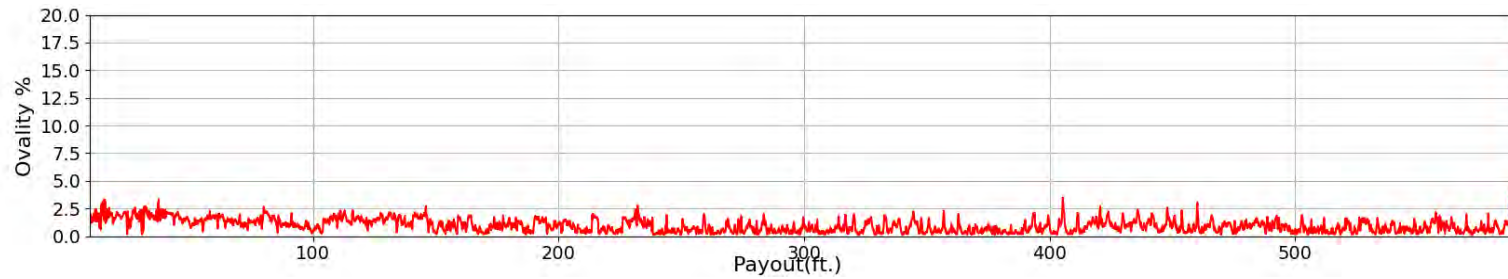
Sediment and Corrosion Graphs(409'-592')

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
9.0'	Start	Start of inspection	0.5"	1.2"	1.6"	0.2"	0.9"	0.0"	0.0%
9.4'	Material Loss	Material loss at joint	2.0"	3.0"	4.1"	1.2"	5.2"	0.0"	0.0%
13.3'	Material Loss	Material loss at joint	0.9"	1.1"	1.7"	0.4"	1.2"	0.0"	0.0%
18.1'	Material Loss	Material loss at joint	0.6"	0.9"	1.8"	0.6"	2.7"	0.0"	0.0%
24.3'	Material Loss	Material loss at joint	0.7"	1.2"	1.8"	3.7"	6.0"	0.0"	0.0%
30.7'	Material Loss	Material loss at joint	0.5"	1.5"	2.2"	0.2"	0.4"	0.0"	0.0%
34.0'	Regular Interval		0.7"	1.1"	1.6"	0.4"	0.6"	0.0"	0.0%
36.7'	Material Loss	Material loss at joint	1.0"	1.4"	1.8"	0.6"	1.6"	0.0"	0.0%
43.0'	Material Loss	Material loss at joint	0.4"	1.1"	1.7"	0.3"	0.6"	0.0"	0.0%
49.3'	Material Loss	Material loss at joint	0.4"	0.9"	1.4"	0.2"	0.9"	0.0"	0.0%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
54.8'	Material Loss	Material loss at joint	0.3"	0.6"	0.9"	0.4"	1.0"	0.0"	0.0%
59.0'	Regular Interval		0.6"	1.1"	1.6"	0.4"	0.6"	0.0"	0.0%
61.3'	Material Loss	Material loss at joint	0.6"	0.8"	1.3"	0.4"	0.9"	0.0"	0.0%
67.2'	Material Loss	Material loss at joint	0.5"	0.9"	1.3"	3.4"	6.0"	0.0"	0.0%
73.2'	Material Loss	Material loss at joint	0.5"	0.8"	1.0"	4.0"	6.0"	0.0"	0.0%
79.4'	Material Loss	Material loss at joint	0.6"	0.9"	1.3"	0.3"	0.6"	0.0"	0.0%
82.3'	Buildup	Buildup	0.6"	0.8"	1.3"	0.3"	0.7"	0.0"	0.0%
84.0'	Regular Interval		0.6"	0.8"	1.2"	1.1"	6.0"	0.0"	0.0%
85.4'	Material Loss	Material loss at joint	0.4"	0.8"	1.4"	0.3"	1.1"	0.0"	0.0%
91.5'	Material Loss	Material loss at joint	0.6"	1.0"	1.4"	0.3"	0.8"	0.0"	0.0%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
93.8'	Buildup	Buildup	0.6"	0.7"	1.1"	0.5"	1.0"	0.0"	0.0%
97.4'	Material Loss	Material loss at joint	0.6"	0.7"	1.2"	2.9"	6.0"	0.0"	0.0%
101.4'	Buildup	Buildup	0.3"	0.6"	0.8"	2.2"	6.0"	0.0"	0.0%
103.8'	Material Loss	Material loss at joint	0.3"	0.5"	0.8"	0.3"	0.6"	0.0"	0.0%
109.0'	Regular Interval		0.5"	0.9"	1.3"	5.0"	6.0"	0.0"	0.0%
109.2'	Material Loss	Material loss at joint	0.6"	0.9"	1.2"	4.9"	6.0"	0.0"	0.0%
121.3'	Material Loss	Material loss at joint	0.8"	0.9"	1.6"	3.7"	6.0"	0.0"	0.0%
128.2'	Material Loss	Material loss at joint	0.5"	0.8"	1.2"	0.4"	1.0"	0.0"	0.0%
134.0'	Regular Interval		0.6"	0.9"	1.3"	0.5"	1.1"	0.0"	0.0%
134.0'	Material Loss	Material loss at joint	0.6"	0.7"	1.1"	0.6"	1.2"	0.0"	0.0%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
140.0'	Material Loss	Material loss at joint	0.5"	0.7"	1.2"	0.3"	0.6"	0.0"	0.0%
146.6'	Material Loss	Material loss at joint	0.6"	1.4"	2.0"	0.3"	0.9"	0.0"	0.0%
152.3'	Material Loss	Material loss at joint	0.4"	0.6"	0.9"	0.3"	0.9"	0.0"	0.0%
155.7'	Material Loss	Material loss at joint	0.5"	0.7"	1.1"	0.4"	1.1"	0.0"	0.0%
155.7'	Buildup	Buildup	0.5"	0.7"	1.1"	0.4"	1.1"	0.0"	0.0%
158.4'	Material Loss	Material loss at joint	0.4"	0.6"	1.0"	0.3"	1.0"	0.0"	0.0%
159.0'	Regular Interval		0.8"	0.9"	1.8"	0.3"	0.8"	0.0"	0.0%
164.8'	Material Loss	Material loss at joint	0.6"	1.2"	1.9"	0.1"	0.3"	0.0"	0.0%
171.1'	Material Loss	Material loss at joint	0.4"	0.6"	1.0"	0.3"	1.1"	0.0"	0.0%
177.0'	Material Loss	Material loss at joint	0.5"	0.9"	1.6"	2.3"	6.0"	0.0"	0.0%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
183.2'	Material Loss	Material loss at joint	0.4"	0.7"	1.4"	0.2"	0.5"	0.0"	0.0%
184.0'	Regular Interval		0.4"	0.7"	1.0"	0.3"	0.9"	0.0"	0.0%
188.7'	Material Loss	Material loss at joint	0.5"	0.8"	1.2"	0.4"	1.2"	0.0"	0.0%
194.8'	Material Loss	Material loss at joint	0.7"	1.0"	1.6"	0.6"	1.1"	0.0"	0.0%
201.2'	Material Loss	Material loss at joint	0.4"	0.6"	0.9"	0.3"	0.8"	0.0"	0.0%
207.1'	Material Loss	Material loss at joint	0.5"	0.9"	1.3"	0.5"	1.0"	0.0"	0.0%
209.0'	Regular Interval		0.4"	0.8"	1.2"	0.3"	0.9"	0.0"	0.0%
213.8'	Material Loss	Material loss at joint	0.6"	0.8"	1.1"	0.4"	0.8"	0.0"	0.0%
219.4'	Material Loss	Material loss at joint	0.3"	0.5"	0.8"	0.3"	1.0"	0.0"	0.0%
225.8'	Material Loss	Material loss at joint	0.4"	0.9"	1.6"	0.5"	5.6"	0.0"	0.0%



Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
231.7'	Material Loss	Material loss at joint	0.7"	0.7"	1.2"	0.5"	1.0"	0.0"	0.0%
234.0'	Regular Interval		0.3"	0.6"	0.8"	0.2"	0.5"	0.0"	0.0%
238.0'	Material Loss	Material loss at joint	0.6"	1.0"	1.5"	0.2"	0.4"	0.0"	0.0%
243.8'	Material Loss	Material loss at joint	1.6"	2.8"	3.4"	0.8"	1.3"	0.0"	0.0%
250.4'	Material Loss	Material loss at joint	0.7"	1.2"	2.2"	0.6"	1.0"	0.0"	0.0%
256.2'	Material Loss	Material loss at joint	0.6"	1.1"	1.6"	0.4"	0.8"	0.0"	0.0%
259.0'	Regular Interval		0.3"	0.9"	1.6"	0.3"	1.0"	0.0"	0.0%
262.2'	Material Loss	Material loss at joint	0.5"	0.9"	1.1"	0.3"	0.9"	0.0"	0.0%
267.9'	Material Loss	Material loss at joint	0.4"	0.7"	1.0"	1.3"	6.0"	0.0"	0.0%
274.1'	Material Loss	Material loss at joint	0.3"	0.9"	1.3"	1.4"	6.0"	0.0"	0.0%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
280.6'	Material Loss	Material loss at joint	0.7"	1.7"	2.1"	2.5"	6.0"	0.0"	0.0%
284.0'	Regular Interval		0.4"	0.7"	0.8"	1.0"	6.0"	0.0"	0.0%
286.8'	Material Loss	Material loss at joint	0.7"	1.3"	1.9"	1.3"	6.0"	0.0"	0.0%
293.0'	Material Loss	Material loss at joint	0.4"	0.6"	1.0"	0.5"	0.9"	0.0"	0.0%
294.2'	Material Loss	Material loss at joint	0.3"	0.5"	0.7"	0.4"	0.8"	0.0"	0.0%
294.6'	Material Loss	Material loss at joint	0.3"	0.6"	1.0"	0.3"	0.8"	0.0"	0.0%
299.1'	Material Loss	Material loss at joint	0.6"	1.1"	2.0"	0.4"	0.6"	0.0"	0.0%
309.0'	Regular Interval		0.3"	0.6"	1.3"	0.4"	1.0"	0.0"	0.0%
314.6'	Material Loss	Material loss at joint	0.3"	0.7"	1.2"	0.3"	0.9"	0.0"	0.0%
317.3'	Material Loss	Material loss at joint	0.4"	0.7"	1.1"	0.2"	0.7"	0.0"	0.0%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
323.2'	Material Loss	Material loss at joint	0.4"	0.6"	0.9"	0.3"	0.9"	0.0"	0.0%
329.3'	Material Loss	Material loss at joint	0.3"	0.6"	1.3"	6.8"	6.0"	0.0"	0.0%
334.0'	Regular Interval		0.4"	0.7"	1.2"	0.4"	0.8"	0.0"	0.0%
334.6'	Material Loss	Material loss at joint	0.3"	0.6"	1.0"	0.2"	0.7"	0.0"	0.0%
335.7'	Material Loss	Material loss at joint	0.4"	1.0"	1.5"	0.2"	0.6"	0.0"	0.0%
341.2'	Material Loss	Material loss at joint	0.4"	0.6"	0.9"	0.3"	0.6"	0.0"	0.0%
347.7'	Material Loss	Material loss at joint	0.8"	1.6"	1.6"	0.4"	1.2"	0.0"	0.0%
353.7'	Material Loss	Material loss at joint	0.3"	0.6"	0.9"	0.3"	0.9"	0.0"	0.0%
354.7'	Material Loss	Material loss at joint	0.4"	0.9"	1.2"	0.4"	1.0"	0.0"	0.0%
359.0'	Regular Interval		0.4"	0.6"	0.8"	0.5"	1.0"	0.0"	0.0%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
359.5'	Material Loss	Material loss at joint	0.7"	1.2"	1.6"	0.7"	1.3"	0.0"	0.0%
365.7'	Material Loss	Material loss at joint	0.6"	0.8"	1.5"	0.3"	0.9"	0.0"	0.0%
371.7'	Material Loss	Material loss at joint	0.4"	0.7"	1.1"	0.6"	1.0"	0.0"	0.0%
378.0'	Material Loss	Material loss at joint	0.5"	1.2"	1.2"	0.4"	1.0"	0.0"	0.0%
383.7'	Material Loss	Material loss at joint	0.4"	0.7"	1.0"	0.9"	6.0"	0.0"	0.0%
384.0'	Regular Interval		0.6"	1.0"	1.3"	0.6"	1.3"	0.0"	0.0%
390.4'	Material Loss	Material loss at joint	0.5"	0.9"	1.3"	0.5"	1.3"	0.0"	0.0%
396.5'	Material Loss	Material loss at joint	0.4"	0.8"	1.2"	0.4"	1.1"	0.0"	0.0%
402.1'	Material Loss	Material loss at joint	0.4"	0.6"	0.8"	0.4"	1.5"	0.0"	0.0%
408.3'	Material Loss	Material loss at joint	0.4"	0.7"	0.9"	0.4"	1.0"	0.0"	0.0%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
409.0'	Regular Interval		0.4"	0.6"	1.0"	0.4"	1.3"	0.0"	0.0%
414.4'	Material Loss	Material loss at joint	0.6"	1.1"	1.5"	0.4"	1.0"	0.0"	0.0%
420.5'	Material Loss	Material loss at joint	0.5"	1.1"	1.4"	0.6"	1.5"	0.0"	0.0%
426.4'	Material Loss	Material loss at joint	0.4"	0.7"	1.0"	0.6"	1.2"	0.0"	0.0%
432.6'	Material Loss	Material loss at joint	0.4"	1.1"	1.2"	0.4"	1.1"	0.0"	0.0%
434.0'	Regular Interval		0.4"	0.8"	1.1"	0.4"	1.1"	0.0"	0.0%
439.1'	Material Loss	Material loss at joint	0.3"	0.6"	1.0"	0.3"	1.1"	0.0"	0.0%
444.7'	Material Loss	Material loss at joint	0.3"	0.6"	0.8"	0.8"	6.0"	0.0"	0.0%
451.1'	Material Loss	Material loss at joint	0.4"	0.7"	1.3"	0.3"	0.8"	0.0"	0.0%
456.9'	Material Loss	Material loss at joint	0.4"	0.4"	0.7"	0.5"	1.5"	0.0"	0.0%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
459.0'	Regular Interval		0.3"	0.5"	0.8"	0.5"	1.4"	0.0"	0.0%
463.3'	Material Loss	Material loss at joint	0.4"	0.6"	1.0"	0.4"	1.1"	0.0"	0.0%
464.8'	Material Loss	Material loss at joint	0.4"	0.7"	1.0"	0.3"	0.9"	0.0"	0.0%
469.4'	Material Loss	Material loss at joint	0.5"	0.8"	1.1"	1.0"	6.0"	0.0"	0.0%
475.1'	Material Loss	Material loss at joint	0.5"	0.7"	0.8"	0.4"	1.2"	0.0"	0.0%
481.3'	Material Loss	Material loss at joint	0.4"	0.9"	1.1"	0.4"	1.3"	0.0"	0.0%
484.0'	Regular Interval		0.5"	1.1"	1.3"	0.4"	1.3"	0.0"	0.0%
484.7'	Material Loss	Material loss at joint	0.5"	0.9"	1.2"	0.5"	1.4"	0.0"	0.0%
487.5'	Material Loss	Material loss at joint	0.6"	1.5"	1.6"	0.4"	1.5"	0.0"	0.0%
493.7'	Material Loss	Material loss at joint	0.4"	0.7"	0.9"	0.4"	1.3"	0.0"	0.0%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
499.2'	Material Loss	Material loss at joint	0.4"	0.9"	1.8"	7.4"	6.0"	0.0"	0.0%
505.5'	Material Loss	Material loss at joint	0.4"	1.0"	1.2"	2.8"	6.0"	0.0"	0.0%
509.0'	Regular Interval		0.5"	0.7"	1.0"	2.8"	6.0"	0.0"	0.0%
512.0'	Material Loss	Material loss at joint	0.4"	0.6"	0.8"	2.3"	6.0"	0.0"	0.0%
517.9'	Material Loss	Material loss at joint	0.4"	1.0"	1.3"	0.3"	0.9"	0.0"	0.0%
520.1'	Material Loss	Material loss at joint	0.5"	1.1"	1.5"	0.4"	1.0"	0.0"	0.0%
523.9'	Material Loss	Material loss at joint	0.3"	0.6"	0.8"	0.4"	1.4"	0.0"	0.0%
530.3'	Material Loss	Material loss at joint	0.3"	0.9"	1.2"	0.3"	0.5"	0.0"	0.0%
534.0'	Regular Interval		0.4"	0.9"	1.1"	0.3"	0.8"	0.0"	0.0%
536.2'	Material Loss	Material loss at joint	0.4"	0.9"	1.6"	0.3"	1.0"	0.0"	0.0%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
540.1'	Material Loss	Material loss at joint	0.3"	0.8"	1.0"	0.3"	0.6"	0.0"	0.0%
542.3'	Material Loss	Material loss at joint	0.4"	0.8"	1.0"	0.3"	0.8"	0.0"	0.0%
548.3'	Material Loss	Material loss at joint	0.7"	1.2"	1.8"	0.6"	1.7"	0.0"	0.0%
554.2'	Material Loss	Material loss at joint	0.4"	0.7"	0.9"	0.3"	0.9"	0.0"	0.0%
559.0'	Regular Interval		0.5"	1.3"	1.3"	0.3"	0.7"	0.0"	0.0%
560.4'	Material Loss	Material loss at joint	0.6"	1.4"	1.7"	0.4"	1.1"	0.0"	0.0%
566.5'	Material Loss	Material loss at joint	0.3"	0.6"	0.8"	1.0"	6.0"	0.0"	0.0%
572.4'	Material Loss	Material loss at joint	0.3"	0.5"	0.7"	0.4"	1.3"	0.0"	0.0%
578.3'	Material Loss	Material loss at joint	0.4"	0.8"	1.1"	0.4"	1.0"	0.0"	0.0%
584.0'	Regular Interval		0.5"	0.8"	1.0"	0.3"	0.9"	0.0"	0.0%

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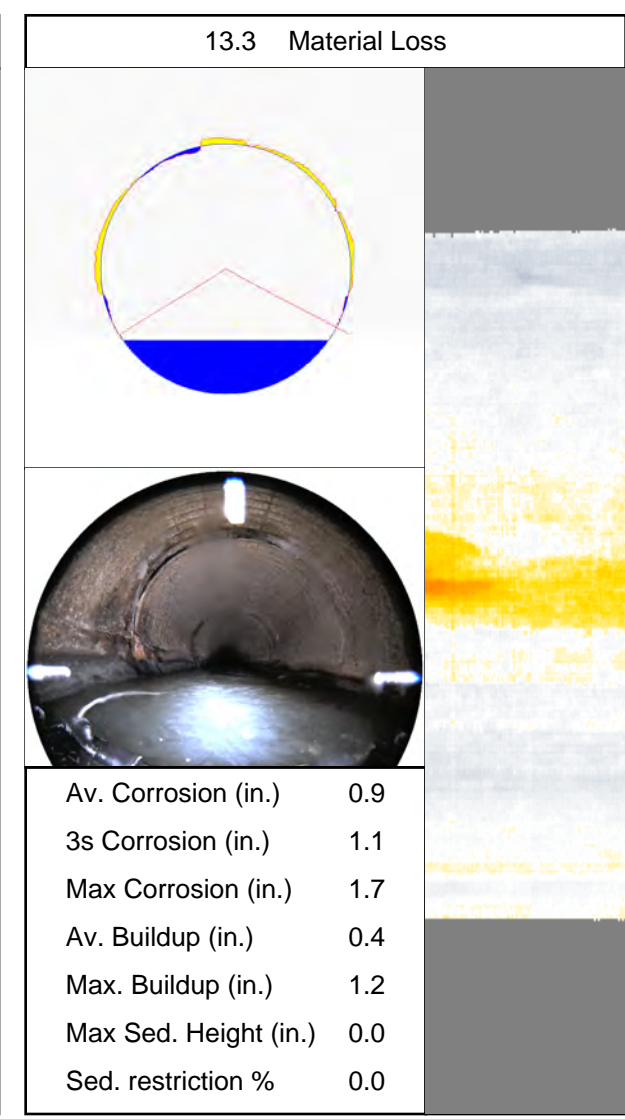
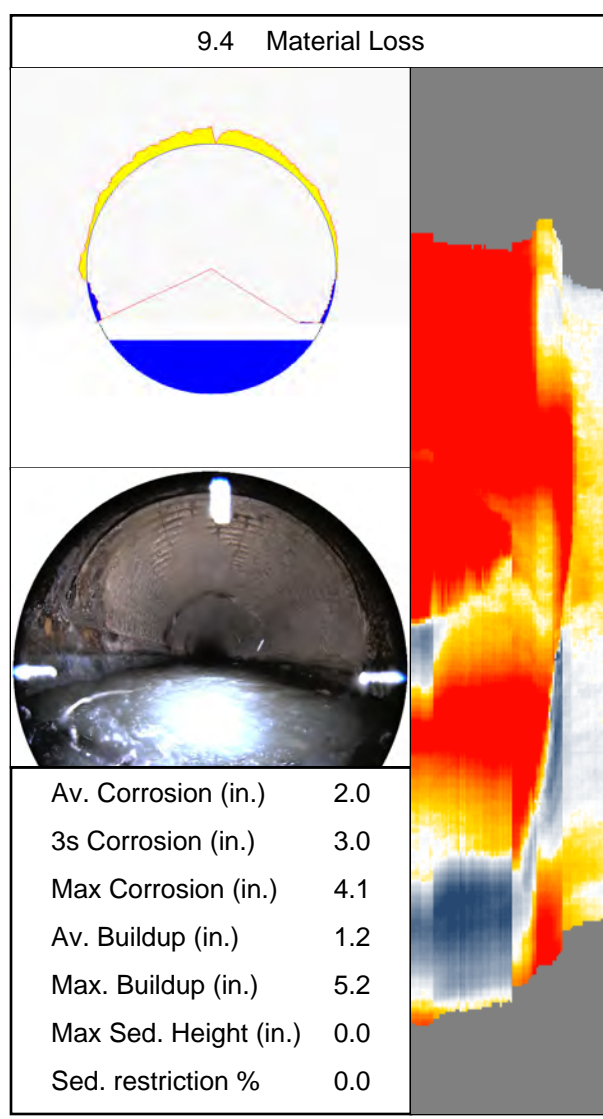
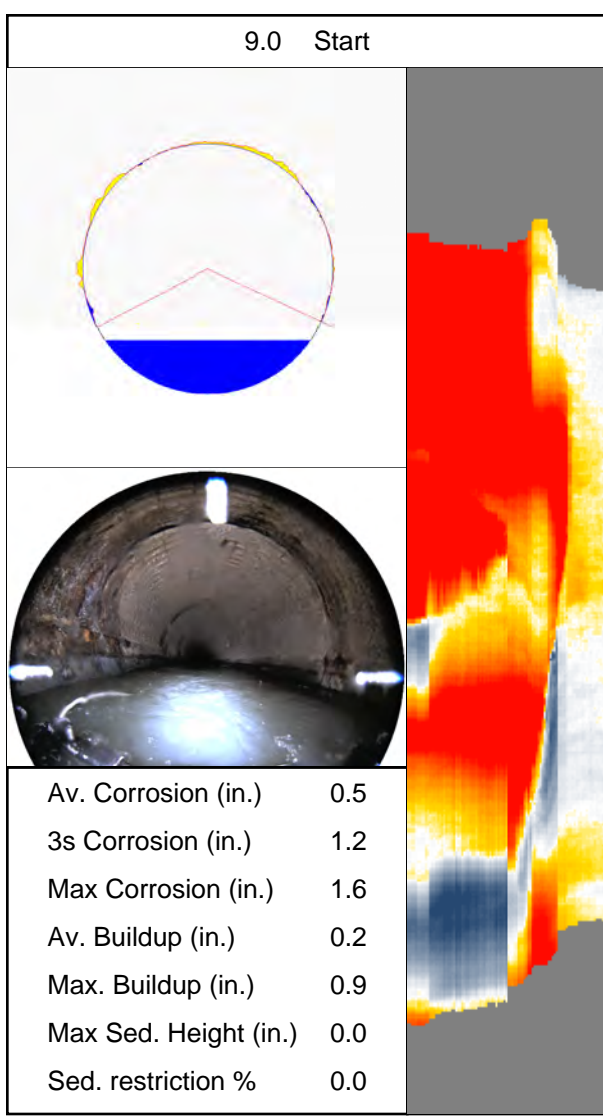
058-00014

Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
584.7'	Material Loss	Material loss at joint	0.6"	1.0"	1.7"	0.4"	1.0"	0.0"	0.0%
590.9'	Material Loss	Material loss at joint	0.8"	1.6"	2.0"	0.5"	2.3"	0.0"	0.0%
591.7'	End	End of inspection	11.6"	6.0"	6.0"	2.3"	4.9"	0.0"	0.0%
591.7'	Material Loss	Material loss at joint	11.6"	6.0"	6.0"	2.3"	4.9"	0.0"	0.0%
591.7'	Hole	Incoming Lateral	11.6"	6.0"	6.0"	2.3"	4.9"	0.0"	0.0%



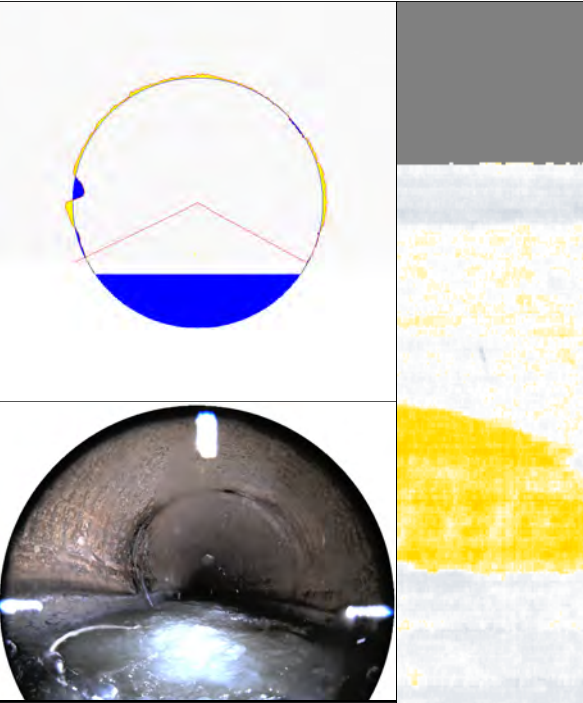
Distributed Cross-Sections





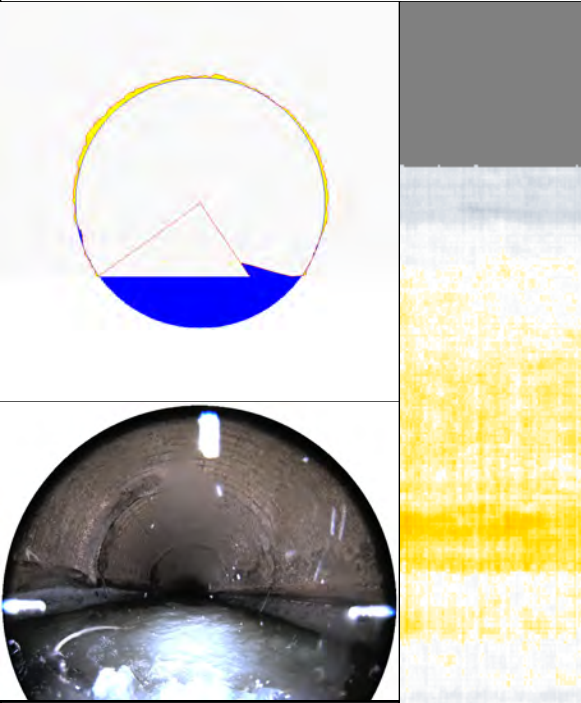
Distributed Cross-Sections

18.1 Material Loss



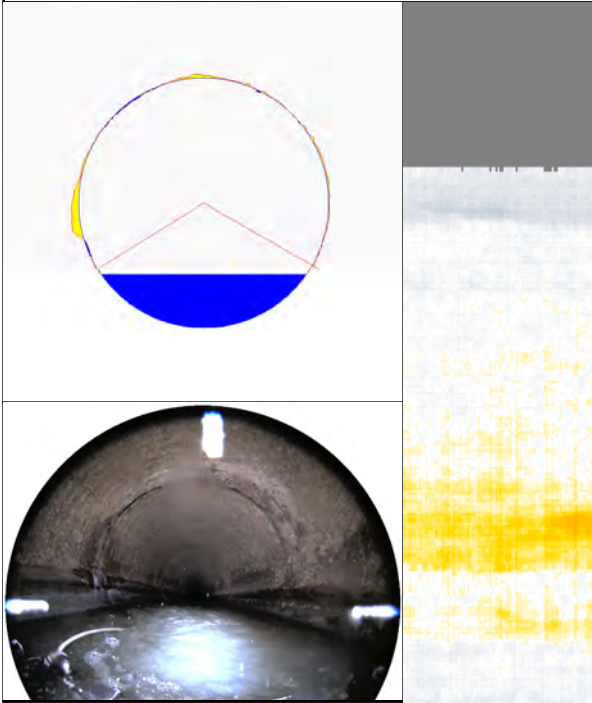
Av. Corrosion (in.)	0.6
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.8
Av. Buildup (in.)	0.6
Max. Buildup (in.)	2.7
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

24.3 Material Loss



Av. Corrosion (in.)	0.7
3s Corrosion (in.)	1.2
Max Corrosion (in.)	1.8
Av. Buildup (in.)	3.7
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

30.7 Material Loss



Av. Corrosion (in.)	0.5
3s Corrosion (in.)	1.5
Max Corrosion (in.)	2.2
Av. Buildup (in.)	0.2
Max. Buildup (in.)	0.4
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

34.0 Regular Interval	
Av. Corrosion (in.)	0.7
3s Corrosion (in.)	1.1
Max Corrosion (in.)	1.6
Av. Buildup (in.)	0.4
Max. Buildup (in.)	0.6
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

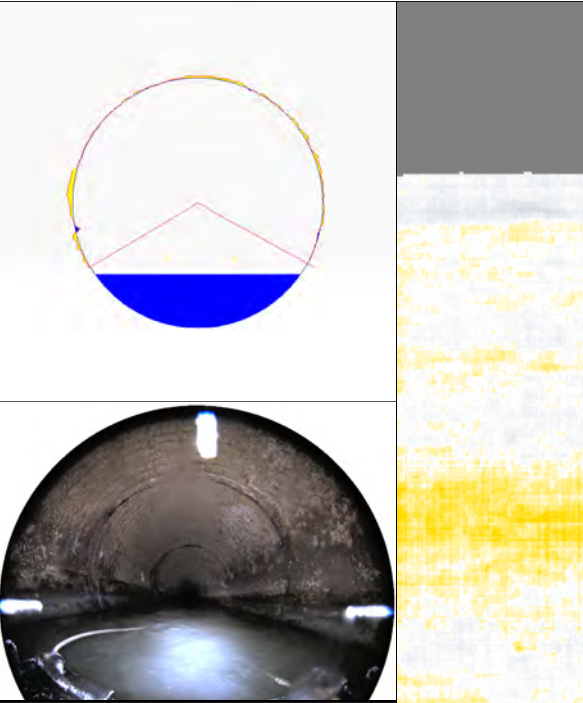
36.7 Material Loss	
Av. Corrosion (in.)	1.0
3s Corrosion (in.)	1.4
Max Corrosion (in.)	1.8
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.6
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

43.0 Material Loss	
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	1.1
Max Corrosion (in.)	1.7
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.6
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



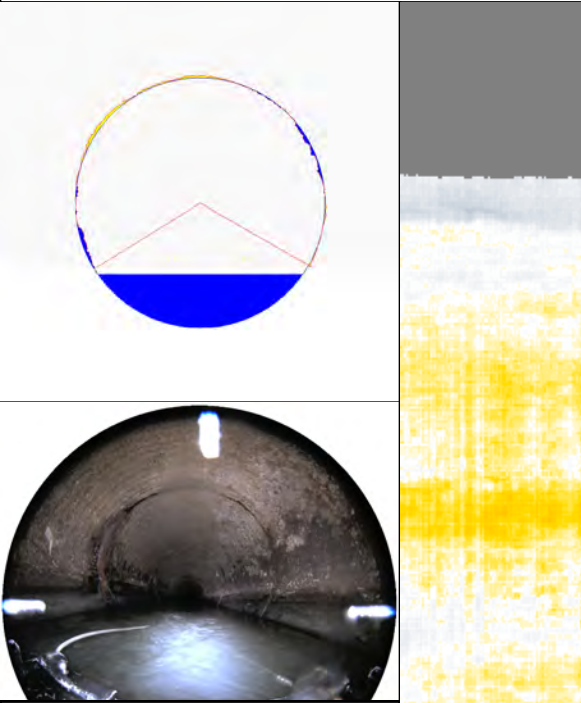
Distributed Cross-Sections

49.3 Material Loss



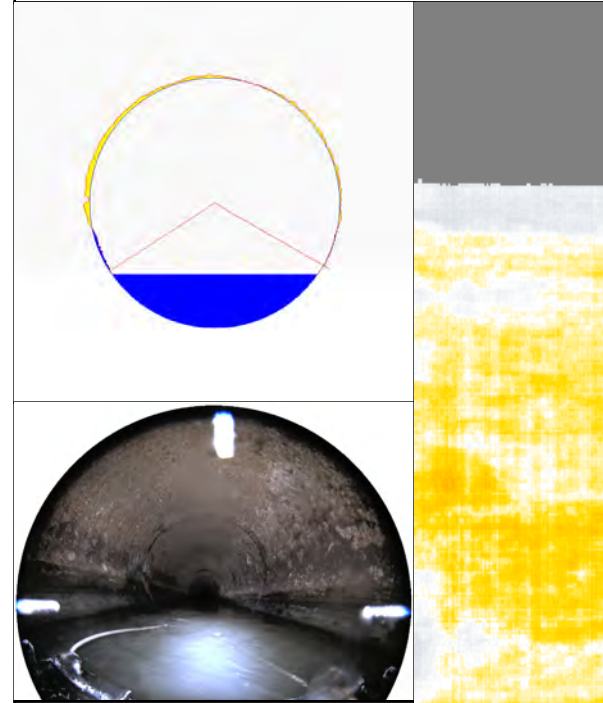
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.4
Av. Buildup (in.)	0.2
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

54.8 Material Loss



Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.9
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

59.0 Regular Interval



Av. Corrosion (in.)	0.6
3s Corrosion (in.)	1.1
Max Corrosion (in.)	1.6
Av. Buildup (in.)	0.4
Max. Buildup (in.)	0.6
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

Distributed Cross-Sections

61.3 Material Loss

Av. Corrosion (in.)	0.6
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.3
Av. Buildup (in.)	0.4
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

67.2 Material Loss

Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.3
Av. Buildup (in.)	3.4
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

73.2 Material Loss

Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.0
Av. Buildup (in.)	4.0
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

79.4 Material Loss

Av. Corrosion (in.)	0.6
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.3
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.6
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

82.3 Buildup

Av. Corrosion (in.)	0.6
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.3
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.7
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

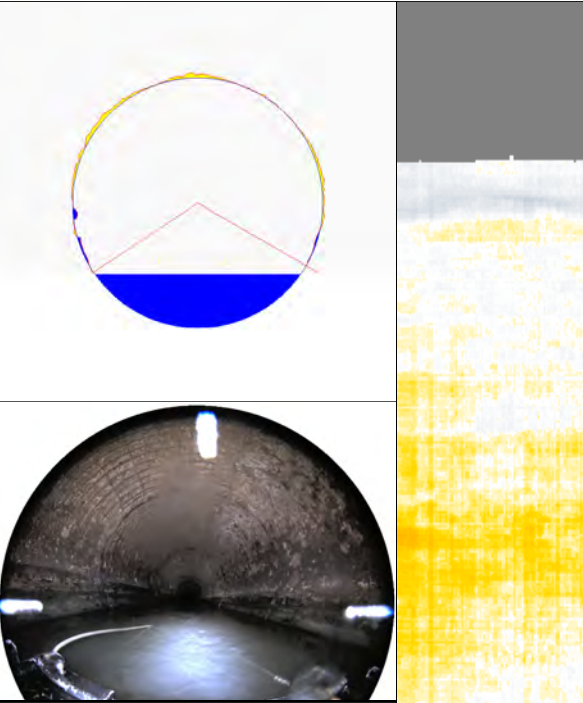
84.0 Regular Interval

Av. Corrosion (in.)	0.6
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.2
Av. Buildup (in.)	1.1
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



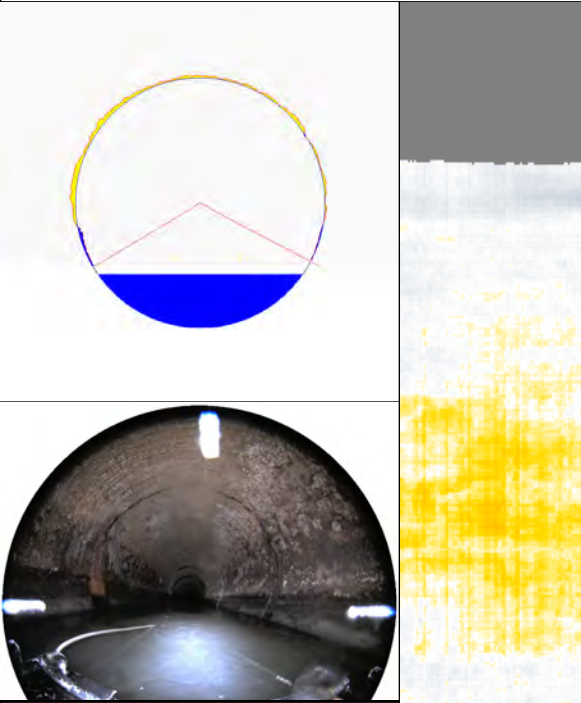
Distributed Cross-Sections

85.4 Material Loss



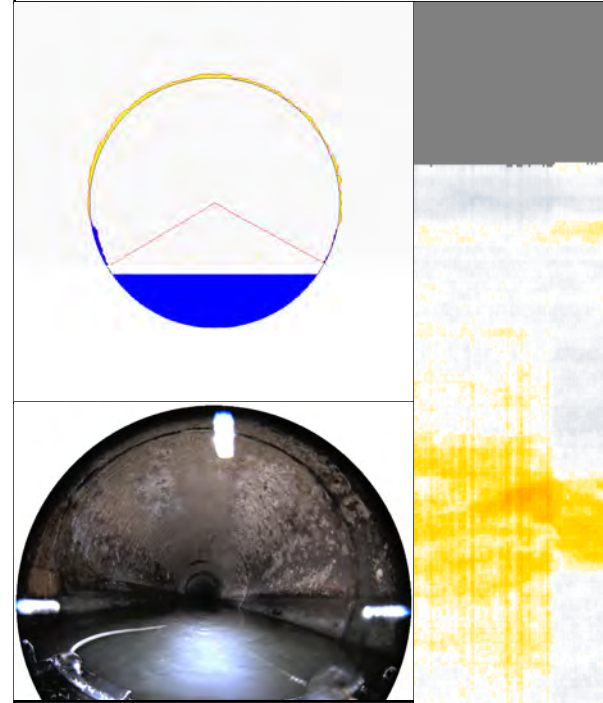
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.4
Av. Buildup (in.)	0.3
Max. Buildup (in.)	1.1
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

91.5 Material Loss



Av. Corrosion (in.)	0.6
3s Corrosion (in.)	1.0
Max Corrosion (in.)	1.4
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.8
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

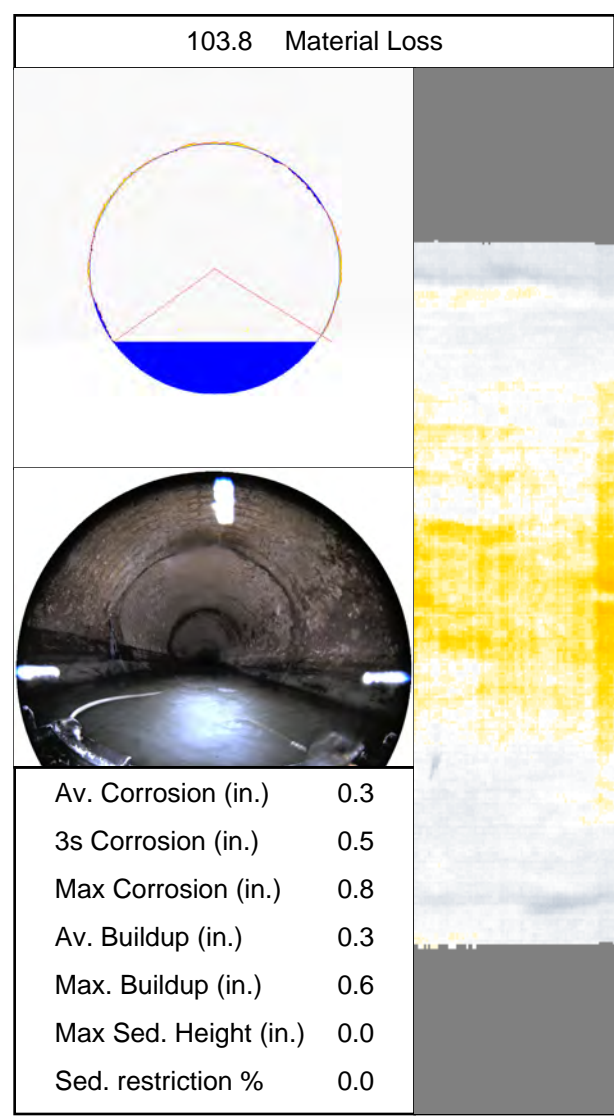
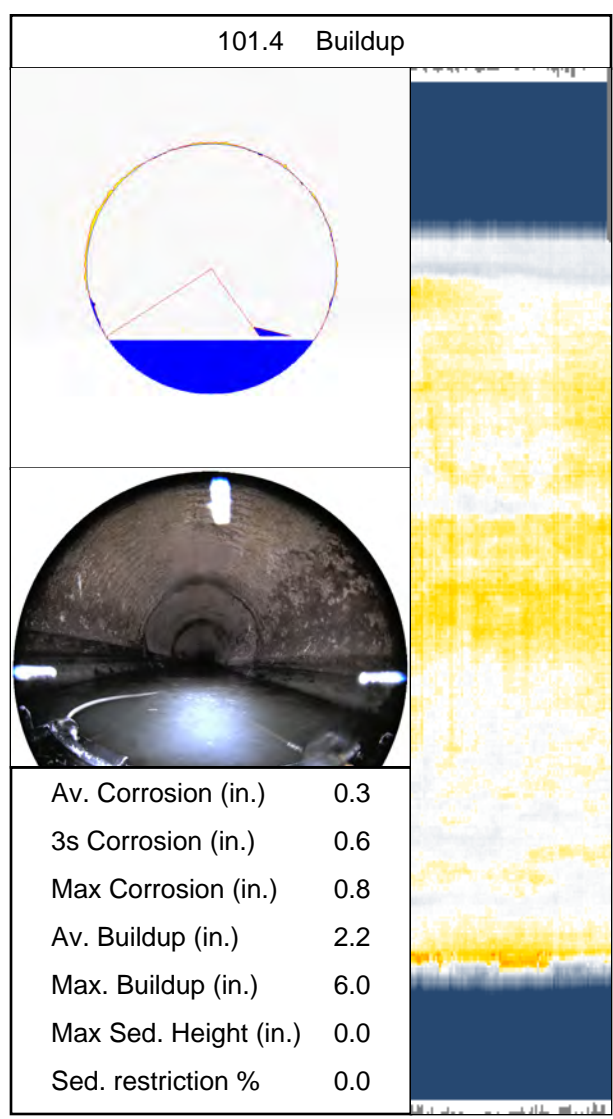
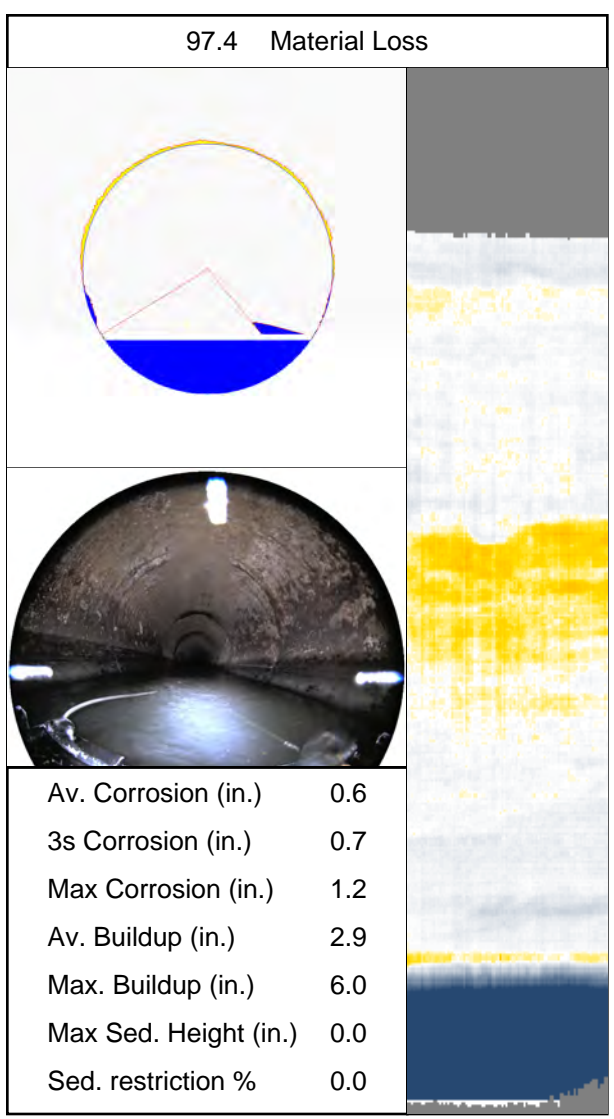
93.8 Buildup



Av. Corrosion (in.)	0.6
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections





Distributed Cross-Sections

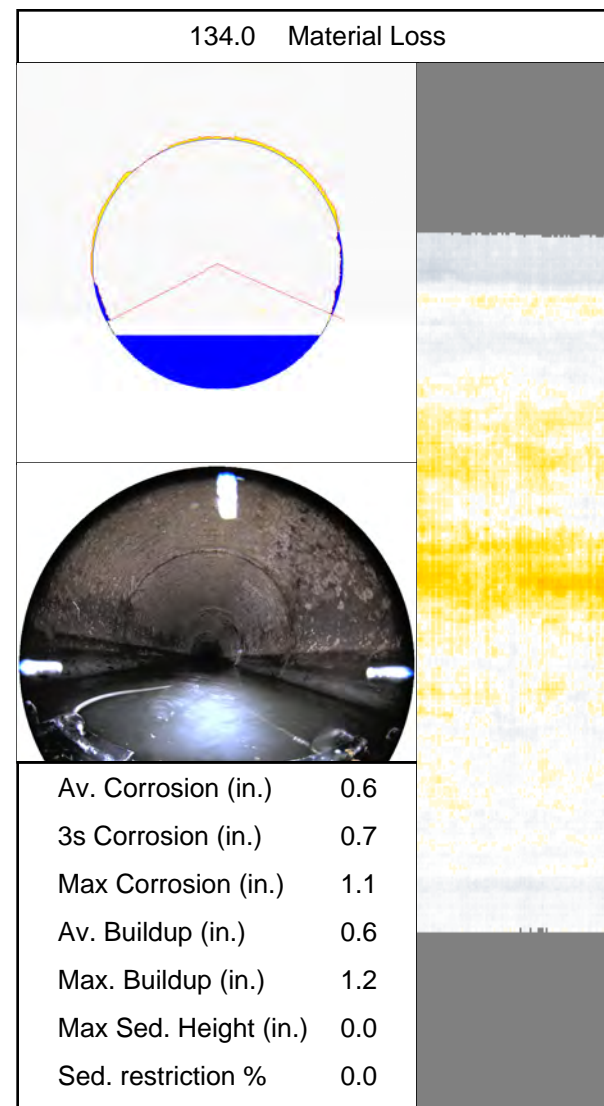
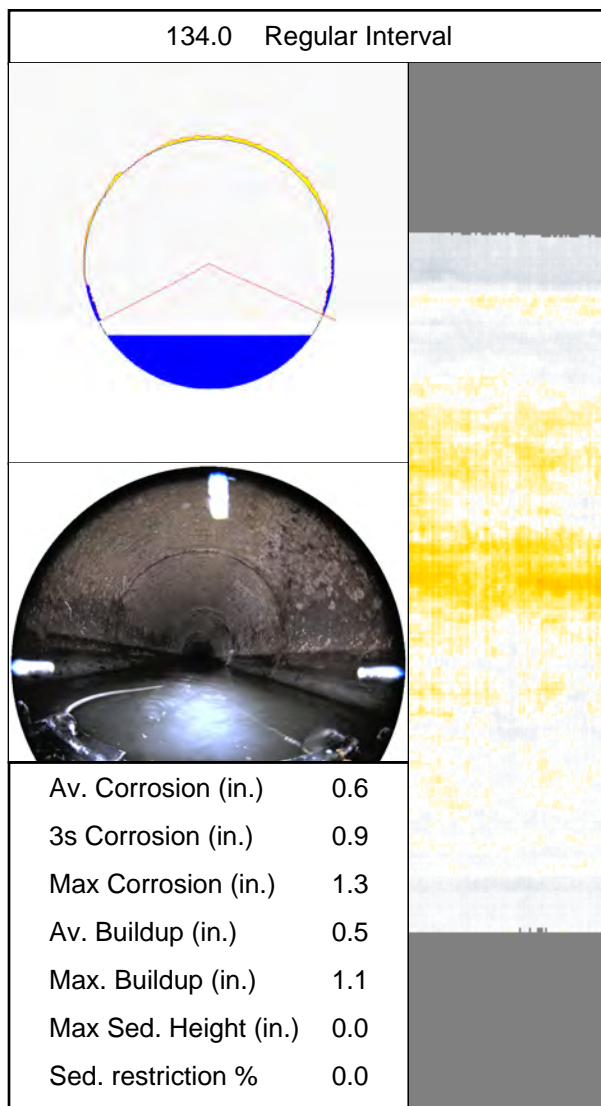
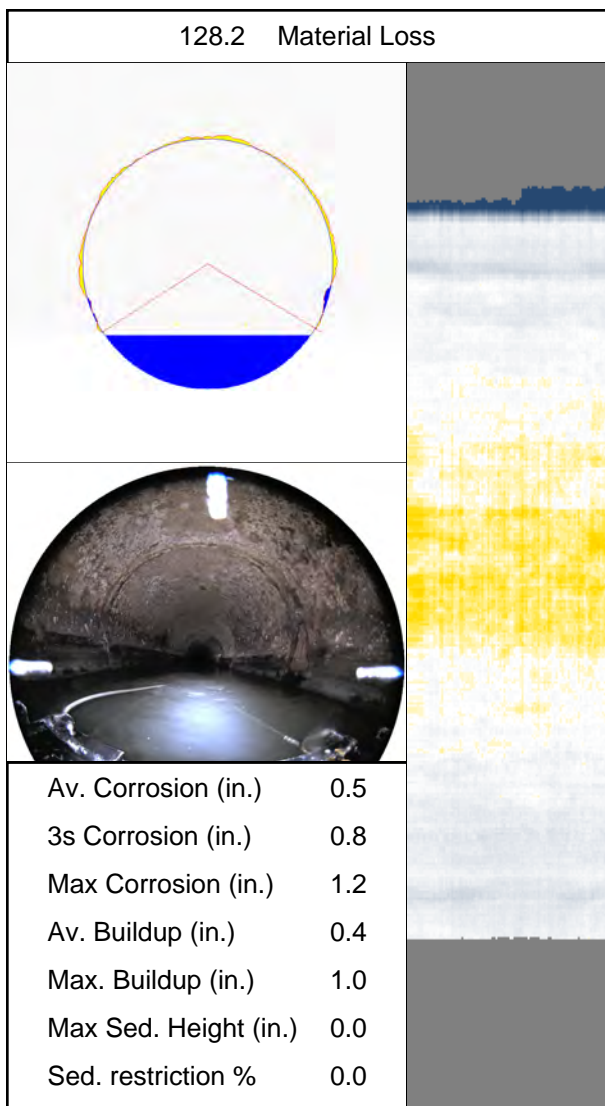
109.0 Regular Interval	
Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.3
Av. Buildup (in.)	5.0
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

109.2 Material Loss	
Av. Corrosion (in.)	0.6
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.2
Av. Buildup (in.)	4.9
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

121.3 Material Loss	
Av. Corrosion (in.)	0.8
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.6
Av. Buildup (in.)	3.7
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



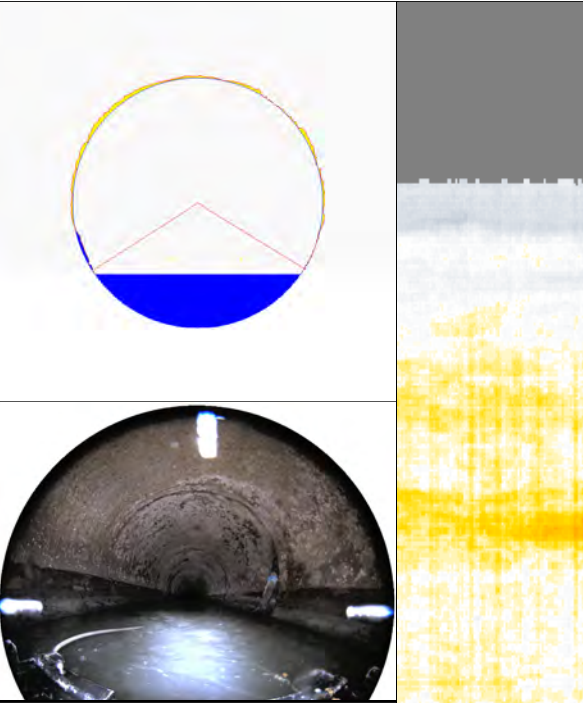
Distributed Cross-Sections





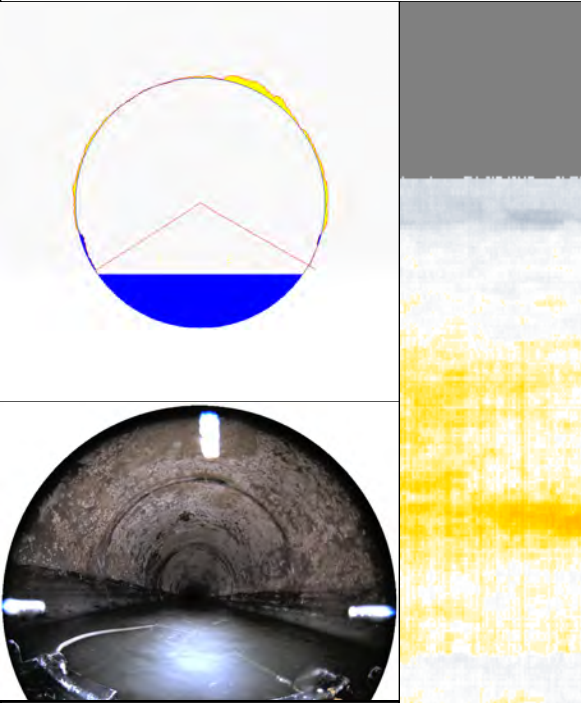
Distributed Cross-Sections

140.0 Material Loss



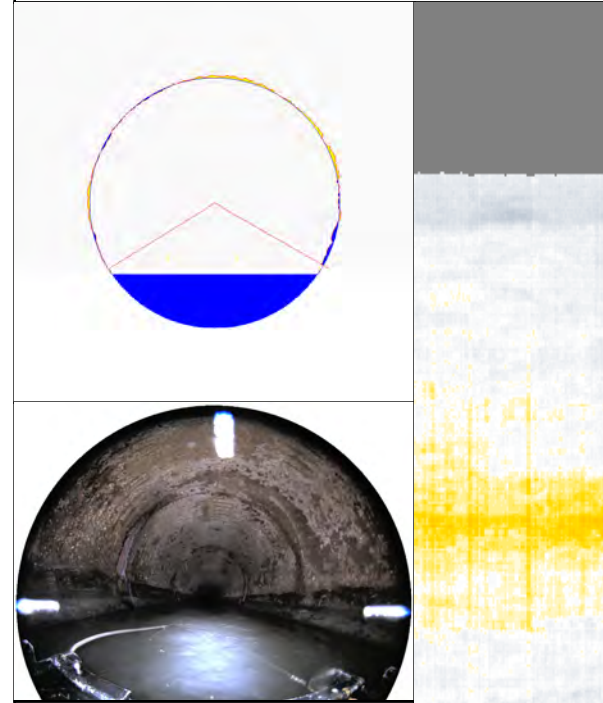
Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.2
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.6
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

146.6 Material Loss



Av. Corrosion (in.)	0.6
3s Corrosion (in.)	1.4
Max Corrosion (in.)	2.0
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

152.3 Material Loss



Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.9
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

155.7 Material Loss	
Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.1
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

155.7 Buildup	
Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.1
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

158.4 Material Loss	
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.6
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.3
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

159.0 Regular Interval	
Av. Corrosion (in.)	0.8
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.8
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.8
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

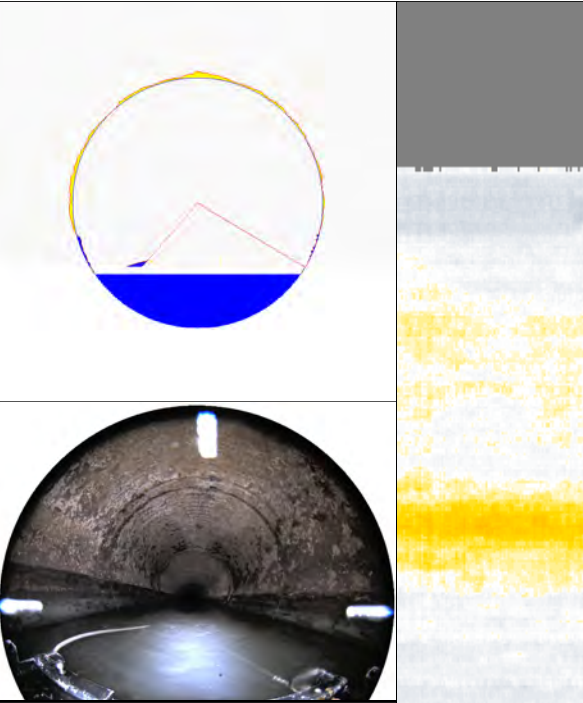
164.8 Material Loss	
Av. Corrosion (in.)	0.6
3s Corrosion (in.)	1.2
Max Corrosion (in.)	1.9
Av. Buildup (in.)	0.1
Max. Buildup (in.)	0.3
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

171.1 Material Loss	
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.6
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.3
Max. Buildup (in.)	1.1
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



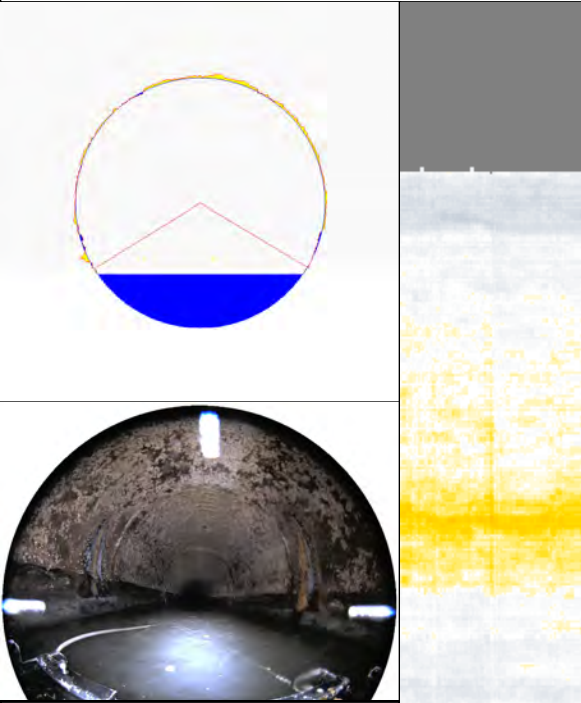
Distributed Cross-Sections

177.0 Material Loss



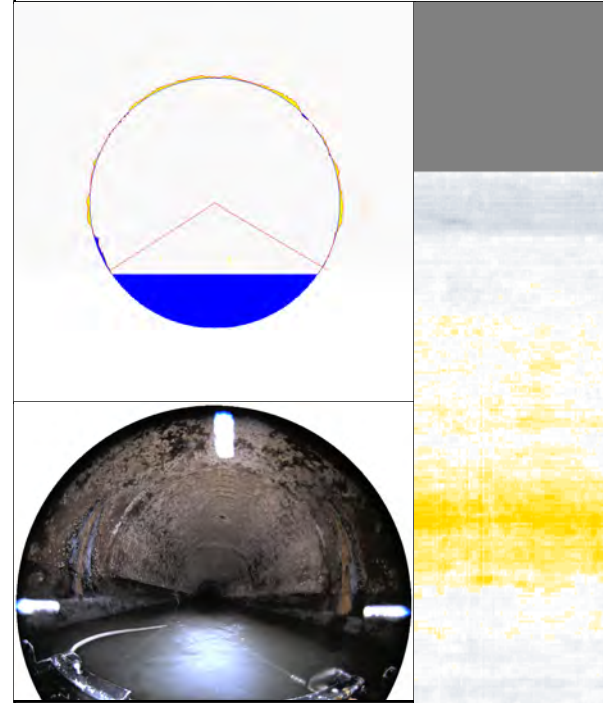
Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.6
Av. Buildup (in.)	2.3
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

183.2 Material Loss



Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.4
Av. Buildup (in.)	0.2
Max. Buildup (in.)	0.5
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

184.0 Regular Interval



Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

188.7 Material Loss

Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.2
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.2
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

194.8 Material Loss

Av. Corrosion (in.)	0.7
3s Corrosion (in.)	1.0
Max Corrosion (in.)	1.6
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.1
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

201.2 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.9
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.8
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

207.1 Material Loss

Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.3
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

209.0 Regular Interval

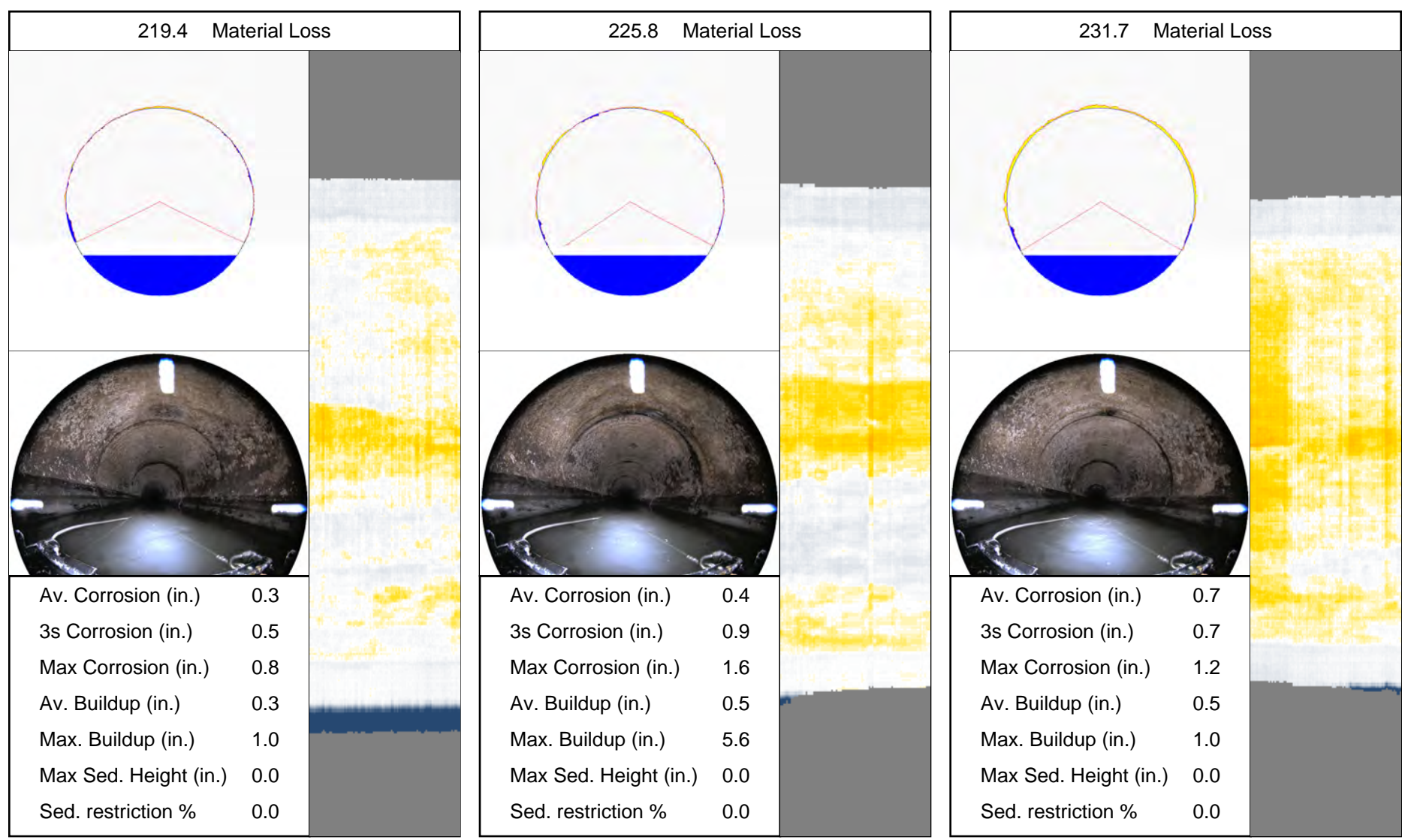
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.2
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

213.8 Material Loss

Av. Corrosion (in.)	0.6
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.4
Max. Buildup (in.)	0.8
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections





Distributed Cross-Sections

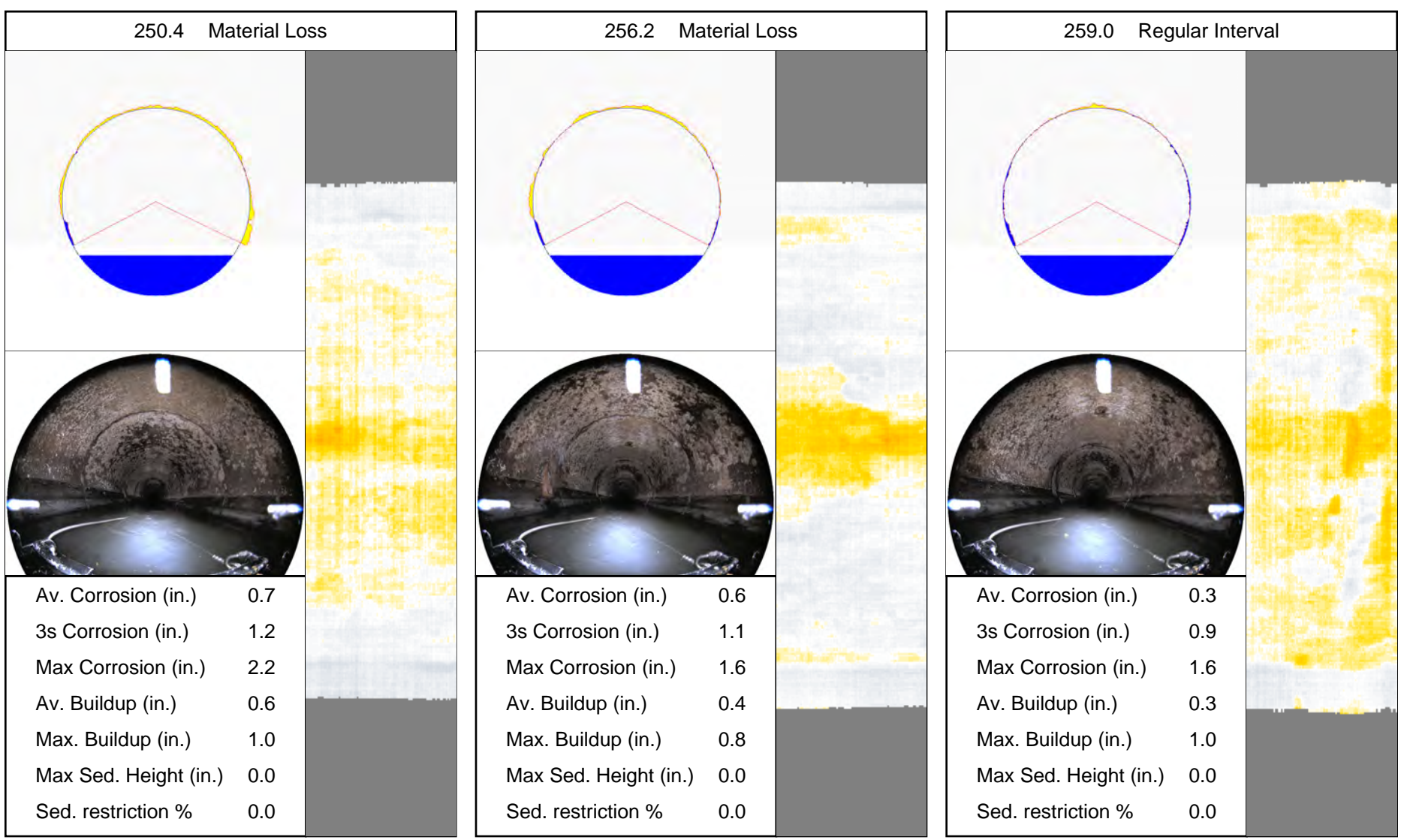
234.0 Regular Interval	
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.2
Max. Buildup (in.)	0.5
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

238.0 Material Loss	
Av. Corrosion (in.)	0.6
3s Corrosion (in.)	1.0
Max Corrosion (in.)	1.5
Av. Buildup (in.)	0.2
Max. Buildup (in.)	0.4
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

243.8 Material Loss	
Av. Corrosion (in.)	1.6
3s Corrosion (in.)	2.8
Max Corrosion (in.)	3.4
Av. Buildup (in.)	0.8
Max. Buildup (in.)	1.3
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections





Distributed Cross-Sections

262.2 Material Loss

Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

267.9 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.0
Av. Buildup (in.)	1.3
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

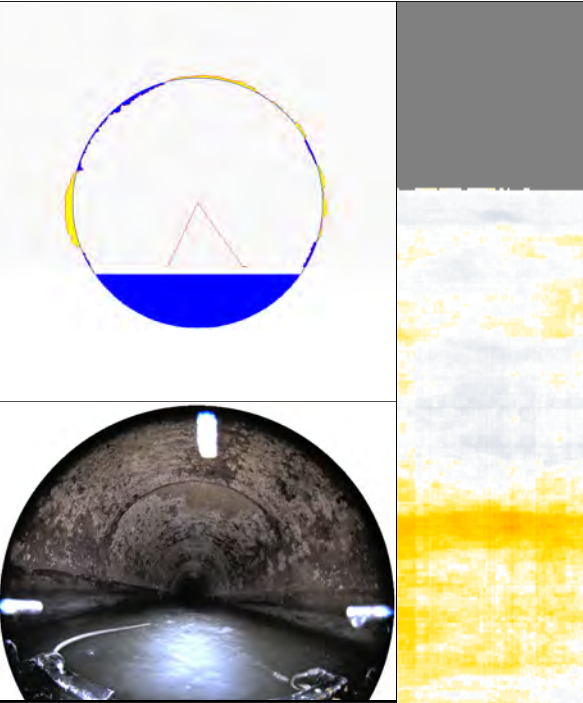
274.1 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.3
Av. Buildup (in.)	1.4
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



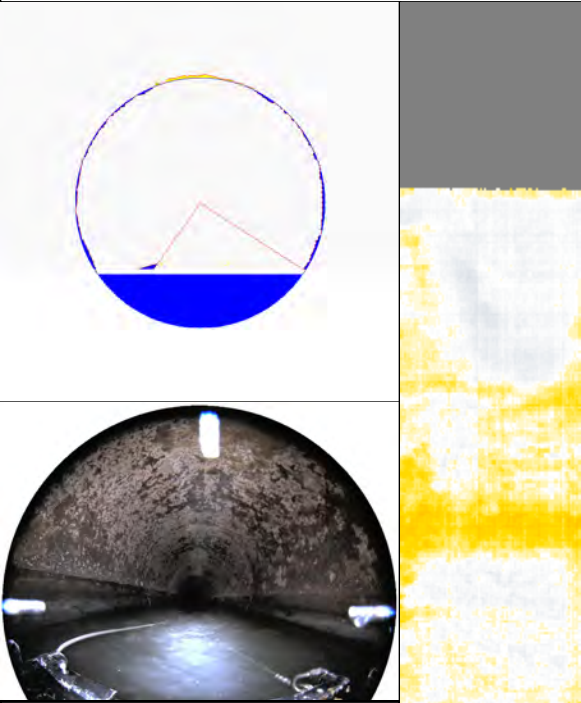
Distributed Cross-Sections

280.6 Material Loss



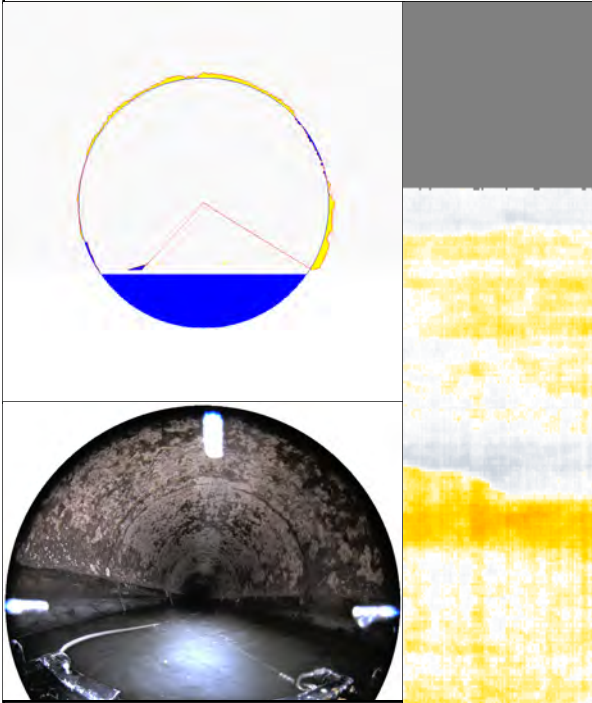
Av. Corrosion (in.)	0.7
3s Corrosion (in.)	1.7
Max Corrosion (in.)	2.1
Av. Buildup (in.)	2.5
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

284.0 Regular Interval



Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.7
Max Corrosion (in.)	0.8
Av. Buildup (in.)	1.0
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

286.8 Material Loss



Av. Corrosion (in.)	0.7
3s Corrosion (in.)	1.3
Max Corrosion (in.)	1.9
Av. Buildup (in.)	1.3
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

293.0 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.6
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.5
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

294.2 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.7
Av. Buildup (in.)	0.4
Max. Buildup (in.)	0.8
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

294.6 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.6
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.8
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

299.1 Material Loss

Av. Corrosion (in.)	0.6
3s Corrosion (in.)	1.1
Max Corrosion (in.)	2.0
Av. Buildup (in.)	0.4
Max. Buildup (in.)	0.6
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

309.0 Regular Interval

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.6
Max Corrosion (in.)	1.3
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

314.6 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.2
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

317.3 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.2
Max. Buildup (in.)	0.7
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

323.2 Material Loss

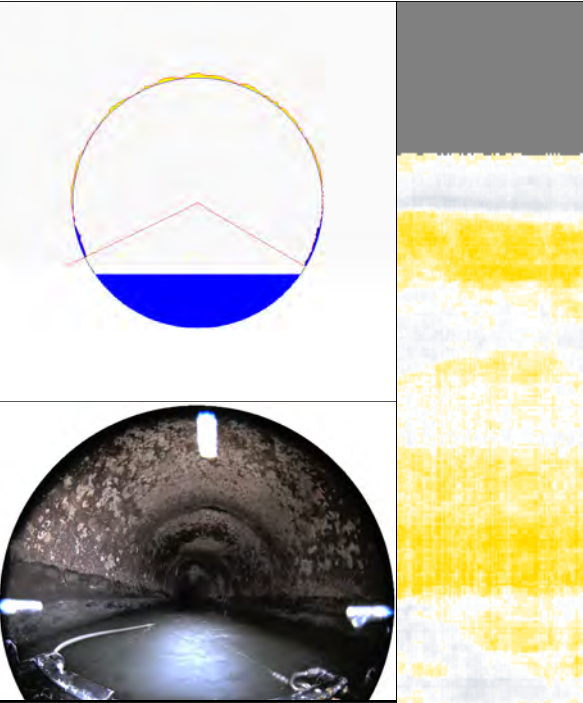
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.9
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

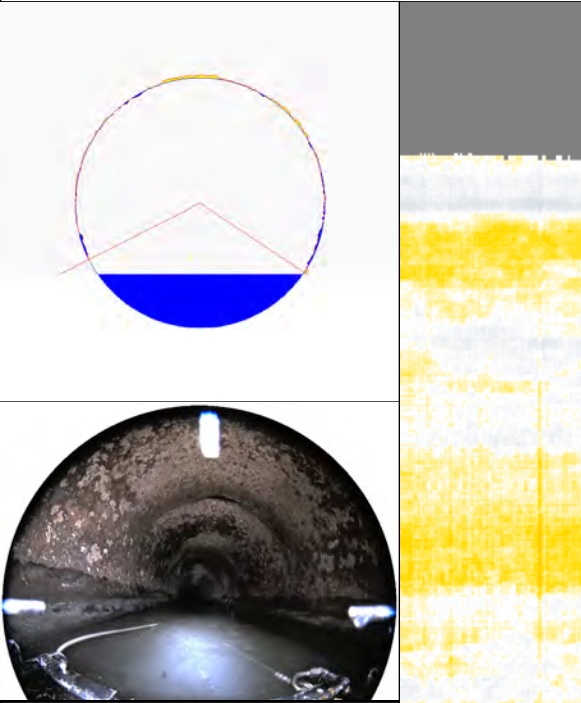
329.3 Material Loss

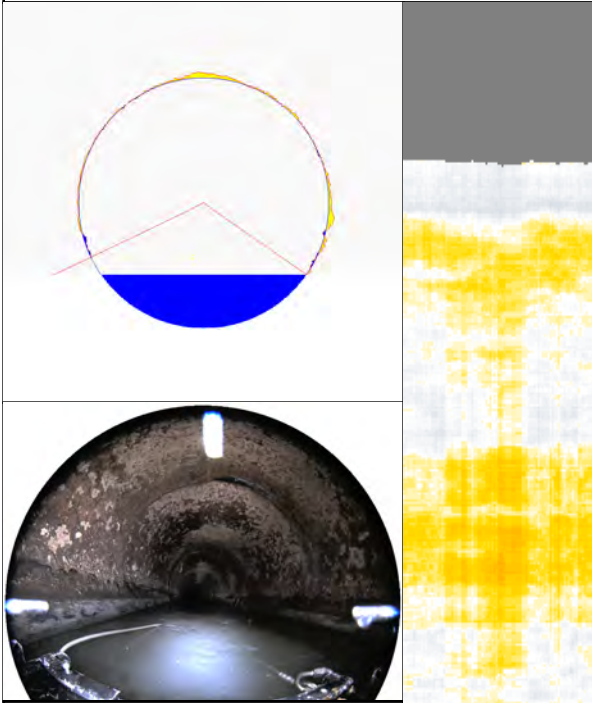
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.6
Max Corrosion (in.)	1.3
Av. Buildup (in.)	6.8
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

334.0 Regular Interval	
	
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.2
Av. Buildup (in.)	0.4
Max. Buildup (in.)	0.8
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

334.6 Material Loss	
	
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.6
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.2
Max. Buildup (in.)	0.7
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

335.7 Material Loss	
	
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	1.0
Max Corrosion (in.)	1.5
Av. Buildup (in.)	0.2
Max. Buildup (in.)	0.6
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

341.2 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.9
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.6
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

347.7 Material Loss

Av. Corrosion (in.)	0.8
3s Corrosion (in.)	1.6
Max Corrosion (in.)	1.6
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.2
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

353.7 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.9
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

354.7 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.2
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

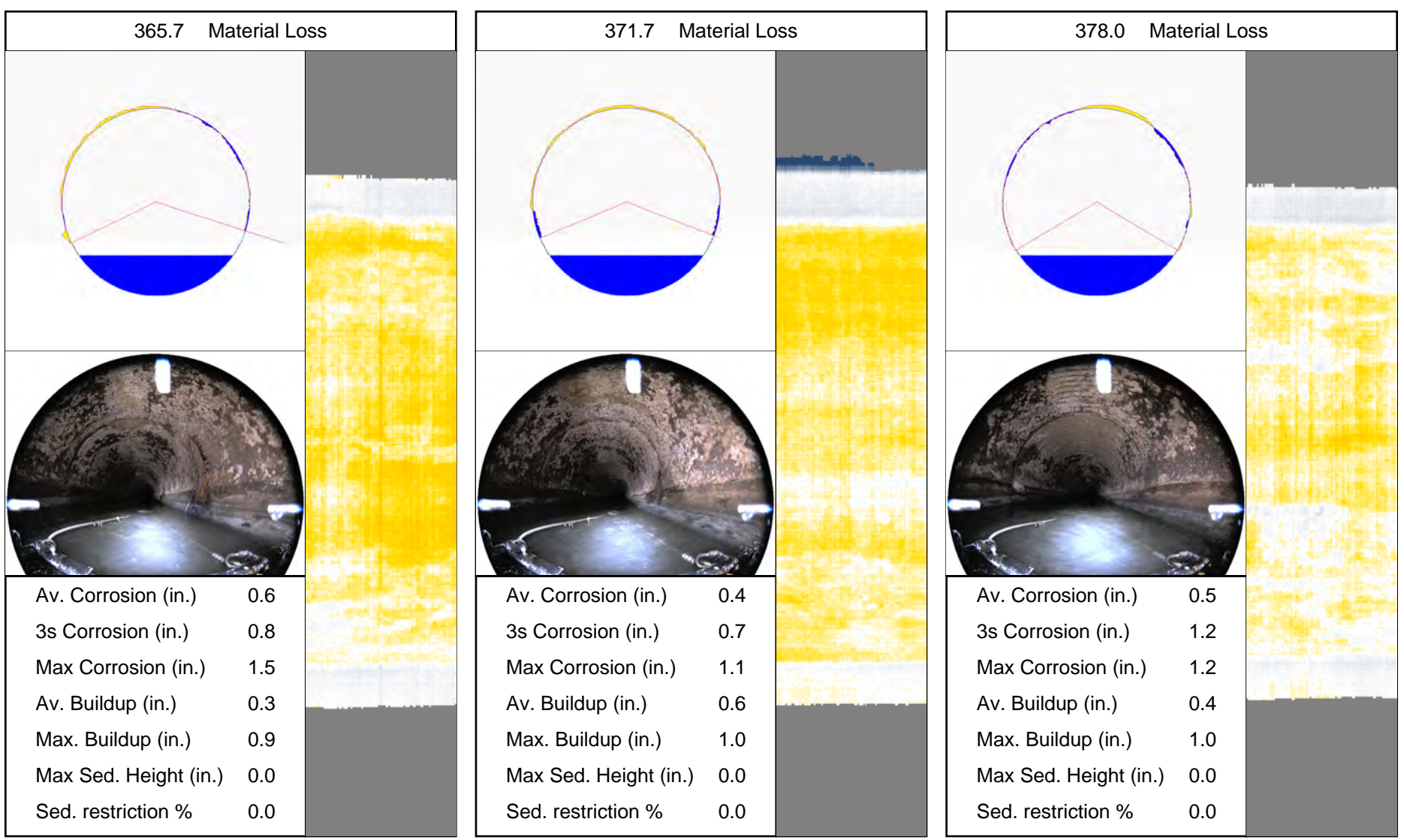
359.0 Regular Interval

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

359.5 Material Loss

Av. Corrosion (in.)	0.7
3s Corrosion (in.)	1.2
Max Corrosion (in.)	1.6
Av. Buildup (in.)	0.7
Max. Buildup (in.)	1.3
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

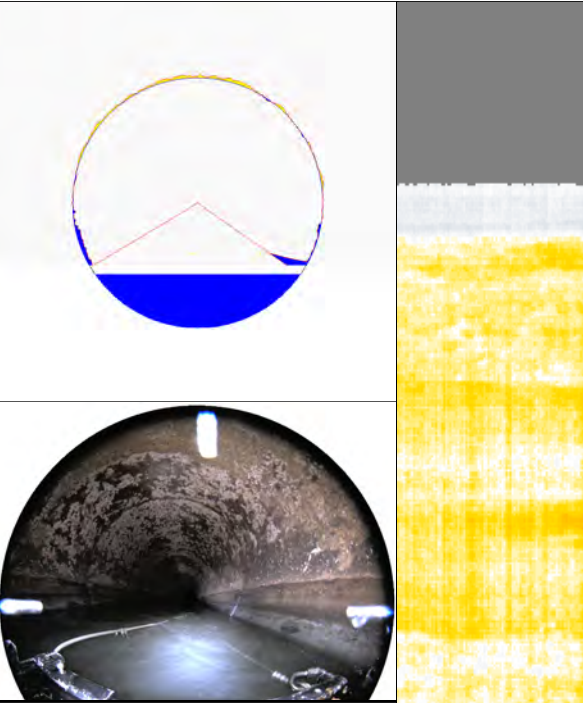
Distributed Cross-Sections





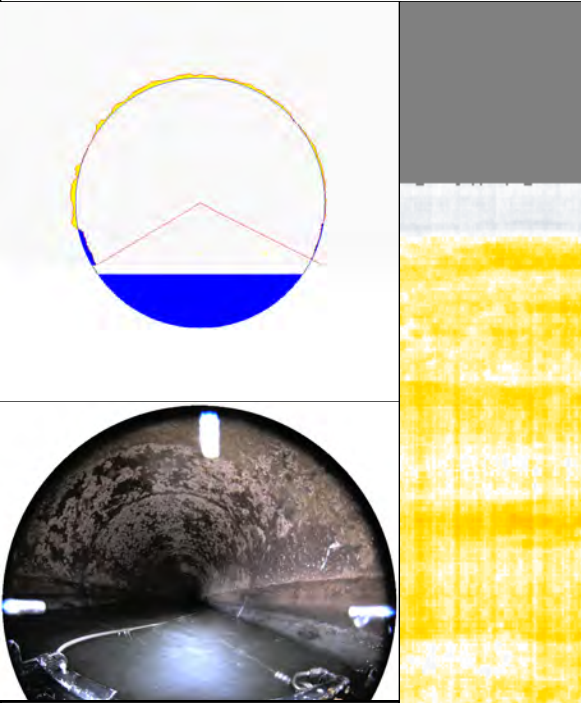
Distributed Cross-Sections

383.7 Material Loss



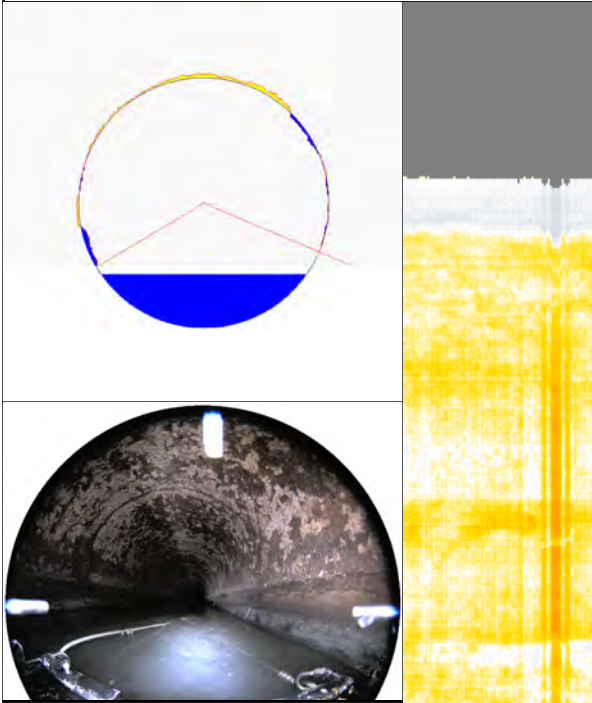
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.9
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

384.0 Regular Interval



Av. Corrosion (in.)	0.6
3s Corrosion (in.)	1.0
Max Corrosion (in.)	1.3
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.3
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

390.4 Material Loss



Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.3
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.3
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

396.5 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.2
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.1
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

402.1 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.5
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

408.3 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.7
Max Corrosion (in.)	0.9
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

409.0 Regular Interval	
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.6
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.3
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

414.4 Material Loss	
Av. Corrosion (in.)	0.6
3s Corrosion (in.)	1.1
Max Corrosion (in.)	1.5
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

420.5 Material Loss	
Av. Corrosion (in.)	0.5
3s Corrosion (in.)	1.1
Max Corrosion (in.)	1.4
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.5
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

426.4 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.2
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

432.6 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	1.1
Max Corrosion (in.)	1.2
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.1
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

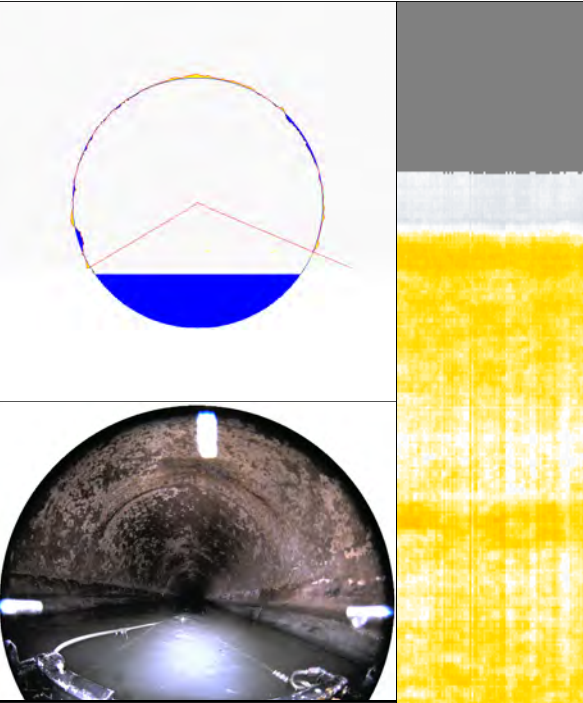
434.0 Regular Interval

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.1
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



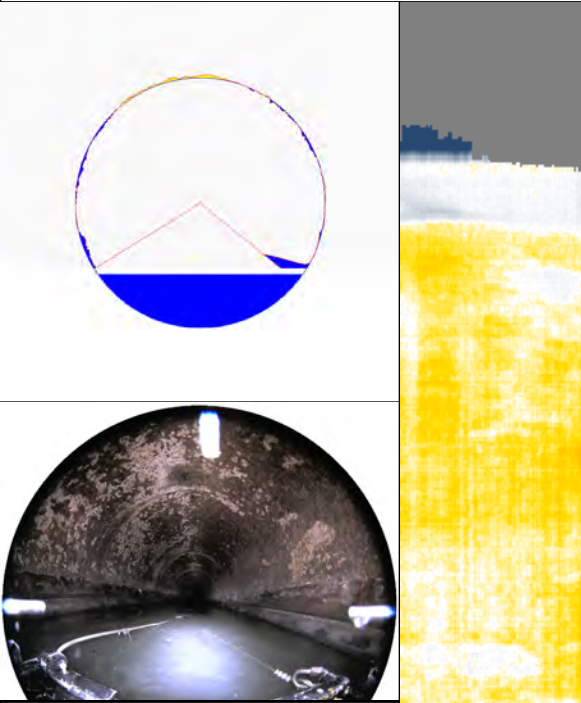
Distributed Cross-Sections

439.1 Material Loss



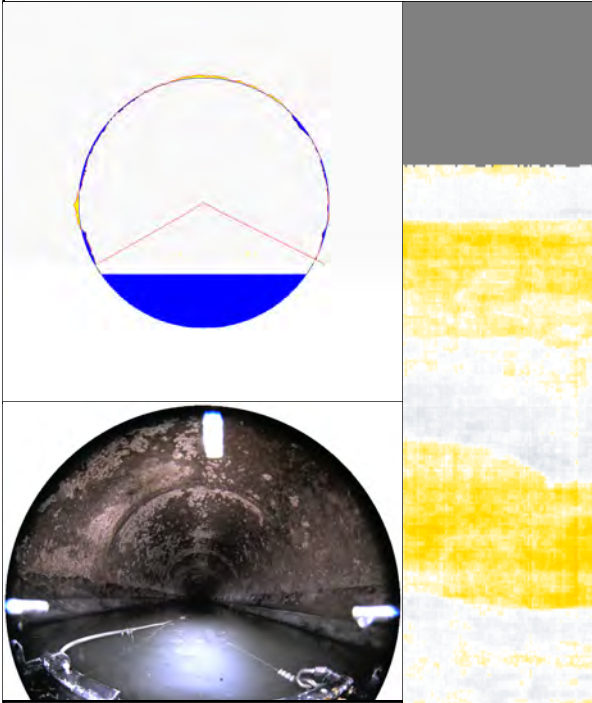
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.6
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.3
Max. Buildup (in.)	1.1
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

444.7 Material Loss



Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.8
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

451.1 Material Loss



Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.3
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.8
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

456.9 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.4
Max Corrosion (in.)	0.7
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.5
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

459.0 Regular Interval

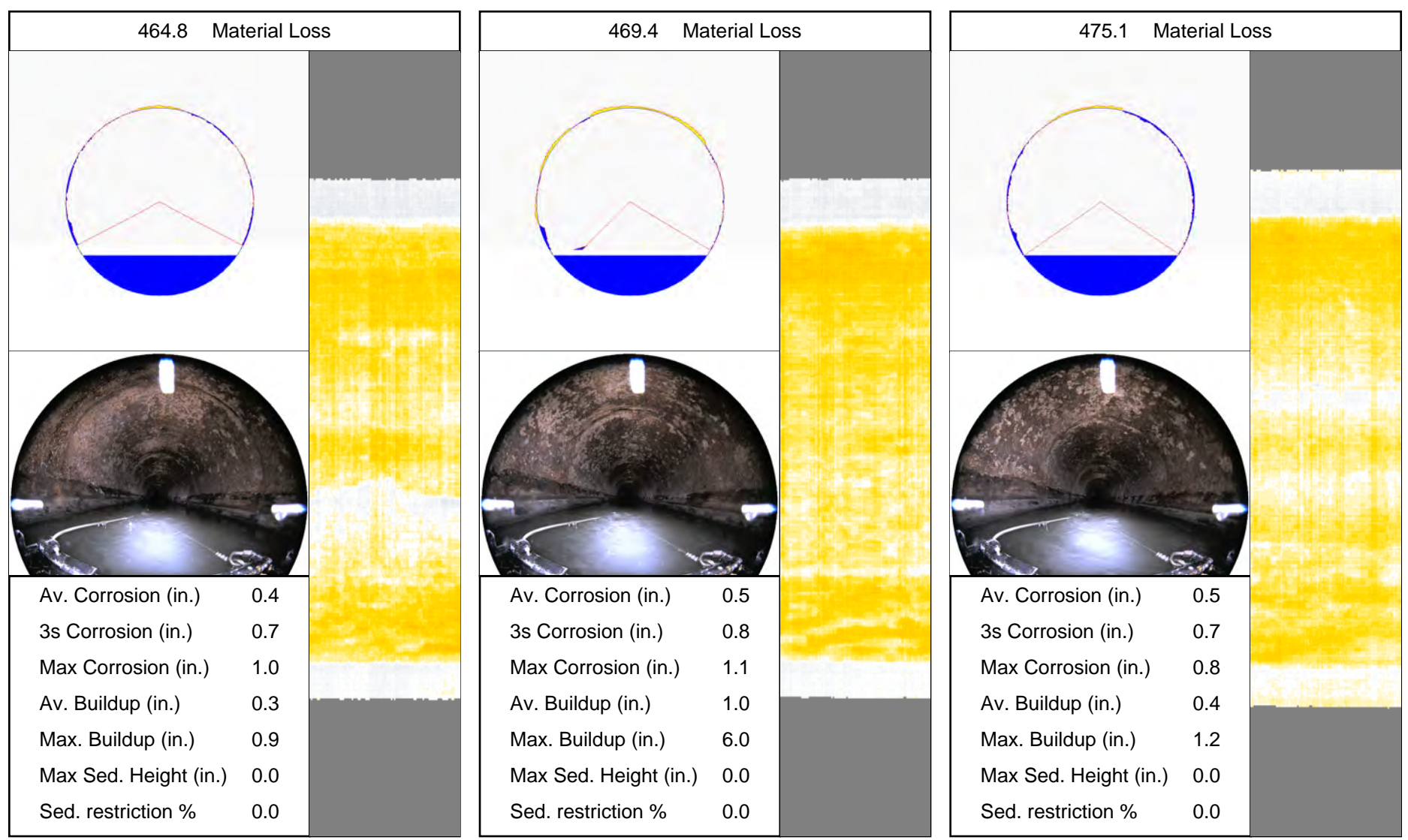
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.4
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

463.3 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.6
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.1
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

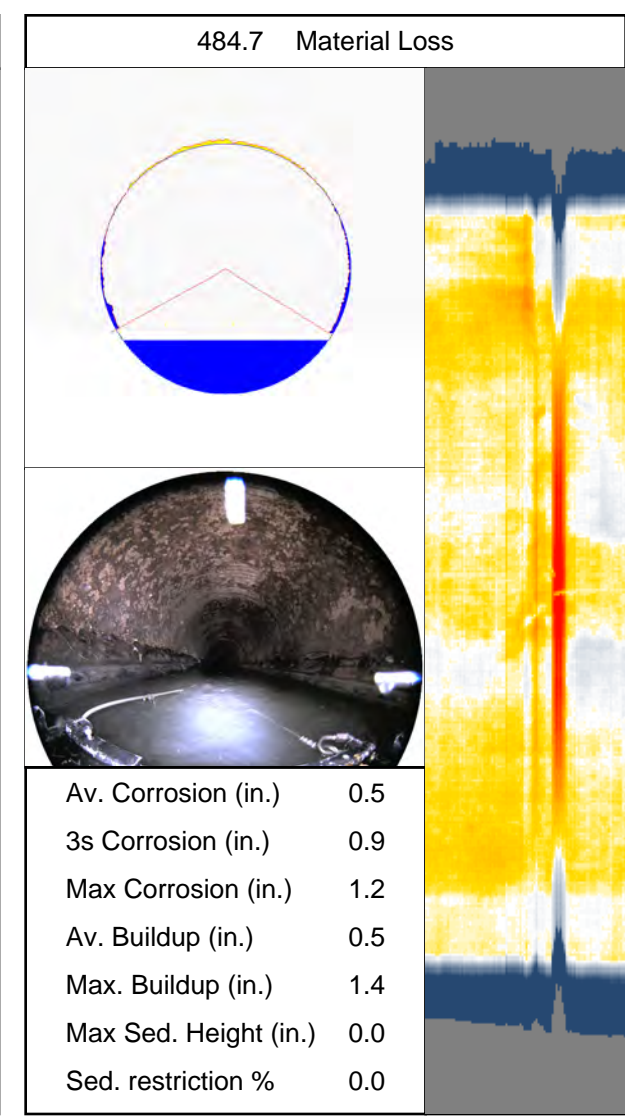
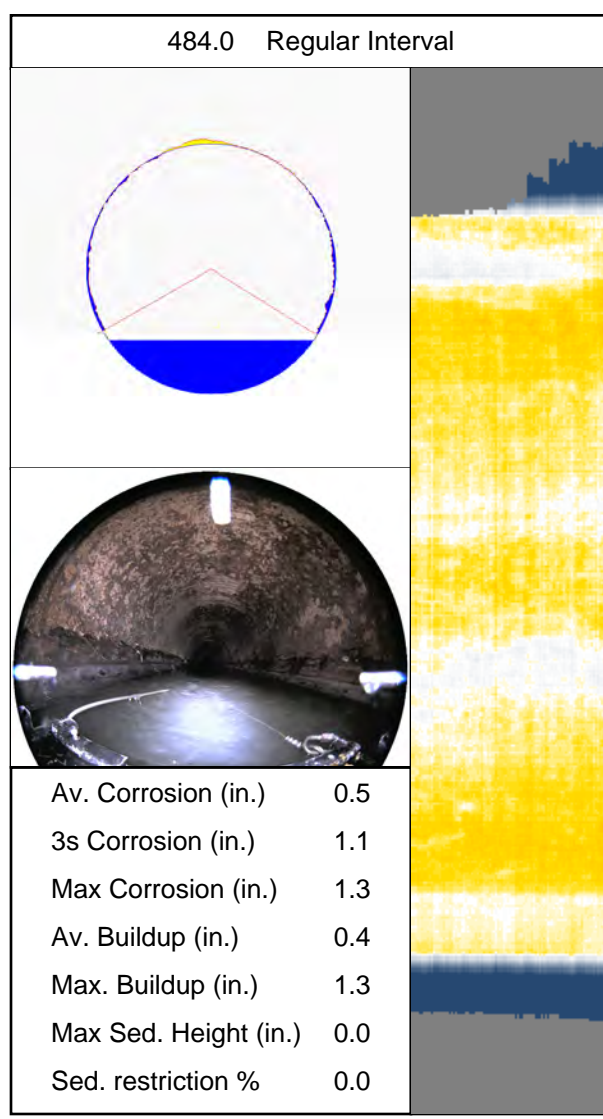
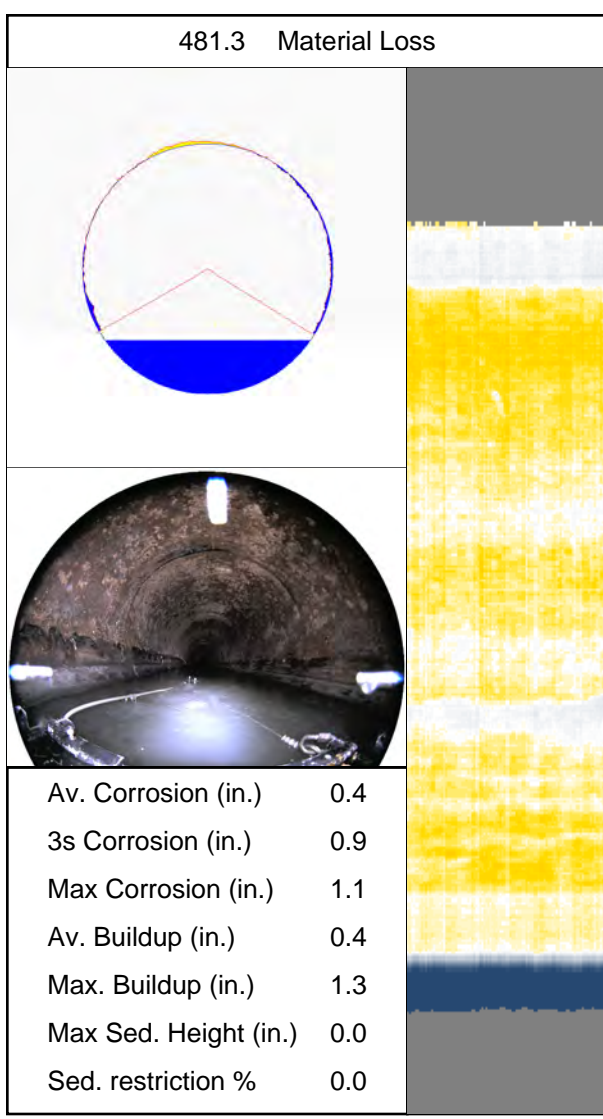


Distributed Cross-Sections





Distributed Cross-Sections





Distributed Cross-Sections

487.5 Material Loss

Av. Corrosion (in.)	0.6
3s Corrosion (in.)	1.5
Max Corrosion (in.)	1.6
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.5
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

493.7 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.7
Max Corrosion (in.)	0.9
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.3
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

499.2 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.8
Av. Buildup (in.)	7.4
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

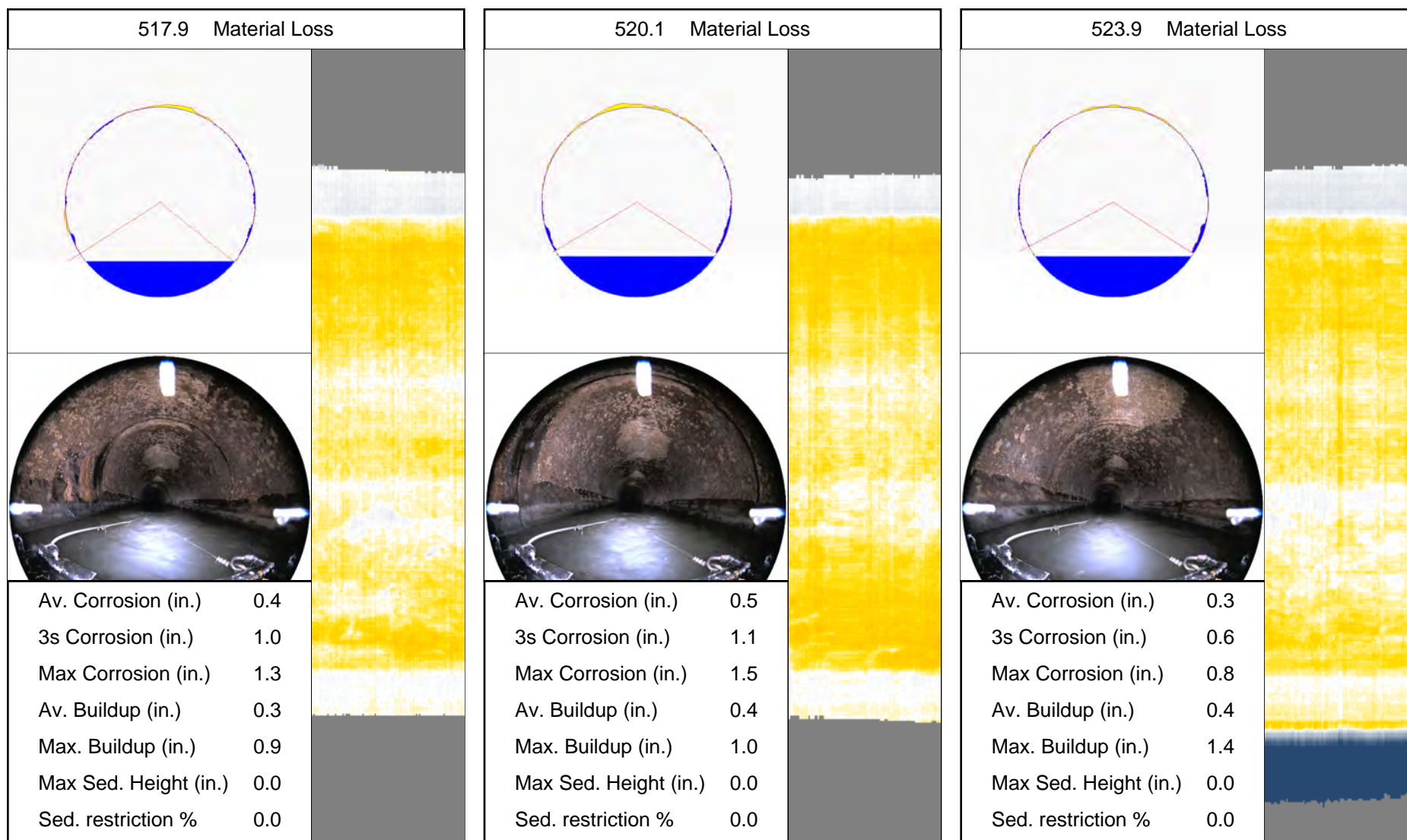
505.5 Material Loss	
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	1.0
Max Corrosion (in.)	1.2
Av. Buildup (in.)	2.8
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

509.0 Regular Interval	
Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.0
Av. Buildup (in.)	2.8
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

512.0 Material Loss	
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.8
Av. Buildup (in.)	2.3
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections





Distributed Cross-Sections

530.3 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.2
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.5
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

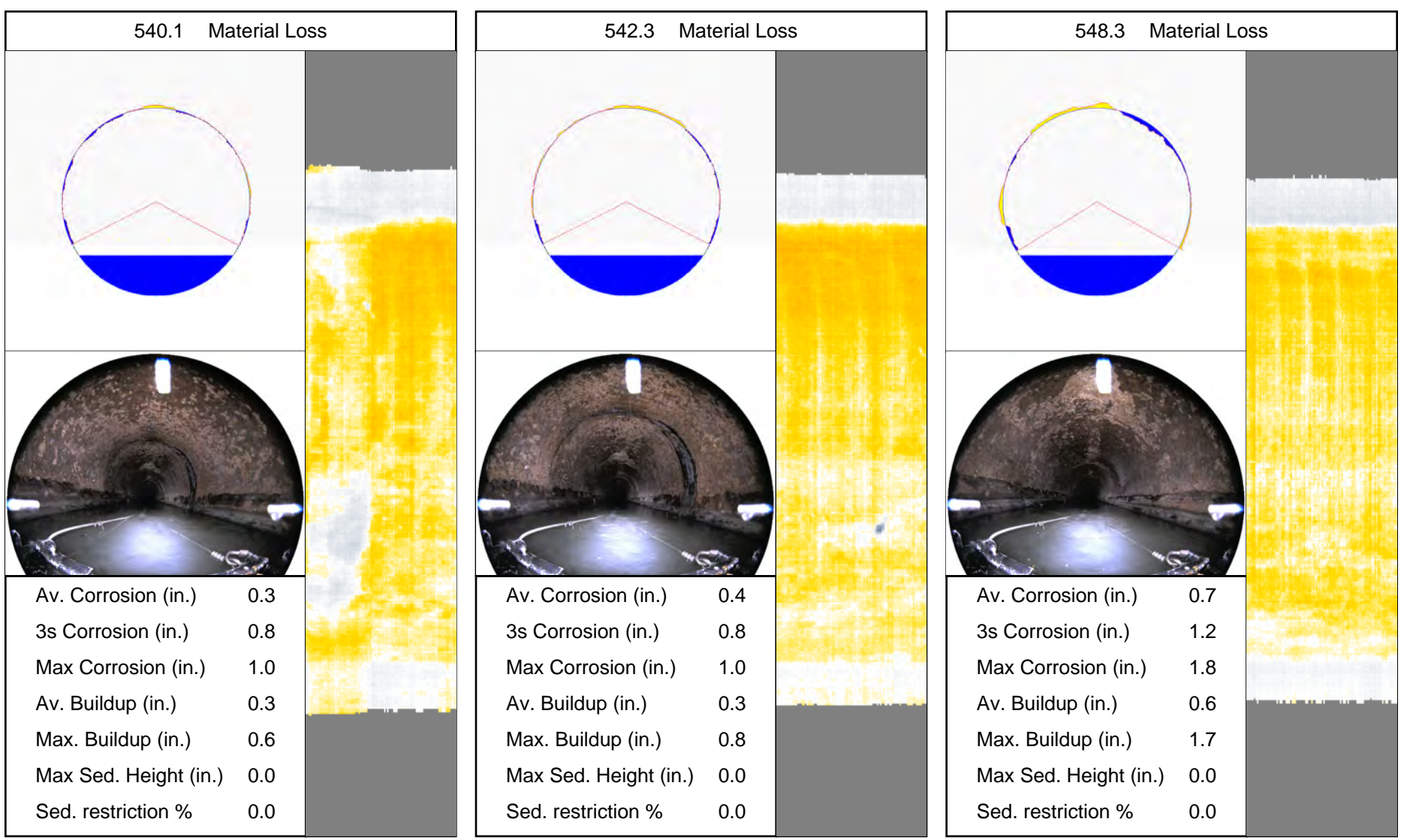
534.0 Regular Interval

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.8
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

536.2 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.6
Av. Buildup (in.)	0.3
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

Distributed Cross-Sections





Distributed Cross-Sections

554.2 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.7
Max Corrosion (in.)	0.9
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

559.0 Regular Interval

Av. Corrosion (in.)	0.5
3s Corrosion (in.)	1.3
Max Corrosion (in.)	1.3
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.7
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

560.4 Material Loss

Av. Corrosion (in.)	0.6
3s Corrosion (in.)	1.4
Max Corrosion (in.)	1.7
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.1
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

566.5 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.8
Av. Buildup (in.)	1.0
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

572.4 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.7
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.3
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

578.3 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

Distributed Cross-Sections

584.0 Regular Interval	
Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

584.7 Material Loss	
Av. Corrosion (in.)	0.6
3s Corrosion (in.)	1.0
Max Corrosion (in.)	1.7
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

590.9 Material Loss	
Av. Corrosion (in.)	0.8
3s Corrosion (in.)	1.6
Max Corrosion (in.)	2.0
Av. Buildup (in.)	0.5
Max. Buildup (in.)	2.3
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

591.7 End

Av. Corrosion (in.)	11.6
3s Corrosion (in.)	6.0
Max Corrosion (in.)	6.0
Av. Buildup (in.)	2.3
Max. Buildup (in.)	4.9
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

591.7 Material Loss

Av. Corrosion (in.)	11.6
3s Corrosion (in.)	6.0
Max Corrosion (in.)	6.0
Av. Buildup (in.)	2.3
Max. Buildup (in.)	4.9
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

591.7 Hole

Av. Corrosion (in.)	11.6
3s Corrosion (in.)	6.0
Max Corrosion (in.)	6.0
Av. Buildup (in.)	2.3
Max. Buildup (in.)	4.9
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

CES Baton Rouge
Inspected December 04, 2019



058-00015K
058-00014

Pipeline Inspection Partners Corp.

3600 Rio Vista Avenue
Orlando Florida 32805
Phone: 800.327.7791
Fax: 407.425.1569

Ed Diggs
800.327.7791
ediggs@cuesinc.com

Scott Thayer
412.839.1100
sthayer@cuesinc.com

Adam Slifko
412-656-5636
aslifko@cuesinc.com

Michelle Joy
724-601-1728
mjoy@cuesinc.com

Josh Graham
1401 Seaboard Dr.
Baton Rouge, LA 70810
Phone: 985.502.5667
jgraham@ces-ses.com

This report presents internal pipeline condition data collected by the CUES Multi Senor Inspection (MSI) technology platform and is being provided to individuals who have experience with MSI data and civil engineering principles. Information provided within this report is not to take the place of or be a substitute for professional civil engineering advice and/or recommendations.

It is the sole responsibility of the client in regards to the following: Interpretation of the MSI data results provided within this report; evaluation of the pipeline segment; any remedial/rehabilitation procedures or processes; post MSI inspection decisions and processes such as additional investigations and/or subsequent cleaning operations.

Some information provided and utilized within this report for this specific pipeline segment such as distance and dimensions may incorporate or have been provided by others. Because this information may not always be accurate and complete the project engineer should confirm this information through their own assessments in regards to such information.

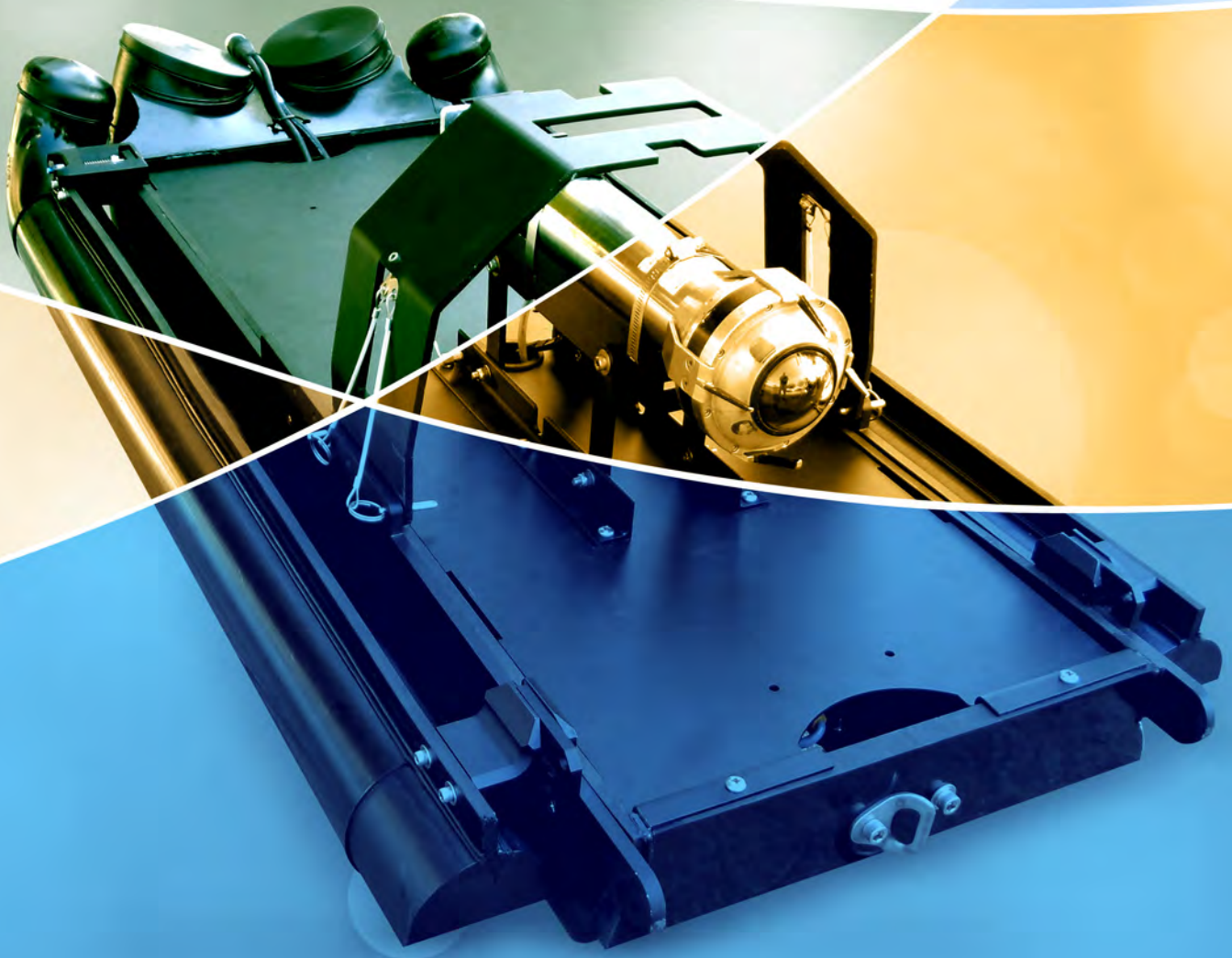


Pipeline Inspection Partners Corp.

SolidFX

Inspection Report

Prepared for



CES Baton Rouge
Inspected December 04, 2019



058-00004
058-00001

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CES Baton Rouge
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Technology Comparison Analysis

Feature	SolidFX	Spinning Laser Profiling	Laser Profiling with Wand
Technology	LIDAR	Spinning Laser Profiling	Laser Profiling with Wand
Cross Sections Scan Rate	45 /second	1.25 /second	12 /sec 12 /second on
Cross Section Measurement Density	1080 points	20 -300 points	Function of Pipe diameter
Effective Range	6"- 30 meters	4" - 48"	18" - 100"
Accuracy	3 mm @ 10m	15mm @ 3m	3 mm @ 3mm
Resolution	1mm (constant)	+/- 0.5% (pipe diameter)	+/- 0.1% (pipe diameter)
Calibration	Precision Factory	Automatic	Factory
Limited by Shadowing	No	No	Yes
Requires Wand Change out	No	No	Yes
"Cork Screw" Distortion during Motion	No	Yes	No
Multiple Returns (fog resistance)	Yes	No	No
Sensor Cleaning during Inspection	Yes	No	No
Transport Mechanism	Tractor/Float	Tractor Only	Float Only
3D Option	Yes	No	No
Custom Reporting	Yes	No	No
Live Video	Yes	Yes	No
Sonar Available	Yes	No	Yes
Maximum Deployment Length (linear foot)	4000	2000	4000+
Made in USA	Yes	Yes	No
Data Viewable During Operations	Yes	Yes	No
Onsite PACP	Yes	Yes	No

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Inspection Information

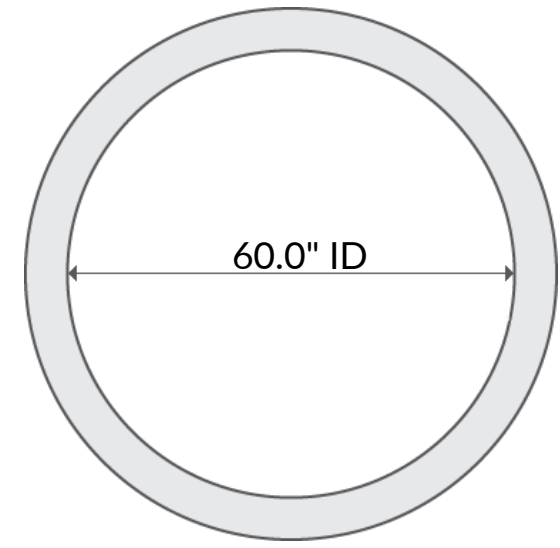
Transport

Float

Sensor(s)

LIDAR
 HD
 SONAR

As-Built Dimensions



Inspection Details

Service Area:	BATON ROUGE
Segment Reference:	2-3
Upstream Manhole:	058-00004
Downstream Manhole:	058-00001
Direction:	Upstream
Distance:	442.2
Scan Date:	December 04, 2019
Operator Notes:	None
Processing Notes:	None

Document Details

Report Prepared	January 07, 2020
Source Reference	14413

CES Baton Rouge
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058-00001

Sediment and Corrosion Summary Metrics

Sediment/Sonar Metrics

Sediment Volume (cubic yard):	0.6
As-is Capacity/As-built Capacity (%):	99.8
Average cross-sectional restriction (%):	0.2

Corrosion/Lidar Metrics

Corroded Volume (cubic in):	102472.4
Wall/As-built (%):	98.4
Average Wall Loss (%):	1.6

Sediment and Corrosion Graphs(0'-200')

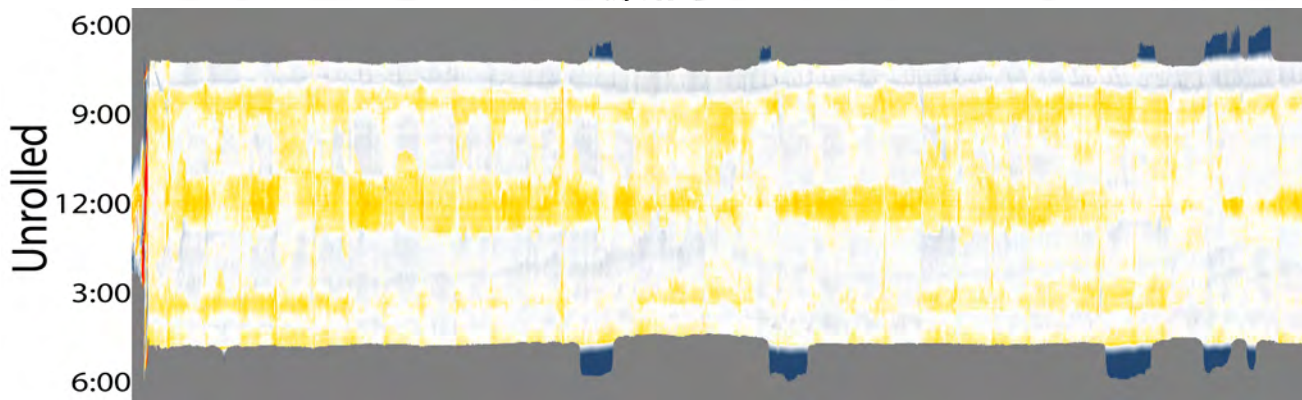
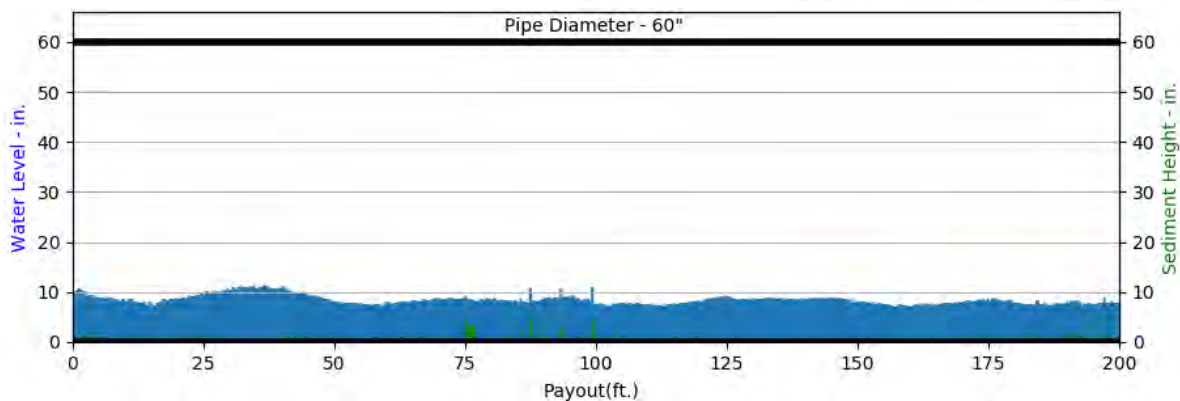
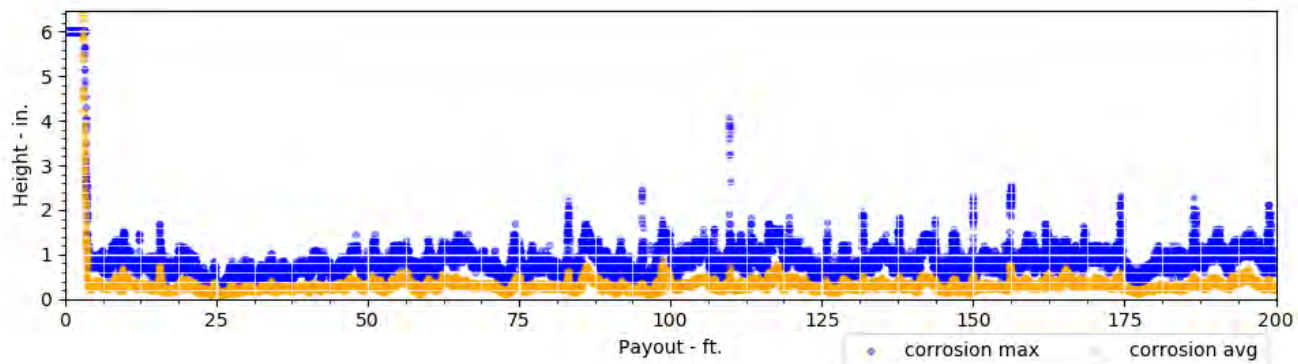
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Sediment and Corrosion Graphs(200'-400')

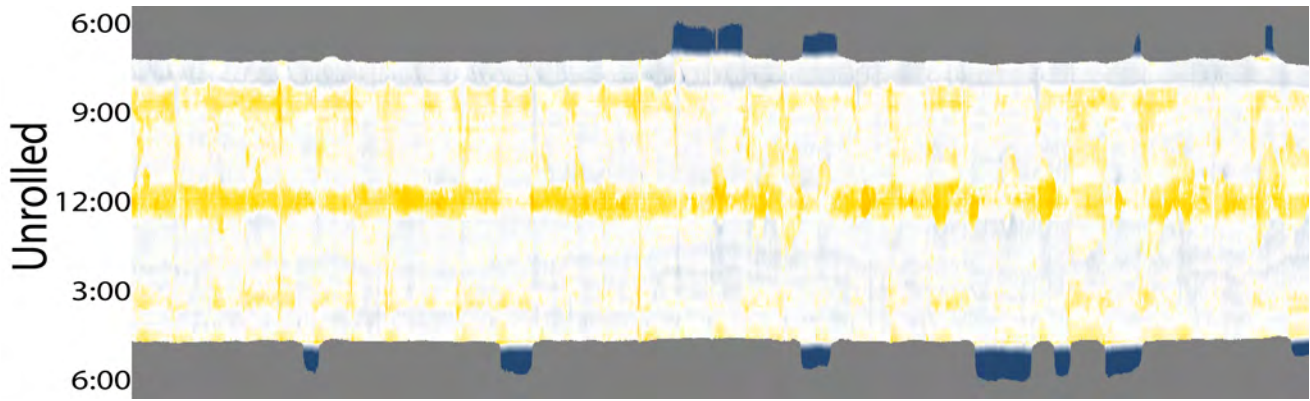
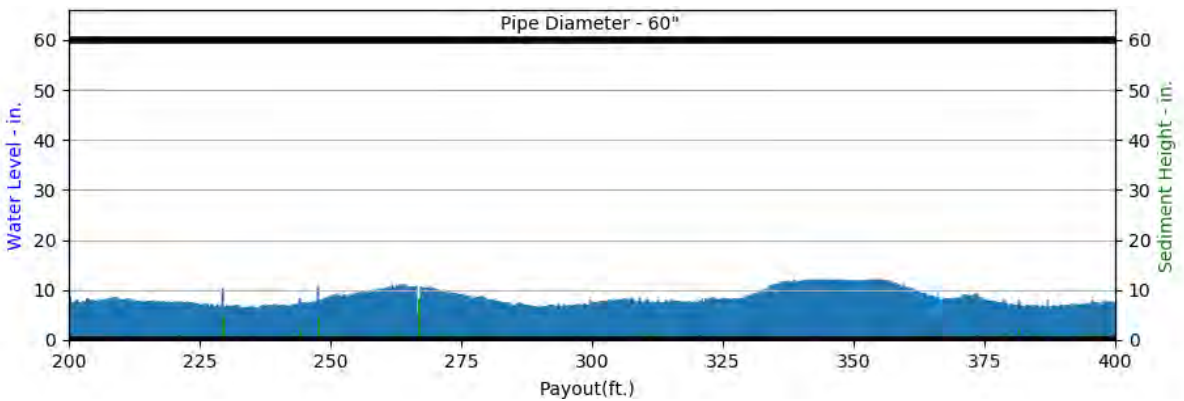
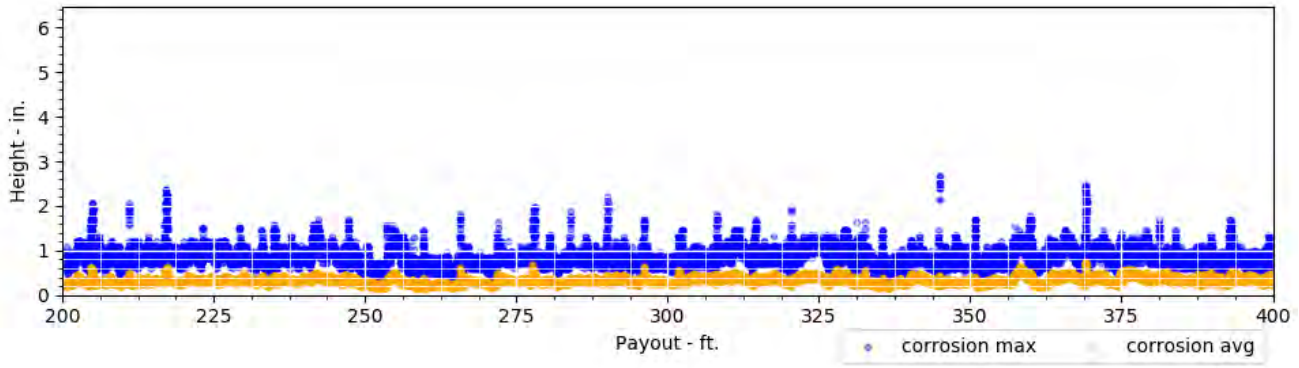
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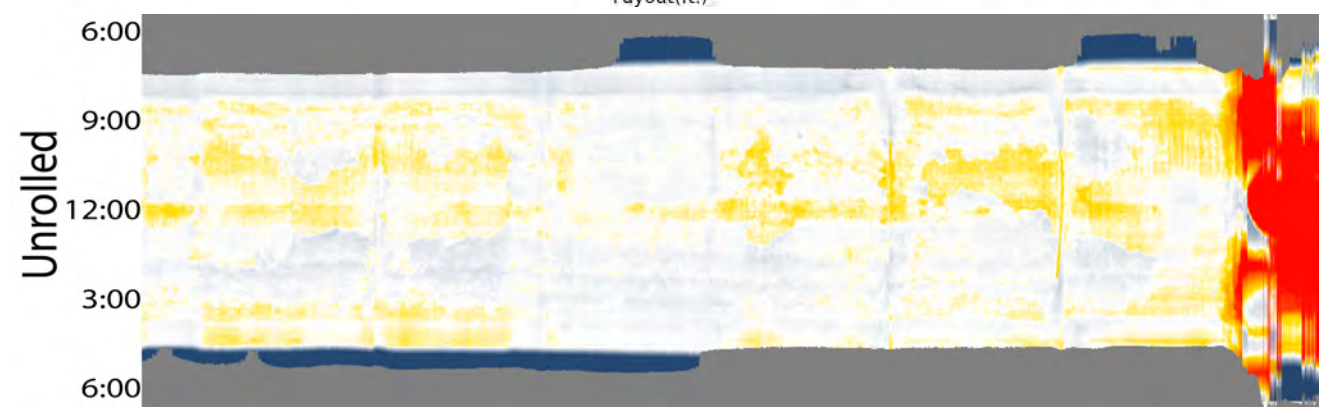
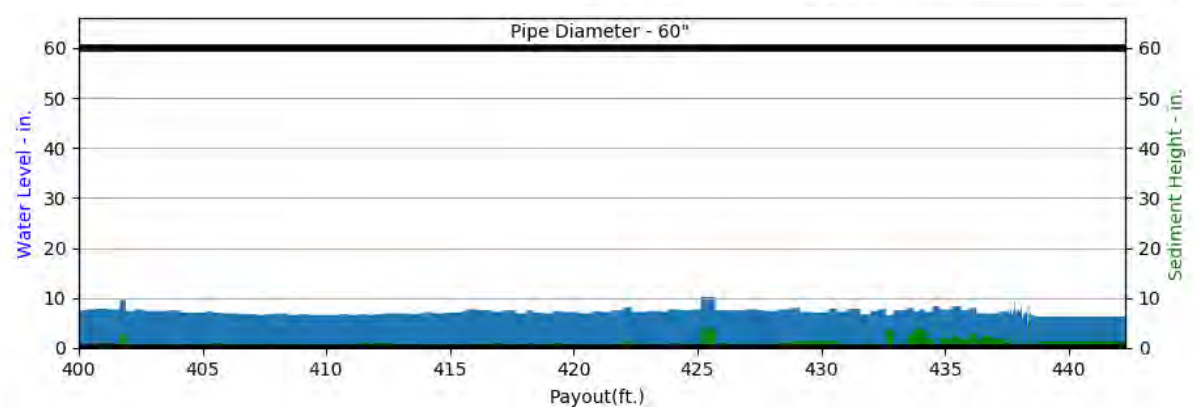
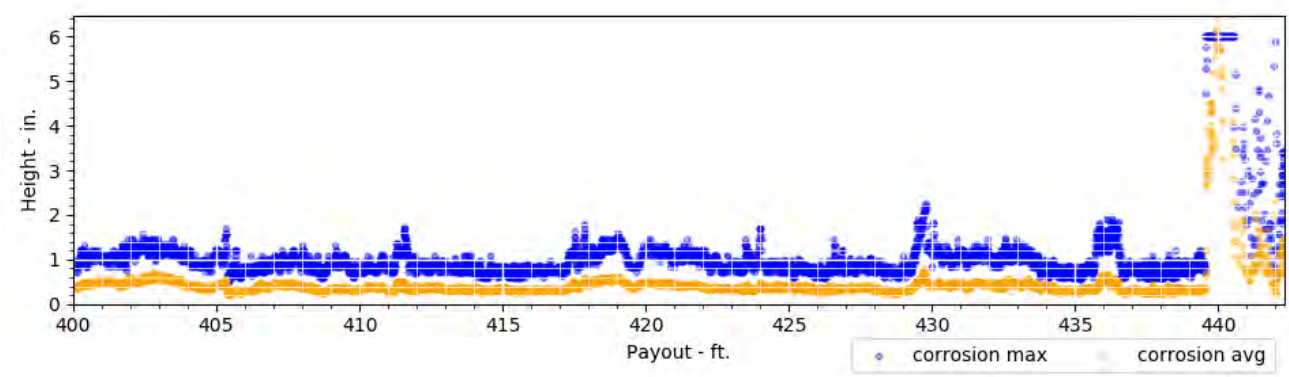
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Sediment and Corrosion Graphs(400'-442')

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 058-00001

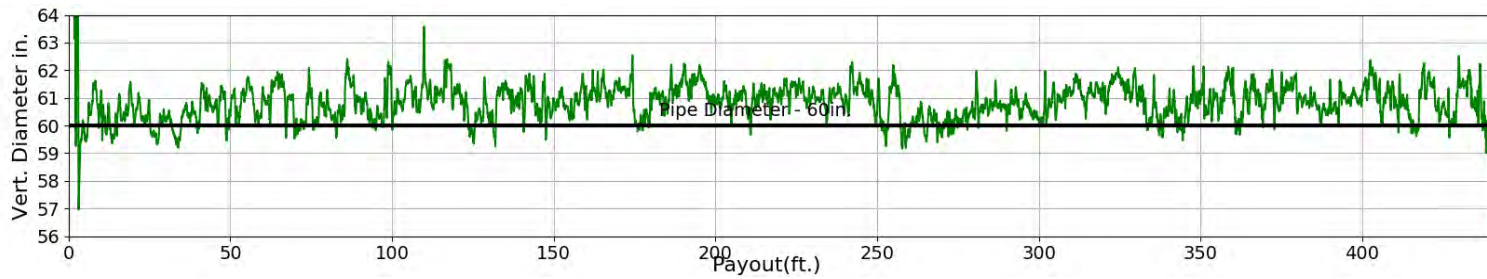
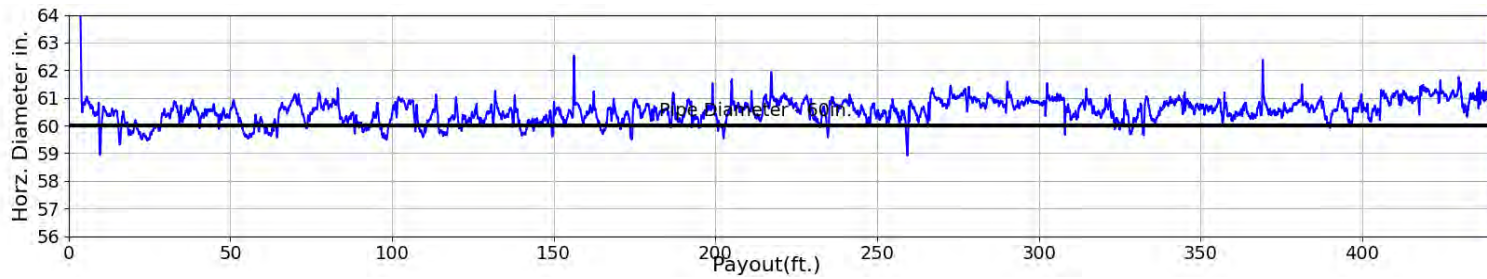
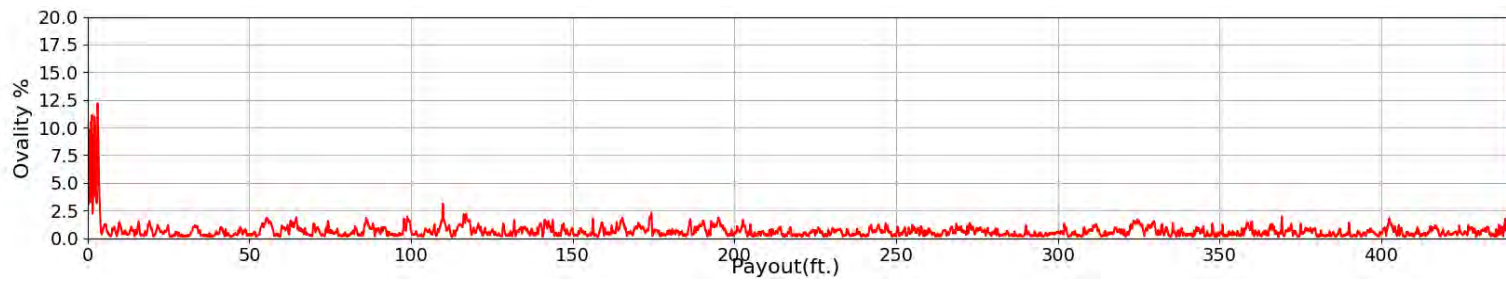


Pipe Ovality Graphs

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
0.1'	Start	Start of inspection	10.1"	6.0"	6.0"	3.6"	6.0"	0.6"	0.2%
1.8'	Hole	Incoming Lateral	12.5"	6.0"	6.0"	0.8"	1.8"	0.5"	0.2%
9.3'	Material Loss	Material loss at joint	0.2"	0.4"	0.6"	0.2"	0.5"	0.5"	0.1%
15.6'	Material Loss	Material loss at joint	0.7"	0.9"	1.3"	0.6"	1.4"	0.3"	0.0%
25.1'	Regular Interval		0.2"	0.2"	0.4"	1.8"	6.0"	0.8"	0.2%
28.2'	Material Loss	Material loss at joint	0.2"	0.4"	0.6"	1.2"	6.0"	0.9"	0.2%
33.9'	Material Loss	Material loss at joint	0.3"	0.7"	0.8"	1.3"	6.0"	0.6"	0.2%
37.4'	Buildup	Buildup	0.2"	0.3"	0.5"	1.4"	6.0"	0.5"	0.1%
40.0'	Material Loss	Material loss at joint	0.3"	0.4"	0.5"	1.1"	6.0"	0.7"	0.3%
45.9'	Material Loss	Material loss at joint	0.2"	0.5"	0.8"	0.3"	1.1"	0.4"	0.1%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
49.2'	Buildup	Buildup	0.2"	0.5"	0.7"	1.8"	6.0"	0.9"	0.3%
50.1'	Regular Interval		0.4"	0.7"	1.0"	0.4"	3.0"	0.4"	0.1%
58.6'	Material Loss	Material loss at joint	0.1"	0.3"	0.4"	0.4"	0.9"	0.7"	0.2%
64.3'	Material Loss	Material loss at joint	0.3"	0.7"	1.1"	0.4"	1.0"	0.3"	0.1%
70.7'	Material Loss	Material loss at joint	0.3"	0.5"	0.8"	0.3"	2.0"	0.5"	0.1%
75.1'	Regular Interval		0.4"	0.9"	1.1"	1.6"	6.0"	4.3"	1.4%
76.6'	Material Loss	Material loss at joint	0.2"	0.3"	0.6"	1.5"	6.0"	3.2"	0.9%
82.8'	Material Loss	Material loss at joint	0.3"	0.6"	0.8"	0.4"	4.8"	0.5"	0.1%
88.5'	Material Loss	Material loss at joint	0.3"	0.4"	0.6"	0.4"	1.1"	0.5"	0.1%
95.3'	Material Loss	Material loss at joint	0.3"	0.6"	1.1"	2.3"	6.0"	0.7"	0.2%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
100.1'	Regular Interval		0.3"	0.5"	0.7"	0.3"	1.0"	0.5"	0.1%
101.1'	Material Loss	Material loss at joint	0.3"	0.4"	0.6"	0.3"	1.2"	0.5"	0.1%
107.0'	Material Loss	Material loss at joint	0.3"	0.5"	0.7"	0.3"	0.8"	0.4"	0.1%
109.7'	Hole	Incoming Lateral	0.5"	2.6"	4.0"	0.3"	1.0"	0.6"	0.1%
113.3'	Material Loss	Material loss at joint	0.3"	0.6"	1.2"	0.2"	0.8"	0.5"	0.2%
119.7'	Material Loss	Material loss at joint	0.3"	0.7"	1.0"	0.3"	0.9"	0.5"	0.1%
125.1'	Regular Interval		0.3"	0.5"	0.7"	2.1"	6.0"	0.3"	0.1%
125.7'	Material Loss	Material loss at joint	0.3"	0.8"	1.2"	2.1"	6.0"	0.4"	0.1%
131.5'	Material Loss	Material loss at joint	0.2"	0.4"	0.6"	0.3"	1.3"	0.6"	0.1%
137.0'	Material Loss	Material loss at joint	0.3"	0.6"	1.0"	0.4"	0.9"	0.5"	0.1%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
143.7'	Material Loss	Material loss at joint	0.4"	1.0"	1.2"	1.3"	6.0"	0.6"	0.2%
149.6'	Material Loss	Material loss at joint	0.2"	0.3"	0.4"	1.5"	6.0"	0.4"	0.1%
150.1'	Regular Interval		0.3"	0.5"	0.8"	1.6"	6.0"	0.6"	0.2%
155.6'	Material Loss	Material loss at joint	0.2"	0.4"	0.6"	0.3"	1.1"	0.5"	0.1%
162.0'	Material Loss	Material loss at joint	0.4"	0.9"	1.2"	0.3"	0.8"	0.6"	0.1%
168.0'	Material Loss	Material loss at joint	0.3"	0.5"	0.7"	0.3"	0.9"	0.6"	0.2%
174.0'	Material Loss	Material loss at joint	0.4"	1.0"	1.1"	0.4"	0.9"	0.7"	0.1%
175.1'	Regular Interval		0.3"	0.5"	0.7"	1.4"	6.0"	0.5"	0.1%
180.0'	Material Loss	Material loss at joint	0.3"	0.5"	0.9"	0.3"	0.7"	0.5"	0.1%
186.4'	Material Loss	Material loss at joint	0.4"	0.9"	1.2"	0.2"	0.6"	0.3"	0.1%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
192.2'	Material Loss	Material loss at joint	0.3"	0.5"	0.7"	0.3"	1.0"	1.4"	0.4%
198.7'	Material Loss	Material loss at joint	0.3"	0.5"	0.8"	0.3"	0.8"	0.6"	0.2%
200.1'	Regular Interval		0.2"	0.5"	0.8"	0.3"	0.9"	1.5"	0.5%
204.7'	Material Loss	Material loss at joint	0.4"	0.8"	1.2"	0.3"	0.8"	0.5"	0.2%
211.0'	Material Loss	Material loss at joint	0.5"	1.6"	2.0"	1.6"	6.0"	0.8"	0.2%
217.0'	Material Loss	Material loss at joint	0.6"	1.2"	1.6"	0.2"	0.5"	0.4"	0.1%
222.8'	Material Loss	Material loss at joint	0.3"	0.5"	0.7"	0.3"	0.8"	0.6"	0.2%
225.1'	Regular Interval		0.3"	0.7"	0.8"	0.3"	0.8"	0.4"	0.1%
228.9'	Material Loss	Material loss at joint	0.3"	0.7"	1.0"	0.3"	1.0"	0.6"	0.1%
234.7'	Material Loss	Material loss at joint	0.4"	0.6"	0.7"	0.3"	0.8"	0.9"	0.2%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
241.0'	Material Loss	Material loss at joint	0.3"	0.5"	0.8"	0.3"	1.0"	0.5"	0.1%
247.3'	Material Loss	Material loss at joint	0.4"	1.2"	1.6"	0.4"	1.0"	0.5"	0.1%
250.1'	Regular Interval		0.3"	0.6"	0.8"	1.7"	6.0"	0.6"	0.1%
258.8'	Buildup	Buildup	0.2"	0.5"	0.8"	1.9"	6.0"	0.5"	0.2%
265.5'	Material Loss	Material loss at joint	0.3"	0.3"	0.6"	0.3"	0.9"	0.3"	0.1%
271.6'	Material Loss	Material loss at joint	0.2"	0.4"	0.6"	1.8"	6.0"	0.6"	0.2%
275.1'	Regular Interval		0.3"	0.5"	0.8"	1.9"	6.0"	0.5"	0.1%
277.6'	Material Loss	Material loss at joint	0.3"	0.6"	0.8"	0.5"	3.3"	0.4"	0.1%
283.7'	Material Loss	Material loss at joint	0.3"	0.6"	1.0"	0.2"	0.6"	0.4"	0.1%
289.8'	Material Loss	Material loss at joint	0.4"	0.9"	1.5"	0.3"	0.6"	0.5"	0.1%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
295.8'	Material Loss	Material loss at joint	0.4"	0.8"	1.1"	0.3"	0.9"	0.6"	0.1%
300.1'	Regular Interval		0.3"	0.4"	0.7"	0.3"	1.0"	0.5"	0.1%
301.8'	Material Loss	Material loss at joint	0.5"	1.1"	1.3"	0.4"	1.1"	0.6"	0.2%
308.1'	Material Loss	Material loss at joint	0.4"	1.0"	1.7"	0.5"	1.3"	0.6"	0.2%
314.3'	Material Loss	Material loss at joint	0.3"	0.5"	1.0"	0.2"	0.6"	0.5"	0.1%
325.1'	Regular Interval		0.4"	1.0"	1.1"	0.3"	0.8"	0.5"	0.1%
332.6'	Material Loss	Material loss at joint	0.5"	1.2"	1.6"	1.4"	6.0"	0.2"	0.0%
338.8'	Material Loss	Material loss at joint	0.3"	0.4"	0.8"	0.3"	0.9"	0.5"	0.1%
344.5'	Material Loss	Material loss at joint	0.2"	0.4"	0.6"	0.5"	1.6"	0.4"	0.1%
350.1'	Regular Interval		0.3"	0.5"	1.0"	0.4"	1.0"	0.2"	0.0%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
350.7'	Material Loss	Material loss at joint	0.3"	0.6"	1.0"	0.4"	1.1"	0.2"	0.0%
356.5'	Material Loss	Material loss at joint	0.2"	0.4"	0.7"	0.5"	1.6"	0.6"	0.3%
362.7'	Material Loss	Material loss at joint	0.2"	0.4"	0.7"	1.9"	6.0"	0.7"	0.2%
368.9'	Material Loss	Material loss at joint	0.3"	0.6"	1.0"	0.3"	0.9"	0.5"	0.1%
374.8'	Material Loss	Material loss at joint	0.5"	1.0"	1.3"	0.4"	1.4"	0.5"	0.1%
375.1'	Regular Interval		0.4"	0.8"	1.1"	0.5"	1.3"	0.5"	0.1%
400.1'	Regular Interval		0.4"	0.7"	0.8"	0.3"	1.1"	0.5"	0.1%
409.1'	Material Loss	Material loss at joint	0.3"	0.6"	1.0"	0.4"	1.3"	0.6"	0.1%
425.1'	Regular Interval		0.4"	0.6"	1.0"	0.3"	1.2"	0.8"	0.3%
436.0'	Material Loss	Material loss at joint	0.6"	1.0"	1.5"	0.4"	1.0"	3.0"	1.0%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
441.2'	Material Loss	Material loss at joint	0.7"	1.1"	1.3"	1.3"	3.8"	1.4"	0.2%
442.3'	End	End of inspection	1.2"	3.1"	2.9"	3.0"	6.0"	1.4"	0.2%



Distributed Cross-Sections

0.1 Start

Av. Corrosion (in.)	10.1
3s Corrosion (in.)	6.0
Max Corrosion (in.)	6.0
Av. Buildup (in.)	3.6
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.6
Sed. restriction %	0.2

1.8 Hole

Av. Corrosion (in.)	12.5
3s Corrosion (in.)	6.0
Max Corrosion (in.)	6.0
Av. Buildup (in.)	0.8
Max. Buildup (in.)	1.8
Max Sed. Height (in.)	0.5
Sed. restriction %	0.2

9.3 Material Loss

Av. Corrosion (in.)	0.2
3s Corrosion (in.)	0.4
Max Corrosion (in.)	0.6
Av. Buildup (in.)	0.2
Max. Buildup (in.)	0.5
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1



Distributed Cross-Sections

15.6 Material Loss

Av. Corrosion (in.)	0.7
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.3
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.4
Max Sed. Height (in.)	0.3
Sed. restriction %	0.0

25.1 Regular Interval

Av. Corrosion (in.)	0.2
3s Corrosion (in.)	0.2
Max Corrosion (in.)	0.4
Av. Buildup (in.)	1.8
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.8
Sed. restriction %	0.2

28.2 Material Loss

Av. Corrosion (in.)	0.2
3s Corrosion (in.)	0.4
Max Corrosion (in.)	0.6
Av. Buildup (in.)	1.2
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.9
Sed. restriction %	0.2



Distributed Cross-Sections

33.9 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.7
Max Corrosion (in.)	0.8
Av. Buildup (in.)	1.3
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.6
Sed. restriction %	0.2

37.4 Buildup

Av. Corrosion (in.)	0.2
3s Corrosion (in.)	0.3
Max Corrosion (in.)	0.5
Av. Buildup (in.)	1.4
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1

40.0 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.4
Max Corrosion (in.)	0.5
Av. Buildup (in.)	1.1
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.7
Sed. restriction %	0.3



Distributed Cross-Sections

45.9 Material Loss	
Av. Corrosion (in.)	0.2
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.3
Max. Buildup (in.)	1.1
Max Sed. Height (in.)	0.4
Sed. restriction %	0.1

49.2 Buildup	
Av. Corrosion (in.)	0.2
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.7
Av. Buildup (in.)	1.8
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.9
Sed. restriction %	0.3

50.1 Regular Interval	
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.4
Max. Buildup (in.)	3.0
Max Sed. Height (in.)	0.4
Sed. restriction %	0.1



Distributed Cross-Sections

58.6 Material Loss

Av. Corrosion (in.)	0.1
3s Corrosion (in.)	0.3
Max Corrosion (in.)	0.4
Av. Buildup (in.)	0.4
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.7
Sed. restriction %	0.2

64.3 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.3
Sed. restriction %	0.1

70.7 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.3
Max. Buildup (in.)	2.0
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1



Distributed Cross-Sections

75.1 Regular Interval		76.6 Material Loss		82.8 Material Loss	
Av. Corrosion (in.)	0.4	Av. Corrosion (in.)	0.2	Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.9	3s Corrosion (in.)	0.3	3s Corrosion (in.)	0.6
Max Corrosion (in.)	1.1	Max Corrosion (in.)	0.6	Max Corrosion (in.)	0.8
Av. Buildup (in.)	1.6	Av. Buildup (in.)	1.5	Av. Buildup (in.)	0.4
Max. Buildup (in.)	6.0	Max. Buildup (in.)	6.0	Max. Buildup (in.)	4.8
Max Sed. Height (in.)	4.3	Max Sed. Height (in.)	3.2	Max Sed. Height (in.)	0.5
Sed. restriction %	1.4	Sed. restriction %	0.9	Sed. restriction %	0.1

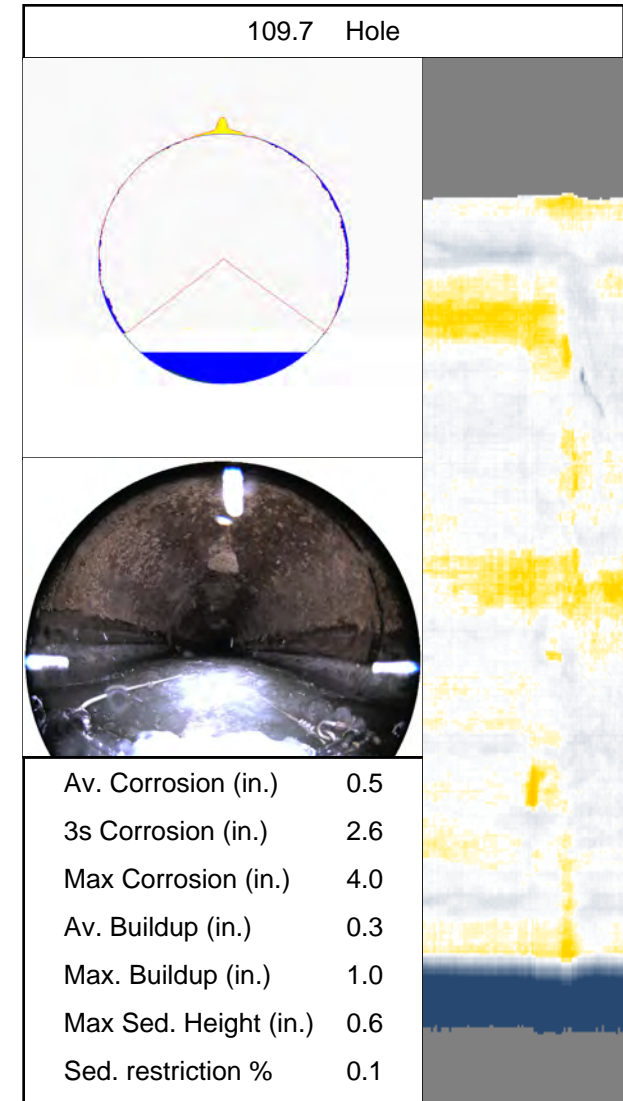
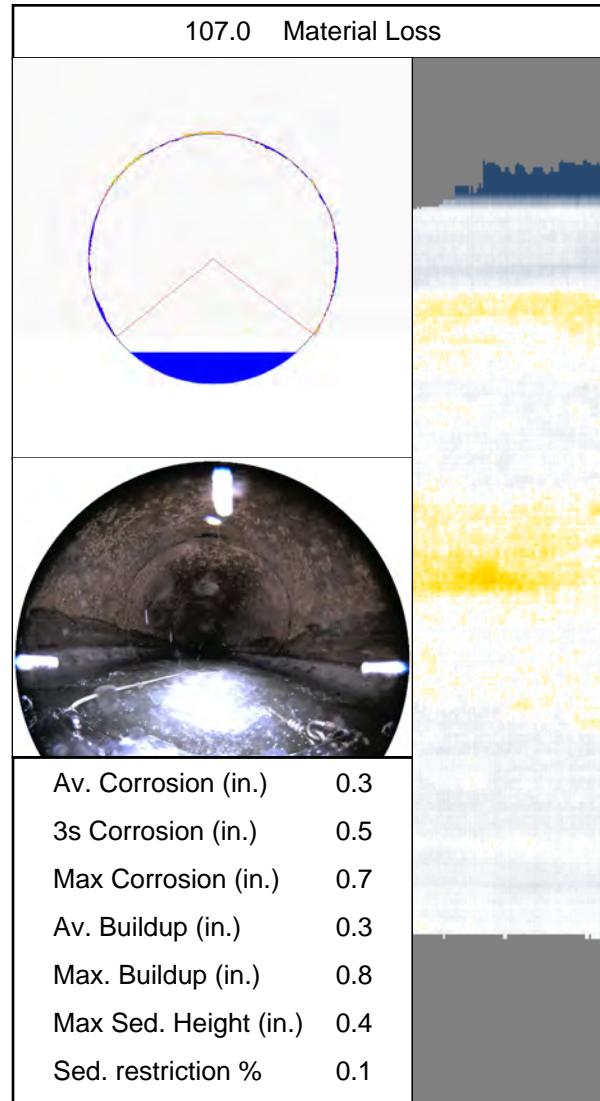
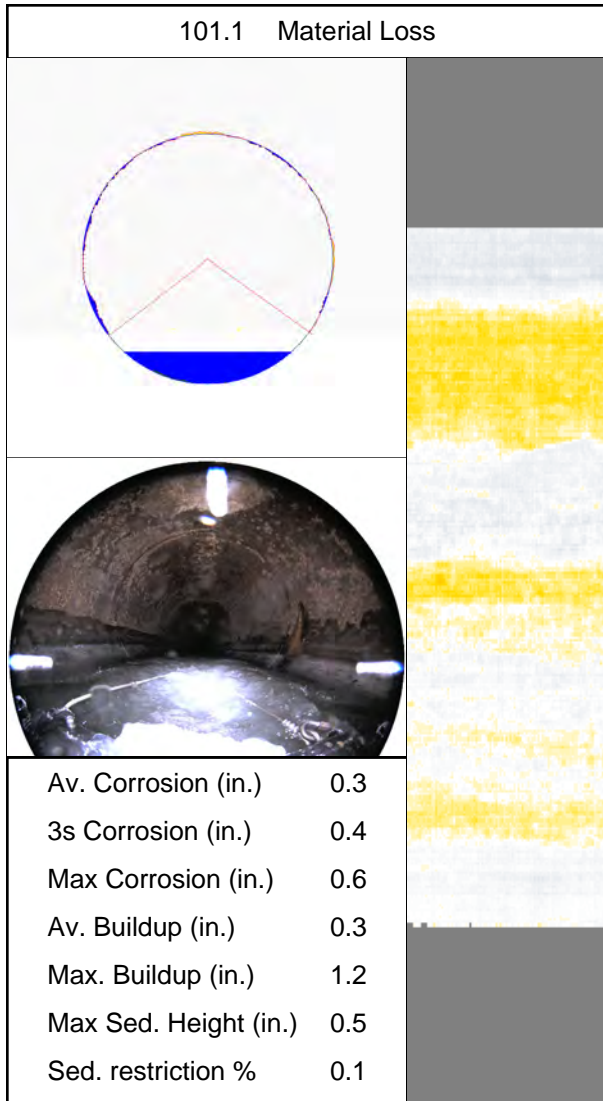


Distributed Cross-Sections

88.5 Material Loss		95.3 Material Loss		100.1 Regular Interval	
Av. Corrosion (in.)	0.3	Av. Corrosion (in.)	0.3	Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.4	3s Corrosion (in.)	0.6	3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.6	Max Corrosion (in.)	1.1	Max Corrosion (in.)	0.7
Av. Buildup (in.)	0.4	Av. Buildup (in.)	2.3	Av. Buildup (in.)	0.3
Max. Buildup (in.)	1.1	Max. Buildup (in.)	6.0	Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.5	Max Sed. Height (in.)	0.7	Max Sed. Height (in.)	0.5
Sed. restriction %	0.1	Sed. restriction %	0.2	Sed. restriction %	0.1



Distributed Cross-Sections





Distributed Cross-Sections

113.3 Material Loss		119.7 Material Loss		125.1 Regular Interval	
Av. Corrosion (in.)	0.3	Av. Corrosion (in.)	0.3	Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.6	3s Corrosion (in.)	0.7	3s Corrosion (in.)	0.5
Max Corrosion (in.)	1.2	Max Corrosion (in.)	1.0	Max Corrosion (in.)	0.7
Av. Buildup (in.)	0.2	Av. Buildup (in.)	0.3	Av. Buildup (in.)	2.1
Max. Buildup (in.)	0.8	Max. Buildup (in.)	0.9	Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.5	Max Sed. Height (in.)	0.5	Max Sed. Height (in.)	0.3
Sed. restriction %	0.2	Sed. restriction %	0.1	Sed. restriction %	0.1



Distributed Cross-Sections

125.7 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.2
Av. Buildup (in.)	2.1
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.4
Sed. restriction %	0.1

131.5 Material Loss

Av. Corrosion (in.)	0.2
3s Corrosion (in.)	0.4
Max Corrosion (in.)	0.6
Av. Buildup (in.)	0.3
Max. Buildup (in.)	1.3
Max Sed. Height (in.)	0.6
Sed. restriction %	0.1

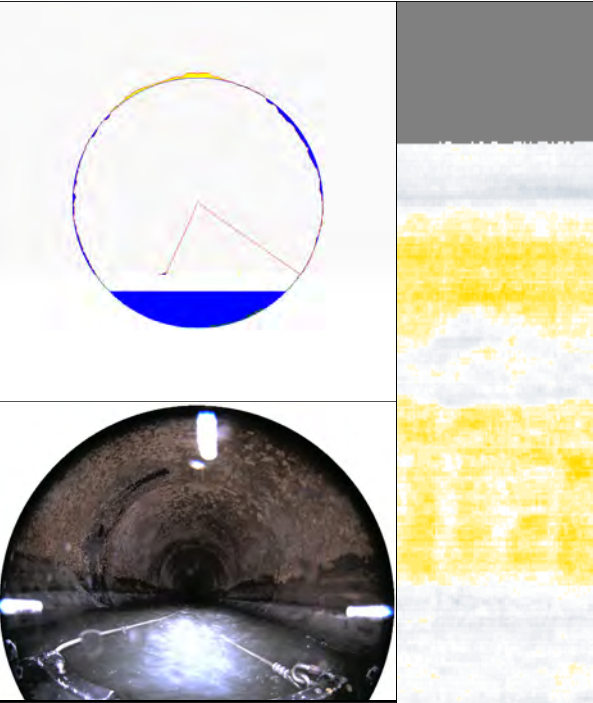
137.0 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.6
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.4
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1



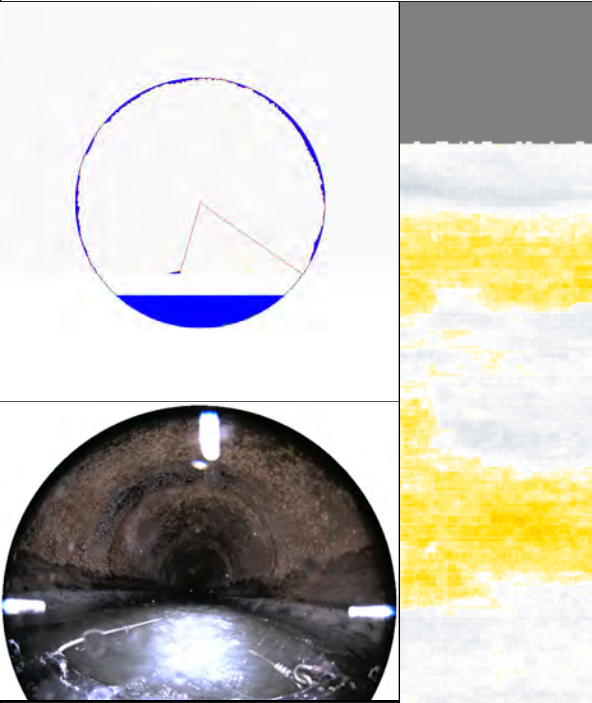
Distributed Cross-Sections

143.7 Material Loss



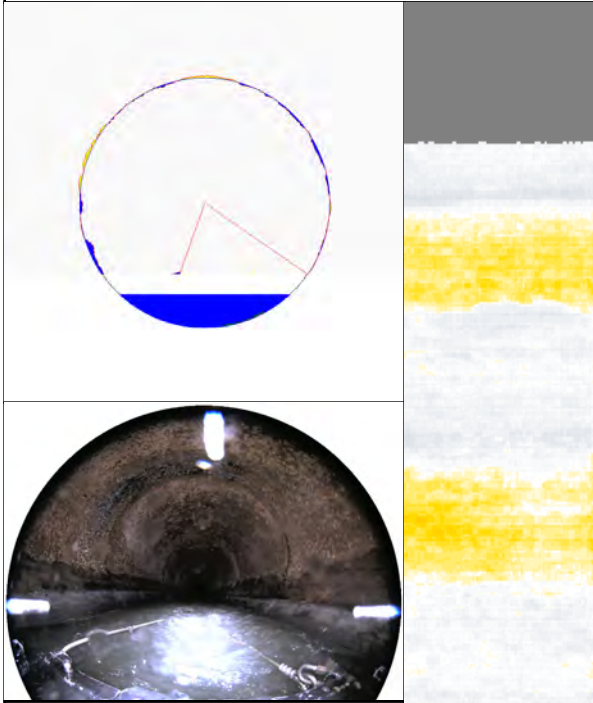
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	1.0
Max Corrosion (in.)	1.2
Av. Buildup (in.)	1.3
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.6
Sed. restriction %	0.2

149.6 Material Loss



Av. Corrosion (in.)	0.2
3s Corrosion (in.)	0.3
Max Corrosion (in.)	0.4
Av. Buildup (in.)	1.5
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.4
Sed. restriction %	0.1

150.1 Regular Interval



Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.8
Av. Buildup (in.)	1.6
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.6
Sed. restriction %	0.2



Distributed Cross-Sections

155.6 Material Loss

Av. Corrosion (in.)	0.2
3s Corrosion (in.)	0.4
Max Corrosion (in.)	0.6
Av. Buildup (in.)	0.3
Max. Buildup (in.)	1.1
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1

162.0 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.2
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.8
Max Sed. Height (in.)	0.6
Sed. restriction %	0.1

168.0 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.7
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.6
Sed. restriction %	0.2



Distributed Cross-Sections

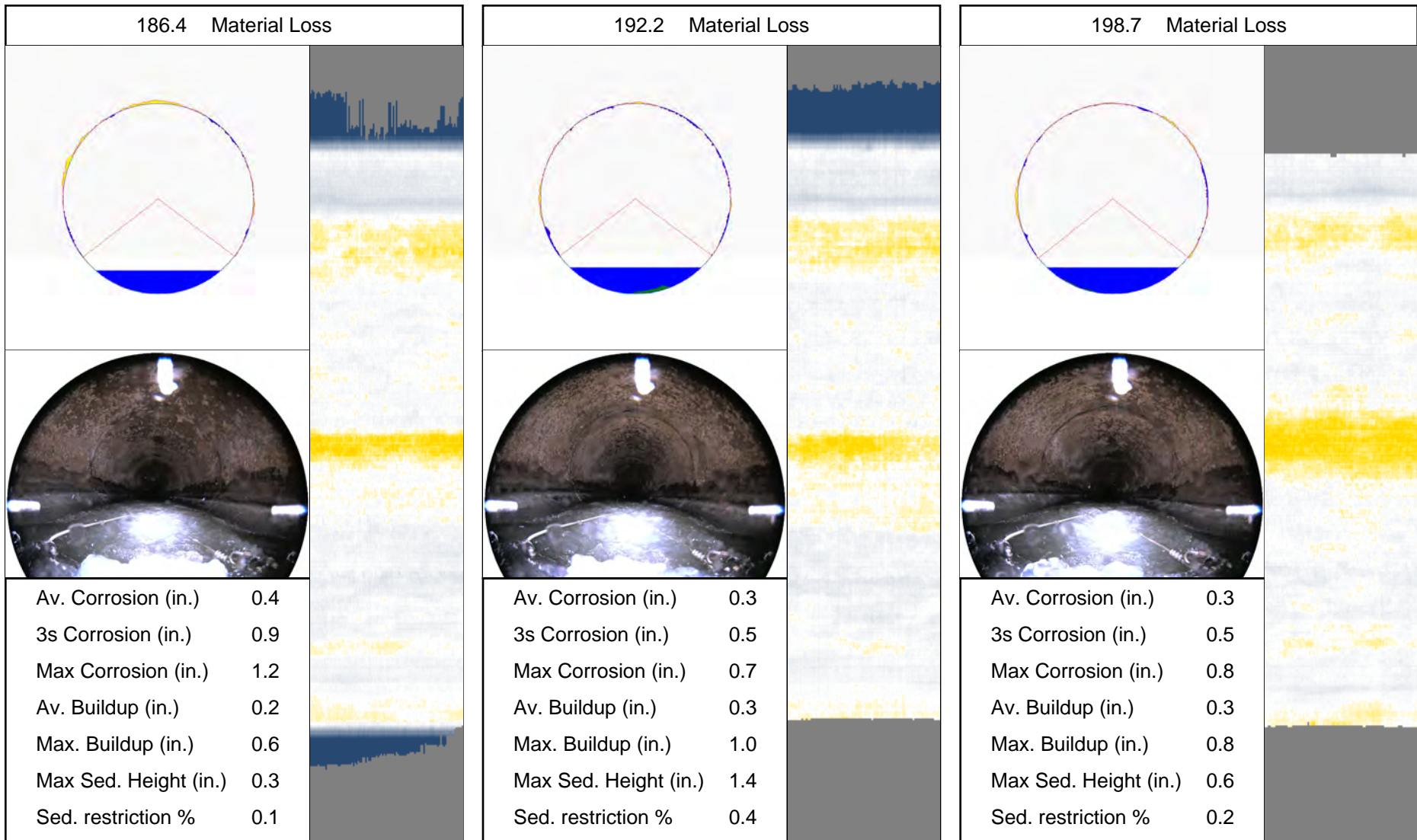
174.0 Material Loss	
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	1.0
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.4
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.7
Sed. restriction %	0.1

175.1 Regular Interval	
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.7
Av. Buildup (in.)	1.4
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1

180.0 Material Loss	
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.9
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.7
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1

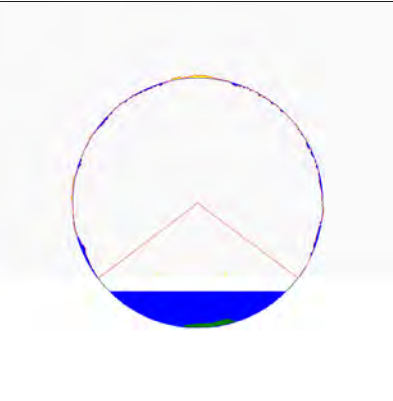
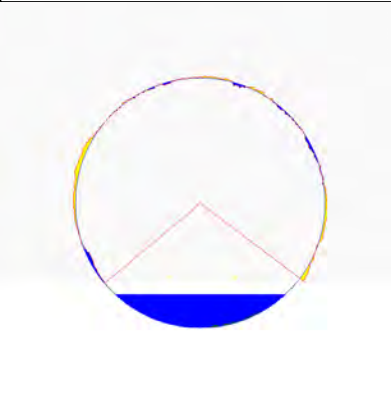
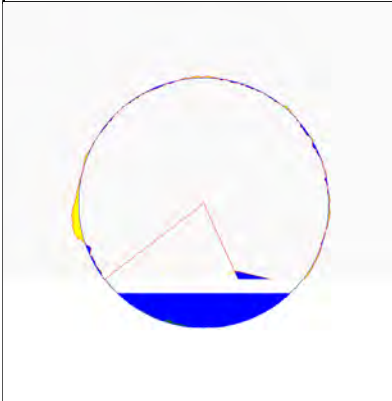





Distributed Cross-Sections





Distributed Cross-Sections

200.1 Regular Interval		204.7 Material Loss		211.0 Material Loss	
					
					
Av. Corrosion (in.)	0.2	Av. Corrosion (in.)	0.4	Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.5	3s Corrosion (in.)	0.8	3s Corrosion (in.)	1.6
Max Corrosion (in.)	0.8	Max Corrosion (in.)	1.2	Max Corrosion (in.)	2.0
Av. Buildup (in.)	0.3	Av. Buildup (in.)	0.3	Av. Buildup (in.)	1.6
Max. Buildup (in.)	0.9	Max. Buildup (in.)	0.8	Max. Buildup (in.)	6.0
Max Sed. Height (in.)	1.5	Max Sed. Height (in.)	0.5	Max Sed. Height (in.)	0.8
Sed. restriction %	0.5	Sed. restriction %	0.2	Sed. restriction %	0.2



Distributed Cross-Sections

217.0 Material Loss	
Av. Corrosion (in.)	0.6
3s Corrosion (in.)	1.2
Max Corrosion (in.)	1.6
Av. Buildup (in.)	0.2
Max. Buildup (in.)	0.5
Max Sed. Height (in.)	0.4
Sed. restriction %	0.1

222.8 Material Loss	
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.7
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.8
Max Sed. Height (in.)	0.6
Sed. restriction %	0.2

225.1 Regular Interval	
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.7
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.8
Max Sed. Height (in.)	0.4
Sed. restriction %	0.1



Distributed Cross-Sections

228.9 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.3
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.6
Sed. restriction %	0.1

234.7 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.7
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.8
Max Sed. Height (in.)	0.9
Sed. restriction %	0.2

241.0 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.3
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1



Distributed Cross-Sections

247.3 Material Loss	
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	1.2
Max Corrosion (in.)	1.6
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1

250.1 Regular Interval	
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.8
Av. Buildup (in.)	1.7
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.6
Sed. restriction %	0.1

258.8 Buildup	
Av. Corrosion (in.)	0.2
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.8
Av. Buildup (in.)	1.9
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.5
Sed. restriction %	0.2



Distributed Cross-Sections

265.5 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.3
Max Corrosion (in.)	0.6
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.3
Sed. restriction %	0.1

271.6 Material Loss

Av. Corrosion (in.)	0.2
3s Corrosion (in.)	0.4
Max Corrosion (in.)	0.6
Av. Buildup (in.)	1.8
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.6
Sed. restriction %	0.2

275.1 Regular Interval

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.8
Av. Buildup (in.)	1.9
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1



Distributed Cross-Sections

277.6 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.5
Max. Buildup (in.)	3.3
Max Sed. Height (in.)	0.4
Sed. restriction %	0.1

283.7 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.6
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.2
Max. Buildup (in.)	0.6
Max Sed. Height (in.)	0.4
Sed. restriction %	0.1

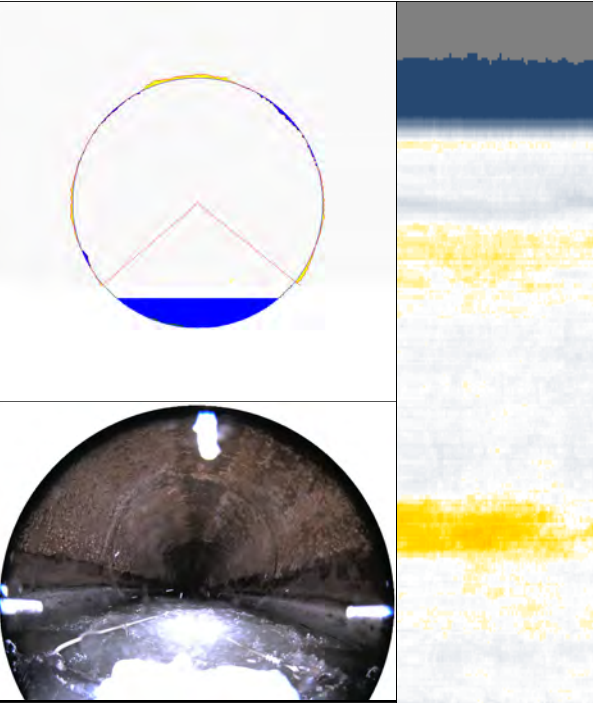
289.8 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.5
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.6
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1



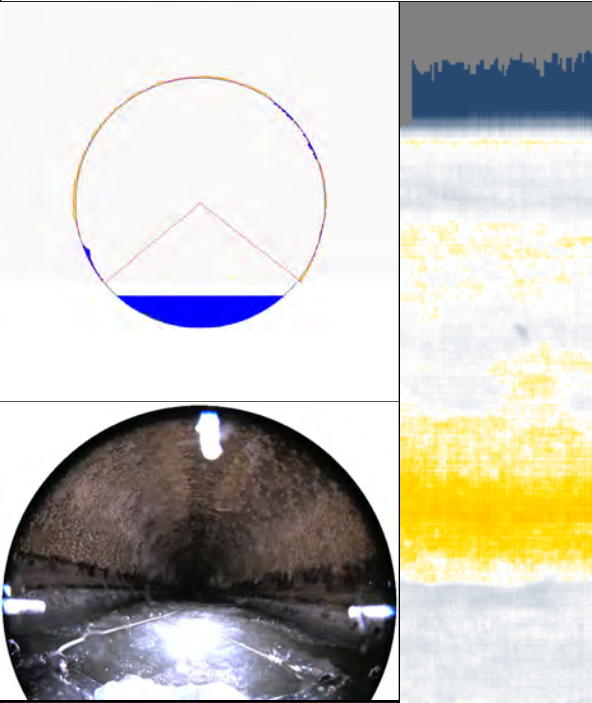
Distributed Cross-Sections

295.8 Material Loss



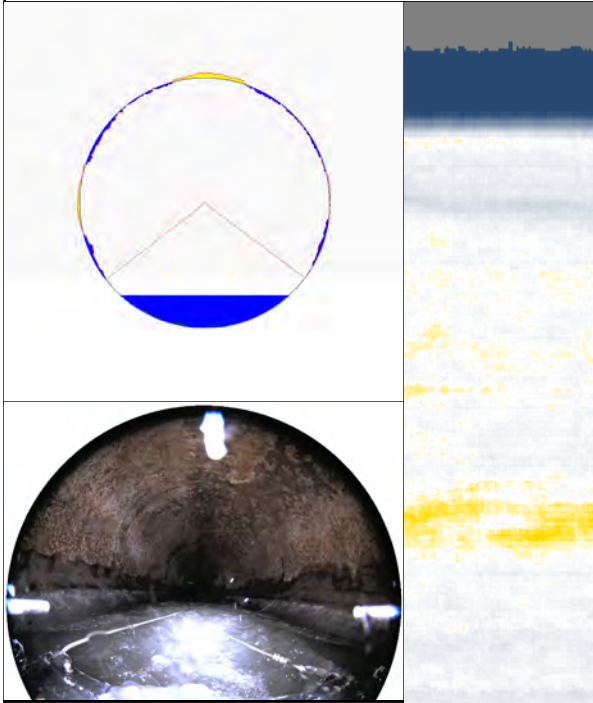
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.6
Sed. restriction %	0.1

300.1 Regular Interval



Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.4
Max Corrosion (in.)	0.7
Av. Buildup (in.)	0.3
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1

301.8 Material Loss



Av. Corrosion (in.)	0.5
3s Corrosion (in.)	1.1
Max Corrosion (in.)	1.3
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.1
Max Sed. Height (in.)	0.6
Sed. restriction %	0.2



Distributed Cross-Sections

308.1 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	1.0
Max Corrosion (in.)	1.7
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.3
Max Sed. Height (in.)	0.6
Sed. restriction %	0.2

314.3 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.2
Max. Buildup (in.)	0.6
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1

325.1 Regular Interval

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	1.0
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.8
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1



Distributed Cross-Sections

332.6 Material Loss

Av. Corrosion (in.)	0.5
3s Corrosion (in.)	1.2
Max Corrosion (in.)	1.6
Av. Buildup (in.)	1.4
Max. Buildup (in.)	6.0
Max Sed. Height (in.)	0.2
Sed. restriction %	0.0

338.8 Material Loss

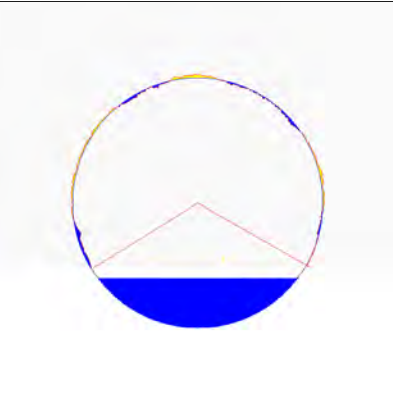
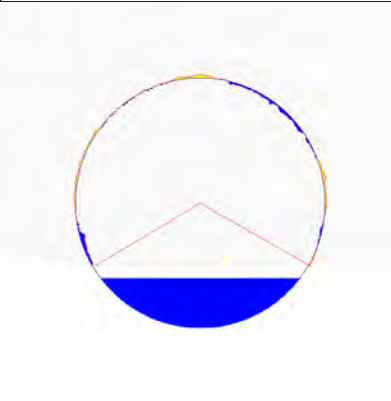
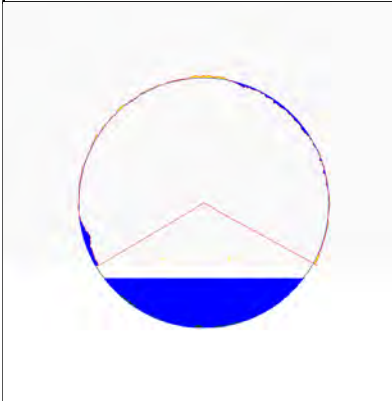



Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.4
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1

344.5 Material Loss

Av. Corrosion (in.)	0.2
3s Corrosion (in.)	0.4
Max Corrosion (in.)	0.6
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.6
Max Sed. Height (in.)	0.4
Sed. restriction %	0.1



Distributed Cross-Sections

350.1 Regular Interval		350.7 Material Loss		356.5 Material Loss	
					
					
Av. Corrosion (in.)	0.3	Av. Corrosion (in.)	0.3	Av. Corrosion (in.)	0.2
3s Corrosion (in.)	0.5	3s Corrosion (in.)	0.6	3s Corrosion (in.)	0.4
Max Corrosion (in.)	1.0	Max Corrosion (in.)	1.0	Max Corrosion (in.)	0.7
Av. Buildup (in.)	0.4	Av. Buildup (in.)	0.4	Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.0	Max. Buildup (in.)	1.1	Max. Buildup (in.)	1.6
Max Sed. Height (in.)	0.2	Max Sed. Height (in.)	0.2	Max Sed. Height (in.)	0.6
Sed. restriction %	0.0	Sed. restriction %	0.0	Sed. restriction %	0.3



Distributed Cross-Sections

362.7 Material Loss		368.9 Material Loss		374.8 Material Loss	
Av. Corrosion (in.)	0.2	Av. Corrosion (in.)	0.3	Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.4	3s Corrosion (in.)	0.6	3s Corrosion (in.)	1.0
Max Corrosion (in.)	0.7	Max Corrosion (in.)	1.0	Max Corrosion (in.)	1.3
Av. Buildup (in.)	1.9	Av. Buildup (in.)	0.3	Av. Buildup (in.)	0.4
Max. Buildup (in.)	6.0	Max. Buildup (in.)	0.9	Max. Buildup (in.)	1.4
Max Sed. Height (in.)	0.7	Max Sed. Height (in.)	0.5	Max Sed. Height (in.)	0.5
Sed. restriction %	0.2	Sed. restriction %	0.1	Sed. restriction %	0.1



Distributed Cross-Sections

375.1 Regular Interval	
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.3
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1

400.1 Regular Interval	
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.7
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.3
Max. Buildup (in.)	1.1
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1

409.1 Material Loss	
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.6
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.3
Max Sed. Height (in.)	0.6
Sed. restriction %	0.1



Distributed Cross-Sections

425.1 Regular Interval	
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.6
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.3
Max. Buildup (in.)	1.2
Max Sed. Height (in.)	0.8
Sed. restriction %	0.3

436.0 Material Loss	
Av. Corrosion (in.)	0.6
3s Corrosion (in.)	1.0
Max Corrosion (in.)	1.5
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	3.0
Sed. restriction %	1.0

441.2 Material Loss	
Av. Corrosion (in.)	0.7
3s Corrosion (in.)	1.1
Max Corrosion (in.)	1.3
Av. Buildup (in.)	1.3
Max. Buildup (in.)	3.8
Max Sed. Height (in.)	1.4
Sed. restriction %	0.2

CES Baton Rouge

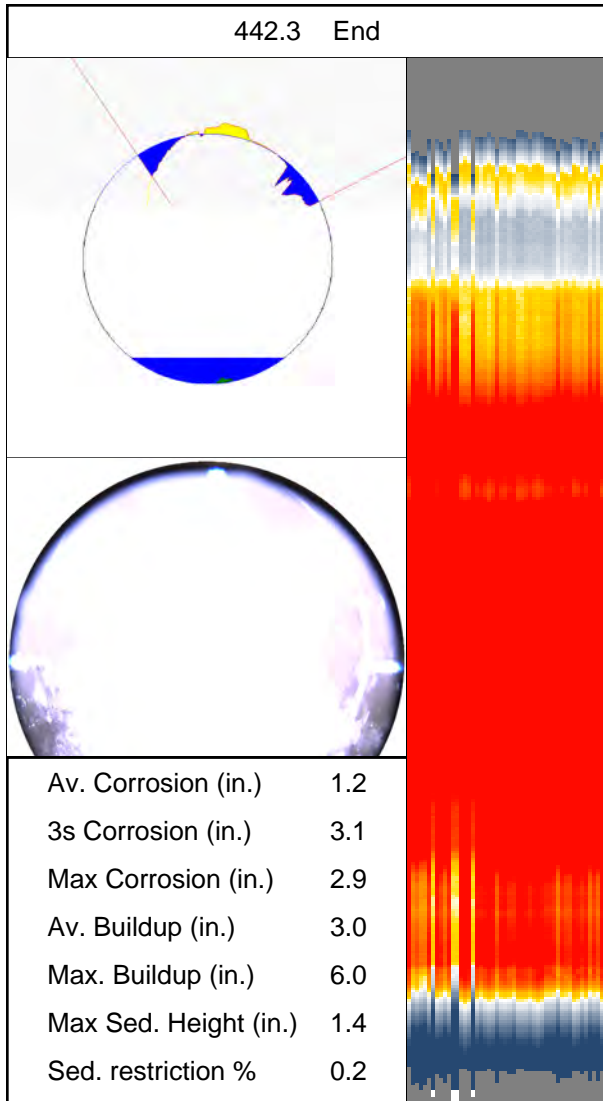
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058-00001



Distributed Cross-Sections



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058-00001

Pipeline Inspection Partners Corp.

3600 Rio Vista Avenue
Orlando Florida 32805
Phone: 800.327.7791
Fax: 407.425.1569

Ed Diggs
800.327.7791
ediggs@cuesinc.com

Scott Thayer
412.839.1100
sthayer@cuesinc.com

Adam Slifko
412-656-5636
aslifko@cuesinc.com

Michelle Joy
724-601-1728
mjoy@cuesinc.com

Josh Graham
1401 Seaboard Dr.
Baton Rouge, LA 70810
Phone: 985.502.5667
jgraham@ces-ses.com

This report presents internal pipeline condition data collected by the CUES Multi Sensor Inspection (MSI) technology platform and is being provided to individuals who have experience with MSI data and civil engineering principles. Information provided within this report is not to take the place of or be a substitute for professional civil engineering advice and/or recommendations.

It is the sole responsibility of the client in regards to the following: Interpretation of the MSI data results provided within this report; evaluation of the pipeline segment; any remedial/rehabilitation procedures or processes; post MSI inspection decisions and processes such as additional investigations and/or subsequent cleaning operations.

Some information provided and utilized within this report for this specific pipeline segment such as distance and dimensions may incorporate or have been provided by others. Because this information may not always be accurate and complete the project engineer should confirm this information through their own assessments in regards to such information.

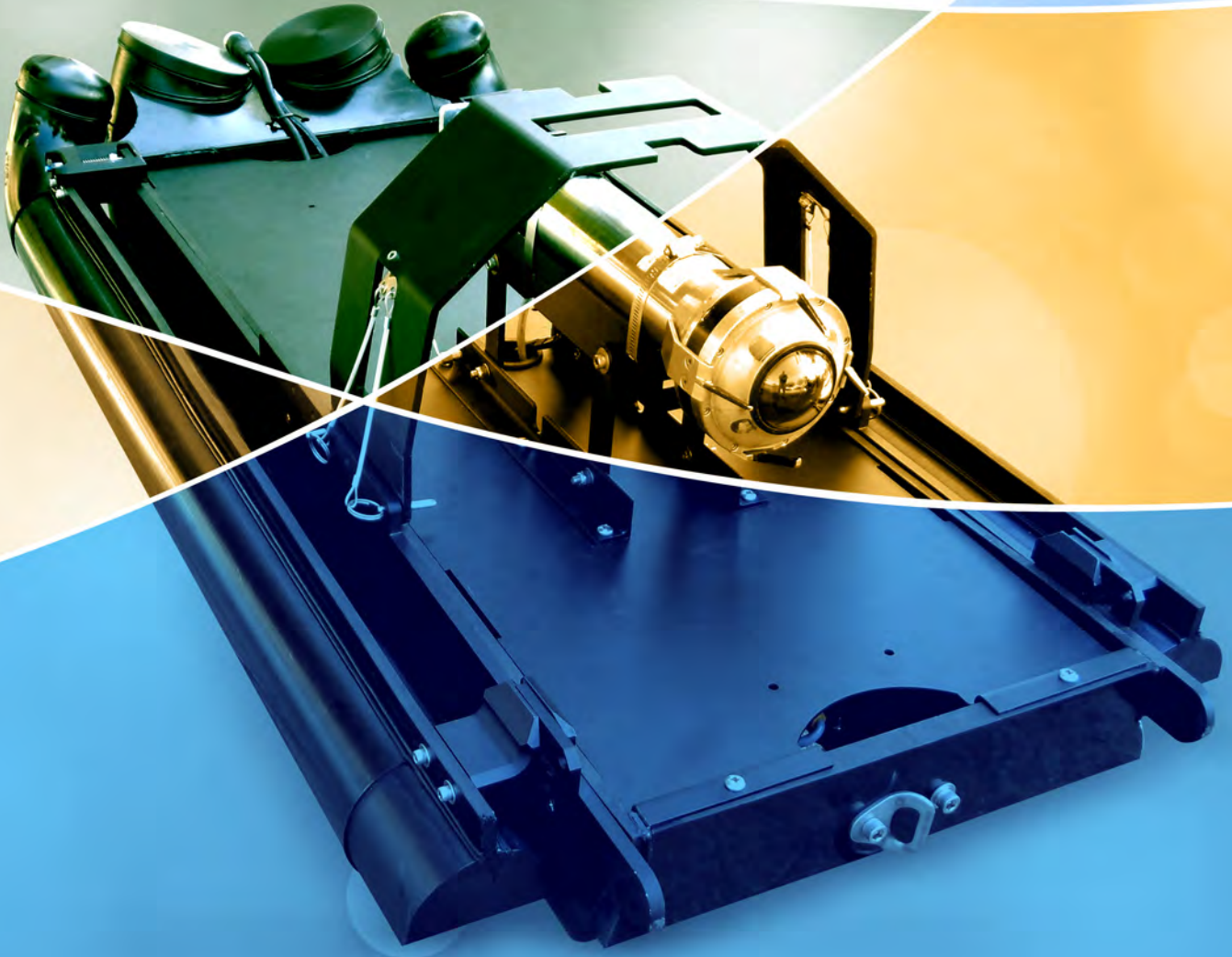


Pipeline Inspection Partners Corp.

SolidFX

Inspection Report

Prepared for



CES Baton Rouge
Inspected December 04, 2019



058-00720A
058-00721A

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CES Baton Rouge
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Technology Comparison Analysis

Feature	SolidFX	Spinning Laser Profiling	Laser Profiling with Wand
Technology	LIDAR	Spinning Laser Profiling	Laser Profiling with Wand
Cross Sections Scan Rate	45 /second	1.25 /second	12 /sec 12 /second on
Cross Section Measurement Density	1080 points	20 -300 points	Function of Pipe diameter
Effective Range	6"- 30 meters	4" - 48"	18" - 100"
Accuracy	3 mm @ 10m	15mm @ 3m	3 mm @ 3mm
Resolution	1mm (constant)	+/- 0.5% (pipe diameter)	+/- 0.1% (pipe diameter)
Calibration	Precision Factory	Automatic	Factory
Limited by Shadowing	No	No	Yes
Requires Wand Change out	No	No	Yes
"Cork Screw" Distortion during Motion	No	Yes	No
Multiple Returns (fog resistance)	Yes	No	No
Sensor Cleaning during Inspection	Yes	No	No
Transport Mechanism	Tractor/Float	Tractor Only	Float Only
3D Option	Yes	No	No
Custom Reporting	Yes	No	No
Live Video	Yes	Yes	No
Sonar Available	Yes	No	Yes
Maximum Deployment Length (linear foot)	4000	2000	4000+
Made in USA	Yes	Yes	No
Data Viewable During Operations	Yes	Yes	No
Onsite PACP	Yes	Yes	No

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Inspection Information

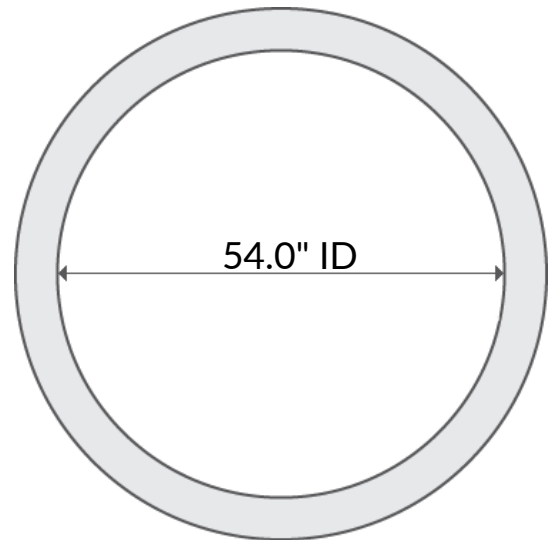
Transport

Float

Sensor(s)

LIDAR
 HD
 SONAR

As-Built Dimensions



Inspection Details

Service Area:	BATON ROUGE
Segment Reference:	1-3
Upstream Manhole:	058-00720A
Downstream Manhole:	058-00721A
Direction:	Upstream
Distance:	492.0
Scan Date:	December 04, 2019
Operator Notes:	None
Processing Notes:	Advanced corrosion present.

Document Details

Report Prepared January 08, 2020
 Source Reference 63015

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Sediment and Corrosion Summary Metrics

Sediment/Sonar Metrics

Sediment Volume (cubic yard):	1.0
As-is Capacity/As-built Capacity (%):	99.6
Average cross-sectional restriction (%):	0.4

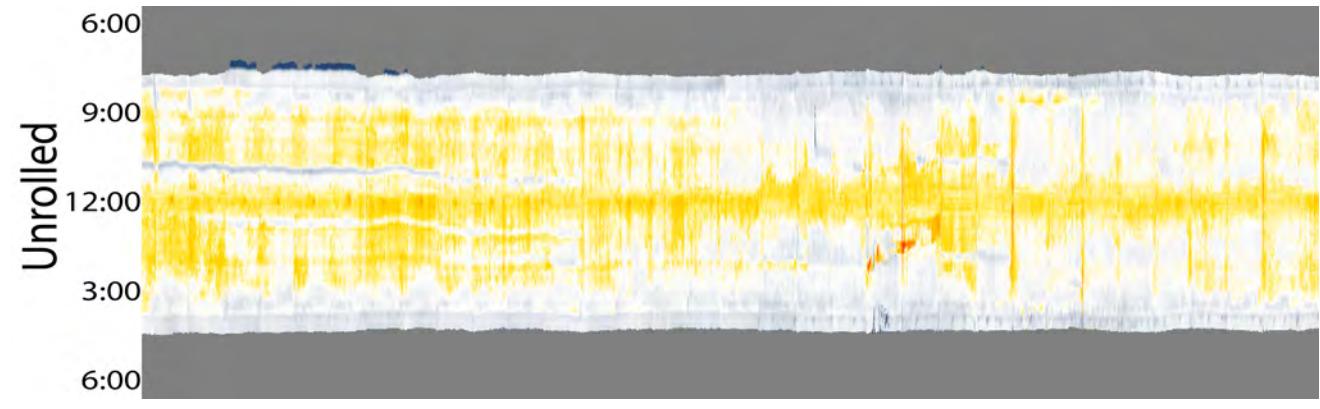
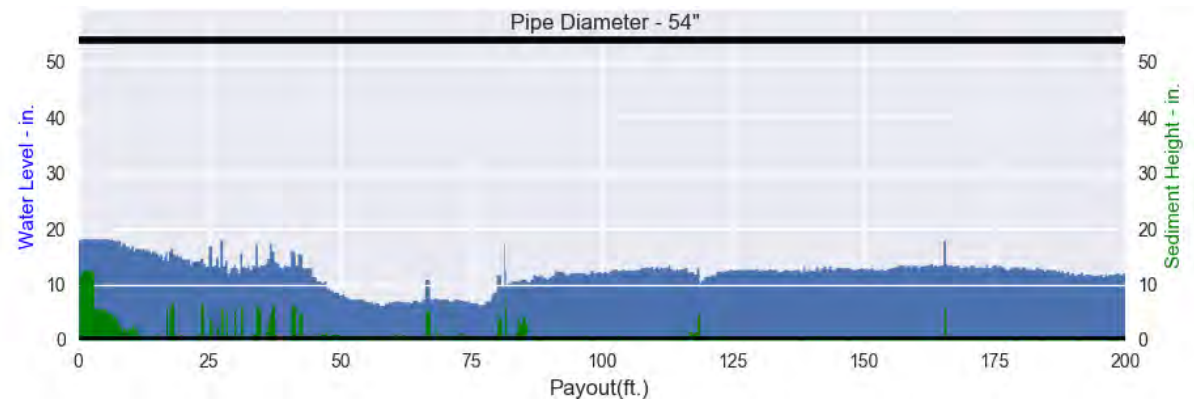
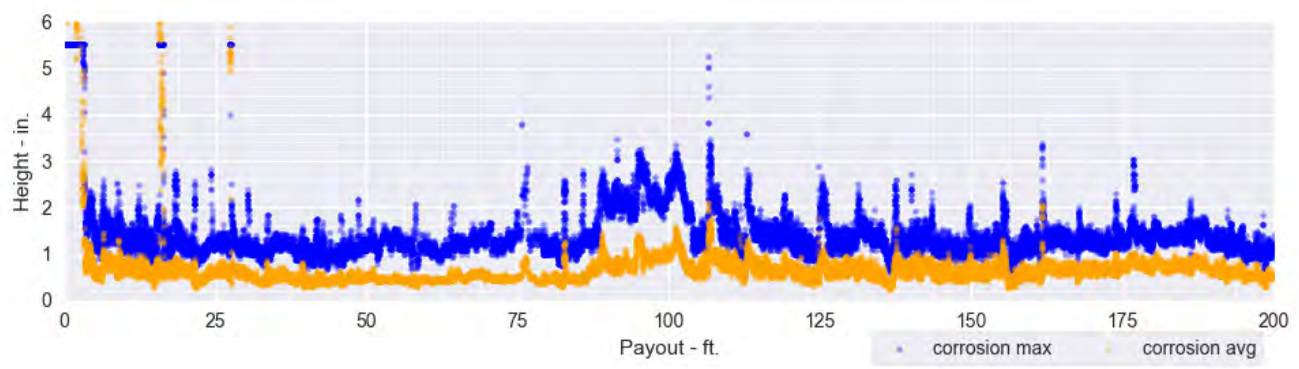
Corrosion/Lidar Metrics

Corroded Volume (cubic in):	237506.0
Wall/As-built (%):	96.1
Average Wall Loss (%):	3.9

Sediment and Corrosion Graphs(0'-200')

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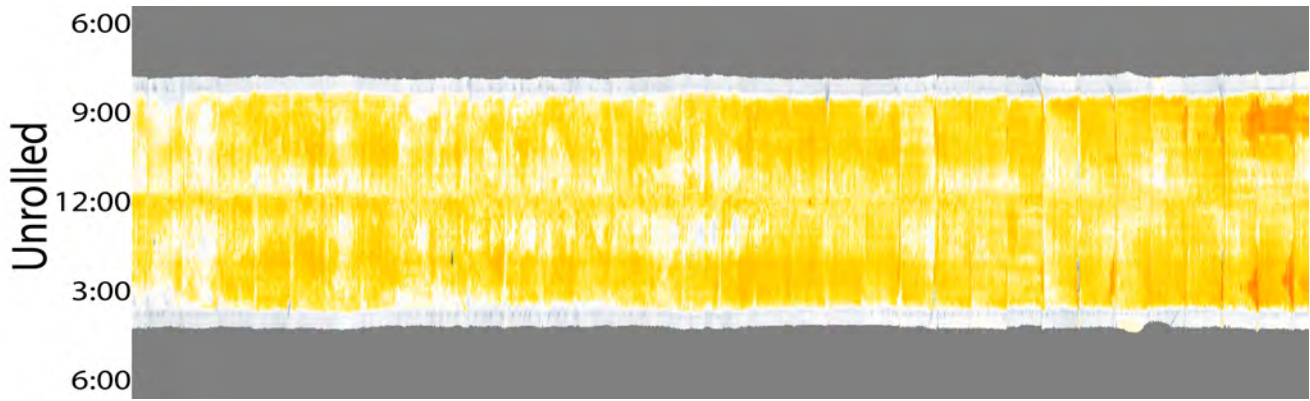
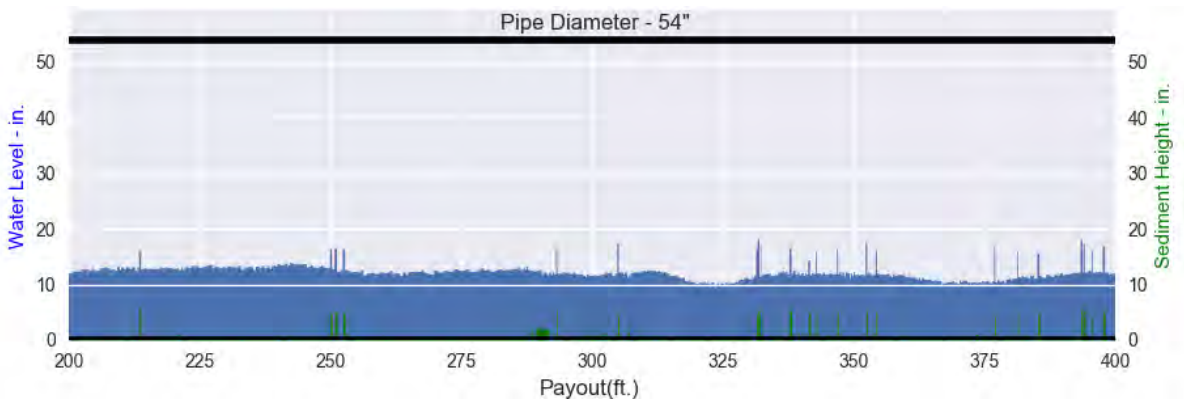
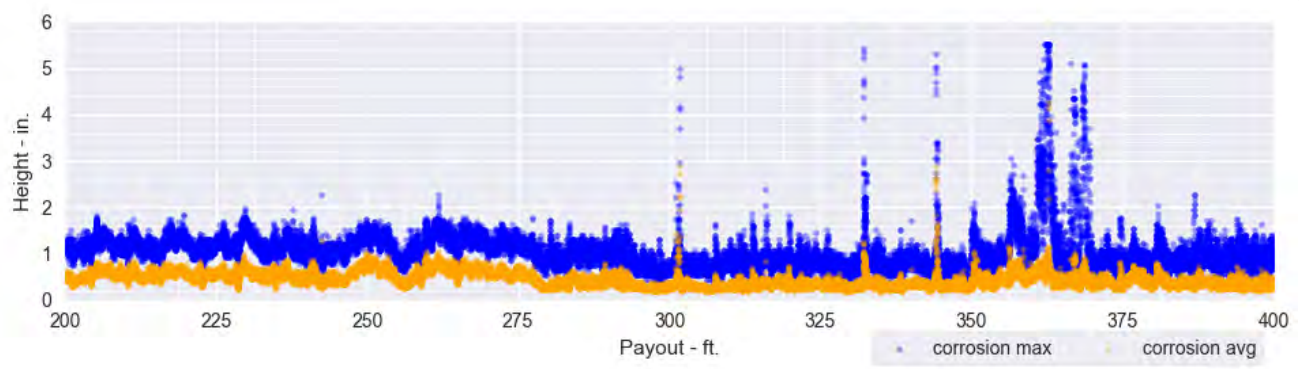


Sediment and Corrosion Graphs(200'-400')

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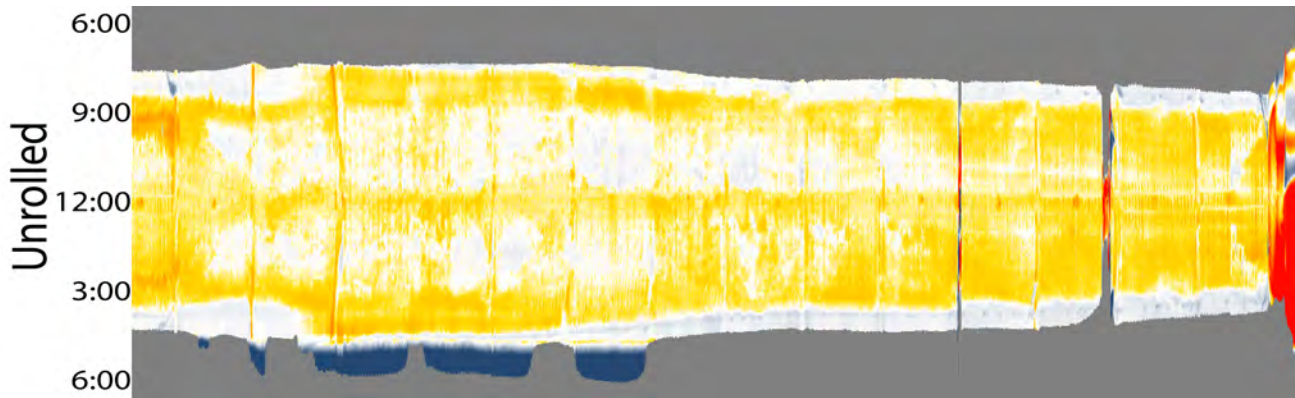
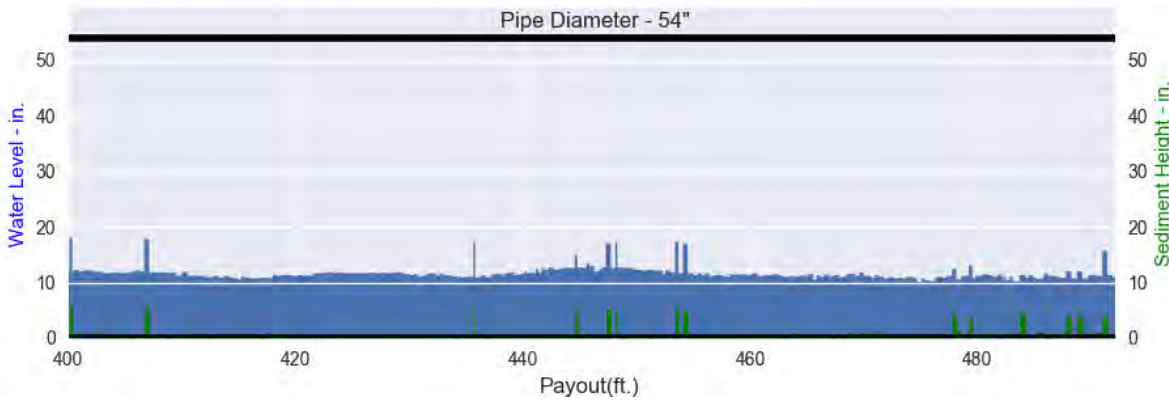
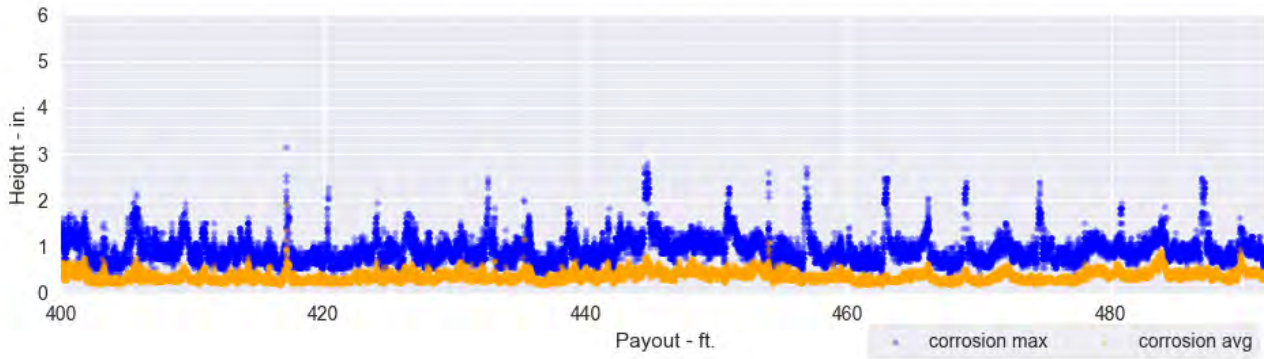


Sediment and Corrosion Graphs(400'-492')

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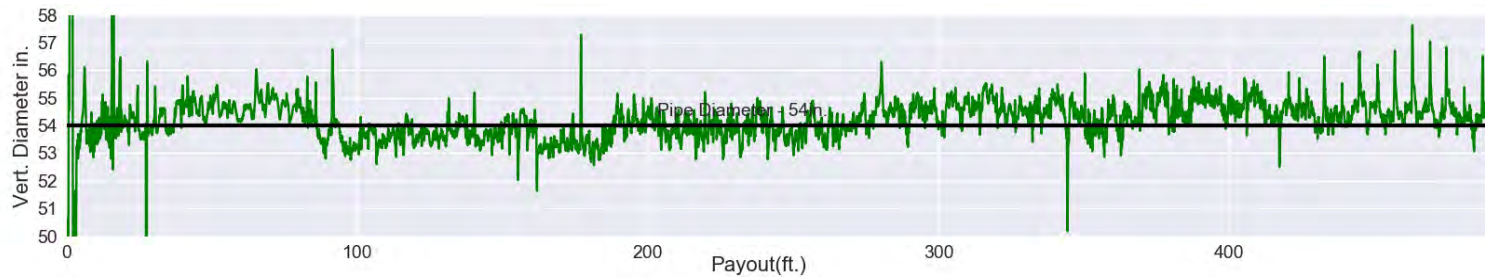
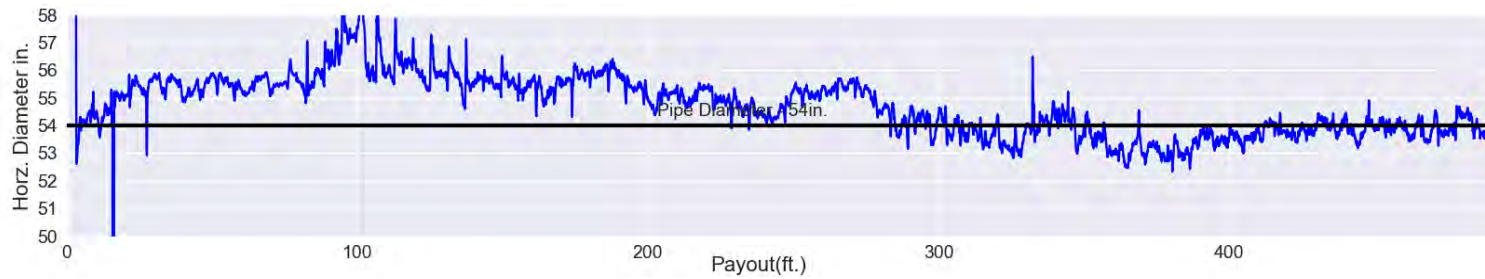
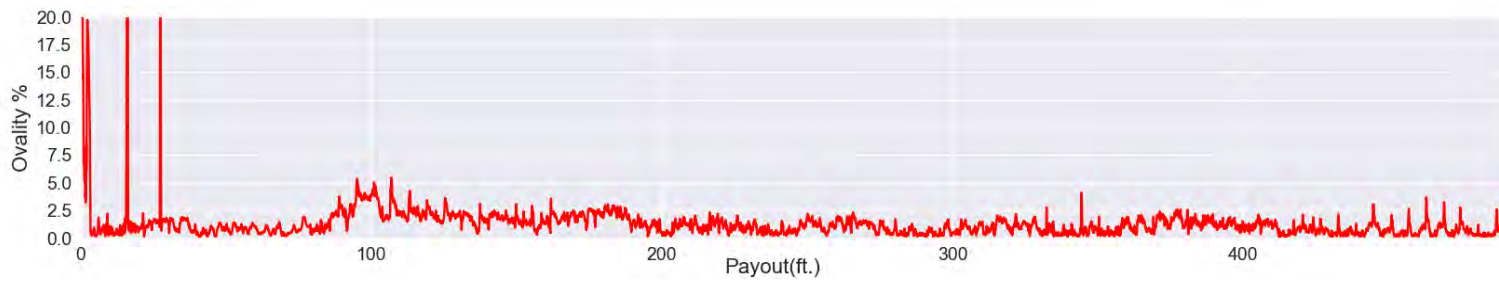


Pipe Ovality Graphs

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Inspected December 04, 2019



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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
0.1'	Start	Start of inspection	12.1"	5.5"	5.5"	1.1"	3.2"	11.6"	12.7%
7.2'	Material Loss	Rebar or rebar pattern visible	0.6"	0.8"	1.0"	0.4"	0.8"	3.7"	2.7%
9.0'	Material Loss	Material loss at joint	1.1"	1.5"	2.2"	0.6"	1.2"	2.1"	1.1%
15.6'	Buildup	Buildup	0.5"	0.8"	1.1"	8.6"	5.5"	0.5"	0.2%
15.8'	Material Loss	Material loss at joint	7.8"	5.5"	5.5"	1.1"	2.6"	0.5"	0.2%
21.5'	Material Loss	Material loss at joint	0.7"	1.4"	2.2"	0.4"	1.2"	0.8"	0.3%
24.7'	Material Loss	Rebar or rebar pattern visible	0.7"	0.8"	1.3"	0.5"	0.8"	0.8"	0.3%
25.1'	Regular Interval		0.6"	0.9"	1.2"	0.5"	0.7"	3.6"	2.3%
27.3'	Buildup	Buildup	4.9"	5.5"	5.5"	2.5"	5.5"	5.7"	3.9%
27.3'	Material Loss	Material loss at joint	4.9"	5.5"	5.5"	2.5"	5.5"	5.7"	3.9%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
33.7'	Material Loss	Material loss at joint	0.7"	1.2"	1.7"	0.6"	1.2"	1.1"	0.4%
39.4'	Material Loss	Material loss at joint	0.6"	0.7"	1.3"	0.6"	1.5"	0.7"	0.3%
46.0'	Material Loss	Material loss at joint	0.3"	0.6"	0.8"	0.3"	1.2"	0.9"	0.3%
50.1'	Regular Interval		0.5"	0.8"	1.3"	0.4"	1.2"	0.8"	0.2%
51.5'	Material Loss	Material loss at joint	0.5"	0.7"	1.2"	0.4"	1.1"	0.9"	0.2%
56.6'	Material Loss	Rebar or rebar pattern visible	0.4"	0.8"	1.1"	2.2"	5.5"	0.7"	0.1%
57.6'	Material Loss	Material loss at joint	0.5"	0.9"	1.5"	0.3"	0.7"	0.5"	0.1%
63.9'	Material Loss	Material loss at joint	0.7"	1.1"	1.4"	2.1"	5.5"	0.5"	0.1%
70.2'	Material Loss	Material loss at joint	0.5"	0.9"	1.4"	0.6"	2.7"	0.7"	0.2%
75.1'	Regular Interval		0.5"	0.9"	1.4"	3.0"	5.5"	0.9"	0.3%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
76.0'	Material Loss	Material loss at joint	0.6"	1.4"	2.3"	3.3"	5.5"	0.9"	0.3%
82.7'	Material Loss	Material loss at joint	1.0"	2.0"	2.6"	2.6"	5.5"	0.4"	0.2%
88.8'	Material Loss	Material loss at joint	1.1"	1.7"	2.4"	1.4"	3.9"	0.5"	0.2%
92.5'	Material Loss	Rebar or rebar pattern visible	0.8"	1.6"	2.2"	0.2"	0.6"	0.5"	0.1%
94.9'	Material Loss	Material loss at joint	1.3"	2.3"	2.6"	0.4"	1.0"	0.4"	0.2%
100.1'	Regular Interval		0.9"	1.7"	2.2"	0.3"	0.8"	0.5"	0.1%
100.8'	Material Loss	Material loss at joint	1.2"	2.6"	2.8"	0.3"	0.7"	0.3"	0.1%
106.9'	Material Loss	Material loss at joint	1.5"	2.2"	2.8"	1.1"	1.9"	0.5"	0.1%
109.0'	Material Loss	Rebar or rebar pattern visible	0.7"	1.0"	1.8"	0.4"	0.8"	0.3"	0.1%
113.1'	Material Loss	Material loss at joint	1.0"	1.8"	2.5"	1.0"	1.7"	0.4"	0.2%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
118.9'	Material Loss	Material loss at joint	1.0"	1.2"	1.9"	0.5"	0.8"	0.8"	0.3%
125.1'	Regular Interval		0.8"	1.0"	1.9"	0.5"	1.2"	0.5"	0.2%
125.1'	Material Loss	Material loss at joint	0.8"	1.0"	1.9"	0.5"	1.2"	0.5"	0.2%
127.7'	Material Loss	Rebar or rebar pattern visible	0.6"	0.7"	1.2"	0.4"	1.0"	0.4"	0.1%
131.3'	Material Loss	Material loss at joint	0.6"	1.5"	2.5"	0.8"	2.5"	0.3"	0.1%
134.9'	Material Loss	Rebar or rebar pattern visible	0.5"	0.8"	1.4"	0.5"	1.0"	0.4"	0.1%
137.4'	Material Loss	Material loss at joint	0.8"	1.7"	2.5"	0.6"	1.5"	0.4"	0.2%
143.5'	Material Loss	Material loss at joint	0.9"	1.3"	1.9"	0.5"	1.4"	0.6"	0.3%
146.5'	Material Loss	Rebar or rebar pattern visible	0.6"	0.7"	1.1"	0.5"	0.9"	0.6"	0.2%
149.6'	Material Loss	Material loss at joint	0.8"	1.1"	1.8"	0.4"	0.8"	0.7"	0.3%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
150.1'	Regular Interval		0.5"	0.5"	1.0"	0.5"	1.0"	0.5"	0.3%
155.5'	Material Loss	Material loss at joint	0.9"	1.2"	1.8"	0.5"	1.6"	0.4"	0.1%
161.6'	Material Loss	Material loss at joint	0.5"	0.9"	1.3"	0.3"	0.7"	0.8"	0.2%
167.5'	Material Loss	Material loss at joint	0.5"	0.8"	1.4"	0.5"	1.1"	0.5"	0.2%
174.1'	Material Loss	Material loss at joint	0.7"	0.8"	1.3"	1.1"	2.6"	0.4"	0.2%
175.1'	Regular Interval		0.7"	0.8"	1.2"	0.5"	1.0"	0.5"	0.2%
180.1'	Material Loss	Material loss at joint	0.8"	0.9"	1.4"	0.6"	1.0"	1.0"	0.2%
186.2'	Material Loss	Material loss at joint	0.6"	1.2"	1.9"	0.5"	0.9"	0.6"	0.2%
192.2'	Material Loss	Material loss at joint	0.5"	0.7"	1.1"	0.3"	0.8"	0.3"	0.1%
198.6'	Material Loss	Material loss at joint	0.4"	0.6"	0.9"	0.5"	1.0"	0.7"	0.2%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
200.1'	Regular Interval		0.5"	0.7"	1.1"	0.4"	0.9"	0.5"	0.2%
204.7'	Material Loss	Material loss at joint	0.6"	0.8"	1.4"	0.7"	1.5"	0.5"	0.2%
210.5'	Material Loss	Material loss at joint	0.8"	1.0"	1.5"	0.6"	1.2"	0.4"	0.2%
216.4'	Material Loss	Material loss at joint	0.5"	0.7"	1.1"	0.8"	1.1"	0.5"	0.2%
222.4'	Material Loss	Material loss at joint	0.5"	0.6"	1.1"	0.4"	1.0"	0.5"	0.3%
225.1'	Regular Interval		0.7"	1.0"	1.4"	0.6"	1.2"	0.3"	0.1%
228.7'	Material Loss	Material loss at joint	0.3"	0.6"	1.0"	0.3"	0.6"	0.4"	0.1%
234.7'	Material Loss	Material loss at joint	0.5"	0.7"	1.0"	0.6"	1.6"	0.4"	0.2%
240.8'	Material Loss	Material loss at joint	0.4"	0.8"	1.2"	0.4"	0.8"	0.3"	0.1%
247.1'	Material Loss	Material loss at joint	0.5"	0.8"	1.2"	0.5"	1.1"	0.6"	0.2%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
250.1'	Regular Interval		0.8"	0.9"	1.3"	0.5"	0.8"	4.9"	2.0%
253.1'	Material Loss	Material loss at joint	0.7"	0.9"	1.3"	0.5"	0.8"	0.5"	0.2%
259.0'	Material Loss	Material loss at joint	0.5"	0.6"	1.1"	0.7"	0.9"	0.2"	0.0%
265.3'	Material Loss	Material loss at joint	0.6"	0.7"	1.2"	0.9"	2.3"	0.4"	0.2%
265.3'	Buildup	Buildup	0.6"	0.7"	1.2"	0.9"	2.3"	0.4"	0.2%
271.2'	Material Loss	Material loss at joint	0.6"	0.9"	1.1"	0.6"	1.0"	0.5"	0.2%
275.1'	Regular Interval		0.6"	0.7"	1.1"	0.6"	1.0"	0.4"	0.1%
277.3'	Material Loss	Material loss at joint	0.5"	0.8"	1.3"	0.8"	1.4"	0.3"	0.2%
283.3'	Material Loss	Material loss at joint	0.3"	0.6"	1.0"	0.4"	1.1"	0.4"	0.2%
289.4'	Material Loss	Material loss at joint	0.5"	0.5"	0.9"	0.7"	1.4"	2.3"	0.5%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
295.6'	Material Loss	Material loss at joint	0.3"	0.6"	1.0"	0.5"	1.9"	0.6"	0.3%
300.1'	Regular Interval		0.3"	0.5"	0.8"	0.4"	0.9"	0.6"	0.2%
301.5'	Material Loss	Material loss at joint	1.1"	1.1"	1.8"	0.6"	1.0"	0.8"	0.2%
307.4'	Material Loss	Material loss at joint	0.3"	0.4"	0.6"	0.4"	1.5"	0.5"	0.1%
314.0'	Material Loss	Material loss at joint	0.4"	0.8"	1.1"	0.5"	1.2"	0.7"	0.2%
319.6'	Material Loss	Material loss at joint	0.4"	0.7"	0.9"	0.3"	1.5"	0.4"	0.1%
325.1'	Regular Interval		0.3"	0.6"	0.9"	0.5"	1.4"	0.5"	0.1%
326.1'	Material Loss	Material loss at joint	0.3"	0.7"	1.1"	1.0"	2.0"	0.2"	0.0%
332.2'	Material Loss	Material loss at joint	0.7"	1.1"	1.8"	1.2"	3.6"	0.4"	0.2%
338.2'	Material Loss	Material loss at joint	0.4"	0.7"	0.9"	0.4"	1.4"	0.5"	0.1%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
344.3'	Material Loss	Material loss at joint	1.1"	1.3"	2.2"	0.5"	0.9"	0.6"	0.3%
350.1'	Regular Interval		0.3"	0.5"	0.9"	0.4"	1.4"	0.8"	0.3%
350.4'	Material Loss	Material loss at joint	0.7"	1.1"	1.5"	0.5"	1.2"	0.4"	0.1%
356.2'	Material Loss	Material loss at joint	0.4"	0.8"	1.1"	1.0"	5.5"	0.5"	0.2%
358.6'	Material Loss	Rebar or rebar pattern visible	0.5"	0.9"	1.3"	0.5"	1.7"	0.5"	0.3%
362.9'	Material Loss	Material loss at joint	0.7"	2.4"	3.6"	0.6"	1.7"	0.2"	0.0%
368.7'	Material Loss	Material loss at joint	0.6"	1.9"	3.5"	0.7"	1.5"	0.3"	0.1%
374.8'	Material Loss	Material loss at joint	0.3"	0.5"	0.8"	0.6"	1.6"	0.5"	0.1%
375.1'	Regular Interval		0.3"	0.5"	0.8"	0.6"	1.5"	0.4"	0.0%
381.1'	Material Loss	Material loss at joint	0.5"	0.7"	1.0"	0.7"	2.0"	0.5"	0.2%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
386.7'	Material Loss	Material loss at joint	0.3"	0.8"	1.2"	0.6"	1.3"	0.4"	0.1%
393.1'	Material Loss	Material loss at joint	0.3"	0.8"	1.1"	0.5"	1.7"	0.4"	0.1%
399.3'	Material Loss	Material loss at joint	0.3"	0.6"	1.0"	0.8"	1.8"	0.7"	0.2%
400.1'	Regular Interval		0.6"	1.0"	1.3"	0.5"	1.4"	5.7"	2.4%
405.8'	Material Loss	Material loss at joint	0.6"	0.9"	1.8"	0.7"	1.3"	0.4"	0.2%
411.2'	Material Loss	Material loss at joint	0.3"	0.5"	0.8"	0.5"	1.5"	0.4"	0.1%
417.1'	Material Loss	Material loss at joint	0.8"	1.0"	1.7"	0.6"	1.5"	0.2"	0.0%
422.9'	Material Loss	Material loss at joint	0.3"	0.7"	1.0"	0.5"	1.0"	0.5"	0.2%
425.1'	Regular Interval		0.4"	0.7"	1.1"	0.5"	1.0"	0.3"	0.2%
429.5'	Material Loss	Material loss at joint	0.4"	0.6"	1.0"	0.5"	1.4"	0.6"	0.2%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
435.8'	Material Loss	Material loss at joint	0.4"	0.5"	0.8"	0.6"	1.4"	0.2"	0.0%
441.8'	Material Loss	Material loss at joint	0.4"	0.7"	1.0"	0.6"	1.4"	0.7"	0.2%
444.7'	Buildup	Buildup	0.8"	1.4"	2.7"	0.7"	1.2"	4.5"	2.0%
447.8'	Material Loss	Material loss at joint	0.5"	0.7"	1.1"	0.4"	1.1"	0.5"	0.2%
450.1'	Regular Interval		0.4"	0.7"	1.0"	1.0"	5.5"	0.6"	0.3%
453.6'	Material Loss	Material loss at joint	0.5"	0.6"	0.9"	0.7"	1.3"	5.3"	2.2%
460.0'	Material Loss	Material loss at joint	0.5"	0.7"	1.1"	0.9"	5.5"	0.7"	0.3%
465.9'	Material Loss	Material loss at joint	0.5"	0.8"	1.3"	1.1"	5.5"	0.4"	0.1%
472.2'	Material Loss	Material loss at joint	0.5"	0.6"	1.0"	0.7"	1.4"	0.4"	0.1%
475.1'	Regular Interval		0.3"	0.8"	1.0"	0.9"	5.5"	0.4"	0.2%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
477.8'	Material Loss	Material loss at joint	0.3"	0.5"	0.7"	0.6"	1.9"	4.4"	1.8%
484.1'	Material Loss	Material loss at joint	0.5"	0.7"	1.2"	0.5"	1.1"	4.5"	1.9%
489.8'	Material Loss	Material loss at joint	0.7"	0.9"	1.3"	0.7"	1.9"	0.6"	0.2%
491.4'	End	End of inspection	0.4"	0.5"	0.8"	0.5"	1.3"	0.8"	0.2%



Distributed Cross-Sections

0.1 Start

Av. Corrosion (in.)	12.1
3s Corrosion (in.)	5.5
Max Corrosion (in.)	5.5
Av. Buildup (in.)	1.1
Max. Buildup (in.)	3.2
Max Sed. Height (in.)	11.6
Sed. restriction %	12.7

7.2 Material Loss

Av. Corrosion (in.)	0.6
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.4
Max. Buildup (in.)	0.8
Max Sed. Height (in.)	3.7
Sed. restriction %	2.7

9.0 Material Loss

Av. Corrosion (in.)	1.1
3s Corrosion (in.)	1.5
Max Corrosion (in.)	2.2
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.2
Max Sed. Height (in.)	2.1
Sed. restriction %	1.1



Distributed Cross-Sections

15.6 Buildup	
Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.1
Av. Buildup (in.)	8.6
Max. Buildup (in.)	5.5
Max Sed. Height (in.)	0.5
Sed. restriction %	0.2

15.8 Material Loss	
Av. Corrosion (in.)	7.8
3s Corrosion (in.)	5.5
Max Corrosion (in.)	5.5
Av. Buildup (in.)	1.1
Max. Buildup (in.)	2.6
Max Sed. Height (in.)	0.5
Sed. restriction %	0.2

21.5 Material Loss	
Av. Corrosion (in.)	0.7
3s Corrosion (in.)	1.4
Max Corrosion (in.)	2.2
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.2
Max Sed. Height (in.)	0.8
Sed. restriction %	0.3



Distributed Cross-Sections

24.7 Material Loss

Av. Corrosion (in.)	0.7
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.3
Av. Buildup (in.)	0.5
Max. Buildup (in.)	0.8
Max Sed. Height (in.)	0.8
Sed. restriction %	0.3

25.1 Regular Interval

Av. Corrosion (in.)	0.6
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.2
Av. Buildup (in.)	0.5
Max. Buildup (in.)	0.7
Max Sed. Height (in.)	3.6
Sed. restriction %	2.3

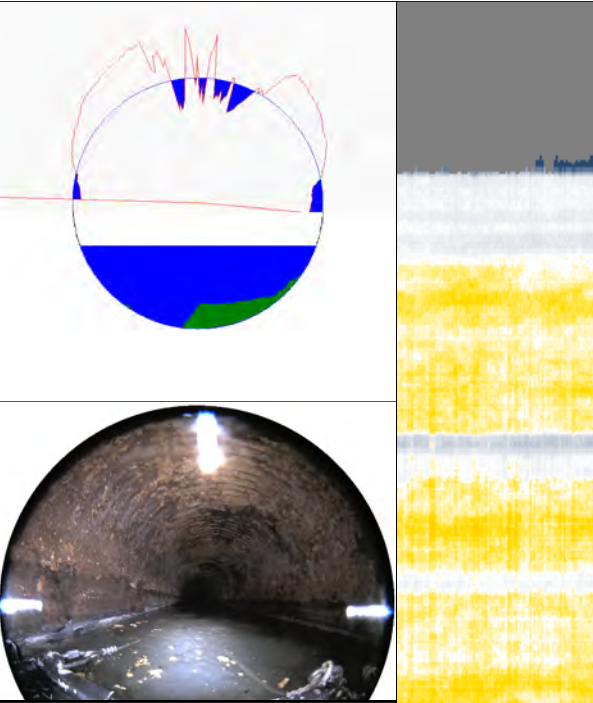
27.3 Buildup

Av. Corrosion (in.)	4.9
3s Corrosion (in.)	5.5
Max Corrosion (in.)	5.5
Av. Buildup (in.)	2.5
Max. Buildup (in.)	5.5
Max Sed. Height (in.)	5.7
Sed. restriction %	3.9



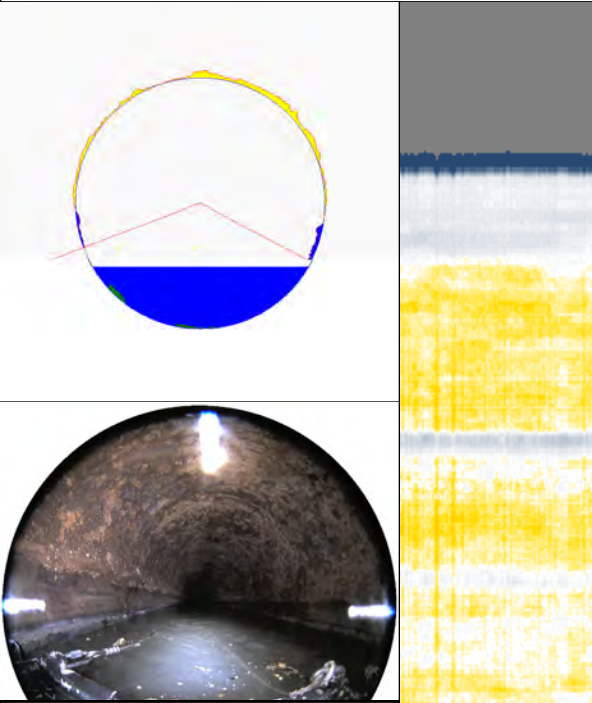
Distributed Cross-Sections

27.3 Material Loss



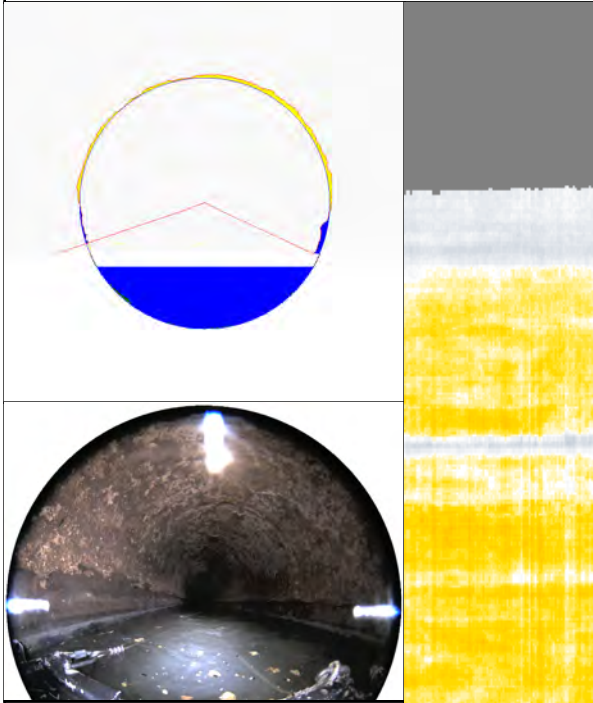
Av. Corrosion (in.)	4.9
3s Corrosion (in.)	5.5
Max Corrosion (in.)	5.5
Av. Buildup (in.)	2.5
Max. Buildup (in.)	5.5
Max Sed. Height (in.)	5.7
Sed. restriction %	3.9

33.7 Material Loss



Av. Corrosion (in.)	0.7
3s Corrosion (in.)	1.2
Max Corrosion (in.)	1.7
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.2
Max Sed. Height (in.)	1.1
Sed. restriction %	0.4

39.4 Material Loss



Av. Corrosion (in.)	0.6
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.3
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.5
Max Sed. Height (in.)	0.7
Sed. restriction %	0.3



Distributed Cross-Sections

46.0 Material Loss	
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.3
Max. Buildup (in.)	1.2
Max Sed. Height (in.)	0.9
Sed. restriction %	0.3

50.1 Regular Interval	
Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.3
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.2
Max Sed. Height (in.)	0.8
Sed. restriction %	0.2

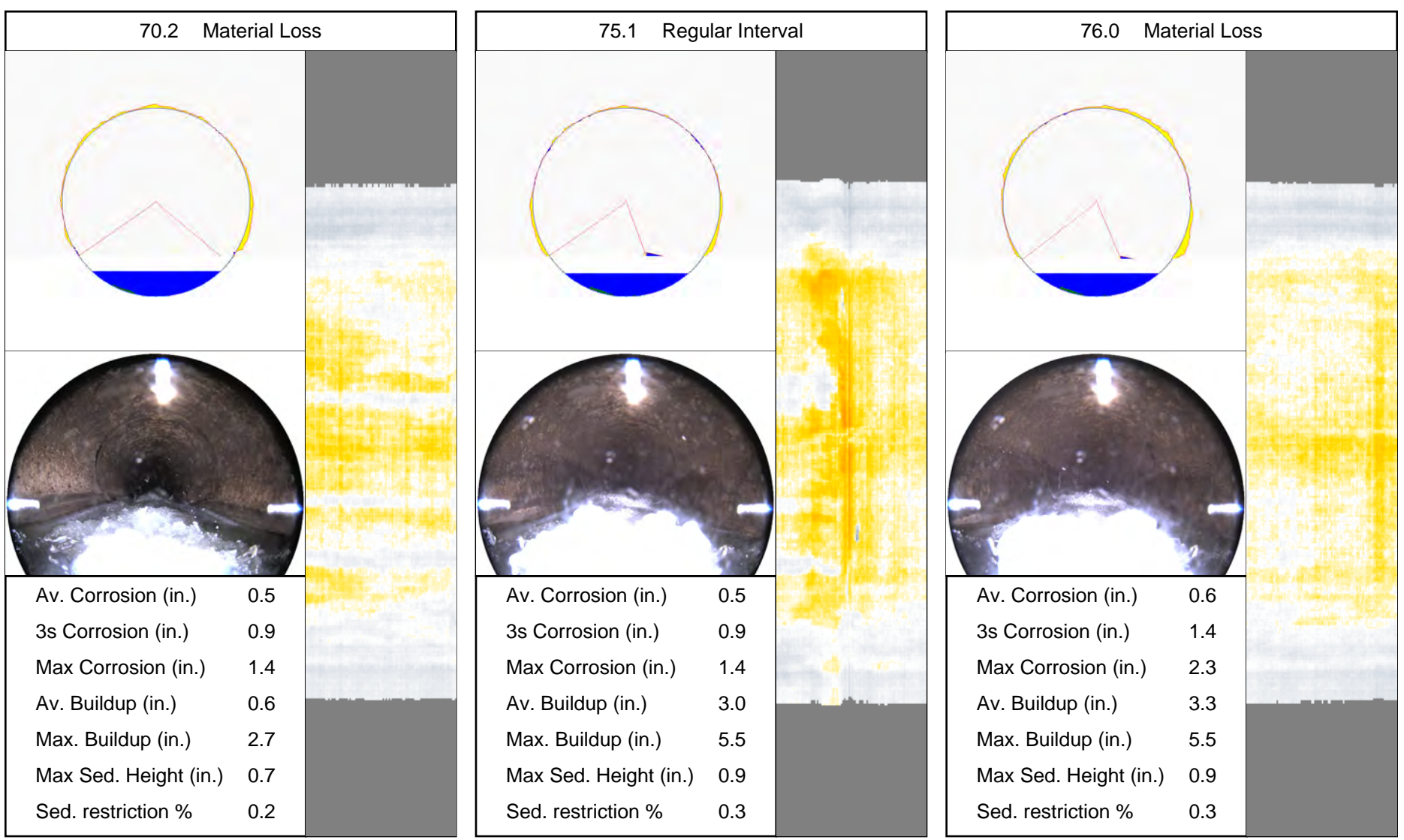
51.5 Material Loss	
Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.2
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.1
Max Sed. Height (in.)	0.9
Sed. restriction %	0.2



Distributed Cross-Sections

56.6 Material Loss		57.6 Material Loss		63.9 Material Loss	
Av. Corrosion (in.)	0.4	Av. Corrosion (in.)	0.5	Av. Corrosion (in.)	0.7
3s Corrosion (in.)	0.8	3s Corrosion (in.)	0.9	3s Corrosion (in.)	1.1
Max Corrosion (in.)	1.1	Max Corrosion (in.)	1.5	Max Corrosion (in.)	1.4
Av. Buildup (in.)	2.2	Av. Buildup (in.)	0.3	Av. Buildup (in.)	2.1
Max. Buildup (in.)	5.5	Max. Buildup (in.)	0.7	Max. Buildup (in.)	5.5
Max Sed. Height (in.)	0.7	Max Sed. Height (in.)	0.5	Max Sed. Height (in.)	0.5
Sed. restriction %	0.1	Sed. restriction %	0.1	Sed. restriction %	0.1

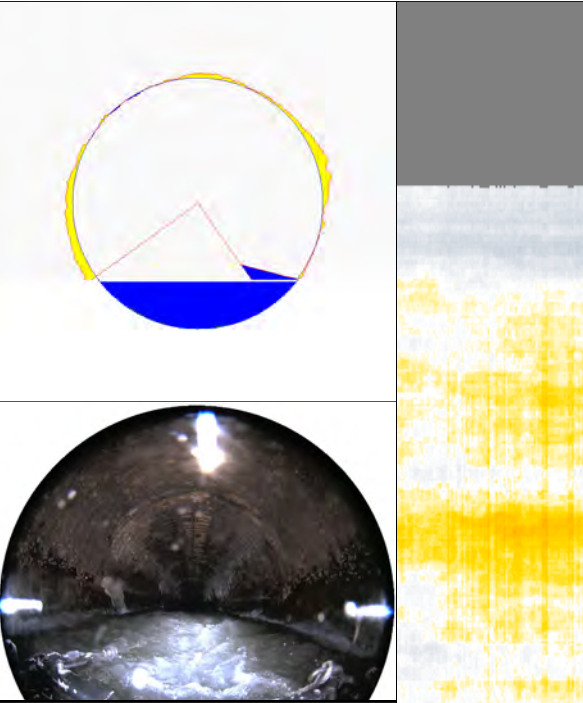
Distributed Cross-Sections





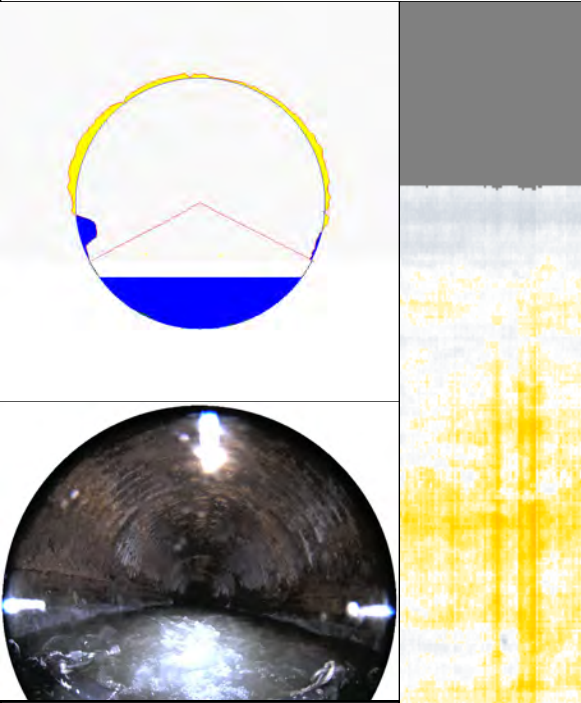
Distributed Cross-Sections

82.7 Material Loss



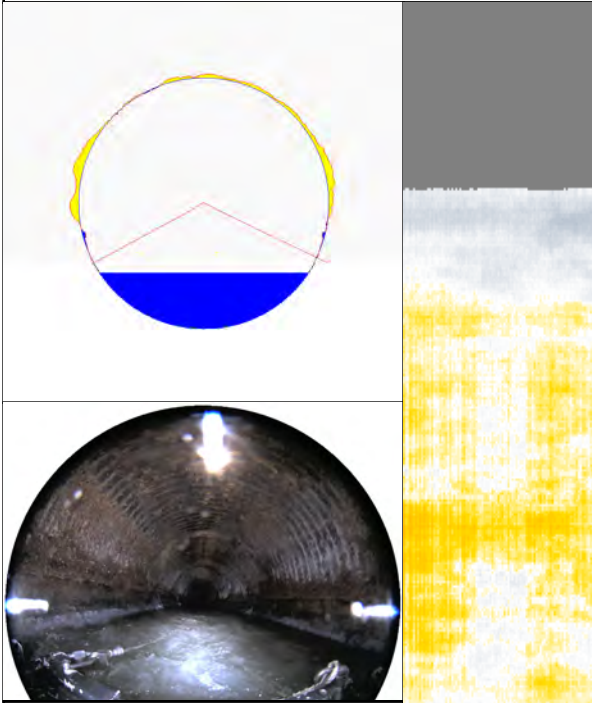
Av. Corrosion (in.)	1.0
3s Corrosion (in.)	2.0
Max Corrosion (in.)	2.6
Av. Buildup (in.)	2.6
Max. Buildup (in.)	5.5
Max Sed. Height (in.)	0.4
Sed. restriction %	0.2

88.8 Material Loss



Av. Corrosion (in.)	1.1
3s Corrosion (in.)	1.7
Max Corrosion (in.)	2.4
Av. Buildup (in.)	1.4
Max. Buildup (in.)	3.9
Max Sed. Height (in.)	0.5
Sed. restriction %	0.2

92.5 Material Loss



Av. Corrosion (in.)	0.8
3s Corrosion (in.)	1.6
Max Corrosion (in.)	2.2
Av. Buildup (in.)	0.2
Max. Buildup (in.)	0.6
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1



Distributed Cross-Sections

94.9 Material Loss

Av. Corrosion (in.)	1.3
3s Corrosion (in.)	2.3
Max Corrosion (in.)	2.6
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.4
Sed. restriction %	0.2

100.1 Regular Interval

Av. Corrosion (in.)	0.9
3s Corrosion (in.)	1.7
Max Corrosion (in.)	2.2
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.8
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1

100.8 Material Loss

Av. Corrosion (in.)	1.2
3s Corrosion (in.)	2.6
Max Corrosion (in.)	2.8
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.7
Max Sed. Height (in.)	0.3
Sed. restriction %	0.1



Distributed Cross-Sections

106.9 Material Loss

Av. Corrosion (in.)	1.5
3s Corrosion (in.)	2.2
Max Corrosion (in.)	2.8
Av. Buildup (in.)	1.1
Max. Buildup (in.)	1.9
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1

109.0 Material Loss

Av. Corrosion (in.)	0.7
3s Corrosion (in.)	1.0
Max Corrosion (in.)	1.8
Av. Buildup (in.)	0.4
Max. Buildup (in.)	0.8
Max Sed. Height (in.)	0.3
Sed. restriction %	0.1

113.1 Material Loss

Av. Corrosion (in.)	1.0
3s Corrosion (in.)	1.8
Max Corrosion (in.)	2.5
Av. Buildup (in.)	1.0
Max. Buildup (in.)	1.7
Max Sed. Height (in.)	0.4
Sed. restriction %	0.2



Distributed Cross-Sections

118.9 Material Loss

Av. Corrosion (in.)	1.0
3s Corrosion (in.)	1.2
Max Corrosion (in.)	1.9
Av. Buildup (in.)	0.5
Max. Buildup (in.)	0.8
Max Sed. Height (in.)	0.8
Sed. restriction %	0.3

125.1 Regular Interval

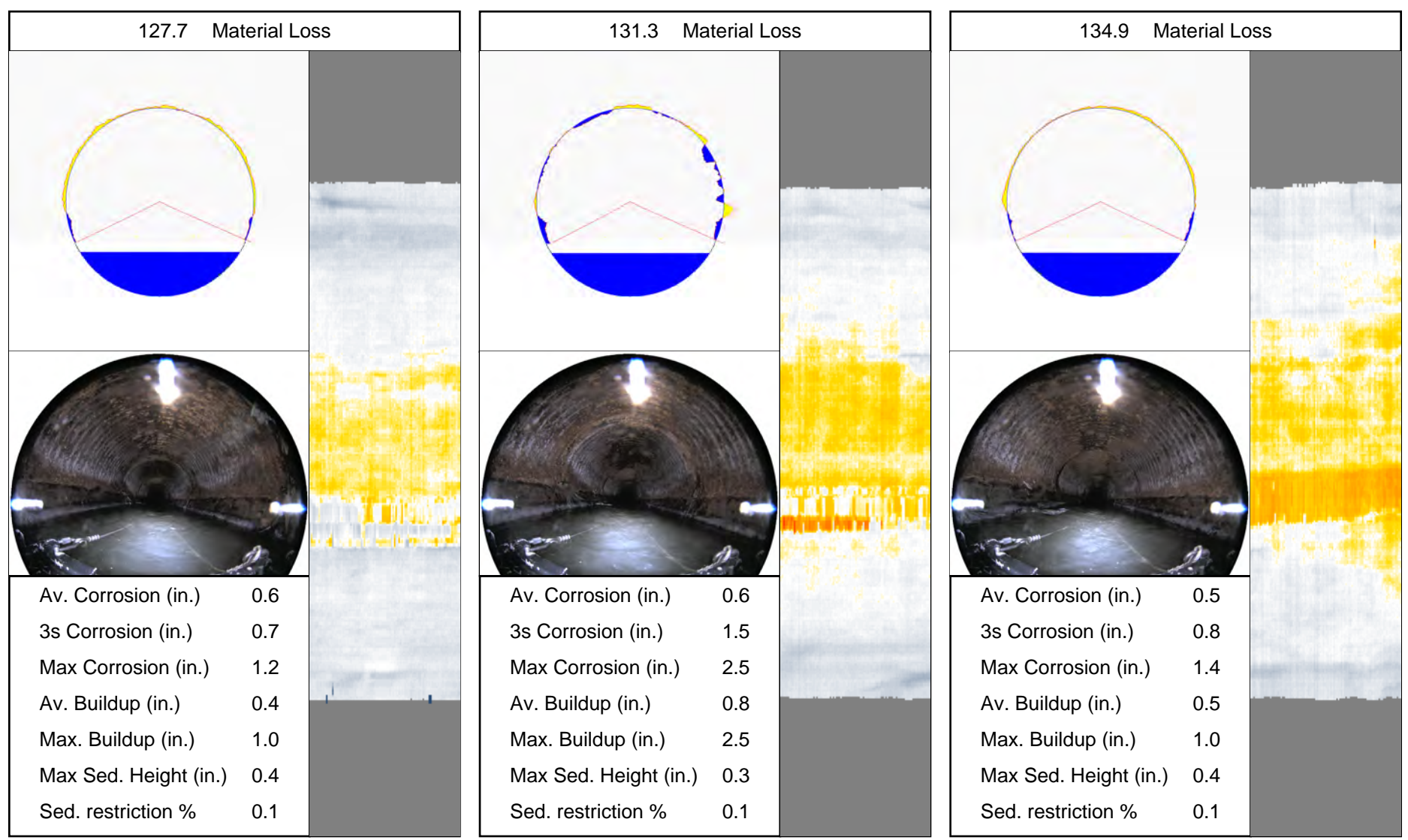
Av. Corrosion (in.)	0.8
3s Corrosion (in.)	1.0
Max Corrosion (in.)	1.9
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.2
Max Sed. Height (in.)	0.5
Sed. restriction %	0.2

125.1 Material Loss

Av. Corrosion (in.)	0.8
3s Corrosion (in.)	1.0
Max Corrosion (in.)	1.9
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.2
Max Sed. Height (in.)	0.5
Sed. restriction %	0.2

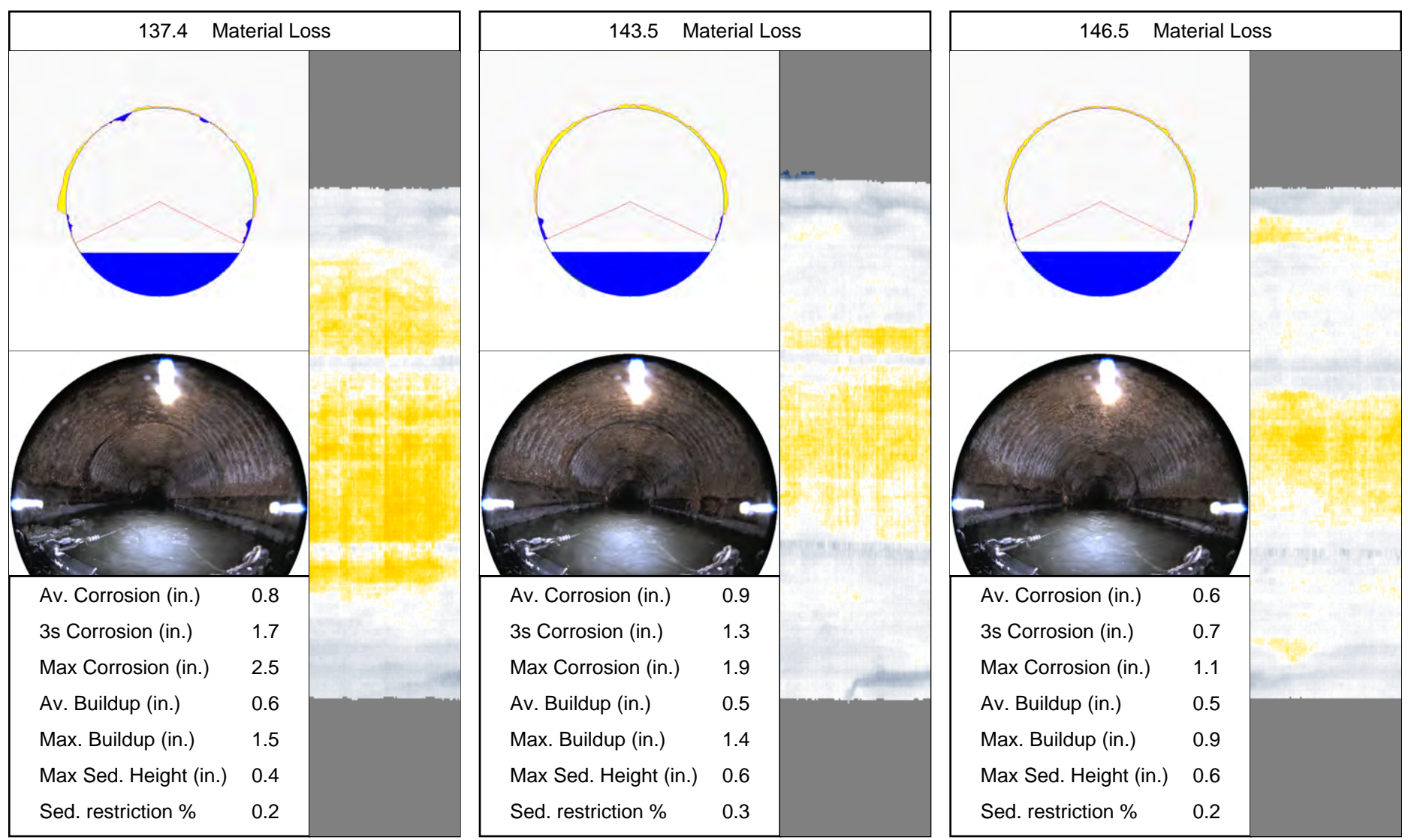


Distributed Cross-Sections





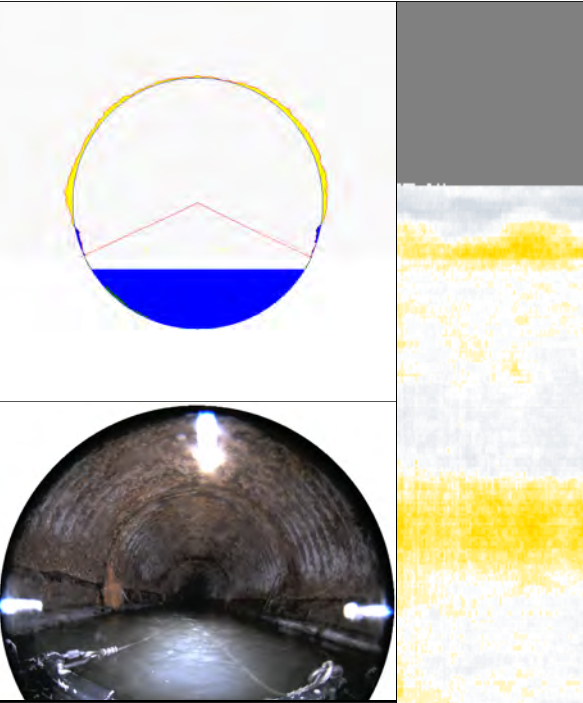
Distributed Cross-Sections





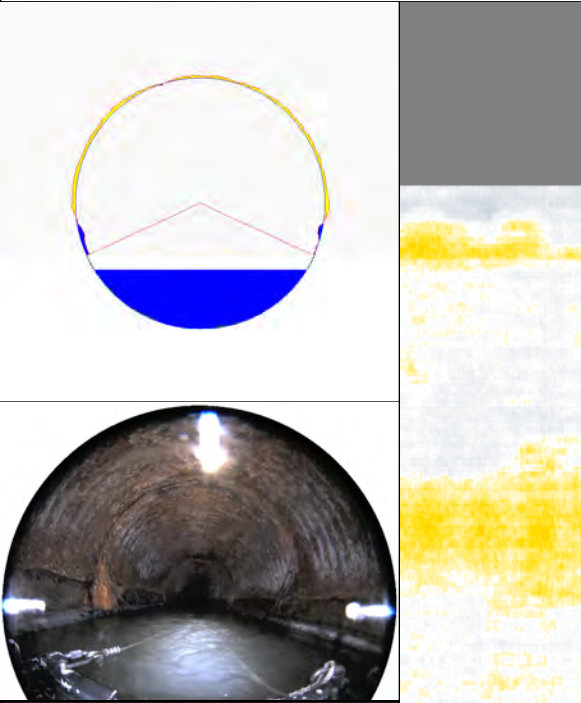
Distributed Cross-Sections

149.6 Material Loss



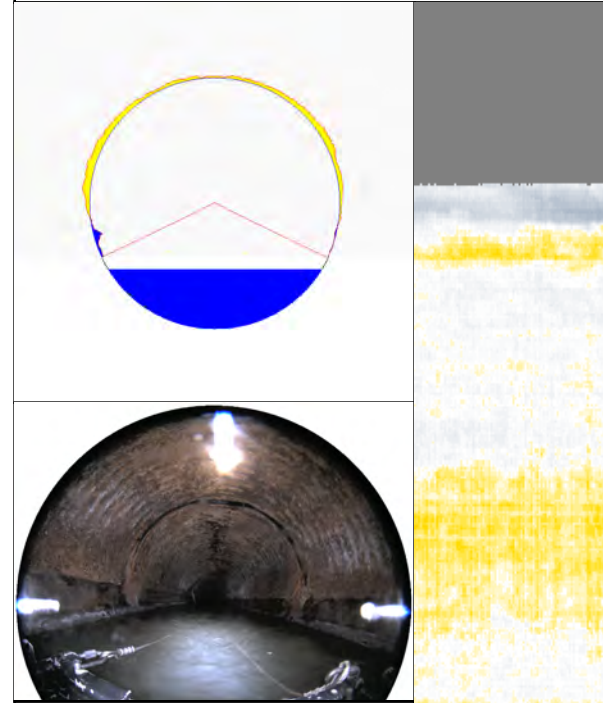
Av. Corrosion (in.)	0.8
3s Corrosion (in.)	1.1
Max Corrosion (in.)	1.8
Av. Buildup (in.)	0.4
Max. Buildup (in.)	0.8
Max Sed. Height (in.)	0.7
Sed. restriction %	0.3

150.1 Regular Interval



Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.5
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.5
Sed. restriction %	0.3

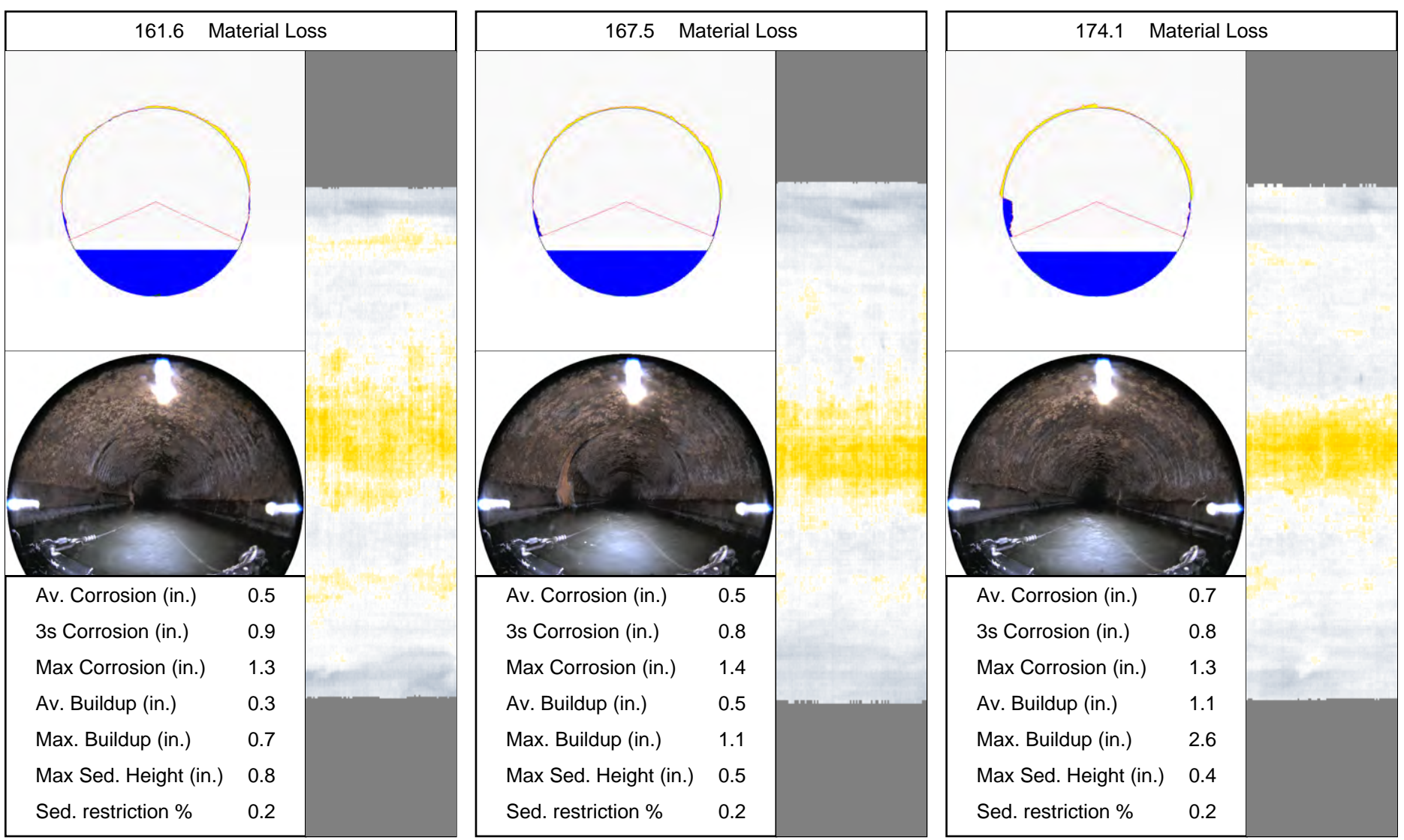
155.5 Material Loss



Av. Corrosion (in.)	0.9
3s Corrosion (in.)	1.2
Max Corrosion (in.)	1.8
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.6
Max Sed. Height (in.)	0.4
Sed. restriction %	0.1



Distributed Cross-Sections





Distributed Cross-Sections

175.1 Regular Interval		180.1 Material Loss		186.2 Material Loss	
Av. Corrosion (in.)	0.7	Av. Corrosion (in.)	0.8	Av. Corrosion (in.)	0.6
3s Corrosion (in.)	0.8	3s Corrosion (in.)	0.9	3s Corrosion (in.)	1.2
Max Corrosion (in.)	1.2	Max Corrosion (in.)	1.4	Max Corrosion (in.)	1.9
Av. Buildup (in.)	0.5	Av. Buildup (in.)	0.6	Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.0	Max. Buildup (in.)	1.0	Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.5	Max Sed. Height (in.)	1.0	Max Sed. Height (in.)	0.6
Sed. restriction %	0.2	Sed. restriction %	0.2	Sed. restriction %	0.2



Distributed Cross-Sections

192.2 Material Loss

Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.8
Max Sed. Height (in.)	0.3
Sed. restriction %	0.1

198.6 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.9
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.7
Sed. restriction %	0.2

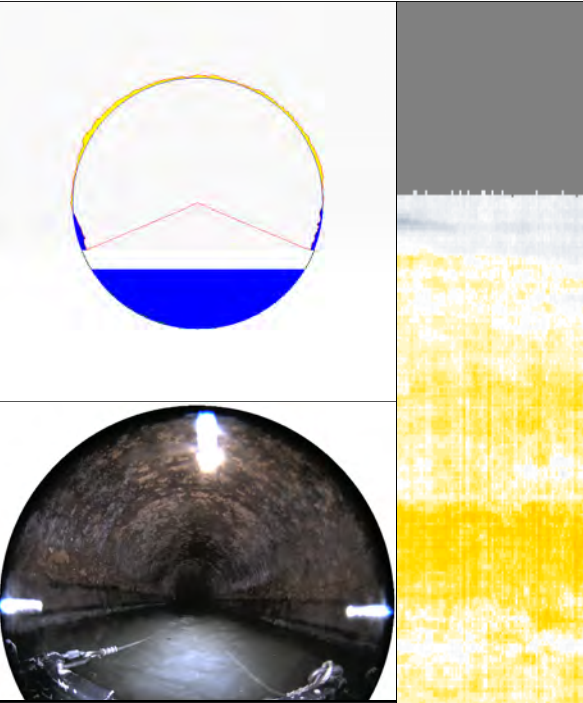
200.1 Regular Interval

Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.4
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.5
Sed. restriction %	0.2



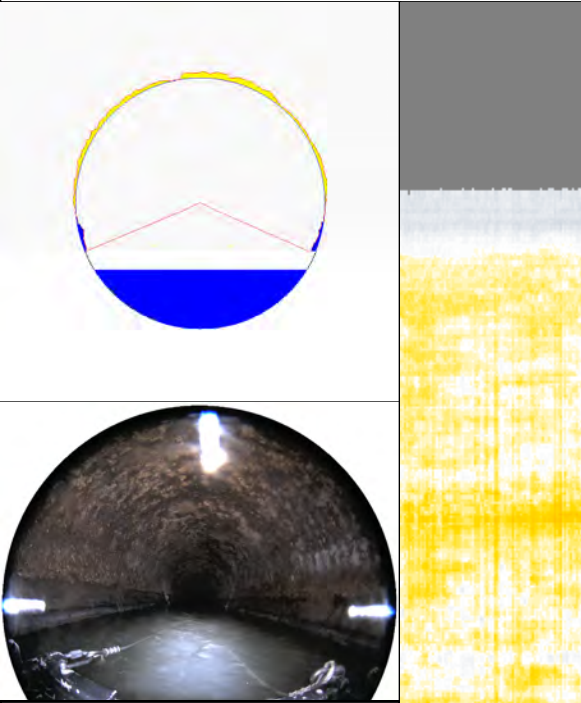
Distributed Cross-Sections

204.7 Material Loss



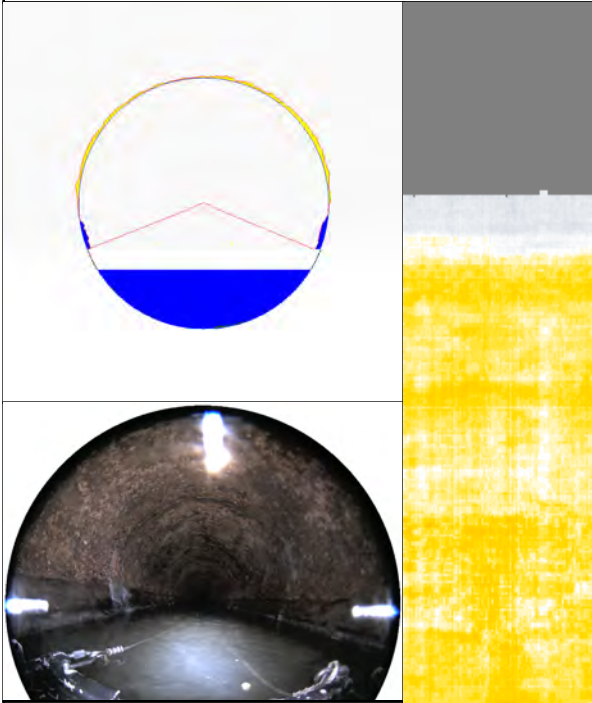
Av. Corrosion (in.)	0.6
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.4
Av. Buildup (in.)	0.7
Max. Buildup (in.)	1.5
Max Sed. Height (in.)	0.5
Sed. restriction %	0.2

210.5 Material Loss



Av. Corrosion (in.)	0.8
3s Corrosion (in.)	1.0
Max Corrosion (in.)	1.5
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.2
Max Sed. Height (in.)	0.4
Sed. restriction %	0.2

216.4 Material Loss



Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.8
Max. Buildup (in.)	1.1
Max Sed. Height (in.)	0.5
Sed. restriction %	0.2



Distributed Cross-Sections

222.4 Material Loss

Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.6
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.5
Sed. restriction %	0.3

225.1 Regular Interval

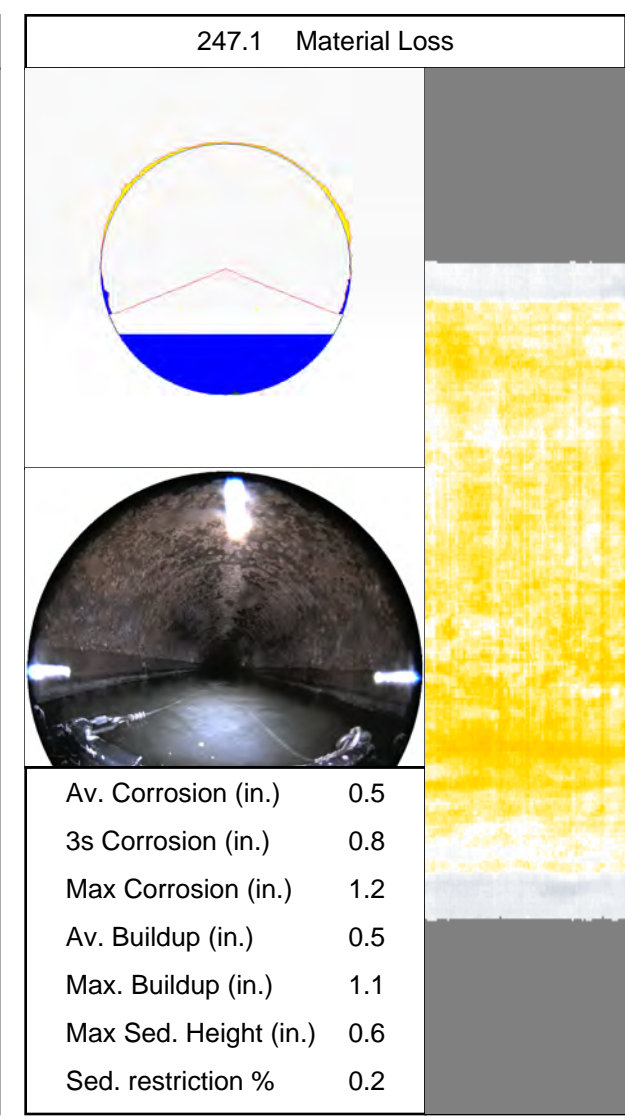
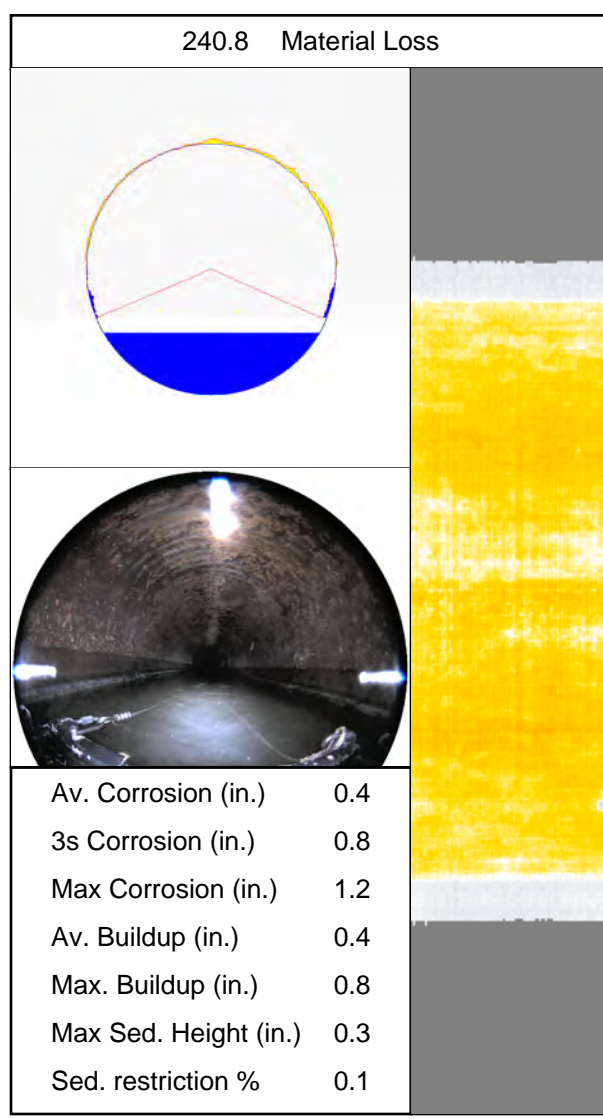
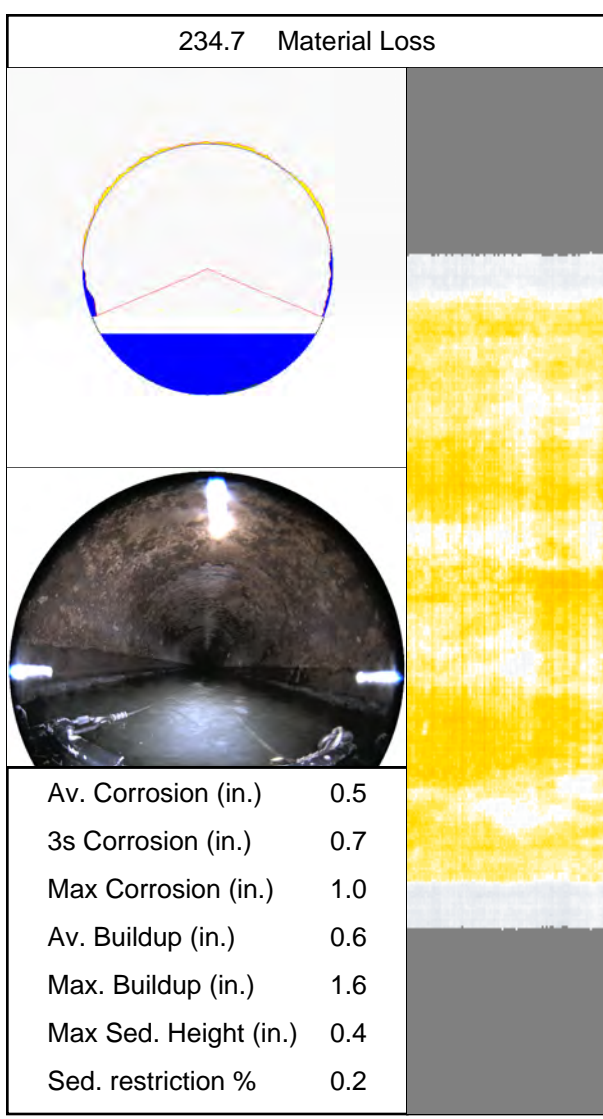
Av. Corrosion (in.)	0.7
3s Corrosion (in.)	1.0
Max Corrosion (in.)	1.4
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.2
Max Sed. Height (in.)	0.3
Sed. restriction %	0.1

228.7 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.6
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.6
Max Sed. Height (in.)	0.4
Sed. restriction %	0.1



Distributed Cross-Sections





Distributed Cross-Sections


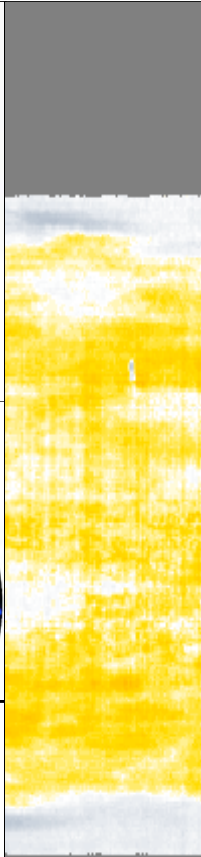

250.1 Regular Interval	
Av. Corrosion (in.)	0.8
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.3
Av. Buildup (in.)	0.5
Max. Buildup (in.)	0.8
Max Sed. Height (in.)	4.9
Sed. restriction %	2.0


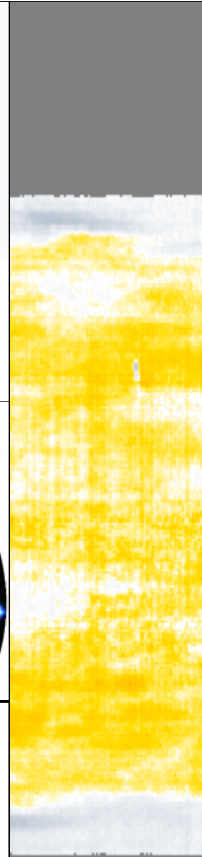

253.1 Material Loss	
Av. Corrosion (in.)	0.7
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.3
Av. Buildup (in.)	0.5
Max. Buildup (in.)	0.8
Max Sed. Height (in.)	0.5
Sed. restriction %	0.2

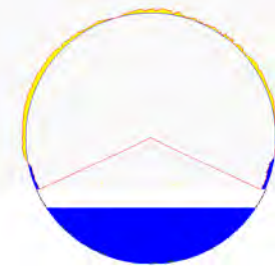
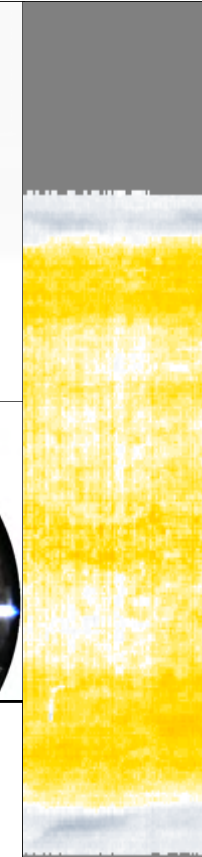

259.0 Material Loss	
Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.6
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.7
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.2
Sed. restriction %	0.0



Distributed Cross-Sections

265.3 Material Loss	
	
	
Av. Corrosion (in.)	0.6
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.2
Av. Buildup (in.)	0.9
Max. Buildup (in.)	2.3
Max Sed. Height (in.)	0.4
Sed. restriction %	0.2

265.3 Buildup	
	
	
Av. Corrosion (in.)	0.6
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.2
Av. Buildup (in.)	0.9
Max. Buildup (in.)	2.3
Max Sed. Height (in.)	0.4
Sed. restriction %	0.2

271.2 Material Loss	
	
	
Av. Corrosion (in.)	0.6
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.5
Sed. restriction %	0.2



Distributed Cross-Sections

275.1 Regular Interval

Av. Corrosion (in.)	0.6
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.4
Sed. restriction %	0.1

277.3 Material Loss

Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.3
Av. Buildup (in.)	0.8
Max. Buildup (in.)	1.4
Max Sed. Height (in.)	0.3
Sed. restriction %	0.2

283.3 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.6
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.1
Max Sed. Height (in.)	0.4
Sed. restriction %	0.2



Distributed Cross-Sections

289.4 Material Loss

Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.9
Av. Buildup (in.)	0.7
Max. Buildup (in.)	1.4
Max Sed. Height (in.)	2.3
Sed. restriction %	0.5

295.6 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.6
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.9
Max Sed. Height (in.)	0.6
Sed. restriction %	0.3

300.1 Regular Interval

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.4
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.6
Sed. restriction %	0.2



Distributed Cross-Sections

301.5 Material Loss

Av. Corrosion (in.)	1.1
3s Corrosion (in.)	1.1
Max Corrosion (in.)	1.8
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.8
Sed. restriction %	0.2

307.4 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.4
Max Corrosion (in.)	0.6
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.5
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1

314.0 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.2
Max Sed. Height (in.)	0.7
Sed. restriction %	0.2



Distributed Cross-Sections

319.6 Material Loss	
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.7
Max Corrosion (in.)	0.9
Av. Buildup (in.)	0.3
Max. Buildup (in.)	1.5
Max Sed. Height (in.)	0.4
Sed. restriction %	0.1

325.1 Regular Interval	
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.9
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.4
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1

326.1 Material Loss	
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.1
Av. Buildup (in.)	1.0
Max. Buildup (in.)	2.0
Max Sed. Height (in.)	0.2
Sed. restriction %	0.0



Distributed Cross-Sections

332.2 Material Loss

Av. Corrosion (in.)	0.7
3s Corrosion (in.)	1.1
Max Corrosion (in.)	1.8
Av. Buildup (in.)	1.2
Max. Buildup (in.)	3.6
Max Sed. Height (in.)	0.4
Sed. restriction %	0.2

338.2 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.7
Max Corrosion (in.)	0.9
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.4
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1

344.3 Material Loss

Av. Corrosion (in.)	1.1
3s Corrosion (in.)	1.3
Max Corrosion (in.)	2.2
Av. Buildup (in.)	0.5
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.6
Sed. restriction %	0.3



Distributed Cross-Sections

350.1 Regular Interval		350.4 Material Loss		356.2 Material Loss	
Av. Corrosion (in.)	0.3	Av. Corrosion (in.)	0.7	Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.5	3s Corrosion (in.)	1.1	3s Corrosion (in.)	0.8
Max Corrosion (in.)	0.9	Max Corrosion (in.)	1.5	Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.4	Av. Buildup (in.)	0.5	Av. Buildup (in.)	1.0
Max. Buildup (in.)	1.4	Max. Buildup (in.)	1.2	Max. Buildup (in.)	5.5
Max Sed. Height (in.)	0.8	Max Sed. Height (in.)	0.4	Max Sed. Height (in.)	0.5
Sed. restriction %	0.3	Sed. restriction %	0.1	Sed. restriction %	0.2



Distributed Cross-Sections

358.6 Material Loss

Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.3
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.7
Max Sed. Height (in.)	0.5
Sed. restriction %	0.3

362.9 Material Loss

Av. Corrosion (in.)	0.7
3s Corrosion (in.)	2.4
Max Corrosion (in.)	3.6
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.7
Max Sed. Height (in.)	0.2
Sed. restriction %	0.0

368.7 Material Loss

Av. Corrosion (in.)	0.6
3s Corrosion (in.)	1.9
Max Corrosion (in.)	3.5
Av. Buildup (in.)	0.7
Max. Buildup (in.)	1.5
Max Sed. Height (in.)	0.3
Sed. restriction %	0.1



Distributed Cross-Sections

374.8 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.6
Max Sed. Height (in.)	0.5
Sed. restriction %	0.1

375.1 Regular Interval

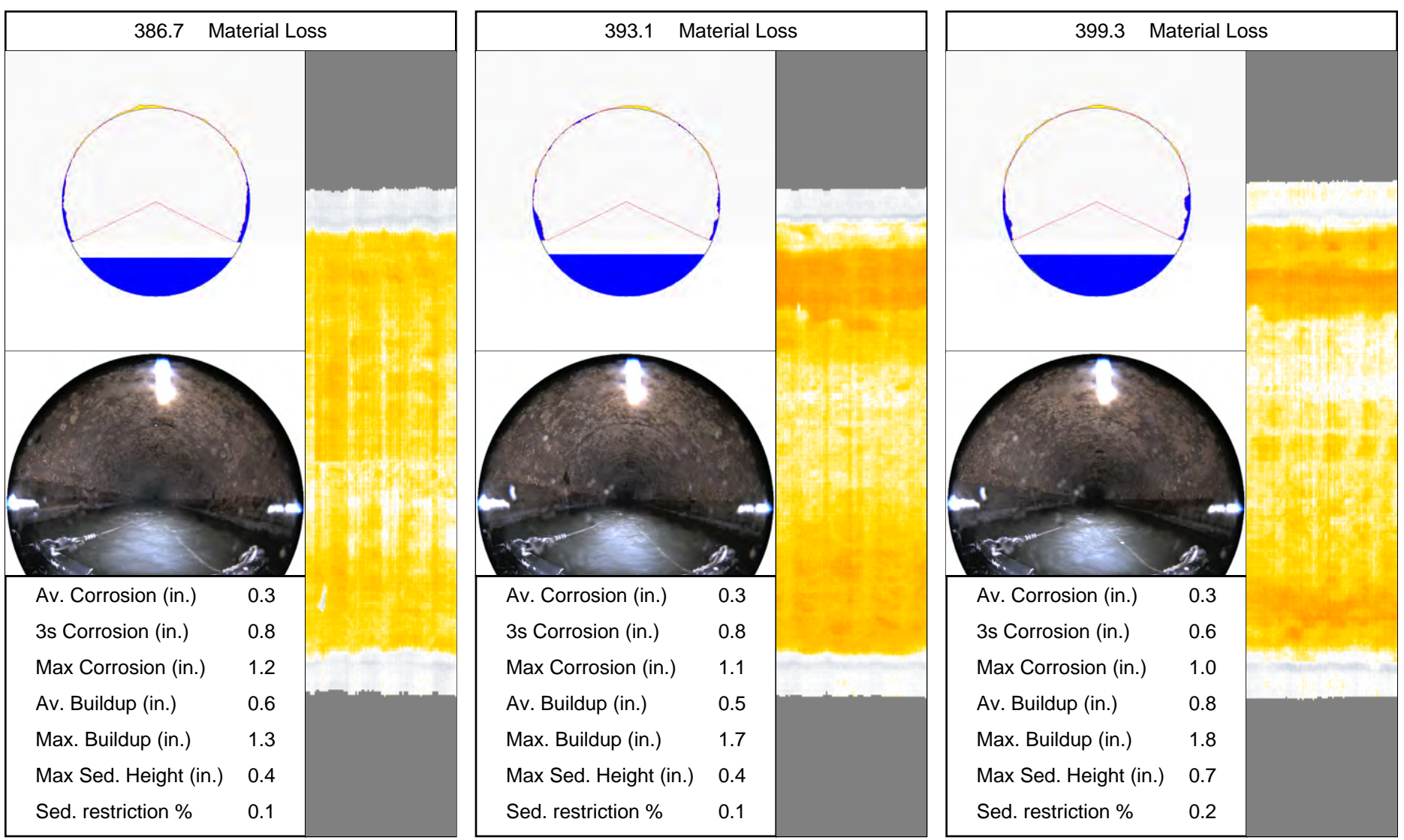
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.5
Max Sed. Height (in.)	0.4
Sed. restriction %	0.0

381.1 Material Loss

Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.7
Max. Buildup (in.)	2.0
Max Sed. Height (in.)	0.5
Sed. restriction %	0.2



Distributed Cross-Sections





Distributed Cross-Sections

400.1 Regular Interval	
Av. Corrosion (in.)	0.6
3s Corrosion (in.)	1.0
Max Corrosion (in.)	1.3
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.4
Max Sed. Height (in.)	5.7
Sed. restriction %	2.4

405.8 Material Loss	
Av. Corrosion (in.)	0.6
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.8
Av. Buildup (in.)	0.7
Max. Buildup (in.)	1.3
Max Sed. Height (in.)	0.4
Sed. restriction %	0.2

411.2 Material Loss	
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.5
Max Sed. Height (in.)	0.4
Sed. restriction %	0.1



Distributed Cross-Sections

417.1 Material Loss

Av. Corrosion (in.)	0.8
3s Corrosion (in.)	1.0
Max Corrosion (in.)	1.7
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.5
Max Sed. Height (in.)	0.2
Sed. restriction %	0.0

422.9 Material Loss

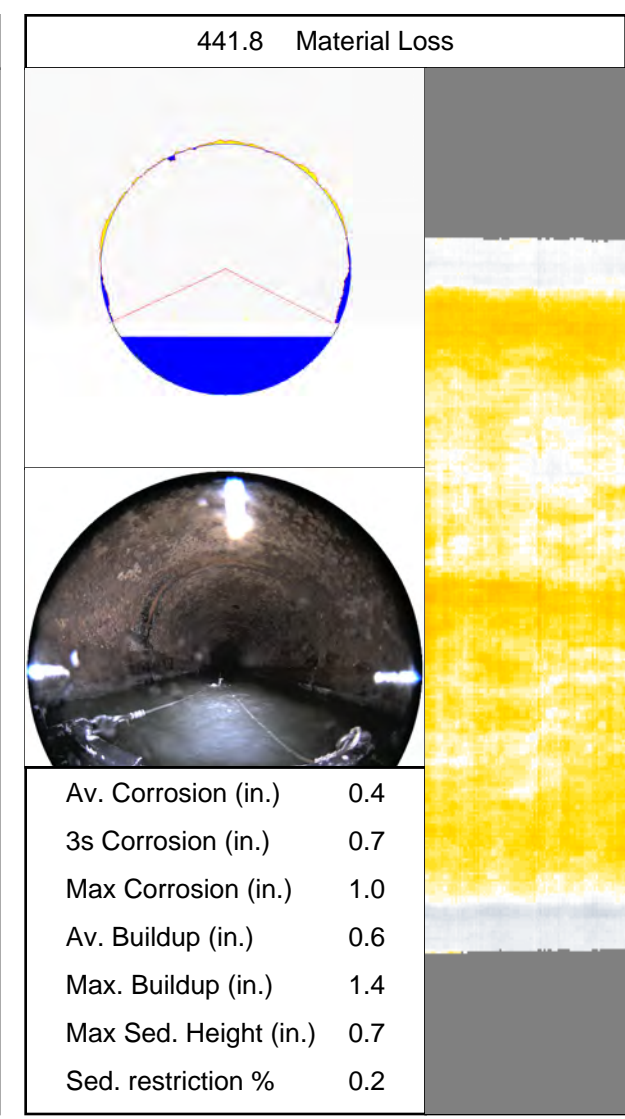
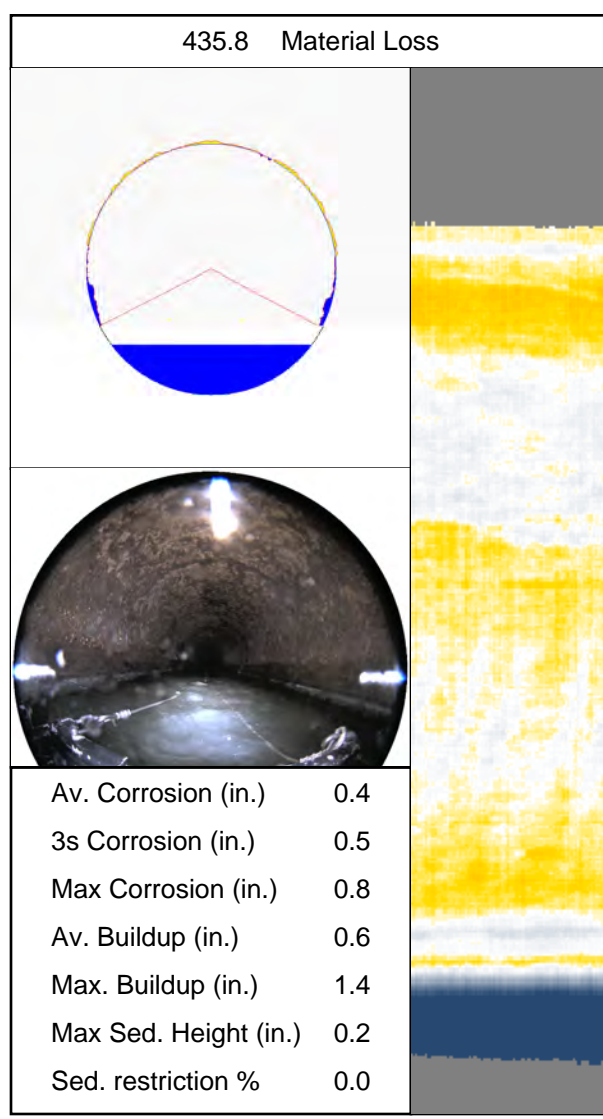
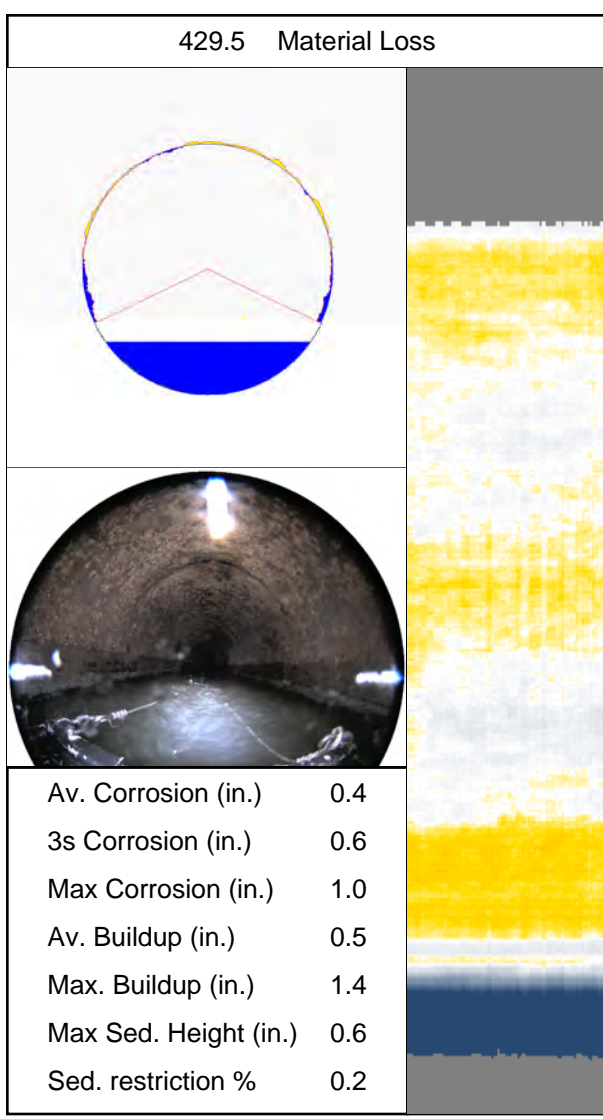
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.5
Sed. restriction %	0.2

425.1 Regular Interval

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.3
Sed. restriction %	0.2



Distributed Cross-Sections





Distributed Cross-Sections

444.7 Buildup

Av. Corrosion (in.)	0.8
3s Corrosion (in.)	1.4
Max Corrosion (in.)	2.7
Av. Buildup (in.)	0.7
Max. Buildup (in.)	1.2
Max Sed. Height (in.)	4.5
Sed. restriction %	2.0

447.8 Material Loss

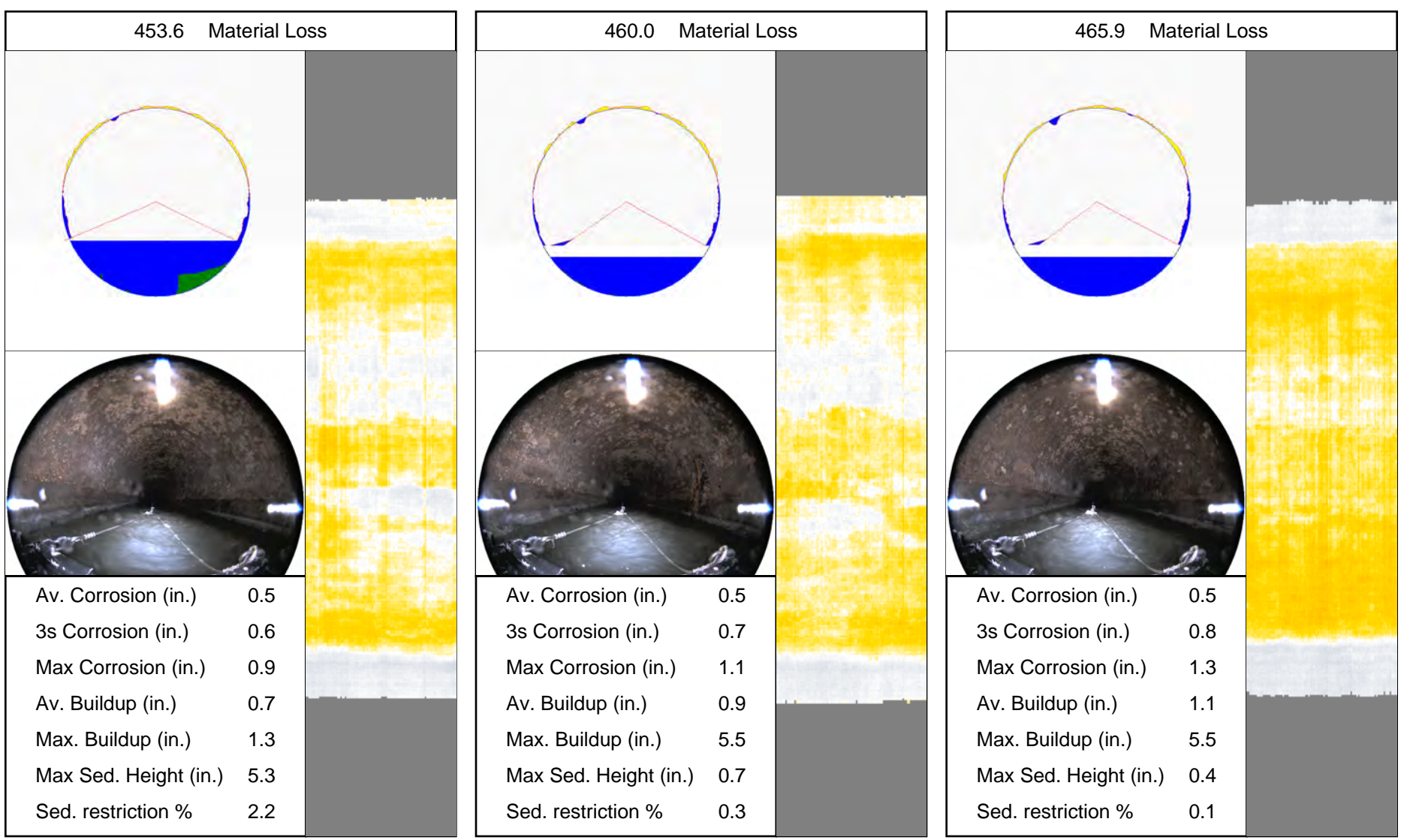
Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.1
Max Sed. Height (in.)	0.5
Sed. restriction %	0.2

450.1 Regular Interval

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.0
Av. Buildup (in.)	1.0
Max. Buildup (in.)	5.5
Max Sed. Height (in.)	0.6
Sed. restriction %	0.3

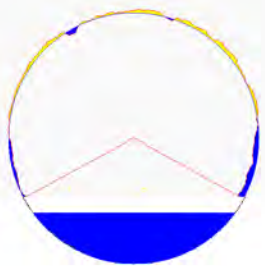
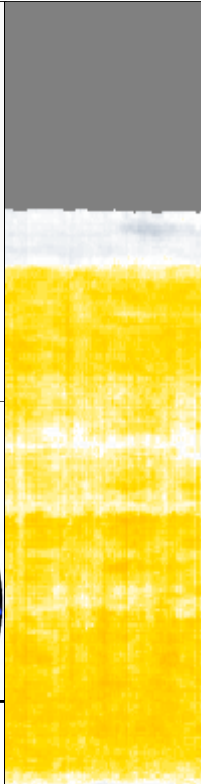



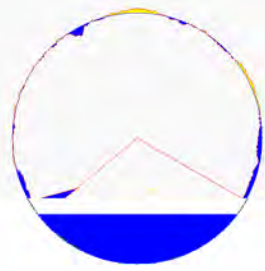
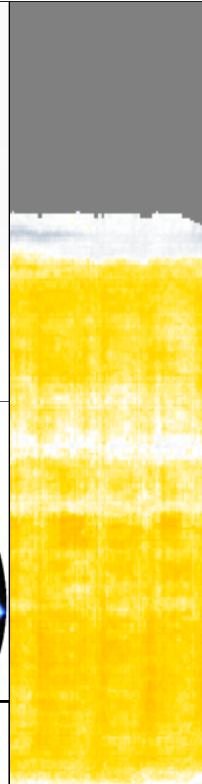

Distributed Cross-Sections

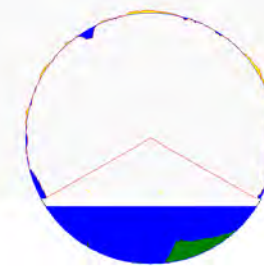
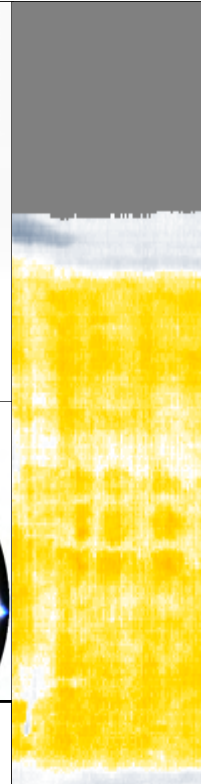





Distributed Cross-Sections

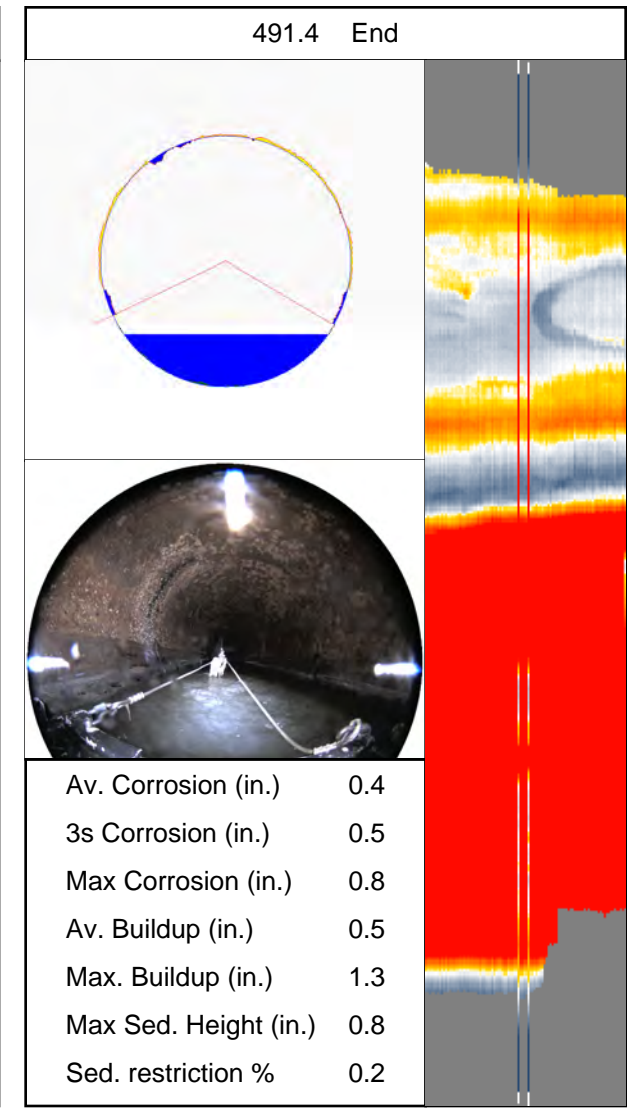
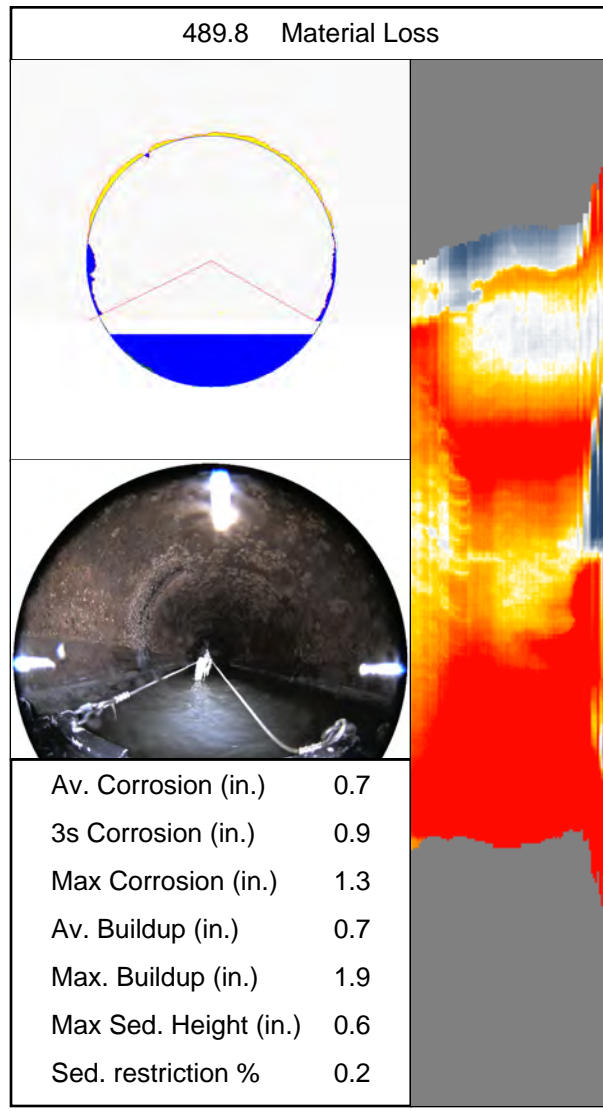
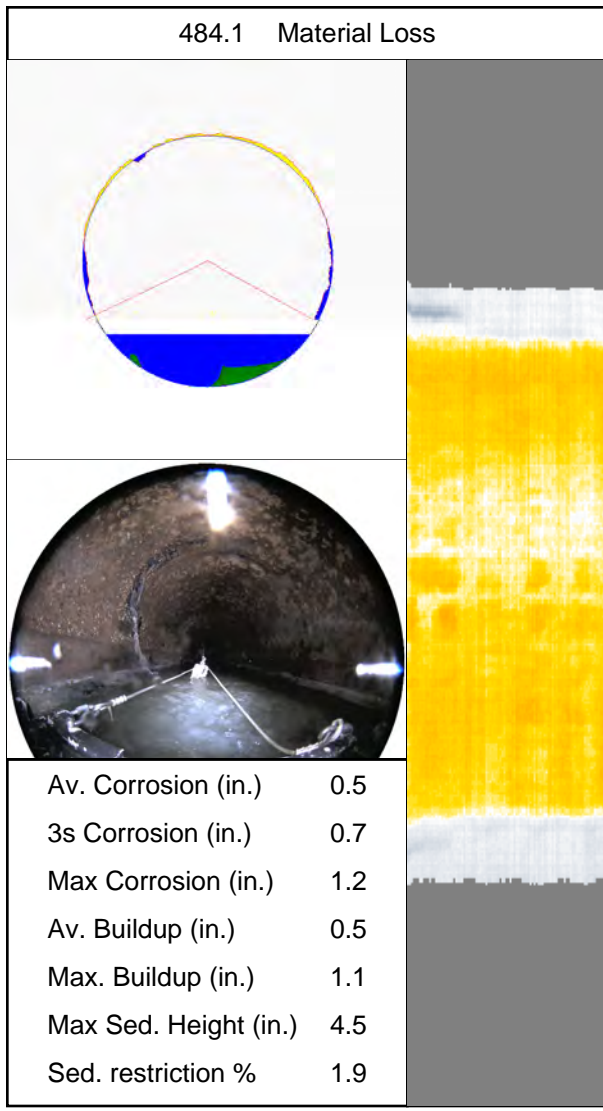
472.2 Material Loss	
	
	
Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.6
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.7
Max. Buildup (in.)	1.4
Max Sed. Height (in.)	0.4
Sed. restriction %	0.1

475.1 Regular Interval	
	
	
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.9
Max. Buildup (in.)	5.5
Max Sed. Height (in.)	0.4
Sed. restriction %	0.2

477.8 Material Loss	
	
	
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.7
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.9
Max Sed. Height (in.)	4.4
Sed. restriction %	1.8



Distributed Cross-Sections



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Pipeline Inspection Partners Corp.

3600 Rio Vista Avenue
Orlando Florida 32805
Phone: 800.327.7791
Fax: 407.425.1569

Ed Diggs
800.327.7791
ediggs@cuesinc.com

Scott Thayer
412.839.1100
sthayer@cuesinc.com

Adam Slifko
412-656-5636
aslifko@cuesinc.com

Michelle Joy
724-601-1728
mjoy@cuesinc.com

Josh Graham
1401 Seaboard Dr.
Baton Rouge, LA 70810
Phone: 985.502.5667
jgraham@ces-ses.com

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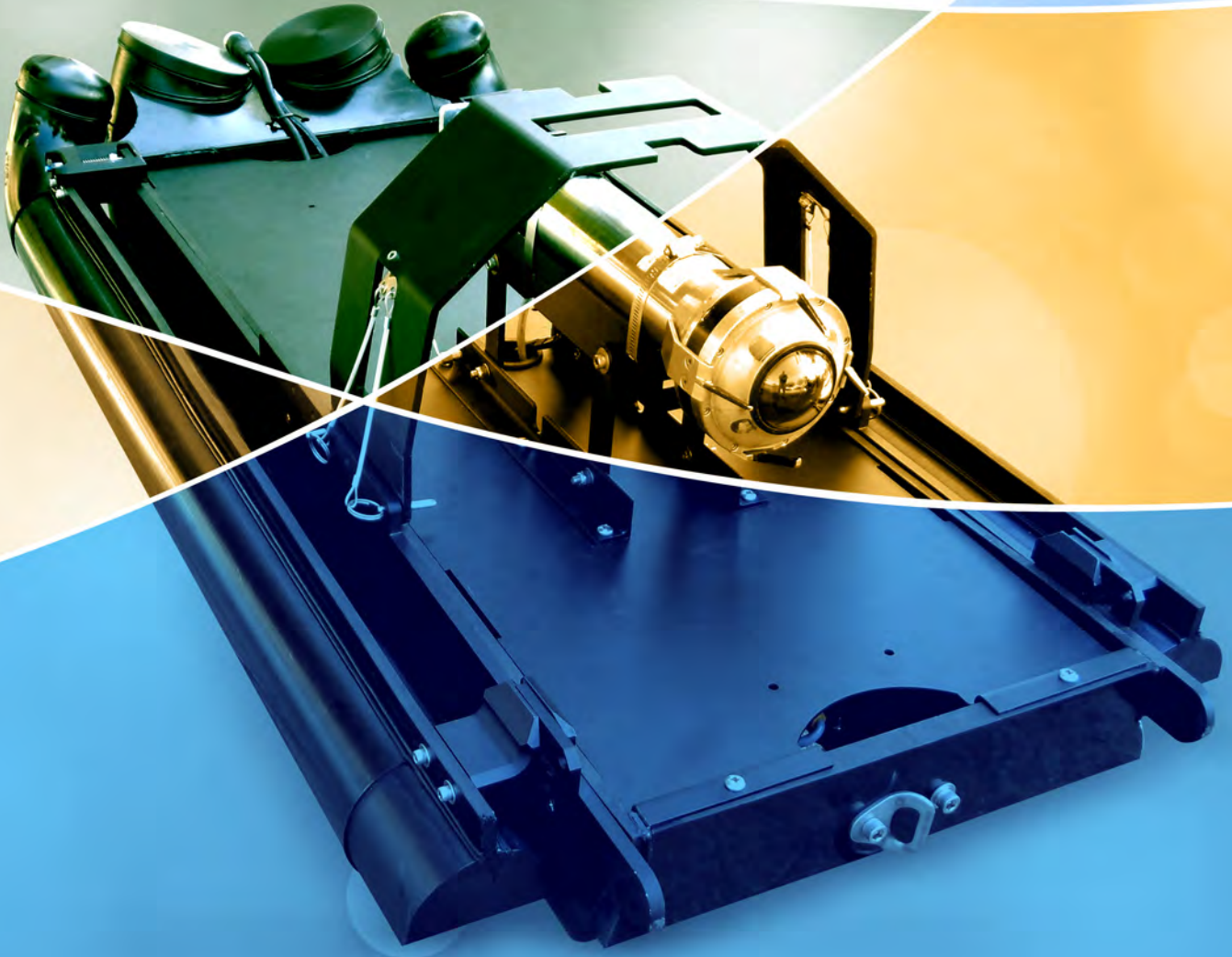


Pipeline Inspection Partners Corp.

SolidFX

Inspection Report

Prepared for



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Technology Comparison Analysis

Feature	SolidFX	Spinning Laser Profiling	Laser Profiling with Wand
Technology	LIDAR	Spinning Laser Profiling	Laser Profiling with Wand
Cross Sections Scan Rate	45 /second	1.25 /second	12 /sec 12 /second on
Cross Section Measurement Density	1080 points	20 -300 points	Function of Pipe diameter
Effective Range	6"- 30 meters	4" - 48"	18" - 100"
Accuracy	3 mm @ 10m	15mm @ 3m	3 mm @ 3mm
Resolution	1mm (constant)	+/- 0.5% (pipe diameter)	+/- 0.1% (pipe diameter)
Calibration	Precision Factory	Automatic	Factory
Limited by Shadowing	No	No	Yes
Requires Wand Change out	No	No	Yes
"Cork Screw" Distortion during Motion	No	Yes	No
Multiple Returns (fog resistance)	Yes	No	No
Sensor Cleaning during Inspection	Yes	No	No
Transport Mechanism	Tractor/Float	Tractor Only	Float Only
3D Option	Yes	No	No
Custom Reporting	Yes	No	No
Live Video	Yes	Yes	No
Sonar Available	Yes	No	Yes
Maximum Deployment Length (linear foot)	4000	2000	4000+
Made in USA	Yes	Yes	No
Data Viewable During Operations	Yes	Yes	No
Onsite PACP	Yes	Yes	No

CES Baton Rouge
 Inspected December 04, 2019

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Inspection Information

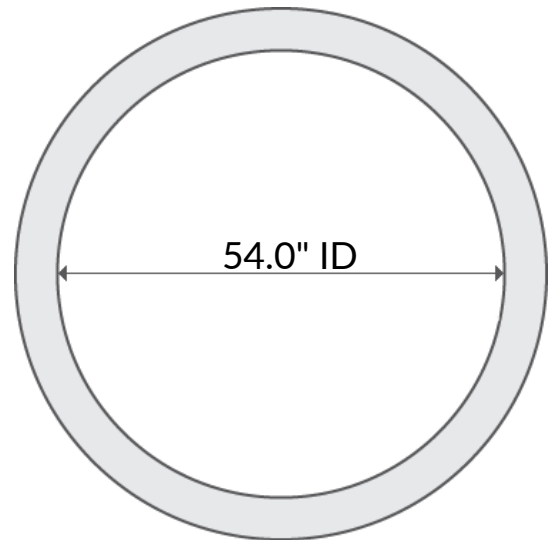
Transport

Float

Sensor(s)

LIDAR
 HD
 SONAR

As-Built Dimensions



Inspection Details

Service Area:	BATON ROUGE
Segment Reference:	1-3
Upstream Manhole:	058-00720A
Downstream Manhole:	058-00721A
Direction:	Upstream
Distance:	15.9
Scan Date:	December 04, 2019
Operator Notes:	None
Processing Notes:	Advanced corrosion present

Document Details

Report Prepared January 07, 2020
 Source Reference 14612

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Sediment and Corrosion Summary Metrics

Sediment/Sonar Metrics

Sediment Volume (cubic yard):	0.2
As-is Capacity/As-built Capacity (%):	97.8
Average cross-sectional restriction (%):	2.2

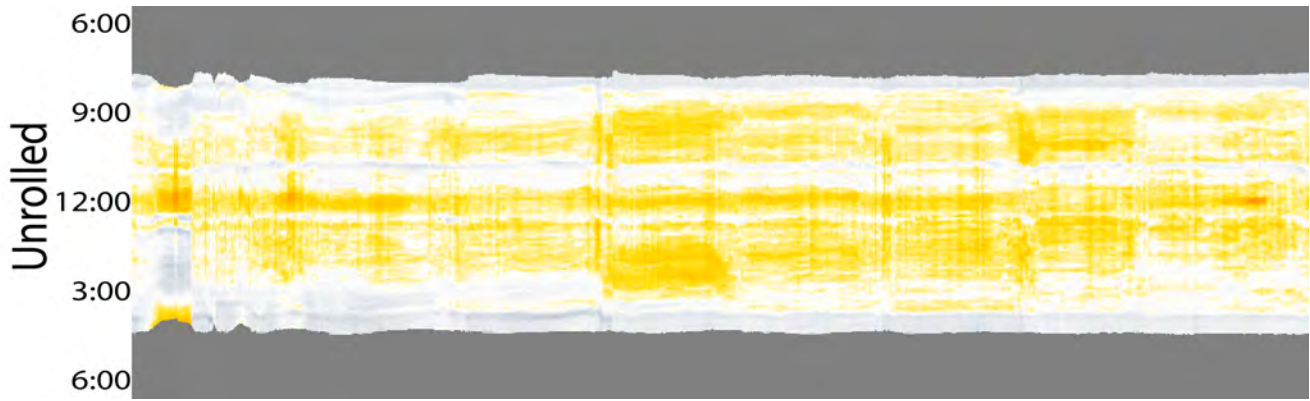
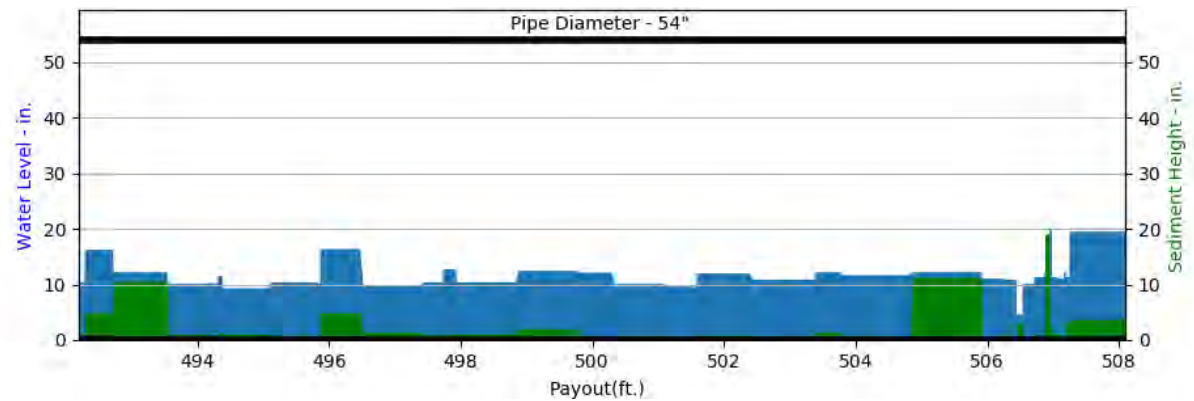
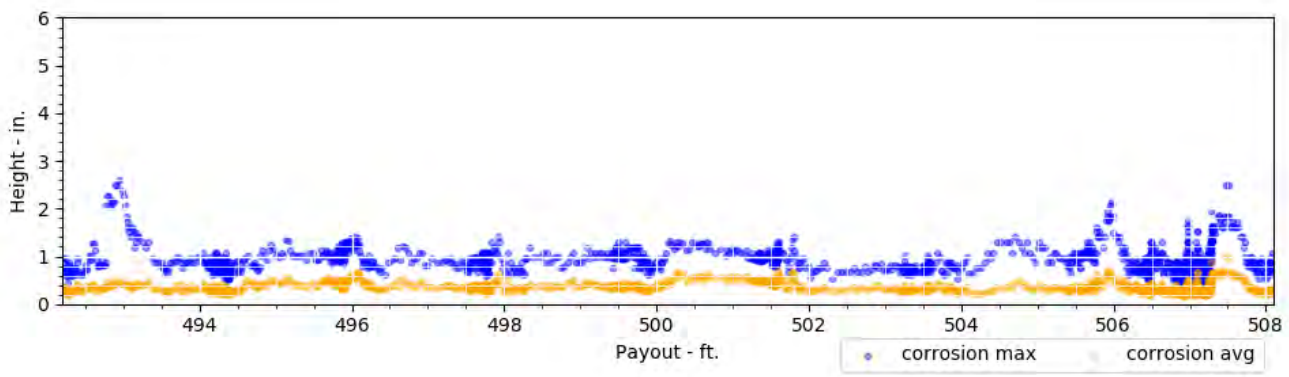
Corrosion/Lidar Metrics

Corroded Volume (cubic in):	4780.0
Wall/As-built (%):	97.6
Average Wall Loss (%):	2.4

Sediment and Corrosion Graphs(492'-508')

CES Baton Rouge
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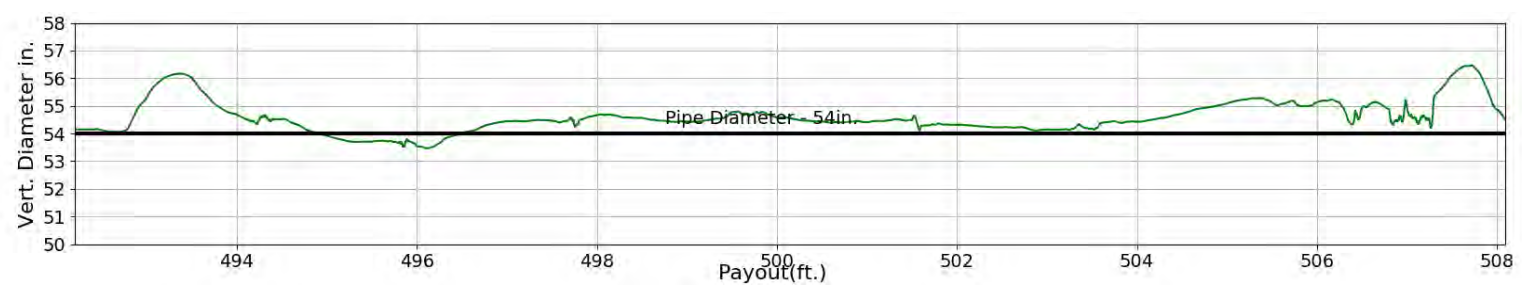
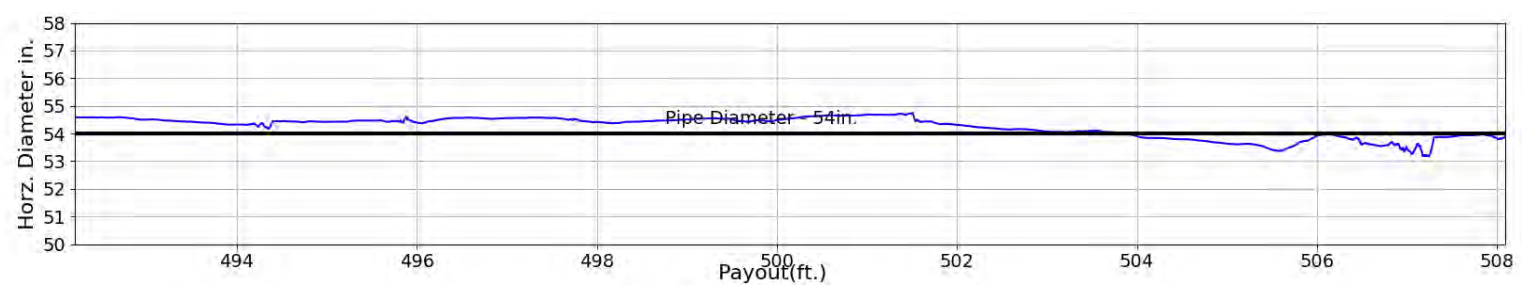
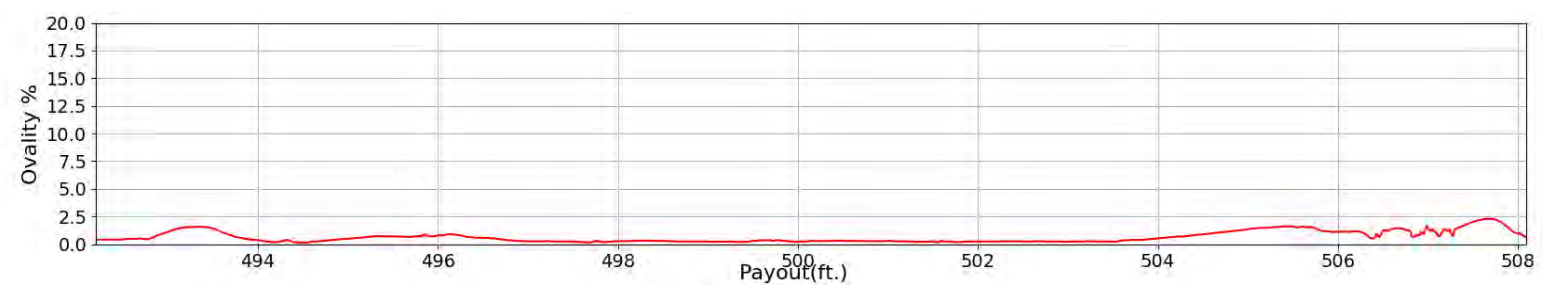


Pipe Ovality Graphs

CES Baton Rouge
 Inspected December 04, 2019



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CES Baton Rouge

Inspected December 04, 2019



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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
492.2'	Start	Start of inspection	0.2"	0.4"	0.6"	0.4"	1.3"	1.3"	0.3%
500.1'	Regular Interval		0.4"	0.6"	1.0"	0.4"	0.9"	0.7"	0.2%
508.1'	End	End of inspection	0.3"	0.5"	0.9"	0.5"	1.7"	3.7"	0.7%



Distributed Cross-Sections

492.2 Start		500.1 Regular Interval		508.1 End	
Av. Corrosion (in.)	0.2	Av. Corrosion (in.)	0.4	Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.4	3s Corrosion (in.)	0.6	3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.6	Max Corrosion (in.)	1.0	Max Corrosion (in.)	0.9
Av. Buildup (in.)	0.4	Av. Buildup (in.)	0.4	Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.3	Max. Buildup (in.)	0.9	Max. Buildup (in.)	1.7
Max Sed. Height (in.)	1.3	Max Sed. Height (in.)	0.7	Max Sed. Height (in.)	3.7
Sed. restriction %	0.3	Sed. restriction %	0.2	Sed. restriction %	0.7

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Pipeline Inspection Partners Corp.

3600 Rio Vista Avenue
Orlando Florida 32805
Phone: 800.327.7791
Fax: 407.425.1569

Ed Diggs
800.327.7791
ediggs@cuesinc.com

Scott Thayer
412.839.1100
sthayer@cuesinc.com

Adam Slifko
412-656-5636
aslifko@cuesinc.com

Michelle Joy
724-601-1728
mjoy@cuesinc.com

Josh Graham
1401 Seaboard Dr.
Baton Rouge, LA 70810
Phone: 985.502.5667
jgraham@ces-ses.com

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Pipeline Inspection Partners Corp.

SolidFX

Inspection Report

Prepared for



CES Baton Rouge
Inspected December 04, 2019



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Technology Comparison Analysis

Feature	SolidFX	Spinning Laser Profiling	Laser Profiling with Wand
Technology	LIDAR	Spinning Laser Profiling	Laser Profiling with Wand
Cross Sections Scan Rate	45 /second	1.25 /second	12 /sec 12 /second on
Cross Section Measurement Density	1080 points	20 -300 points	Function of Pipe diameter
Effective Range	6"- 30 meters	4" - 48"	18" - 100"
Accuracy	3 mm @ 10m	15mm @ 3m	3 mm @ 3mm
Resolution	1mm (constant)	+/- 0.5% (pipe diameter)	+/- 0.1% (pipe diameter)
Calibration	Precision Factory	Automatic	Factory
Limited by Shadowing	No	No	Yes
Requires Wand Change out	No	No	Yes
"Cork Screw" Distortion during Motion	No	Yes	No
Multiple Returns (fog resistance)	Yes	No	No
Sensor Cleaning during Inspection	Yes	No	No
Transport Mechanism	Tractor/Float	Tractor Only	Float Only
3D Option	Yes	No	No
Custom Reporting	Yes	No	No
Live Video	Yes	Yes	No
Sonar Available	Yes	No	Yes
Maximum Deployment Length (linear foot)	4000	2000	4000+
Made in USA	Yes	Yes	No
Data Viewable During Operations	Yes	Yes	No
Onsite PACP	Yes	Yes	No

CES Baton Rouge
 Inspected December 04, 2019

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Inspection Information

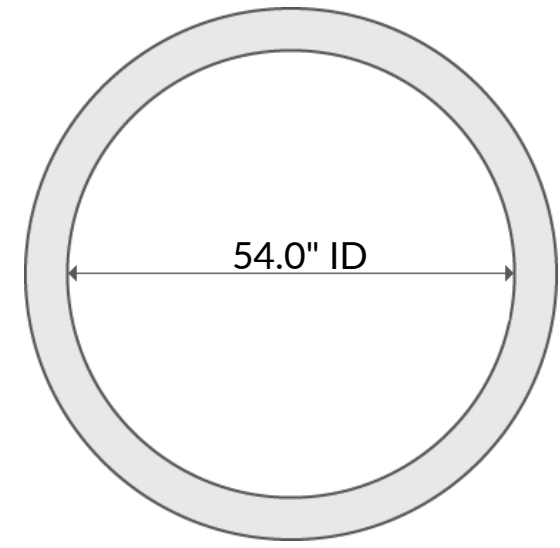
Transport

Float

Sensor(s)

LIDAR
 HD
 SONAR

As-Built Dimensions



Inspection Details

Service Area:	BATON ROUGE
Segment Reference:	1-2
Upstream Manhole:	058-00006H
Downstream Manhole:	058-00720A
Direction:	Upstream
Distance:	622.9
Scan Date:	December 04, 2019
Operator Notes:	None
Processing Notes:	Advanced corrosion present

Document Details

Report Prepared January 07, 2020
 Source Reference 62830



Sediment and Corrosion Summary Metrics

Sediment/Sonar Metrics

Sediment Volume (cubic yard):	0.0
As-is Capacity/As-built Capacity (%):	100.0
Average cross-sectional restriction (%):	0.0

Corrosion/Lidar Metrics

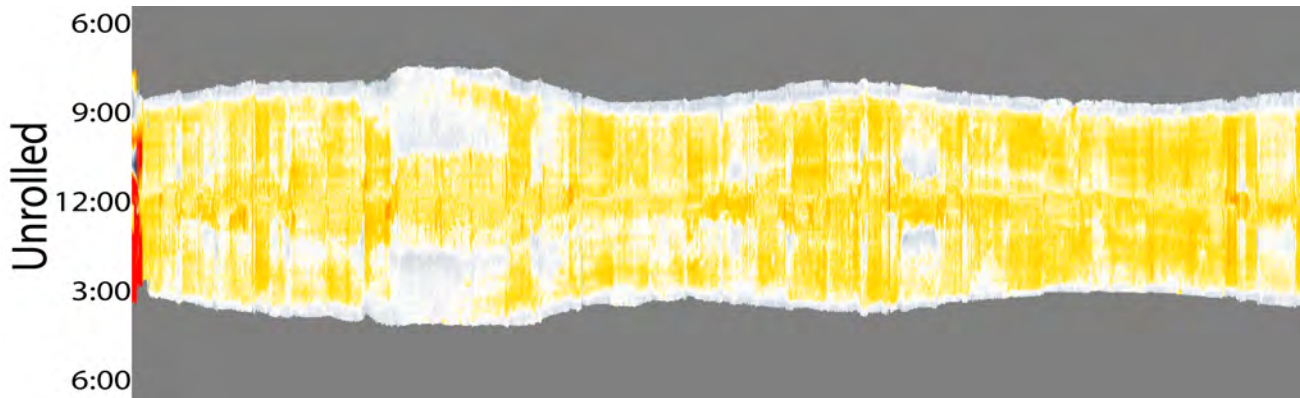
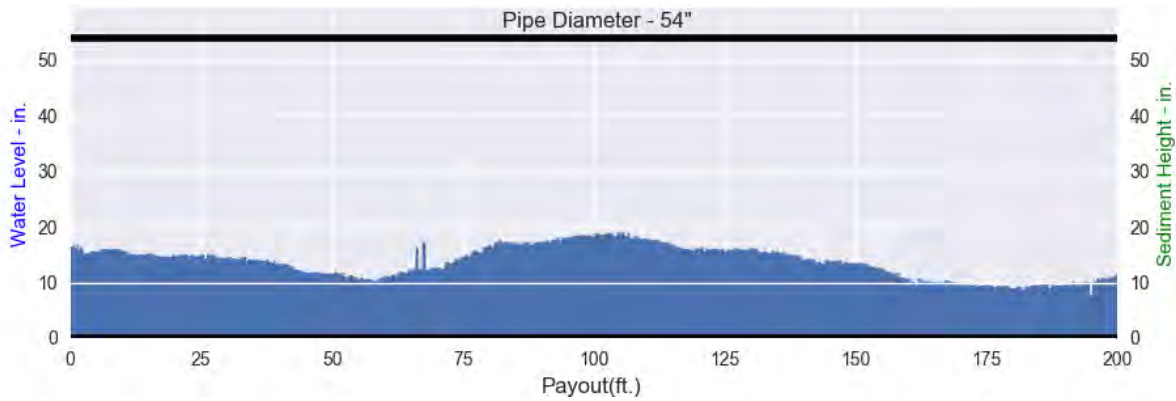
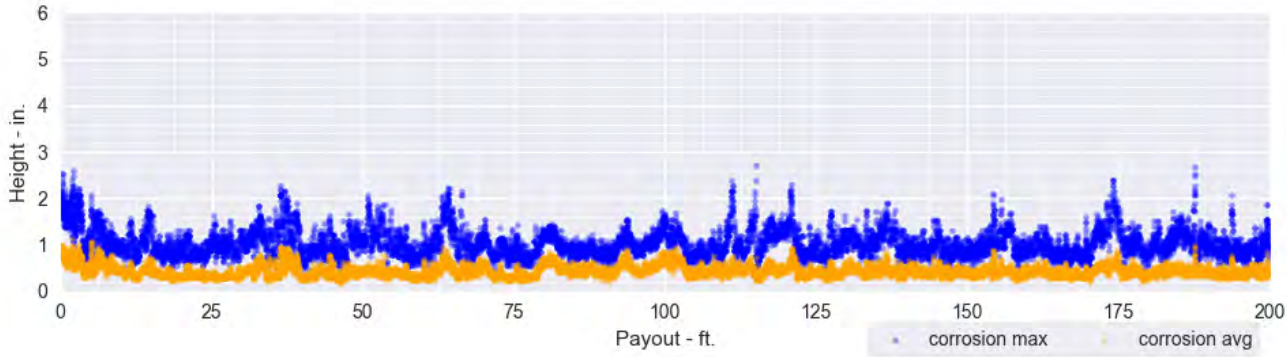
Corroded Volume (cubic in):	232688.4
Wall/As-built (%):	97.0
Average Wall Loss (%):	3.0

Sediment and Corrosion Graphs(0'-200')

CES Baton Rouge
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Sediment and Corrosion Graphs(200'-400')

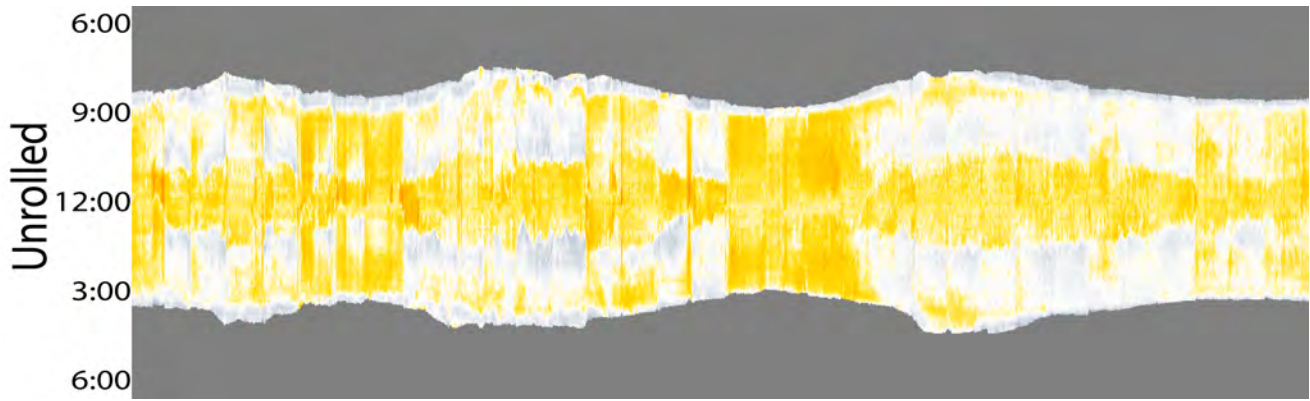
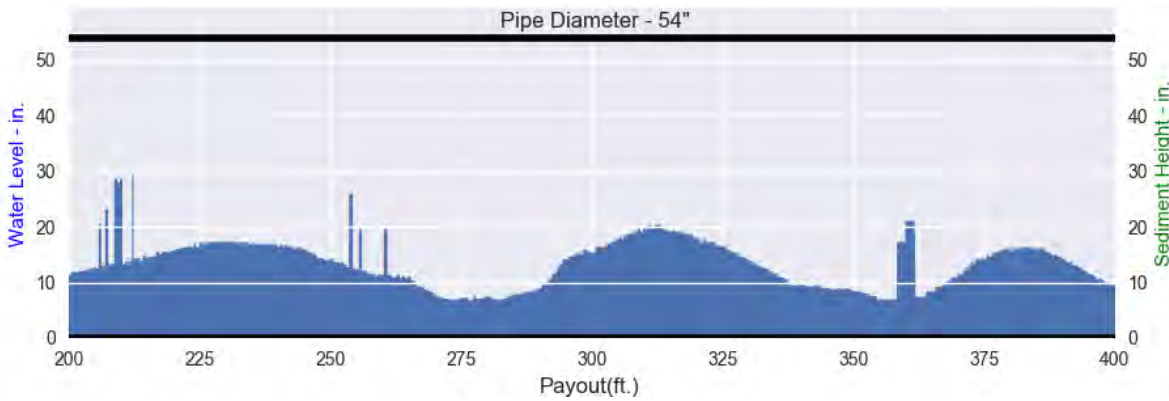
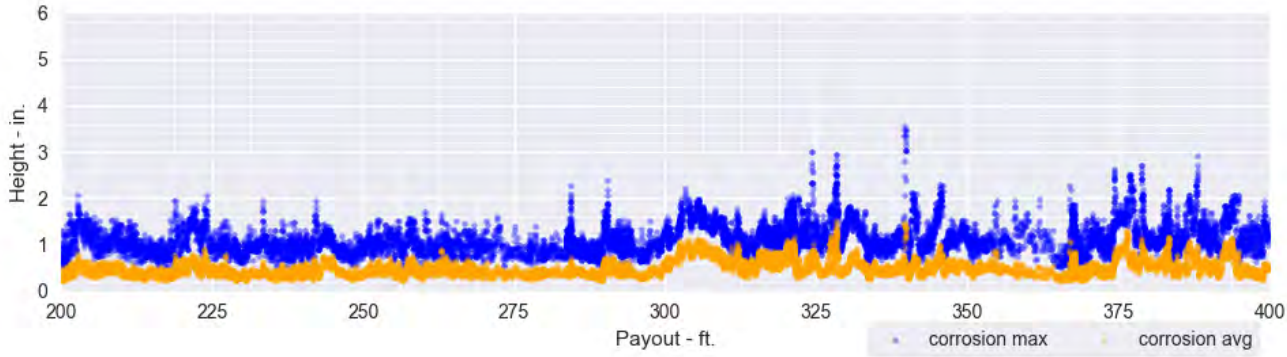
CES Baton Rouge

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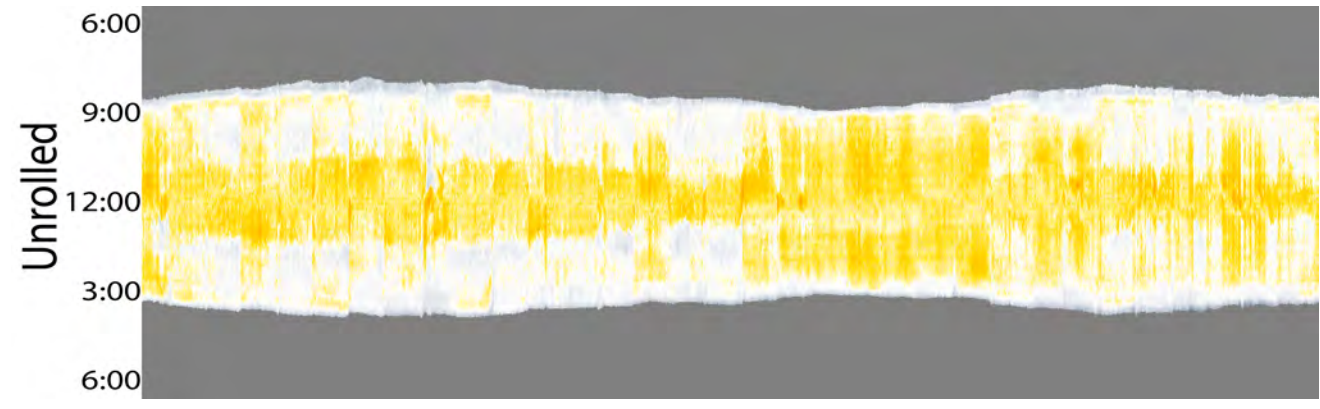
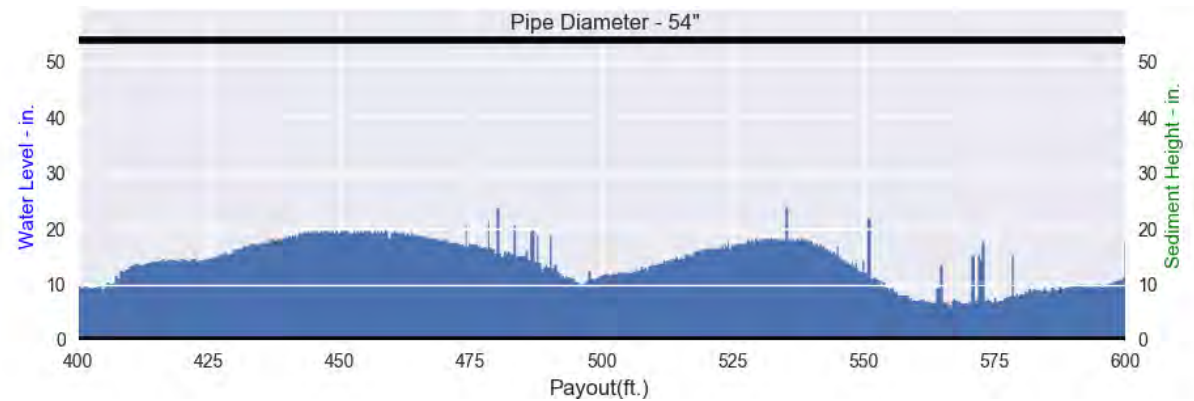
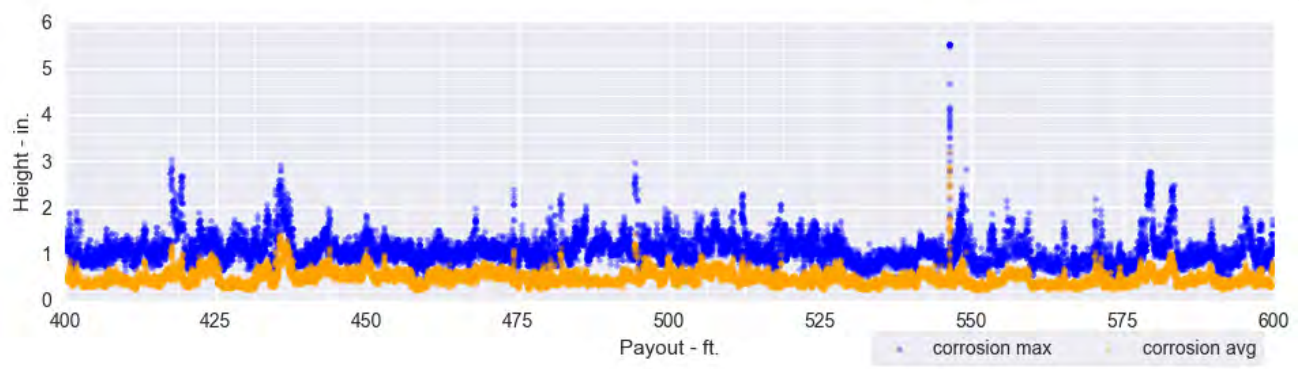
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Sediment and Corrosion Graphs(400'-600')

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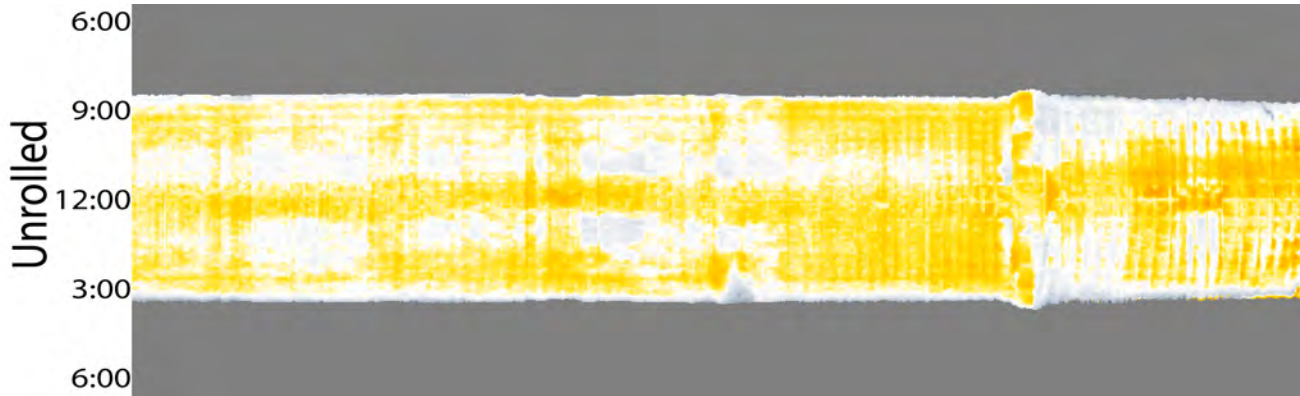
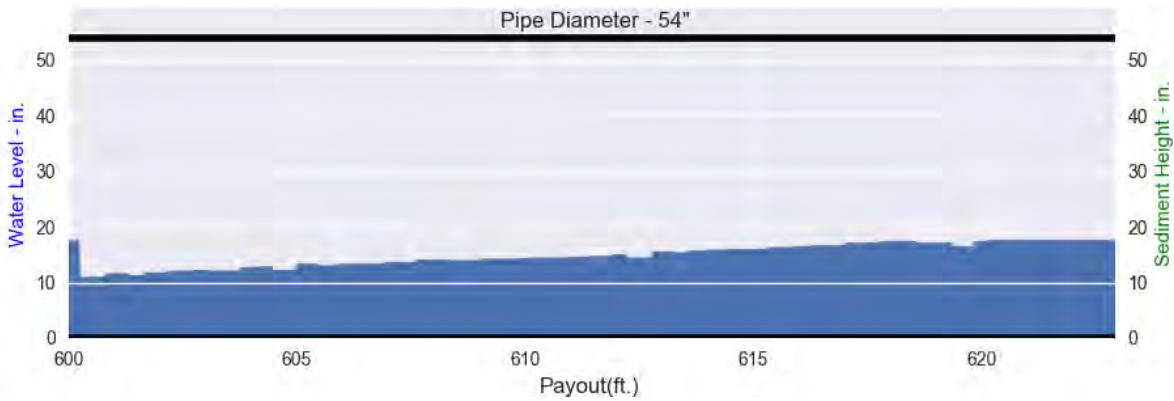
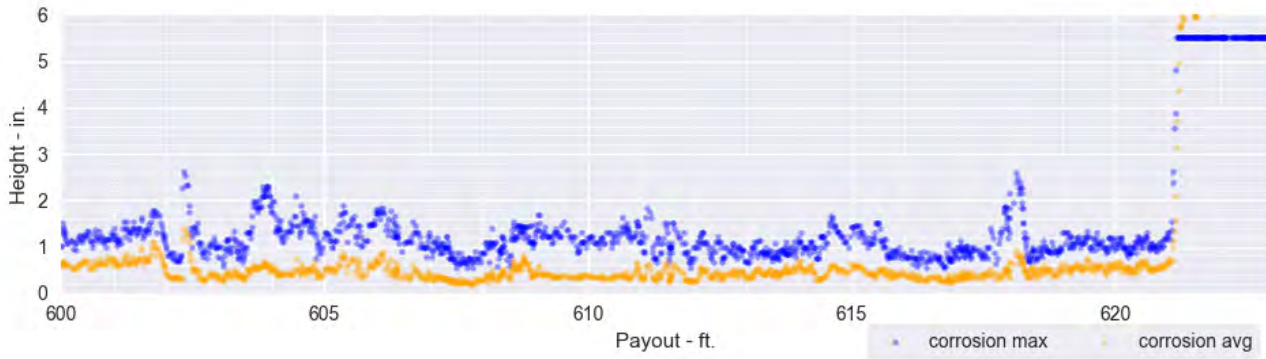


Sediment and Corrosion Graphs(600'-623')

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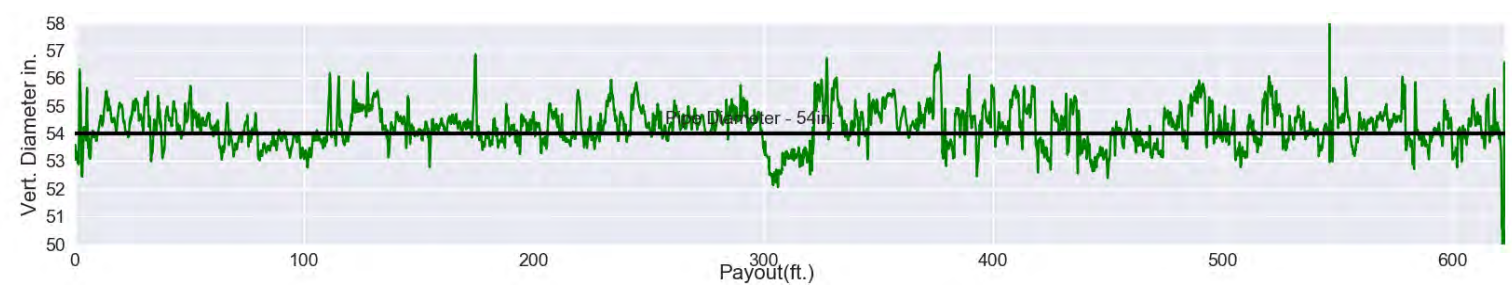
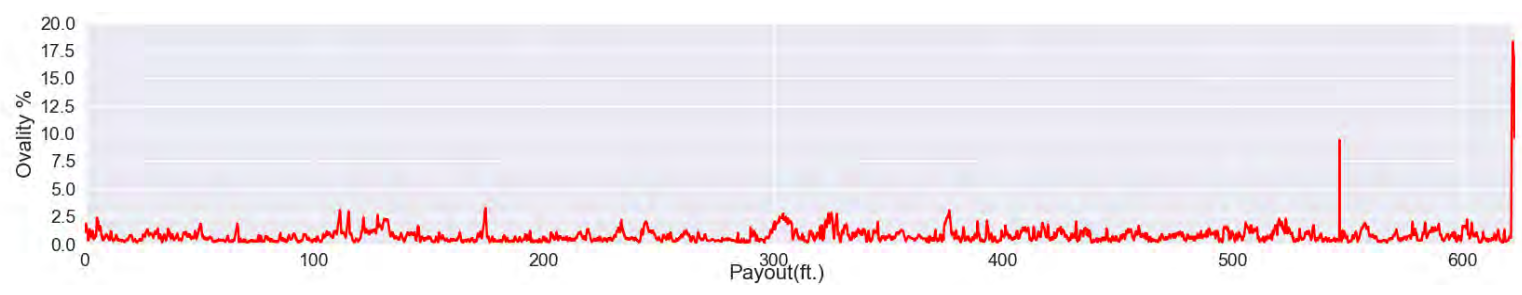


Pipe Ovality Graphs

CES Baton Rouge
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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
0.1'	Start	Start of inspection	0.8"	1.2"	1.8"	1.0"	2.4"	0.0"	0.0%
1.6'	Buildup	Buildup	0.7"	1.1"	1.5"	0.7"	2.2"	0.0"	0.0%
5.1'	Material Loss	Material loss at joint	0.8"	1.8"	1.7"	0.6"	2.4"	0.0"	0.0%
11.5'	Material Loss	Material loss at joint	0.5"	1.1"	1.3"	0.4"	1.5"	0.0"	0.0%
11.5'	Material Loss	Material loss at joint	0.5"	1.1"	1.3"	0.4"	1.5"	0.0"	0.0%
23.6'	Material Loss	Material loss at joint	0.4"	0.5"	1.0"	0.7"	1.7"	0.0"	0.0%
25.1'	Regular Interval		0.3"	0.7"	1.1"	0.4"	2.3"	0.0"	0.0%
35.8'	Material Loss	Material loss at joint	0.3"	0.7"	0.8"	0.3"	2.7"	0.0"	0.0%
47.7'	Material Loss	Material loss at joint	0.6"	1.3"	1.4"	0.5"	2.4"	0.0"	0.0%
50.1'	Regular Interval		0.4"	1.0"	1.1"	0.3"	1.9"	0.0"	0.0%

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 058-00720A

Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
54.3'	Buildup	Buildup	0.4"	0.7"	1.1"	0.7"	2.3"	0.0"	0.0%
60.0'	Material Loss	Material loss at joint	0.4"	0.7"	1.0"	0.7"	1.9"	0.0"	0.0%
66.6'	Buildup	Buildup	0.5"	0.8"	1.1"	0.7"	2.1"	0.0"	0.0%
73.1'	Material Loss	Material loss at joint	0.4"	0.8"	1.2"	0.7"	1.8"	0.0"	0.0%
75.1'	Regular Interval		0.3"	0.4"	0.5"	0.3"	0.8"	0.0"	0.0%
78.6'	Buildup	Buildup	0.3"	0.6"	0.8"	0.2"	1.4"	0.0"	0.0%
84.8'	Material Loss	Material loss at joint	0.3"	0.5"	0.8"	0.5"	1.5"	0.0"	0.0%
90.5'	Buildup	Buildup	0.4"	0.6"	0.9"	0.5"	1.6"	0.0"	0.0%
100.1'	Regular Interval		0.7"	0.9"	1.5"	0.7"	1.9"	0.0"	0.0%
103.2'	Material Loss	Material loss at joint	0.4"	0.6"	0.8"	0.3"	0.8"	0.0"	0.0%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
108.5'	Buildup	Buildup	0.3"	0.4"	0.8"	0.4"	1.6"	0.0"	0.0%
115.0'	Buildup	Buildup	0.4"	1.4"	1.7"	0.3"	1.6"	0.0"	0.0%
120.8'	Material Loss	Material loss at joint	0.8"	1.8"	2.2"	0.6"	1.5"	0.0"	0.0%
125.1'	Regular Interval		0.4"	0.7"	0.9"	0.4"	1.6"	0.0"	0.0%
127.4'	Material Loss	Material loss at joint	0.5"	1.6"	1.6"	0.4"	1.3"	0.0"	0.0%
133.5'	Material Loss	Material loss at joint	0.3"	0.7"	0.9"	0.3"	1.4"	0.0"	0.0%
140.6'	Buildup	Buildup	0.6"	0.6"	1.0"	0.4"	1.4"	0.0"	0.0%
150.1'	Regular Interval		0.4"	0.7"	0.9"	0.4"	1.5"	0.0"	0.0%
151.6'	Material Loss	Material loss at joint	0.4"	0.6"	1.0"	0.3"	1.2"	0.0"	0.0%
157.4'	Material Loss	Material loss at joint	0.4"	0.7"	1.3"	0.4"	1.7"	0.0"	0.0%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
163.0'	Material Loss	Material loss at joint	0.4"	0.6"	0.9"	0.5"	1.5"	0.0"	0.0%
174.6'	Material Loss	Material loss at joint	0.7"	1.5"	1.8"	0.6"	1.3"	0.0"	0.0%
175.1'	Regular Interval		0.4"	0.8"	1.2"	0.5"	2.0"	0.0"	0.0%
187.6'	Material Loss	Material loss at joint	0.8"	1.7"	2.1"	0.7"	1.3"	0.0"	0.0%
199.2'	Material Loss	Material loss at joint	0.4"	0.9"	1.1"	0.4"	1.6"	0.0"	0.0%
200.1'	Regular Interval		0.3"	0.4"	0.8"	0.4"	1.1"	0.0"	0.0%
218.8'	Material Loss	Material loss at joint	0.4"	0.7"	1.0"	0.5"	1.5"	0.0"	0.0%
224.3'	Buildup	Buildup	0.4"	0.9"	1.1"	0.4"	1.3"	0.0"	0.0%
225.1'	Regular Interval		0.4"	0.6"	1.0"	0.5"	1.2"	0.0"	0.0%
230.9'	Buildup	Buildup	0.3"	0.5"	1.0"	0.3"	0.9"	0.0"	0.0%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
235.0'	Buildup	Buildup	0.3"	0.4"	0.7"	0.3"	1.3"	0.0"	0.0%
242.2'	Material Loss	Material loss at joint	0.4"	1.1"	1.5"	0.2"	0.9"	0.0"	0.0%
248.4'	Material Loss	Material loss at joint	0.3"	0.5"	0.8"	0.4"	1.1"	0.0"	0.0%
250.1'	Regular Interval		0.4"	0.8"	1.0"	0.3"	1.1"	0.0"	0.0%
260.1'	Material Loss	Material loss at joint	0.4"	0.6"	0.8"	0.5"	1.8"	0.0"	0.0%
266.8'	Material Loss	Material loss at joint	0.5"	0.9"	1.0"	0.4"	1.6"	0.0"	0.0%
275.1'	Regular Interval		0.6"	1.0"	1.3"	0.4"	1.6"	0.0"	0.0%
280.0'	Material Loss	Material loss at joint	0.3"	0.5"	0.8"	0.4"	0.9"	0.0"	0.0%
284.4'	Material Loss	Material loss at joint	0.5"	0.9"	1.3"	0.2"	0.3"	0.0"	0.0%
289.7'	Material Loss	Material loss at joint	0.4"	0.9"	1.1"	0.3"	0.9"	0.0"	0.0%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
296.0'	Material Loss	Material loss at joint	0.4"	0.6"	0.9"	0.3"	1.1"	0.0"	0.0%
300.1'	Regular Interval		0.6"	0.9"	1.3"	0.7"	1.0"	0.0"	0.0%
304.0'	Buildup	Buildup	1.0"	1.0"	1.9"	0.4"	0.5"	0.0"	0.0%
305.3'	Material Loss	Material loss at joint	1.0"	1.1"	1.8"	0.3"	0.5"	0.0"	0.0%
321.3'	Material Loss	Material loss at joint	0.7"	0.7"	1.1"	0.6"	1.1"	0.0"	0.0%
325.1'	Regular Interval		0.6"	1.2"	1.4"	0.5"	2.8"	0.0"	0.0%
328.4'	Buildup	Buildup	0.8"	1.1"	1.7"	0.5"	1.0"	0.0"	0.0%
331.7'	Buildup	Buildup	0.7"	1.5"	1.5"	0.5"	2.0"	0.0"	0.0%
339.6'	Material Loss	Material loss at joint	1.1"	1.4"	2.5"	0.7"	1.0"	0.0"	0.0%
345.6'	Material Loss	Material loss at joint	0.7"	1.4"	1.9"	0.6"	1.4"	0.0"	0.0%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
350.1'	Regular Interval		0.5"	0.8"	1.1"	0.5"	1.3"	0.0"	0.0%
358.0'	Material Loss	Material loss at joint	0.6"	0.9"	1.4"	0.4"	1.0"	0.0"	0.0%
371.9'	Material Loss	Material loss at joint	0.4"	0.8"	1.0"	0.5"	1.3"	0.0"	0.0%
375.1'	Regular Interval		0.8"	1.7"	1.7"	0.4"	1.0"	0.0"	0.0%
378.9'	Material Loss	Material loss at joint	0.8"	1.3"	2.0"	0.7"	1.4"	0.0"	0.0%
388.8'	Material Loss	Material loss at joint	0.5"	1.1"	1.4"	0.6"	1.5"	0.0"	0.0%
394.7'	Material Loss	Material loss at joint	0.7"	1.2"	2.0"	0.4"	0.7"	0.0"	0.0%
400.1'	Regular Interval		0.5"	1.0"	1.2"	0.6"	1.3"	0.0"	0.0%
407.2'	Material Loss	Material loss at joint	0.6"	1.0"	1.1"	0.6"	1.7"	0.0"	0.0%
417.5'	Material Loss	Material loss at joint	0.9"	2.1"	2.4"	0.2"	0.8"	0.0"	0.0%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
425.1'	Regular Interval		0.7"	0.8"	1.2"	0.7"	1.2"	0.0"	0.0%
425.6'	Material Loss	Material loss at joint	0.5"	0.8"	1.0"	0.5"	2.8"	0.0"	0.0%
431.6'	Material Loss	Material loss at joint	0.7"	0.8"	1.0"	0.5"	1.5"	0.0"	0.0%
437.6'	Material Loss	Material loss at joint	0.6"	0.7"	1.1"	0.7"	1.4"	0.0"	0.0%
443.6'	Material Loss	Material loss at joint	0.9"	1.2"	1.8"	0.7"	1.2"	0.0"	0.0%
450.1'	Regular Interval		0.6"	0.8"	1.4"	0.6"	1.6"	0.0"	0.0%
456.1'	Material Loss	Material loss at joint	0.6"	0.9"	1.2"	0.8"	2.2"	0.0"	0.0%
468.1'	Material Loss	Material loss at joint	0.5"	0.8"	1.3"	0.4"	1.2"	0.0"	0.0%
474.2'	Material Loss	Material loss at joint	0.4"	0.7"	1.0"	0.3"	0.9"	0.0"	0.0%
475.1'	Regular Interval		0.4"	0.7"	1.2"	0.5"	1.5"	0.0"	0.0%



Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
480.4'	Material Loss	Material loss at joint	0.3"	0.5"	0.7"	0.6"	1.8"	0.0"	0.0%
492.2'	Material Loss	Material loss at joint	0.6"	1.1"	1.5"	0.5"	1.3"	0.0"	0.0%
500.1'	Regular Interval		0.7"	0.8"	1.3"	0.6"	1.0"	0.0"	0.0%
504.6'	Material Loss	Material loss at joint	0.5"	1.0"	1.2"	0.4"	2.2"	0.0"	0.0%
510.8'	Material Loss	Material loss at joint	0.5"	0.7"	1.0"	0.5"	1.4"	0.0"	0.0%
517.7'	Material Loss	Material loss at joint	0.3"	0.7"	0.8"	0.4"	1.3"	0.0"	0.0%
523.0'	Material Loss	Material loss at joint	0.4"	0.8"	1.0"	0.5"	2.3"	0.0"	0.0%
525.1'	Regular Interval		0.3"	0.5"	0.9"	0.5"	1.3"	0.0"	0.0%
528.8'	Material Loss	Material loss at joint	0.4"	0.6"	1.0"	0.4"	1.4"	0.0"	0.0%
534.7'	Material Loss	Material loss at joint	0.3"	0.6"	0.8"	0.5"	1.2"	0.0"	0.0%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
540.9'	Material Loss	Material loss at joint	0.5"	0.6"	0.9"	0.4"	1.2"	0.0"	0.0%
546.5'	Material Loss	Material loss at joint	0.4"	0.5"	0.8"	0.6"	1.1"	0.0"	0.0%
550.1'	Regular Interval		0.3"	0.4"	0.6"	0.5"	0.9"	0.0"	0.0%
553.2'	Material Loss	Material loss at joint	0.3"	0.6"	0.8"	0.5"	1.8"	0.0"	0.0%
558.9'	Material Loss	Material loss at joint	0.6"	0.9"	1.5"	0.6"	1.1"	0.0"	0.0%
565.5'	Material Loss	Material loss at joint	0.4"	0.8"	1.4"	0.3"	1.0"	0.0"	0.0%
575.1'	Regular Interval		0.4"	0.7"	1.0"	0.4"	0.9"	0.0"	0.0%
578.5'	Material Loss	Material loss at joint	0.5"	1.1"	1.2"	0.4"	1.3"	0.0"	0.0%
583.4'	Material Loss	Material loss at joint	0.7"	1.6"	2.4"	0.6"	1.4"	0.0"	0.0%
590.0'	Material Loss	Material loss at joint	0.4"	0.6"	0.9"	0.3"	0.8"	0.0"	0.0%

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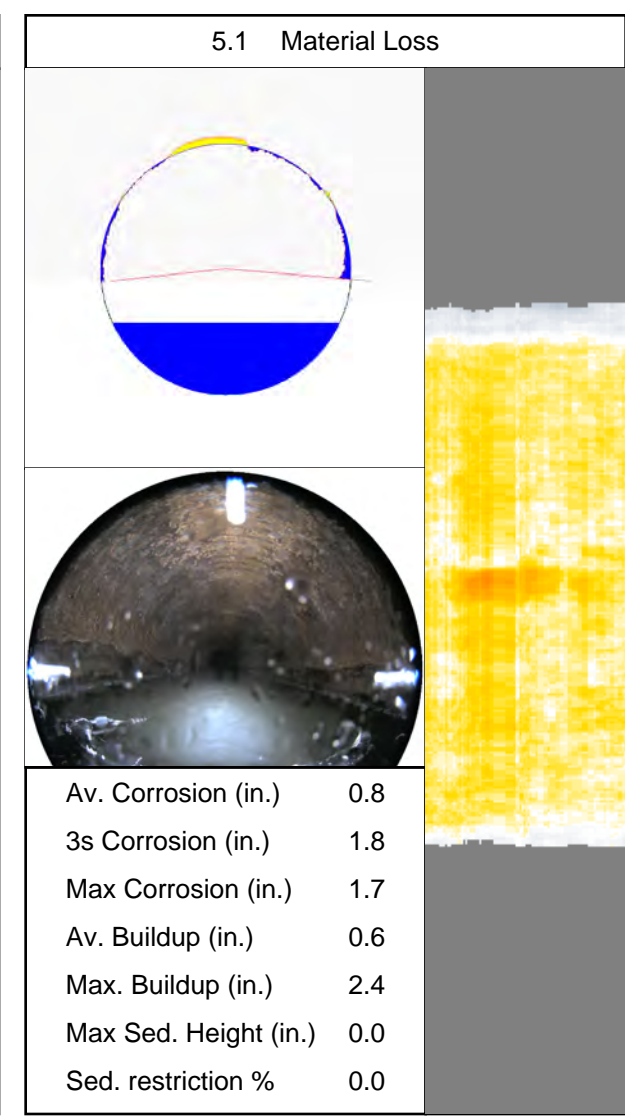
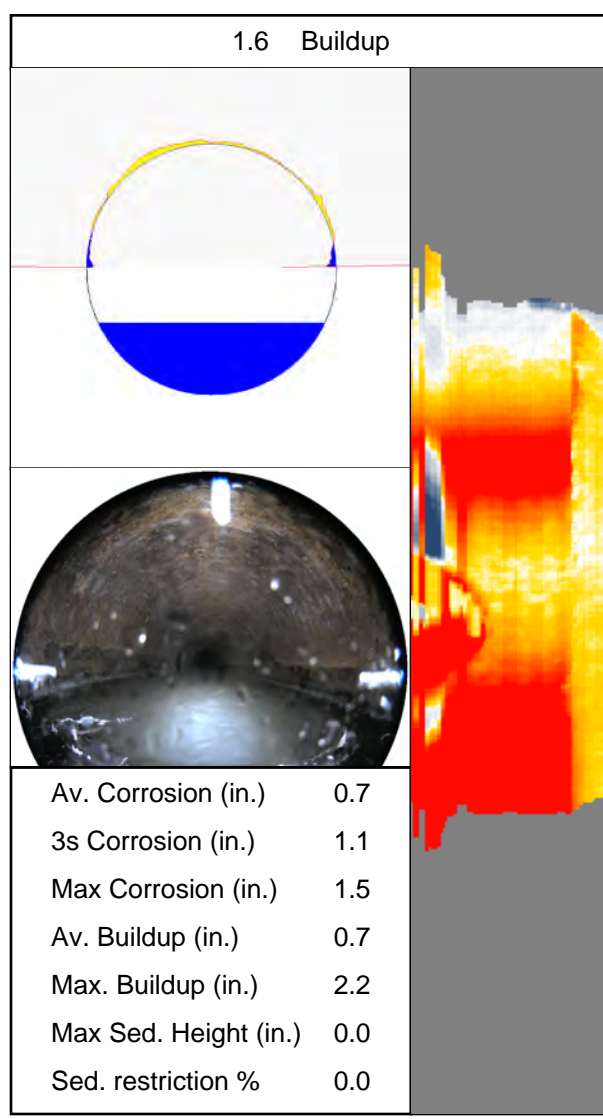
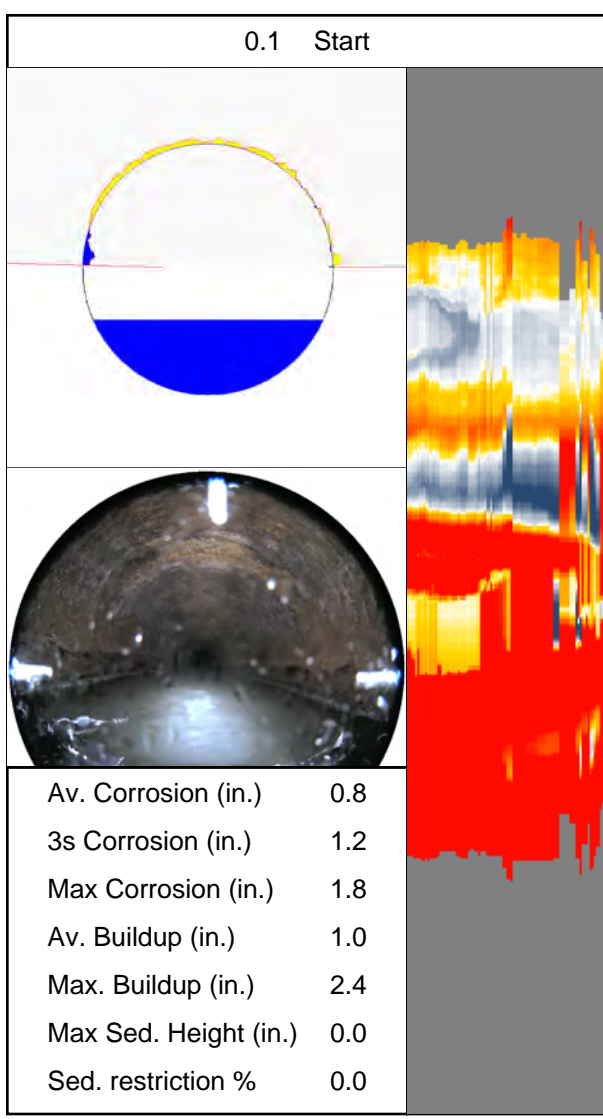
058-00720A

Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
596.8'	Material Loss	Material loss at joint	0.4"	0.8"	1.0"	0.4"	1.0"	0.0"	0.0%
600.1'	Regular Interval		0.6"	0.7"	1.3"	0.6"	1.2"	0.0"	0.0%
608.6'	Material Loss	Material loss at joint	0.6"	0.8"	1.2"	0.5"	1.2"	0.0"	0.0%
614.9'	Material Loss	Material loss at joint	0.5"	0.7"	1.1"	0.4"	1.1"	0.0"	0.0%
622.2'	Hole	Incoming Lateral	10.7"	5.5"	5.5"	2.4"	5.5"	0.0"	0.0%
622.9'	End	End of inspection	9.4"	5.5"	5.5"	1.2"	2.9"	0.0"	0.0%

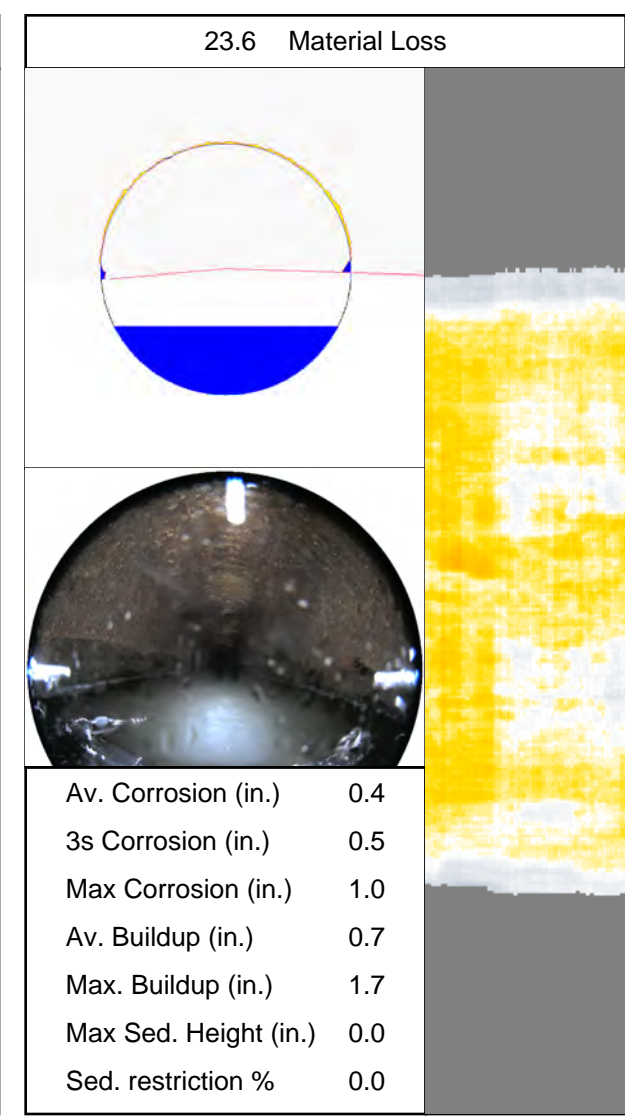
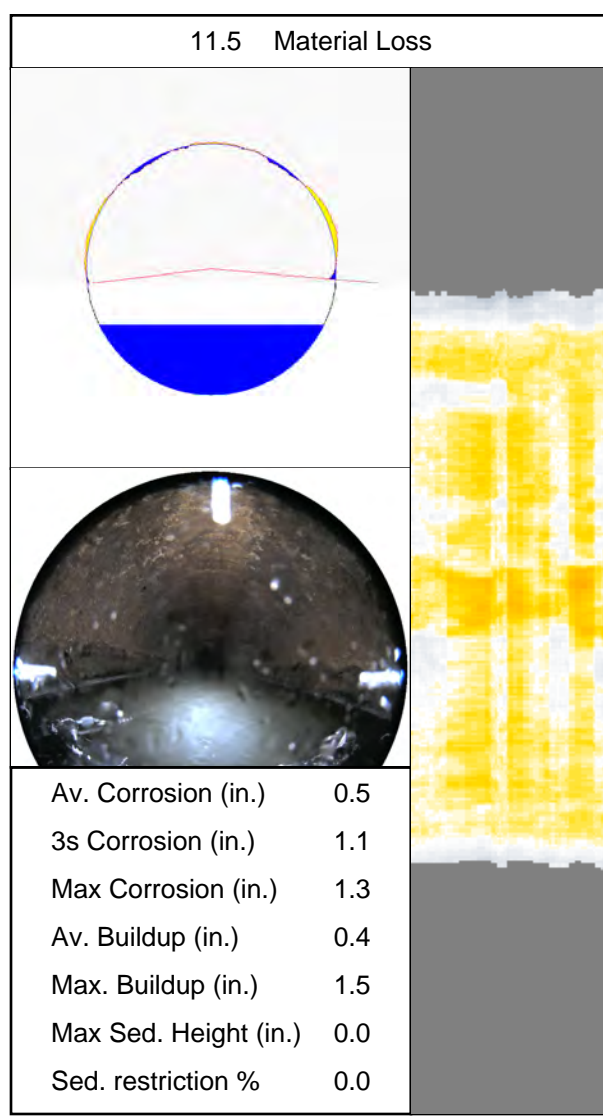
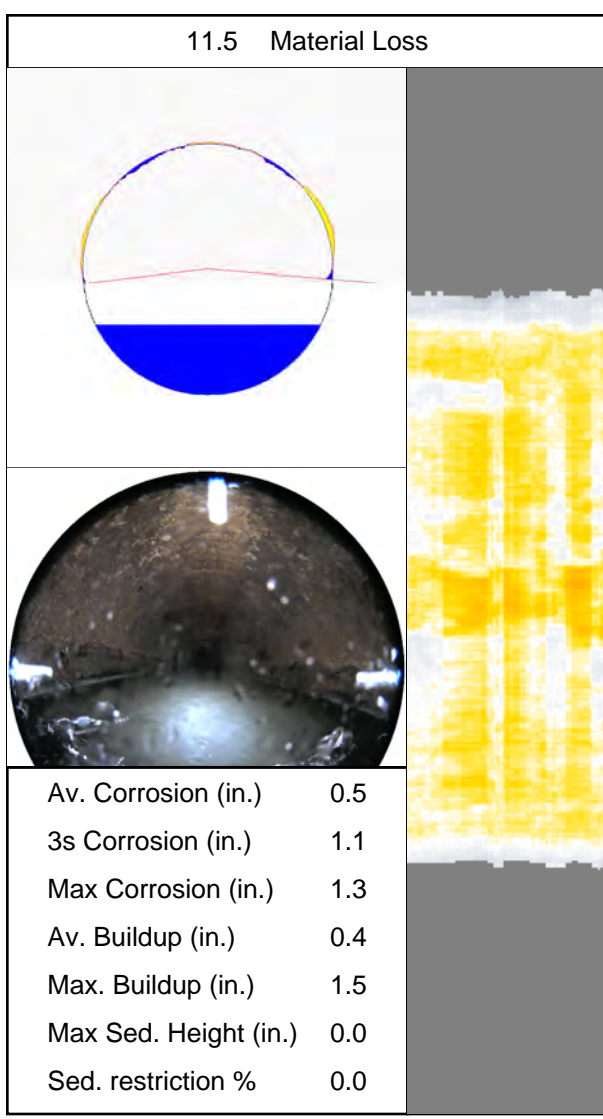


Distributed Cross-Sections



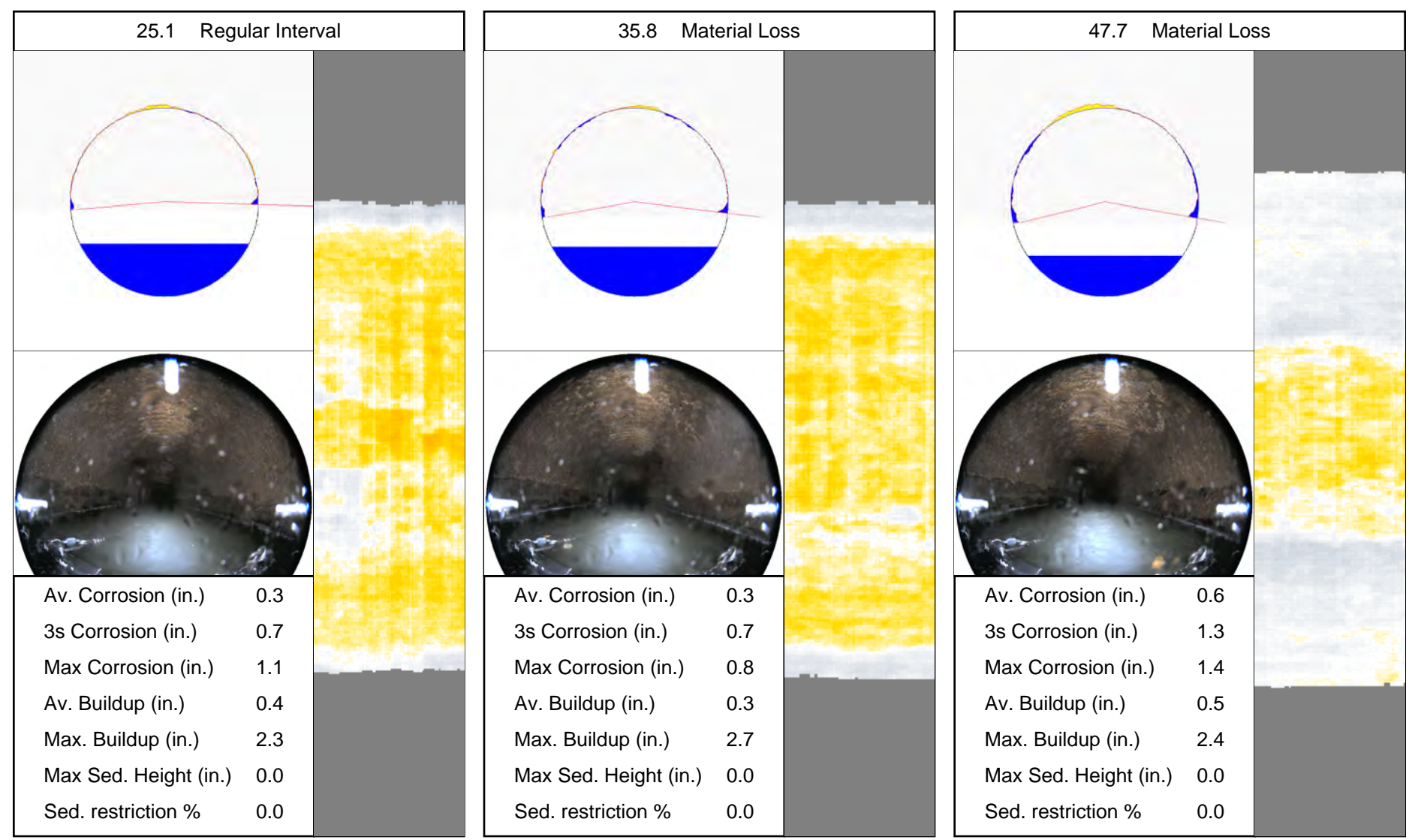


Distributed Cross-Sections



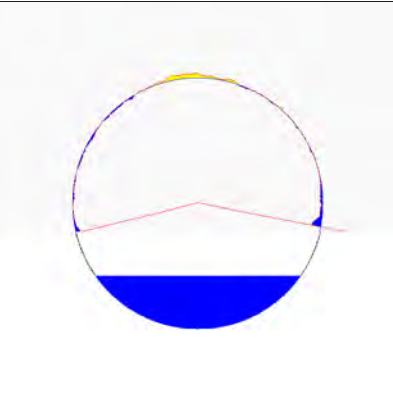
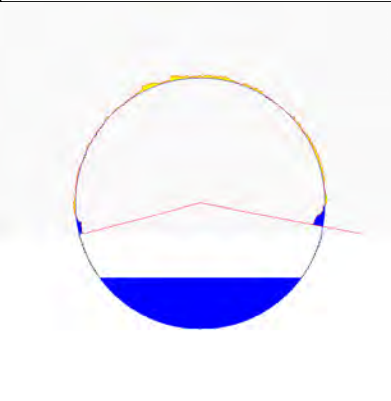
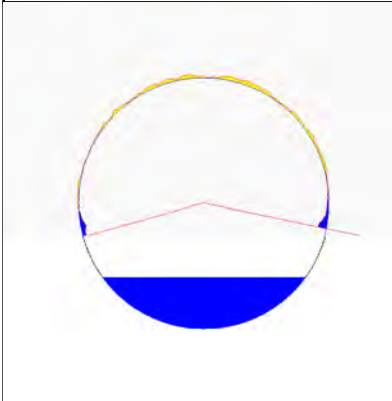
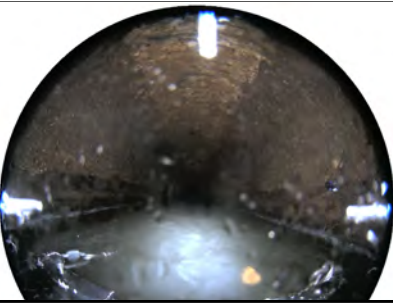
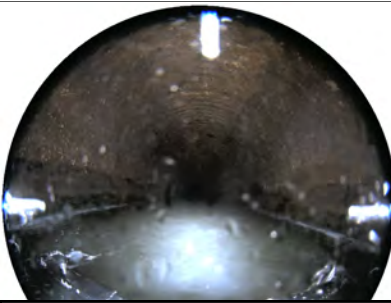



Distributed Cross-Sections





Distributed Cross-Sections

50.1 Regular Interval		54.3 Buildup		60.0 Material Loss	
					
					
Av. Corrosion (in.)	0.4	Av. Corrosion (in.)	0.4	Av. Corrosion (in.)	0.4
3s Corrosion (in.)	1.0	3s Corrosion (in.)	0.7	3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.1	Max Corrosion (in.)	1.1	Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.3	Av. Buildup (in.)	0.7	Av. Buildup (in.)	0.7
Max. Buildup (in.)	1.9	Max. Buildup (in.)	2.3	Max. Buildup (in.)	1.9
Max Sed. Height (in.)	0.0	Max Sed. Height (in.)	0.0	Max Sed. Height (in.)	0.0
Sed. restriction %	0.0	Sed. restriction %	0.0	Sed. restriction %	0.0



Distributed Cross-Sections

66.6 Buildup

Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.7
Max. Buildup (in.)	2.1
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

73.1 Material Loss

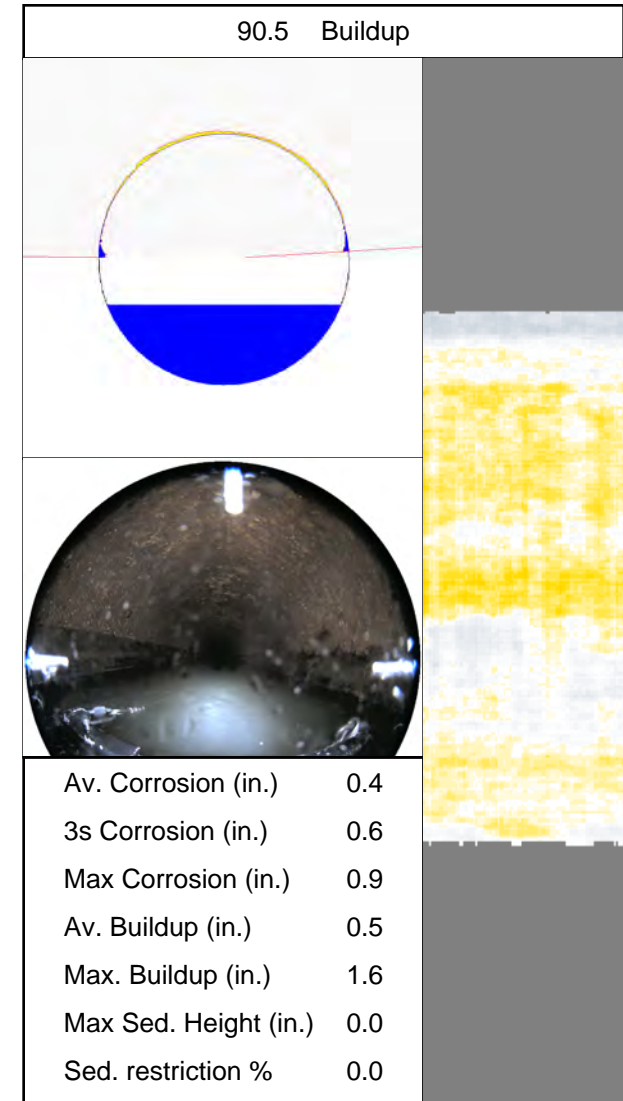
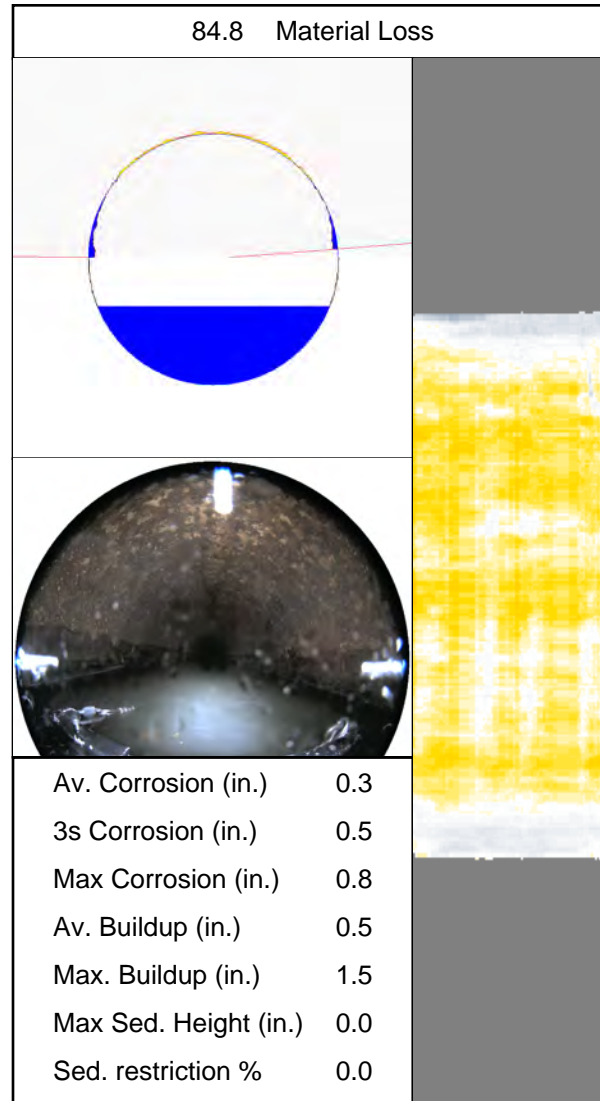
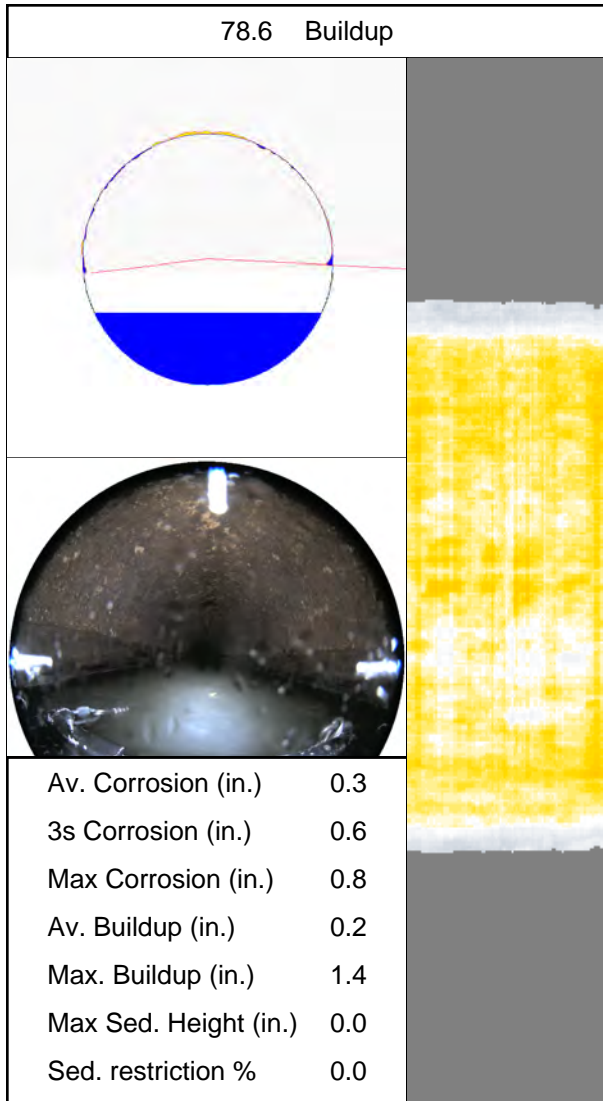
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.2
Av. Buildup (in.)	0.7
Max. Buildup (in.)	1.8
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

75.1 Regular Interval

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.4
Max Corrosion (in.)	0.5
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.8
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

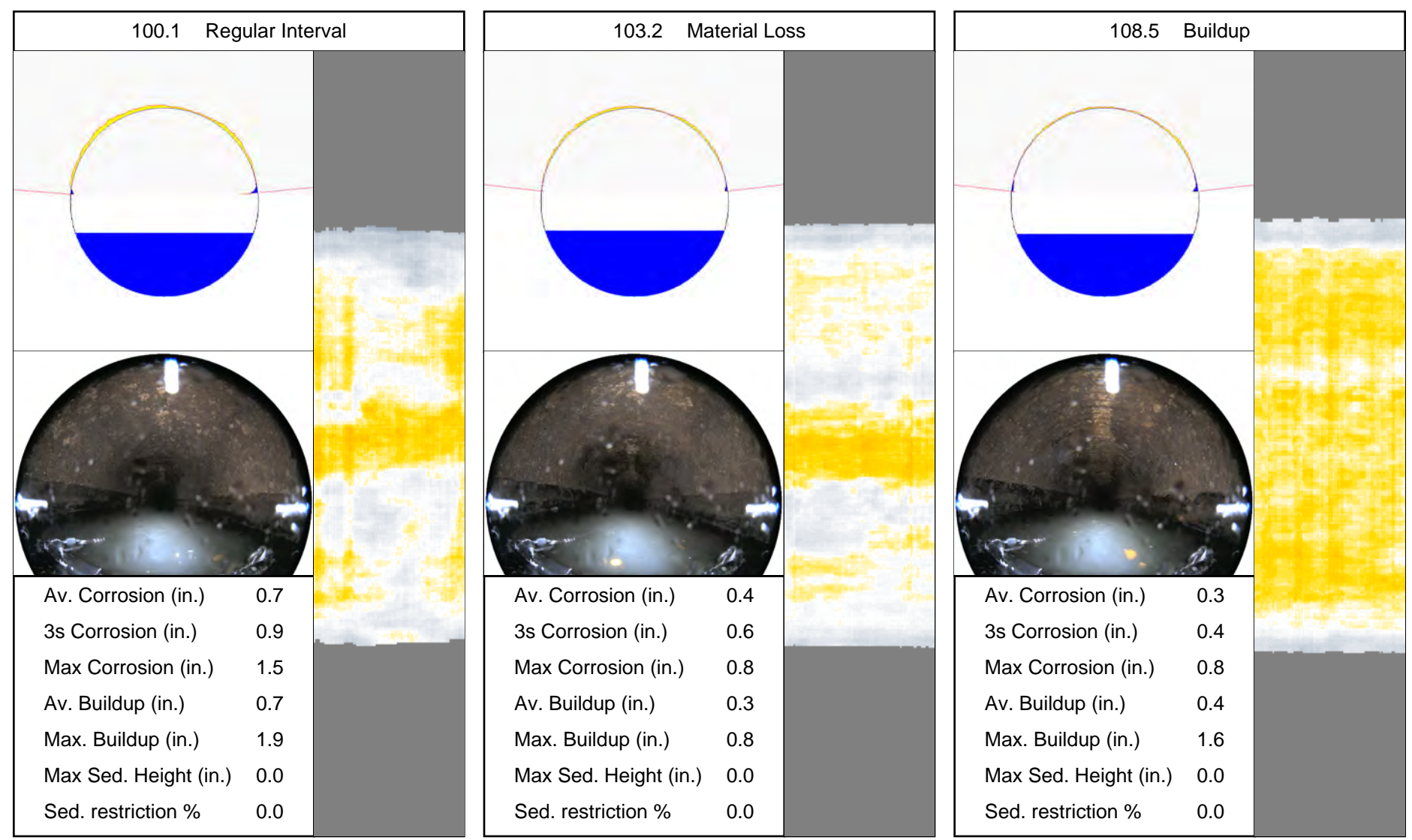


Distributed Cross-Sections





Distributed Cross-Sections





Distributed Cross-Sections

115.0 Buildup

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	1.4
Max Corrosion (in.)	1.7
Av. Buildup (in.)	0.3
Max. Buildup (in.)	1.6
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

120.8 Material Loss

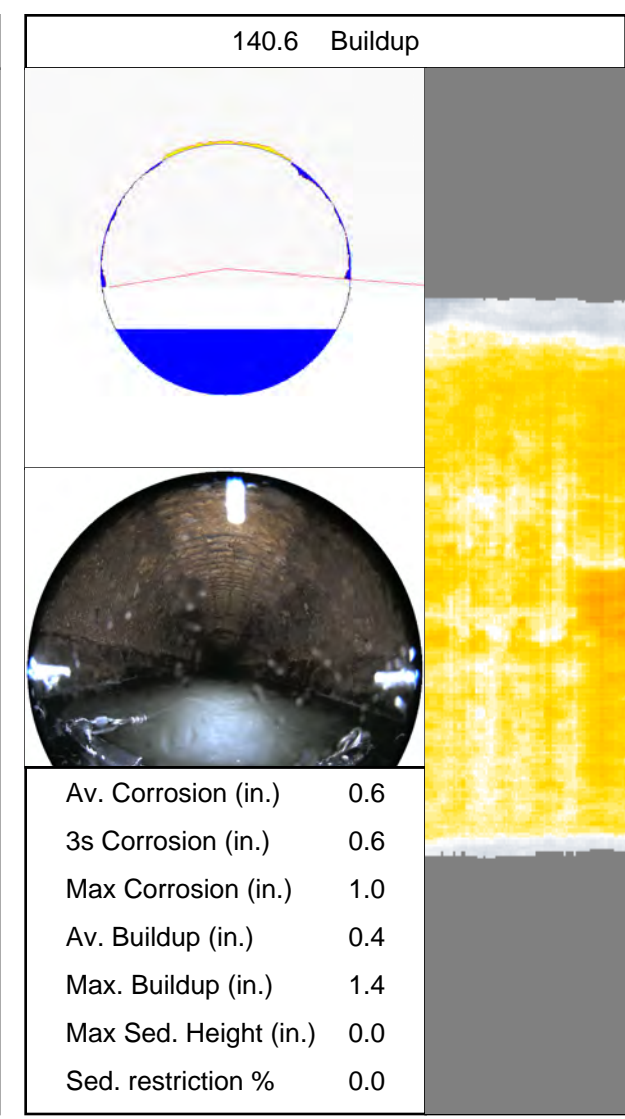
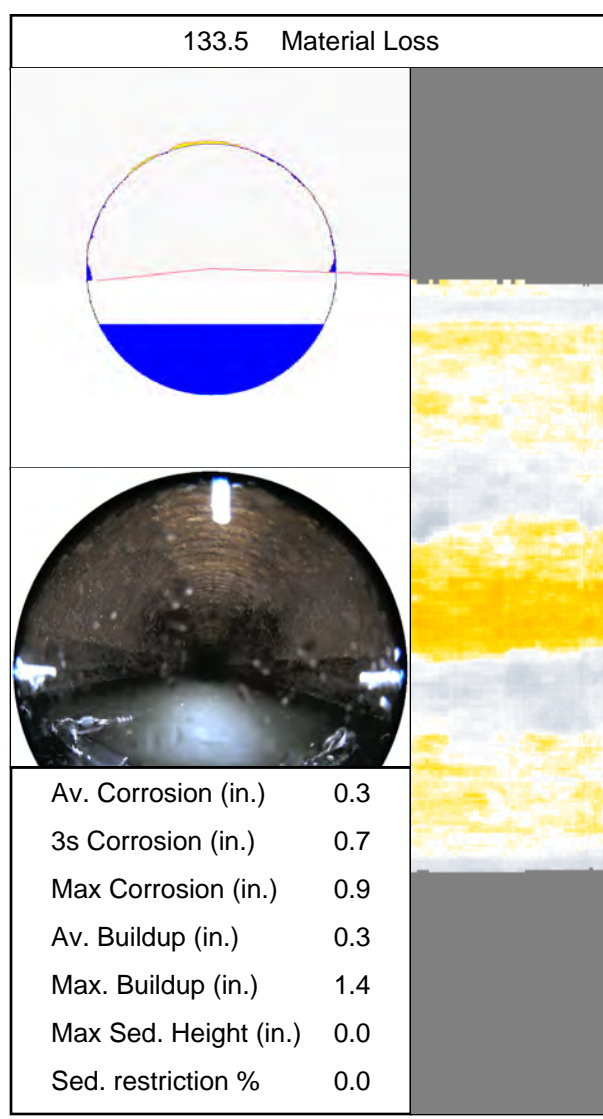
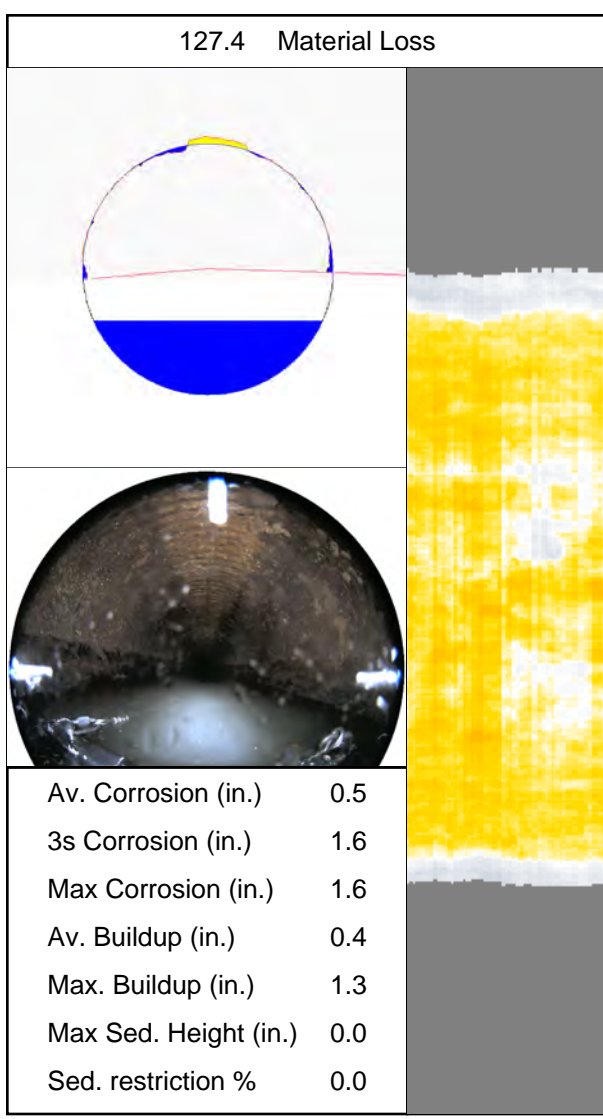
Av. Corrosion (in.)	0.8
3s Corrosion (in.)	1.8
Max Corrosion (in.)	2.2
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.5
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

125.1 Regular Interval

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.7
Max Corrosion (in.)	0.9
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.6
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections





Distributed Cross-Sections

150.1 Regular Interval		151.6 Material Loss		157.4 Material Loss	
Av. Corrosion (in.)	0.4	Av. Corrosion (in.)	0.4	Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.7	3s Corrosion (in.)	0.6	3s Corrosion (in.)	0.7
Max Corrosion (in.)	0.9	Max Corrosion (in.)	1.0	Max Corrosion (in.)	1.3
Av. Buildup (in.)	0.4	Av. Buildup (in.)	0.3	Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.5	Max. Buildup (in.)	1.2	Max. Buildup (in.)	1.7
Max Sed. Height (in.)	0.0	Max Sed. Height (in.)	0.0	Max Sed. Height (in.)	0.0
Sed. restriction %	0.0	Sed. restriction %	0.0	Sed. restriction %	0.0



Distributed Cross-Sections

163.0 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.9
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.5
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

174.6 Material Loss

Av. Corrosion (in.)	0.7
3s Corrosion (in.)	1.5
Max Corrosion (in.)	1.8
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.3
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

175.1 Regular Interval

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.2
Av. Buildup (in.)	0.5
Max. Buildup (in.)	2.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

187.6 Material Loss

Av. Corrosion (in.)	0.8
3s Corrosion (in.)	1.7
Max Corrosion (in.)	2.1
Av. Buildup (in.)	0.7
Max. Buildup (in.)	1.3
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

199.2 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.6
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

200.1 Regular Interval

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.4
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.1
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

218.8 Material Loss	
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.5
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

224.3 Buildup	
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.3
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

225.1 Regular Interval	
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.6
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.2
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

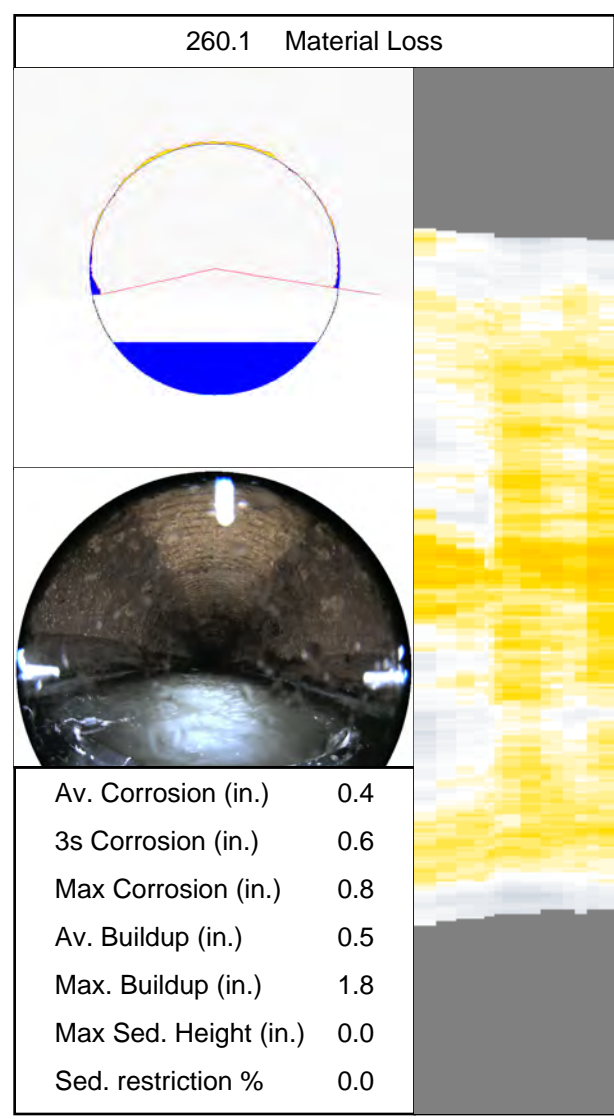
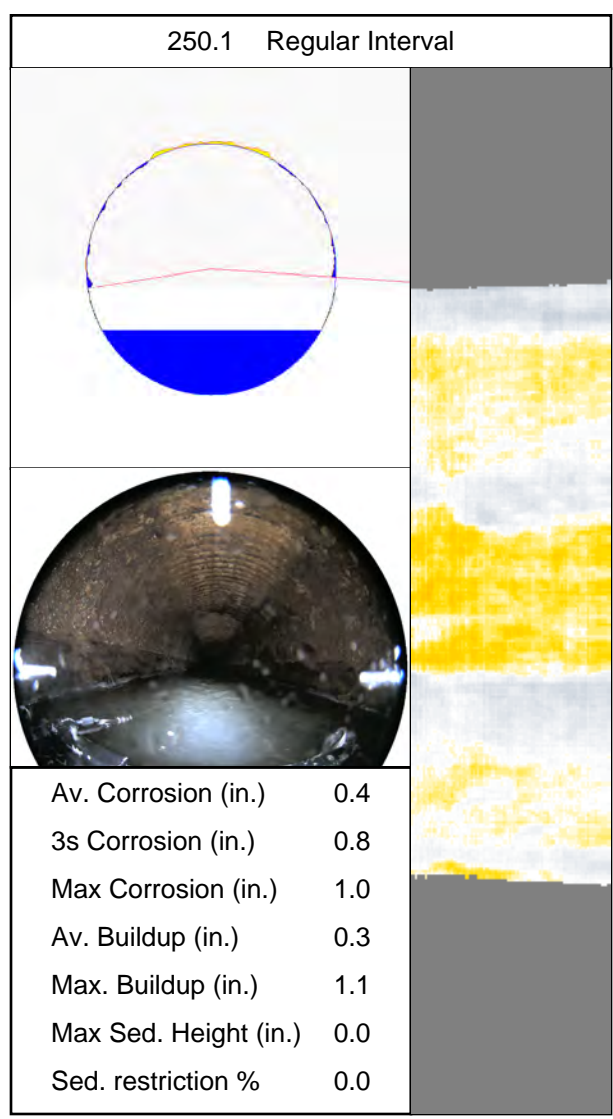
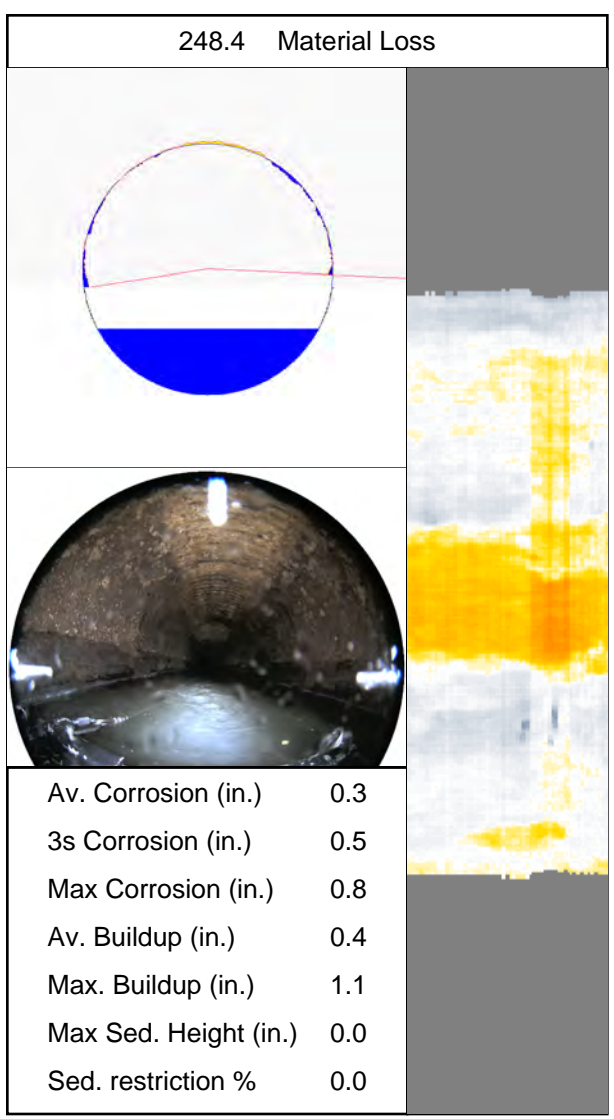
230.9 Buildup	
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

235.0 Buildup	
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.4
Max Corrosion (in.)	0.7
Av. Buildup (in.)	0.3
Max. Buildup (in.)	1.3
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

242.2 Material Loss	
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	1.1
Max Corrosion (in.)	1.5
Av. Buildup (in.)	0.2
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

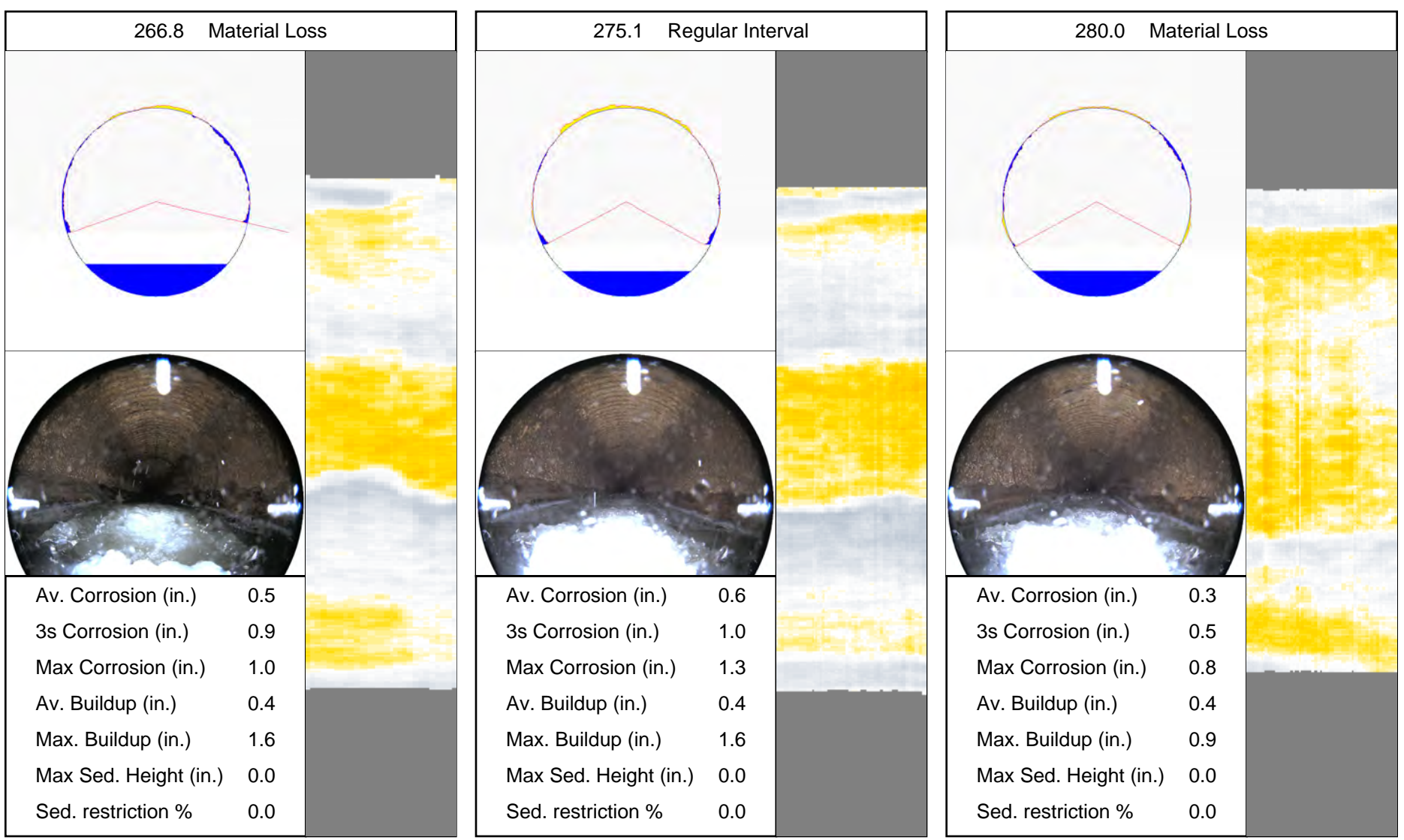


Distributed Cross-Sections



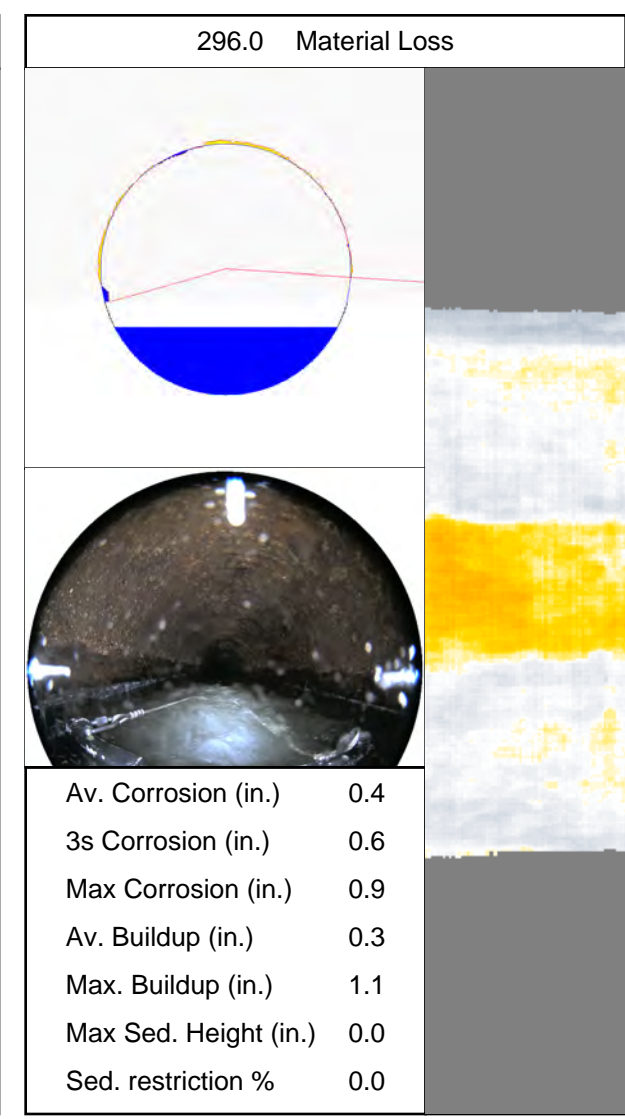
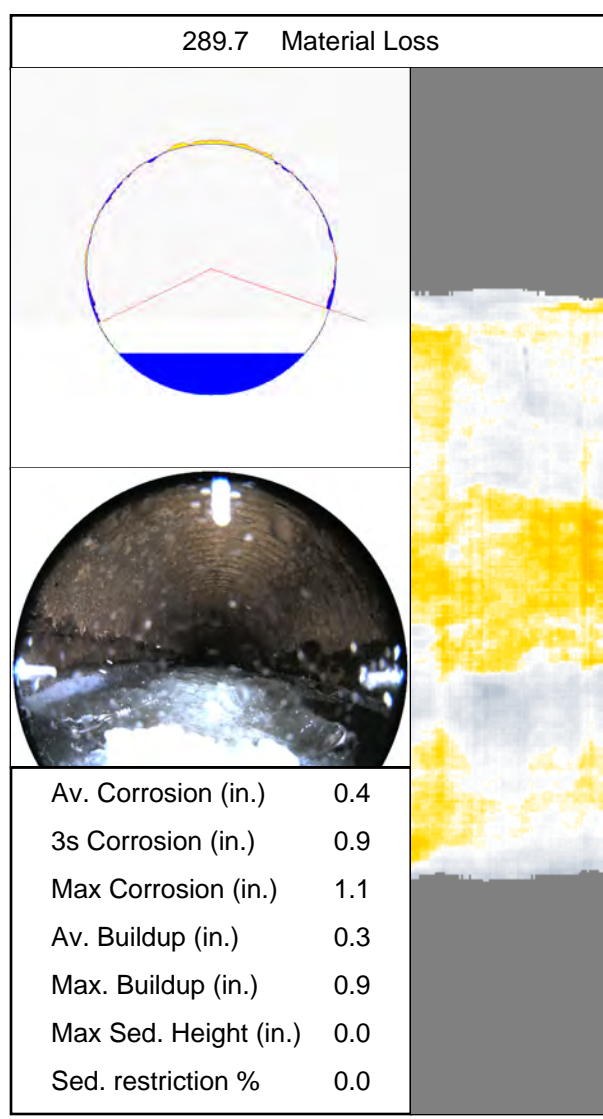
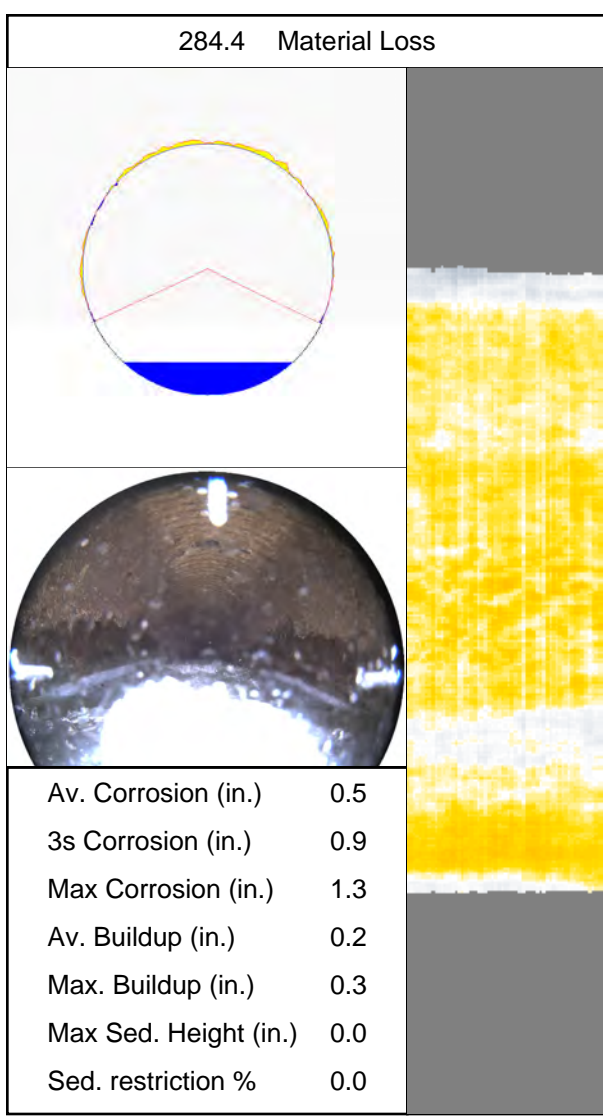


Distributed Cross-Sections



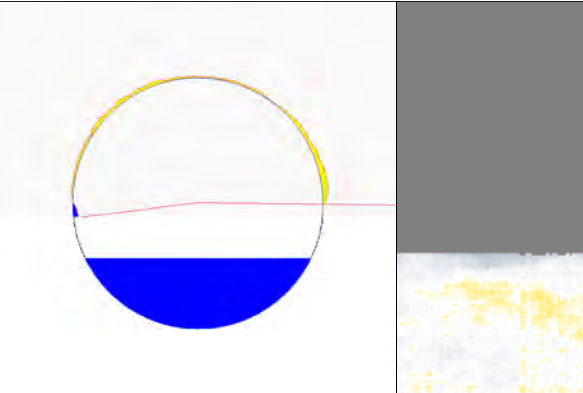


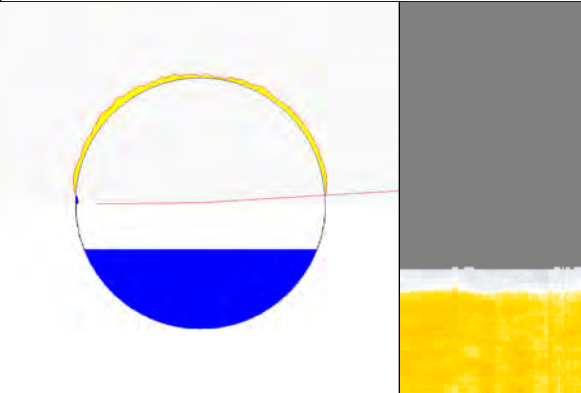
Distributed Cross-Sections

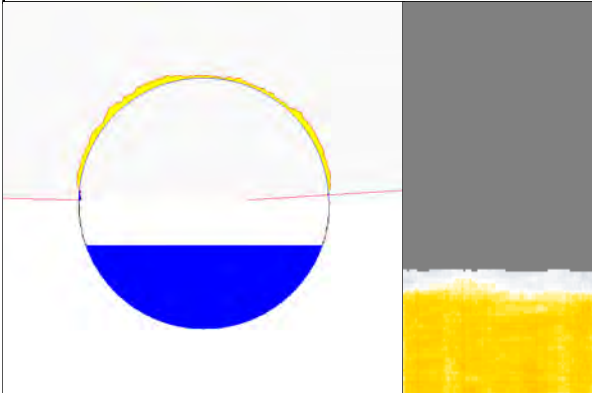




Distributed Cross-Sections

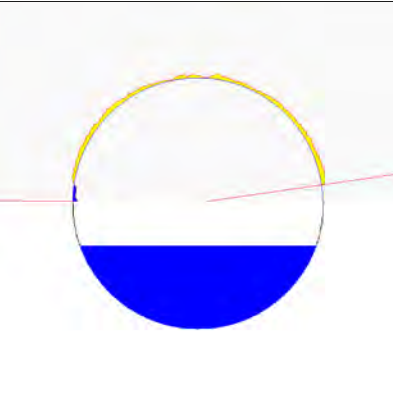


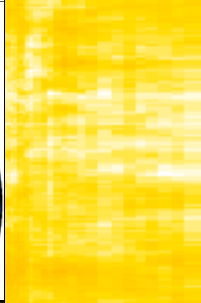
300.1 Regular Interval	
	
Av. Corrosion (in.)	0.6
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.3
Av. Buildup (in.)	0.7
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

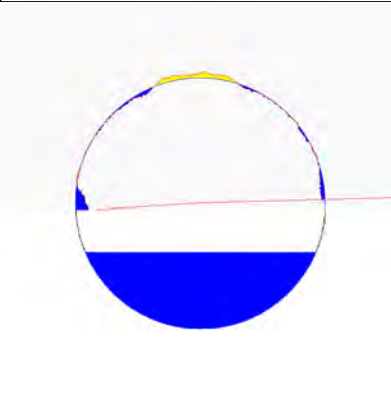
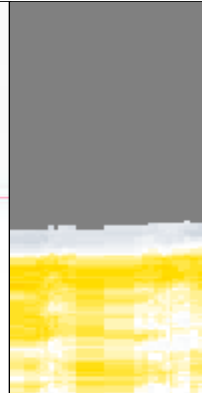

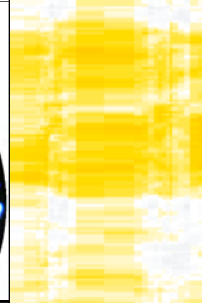
304.0 Buildup	
	
Av. Corrosion (in.)	1.0
3s Corrosion (in.)	1.0
Max Corrosion (in.)	1.9
Av. Buildup (in.)	0.4
Max. Buildup (in.)	0.5
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

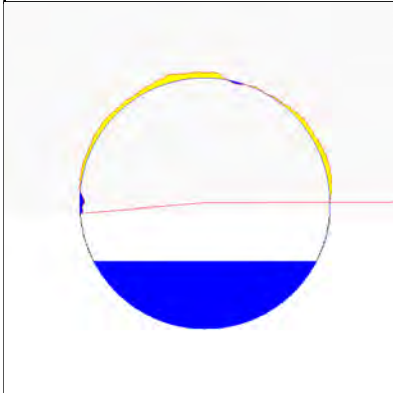


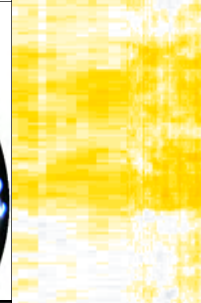
305.3 Material Loss	
	
Av. Corrosion (in.)	1.0
3s Corrosion (in.)	1.1
Max Corrosion (in.)	1.8
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.5
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

321.3 Material Loss	
	
	
Av. Corrosion (in.)	0.7
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.1
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

325.1 Regular Interval	
	
	
Av. Corrosion (in.)	0.6
3s Corrosion (in.)	1.2
Max Corrosion (in.)	1.4
Av. Buildup (in.)	0.5
Max. Buildup (in.)	2.8
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

328.4 Buildup	
	
	
Av. Corrosion (in.)	0.8
3s Corrosion (in.)	1.1
Max Corrosion (in.)	1.7
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

331.7 Buildup	
Av. Corrosion (in.)	0.7
3s Corrosion (in.)	1.5
Max Corrosion (in.)	1.5
Av. Buildup (in.)	0.5
Max. Buildup (in.)	2.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

339.6 Material Loss	
Av. Corrosion (in.)	1.1
3s Corrosion (in.)	1.4
Max Corrosion (in.)	2.5
Av. Buildup (in.)	0.7
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

345.6 Material Loss	
Av. Corrosion (in.)	0.7
3s Corrosion (in.)	1.4
Max Corrosion (in.)	1.9
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.4
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

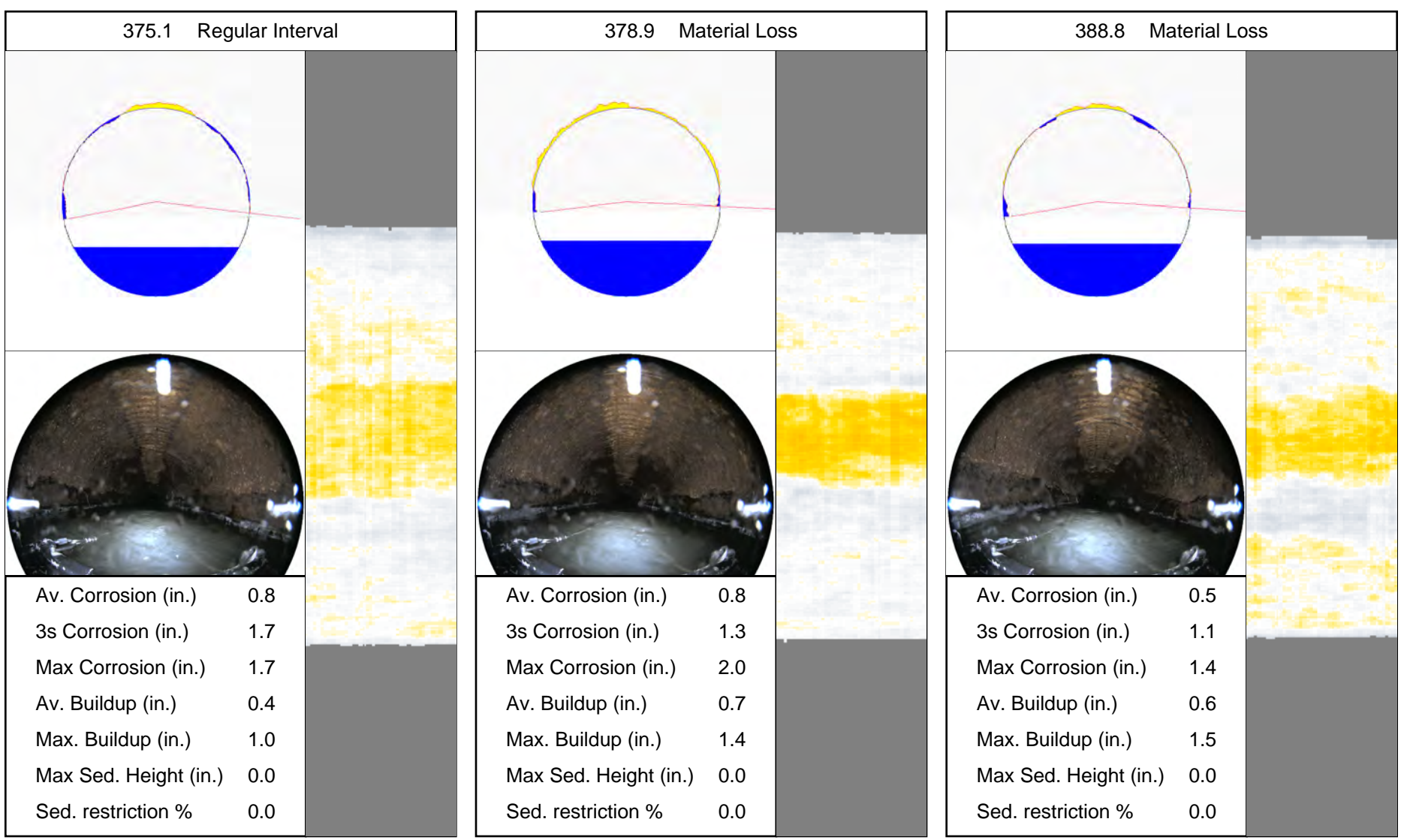


Distributed Cross-Sections

350.1 Regular Interval		358.0 Material Loss		371.9 Material Loss	
Av. Corrosion (in.)	0.5	Av. Corrosion (in.)	0.6	Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.8	3s Corrosion (in.)	0.9	3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.1	Max Corrosion (in.)	1.4	Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.5	Av. Buildup (in.)	0.4	Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.3	Max. Buildup (in.)	1.0	Max. Buildup (in.)	1.3
Max Sed. Height (in.)	0.0	Max Sed. Height (in.)	0.0	Max Sed. Height (in.)	0.0
Sed. restriction %	0.0	Sed. restriction %	0.0	Sed. restriction %	0.0



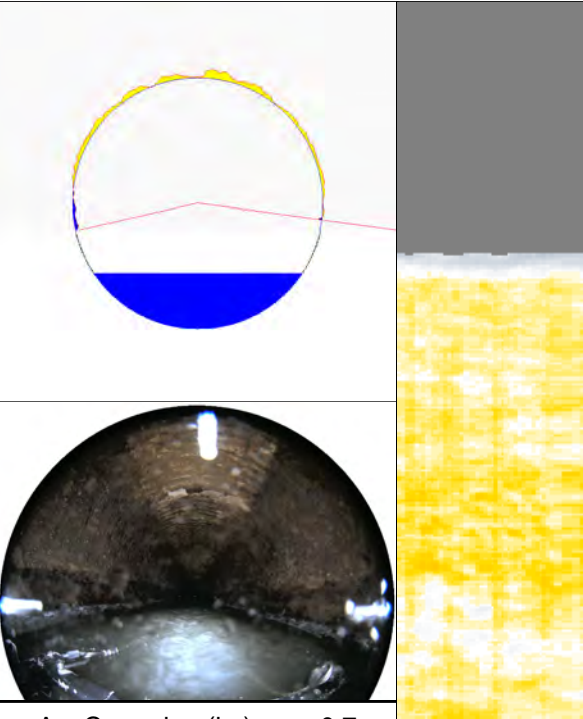
Distributed Cross-Sections





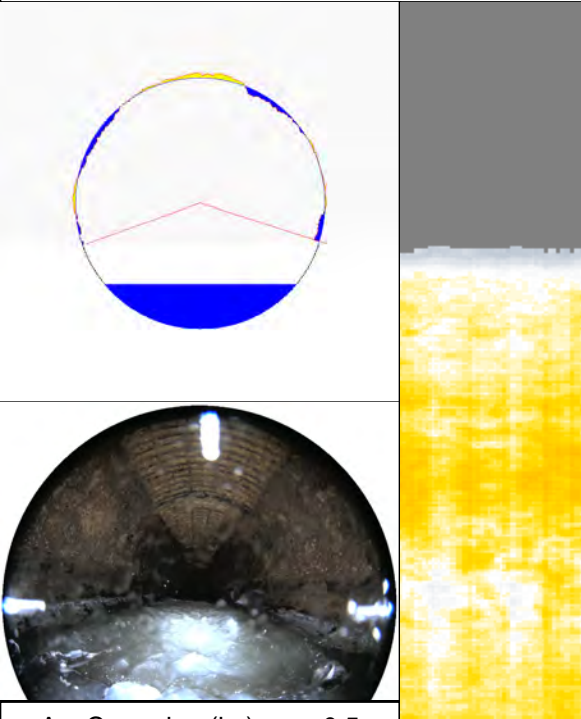
Distributed Cross-Sections

394.7 Material Loss



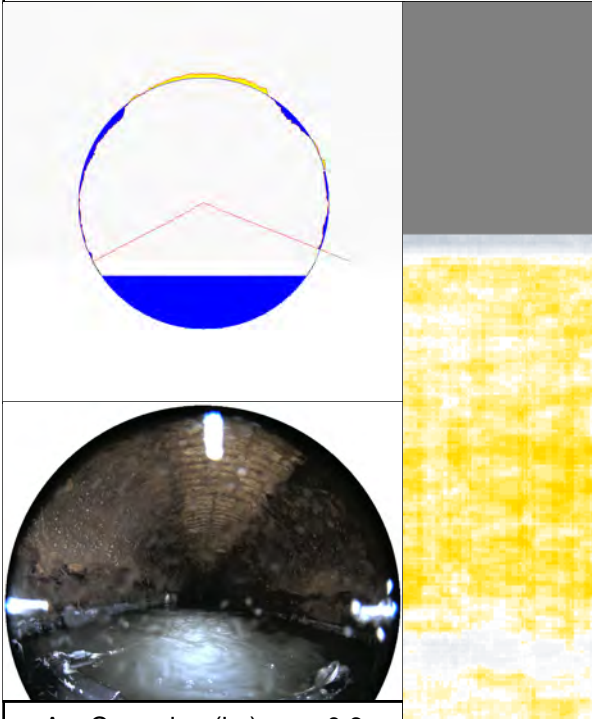
Av. Corrosion (in.)	0.7
3s Corrosion (in.)	1.2
Max Corrosion (in.)	2.0
Av. Buildup (in.)	0.4
Max. Buildup (in.)	0.7
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

400.1 Regular Interval



Av. Corrosion (in.)	0.5
3s Corrosion (in.)	1.0
Max Corrosion (in.)	1.2
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.3
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

407.2 Material Loss



Av. Corrosion (in.)	0.6
3s Corrosion (in.)	1.0
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.7
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

417.5 Material Loss	
Av. Corrosion (in.)	0.9
3s Corrosion (in.)	2.1
Max Corrosion (in.)	2.4
Av. Buildup (in.)	0.2
Max. Buildup (in.)	0.8
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

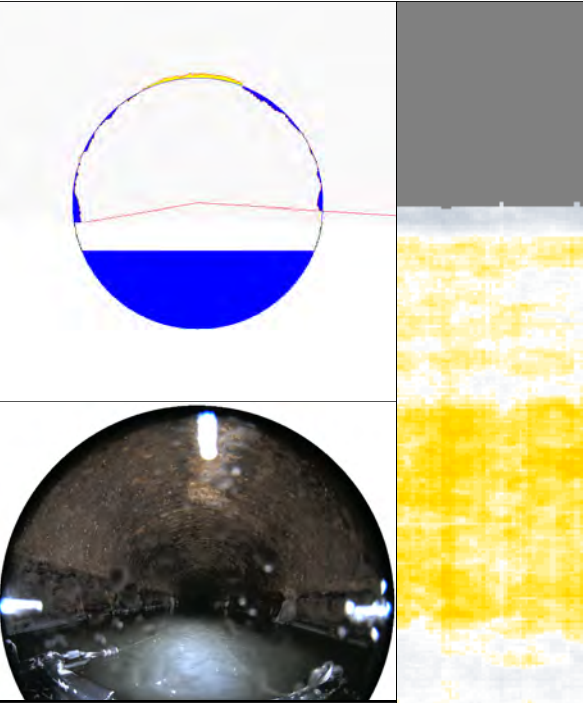
425.1 Regular Interval	
Av. Corrosion (in.)	0.7
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.2
Av. Buildup (in.)	0.7
Max. Buildup (in.)	1.2
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

425.6 Material Loss	
Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.5
Max. Buildup (in.)	2.8
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



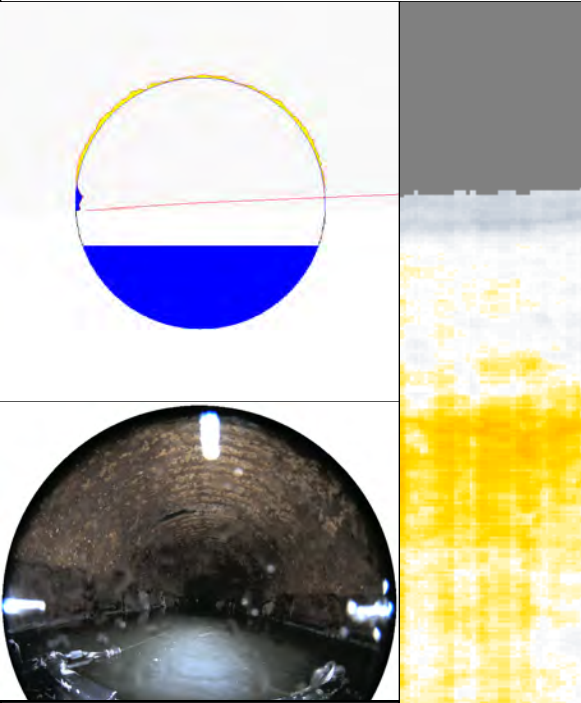
Distributed Cross-Sections

431.6 Material Loss



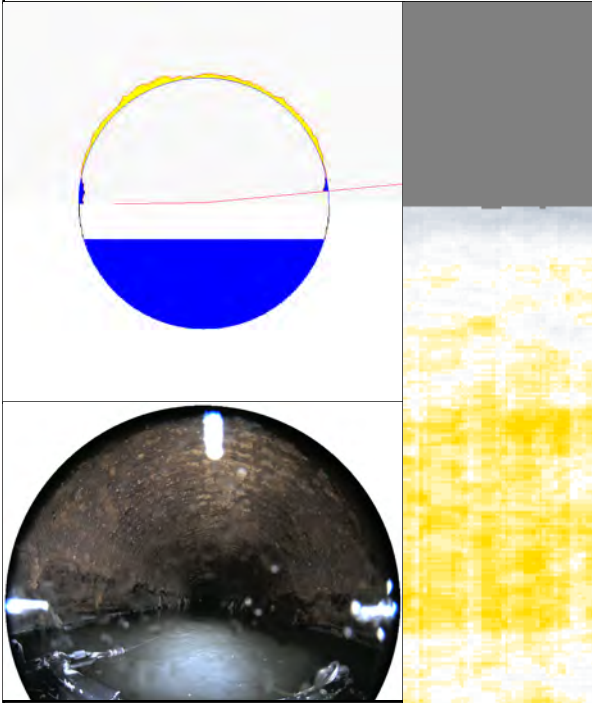
Av. Corrosion (in.)	0.7
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.5
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

437.6 Material Loss



Av. Corrosion (in.)	0.6
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.1
Av. Buildup (in.)	0.7
Max. Buildup (in.)	1.4
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

443.6 Material Loss



Av. Corrosion (in.)	0.9
3s Corrosion (in.)	1.2
Max Corrosion (in.)	1.8
Av. Buildup (in.)	0.7
Max. Buildup (in.)	1.2
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

450.1 Regular Interval		456.1 Material Loss		468.1 Material Loss	
Av. Corrosion (in.)	0.6	Av. Corrosion (in.)	0.6	Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.8	3s Corrosion (in.)	0.9	3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.4	Max Corrosion (in.)	1.2	Max Corrosion (in.)	1.3
Av. Buildup (in.)	0.6	Av. Buildup (in.)	0.8	Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.6	Max. Buildup (in.)	2.2	Max. Buildup (in.)	1.2
Max Sed. Height (in.)	0.0	Max Sed. Height (in.)	0.0	Max Sed. Height (in.)	0.0
Sed. restriction %	0.0	Sed. restriction %	0.0	Sed. restriction %	0.0



Distributed Cross-Sections

474.2 Material Loss	
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

475.1 Regular Interval	
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.2
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.5
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

480.4 Material Loss	
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.7
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.8
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

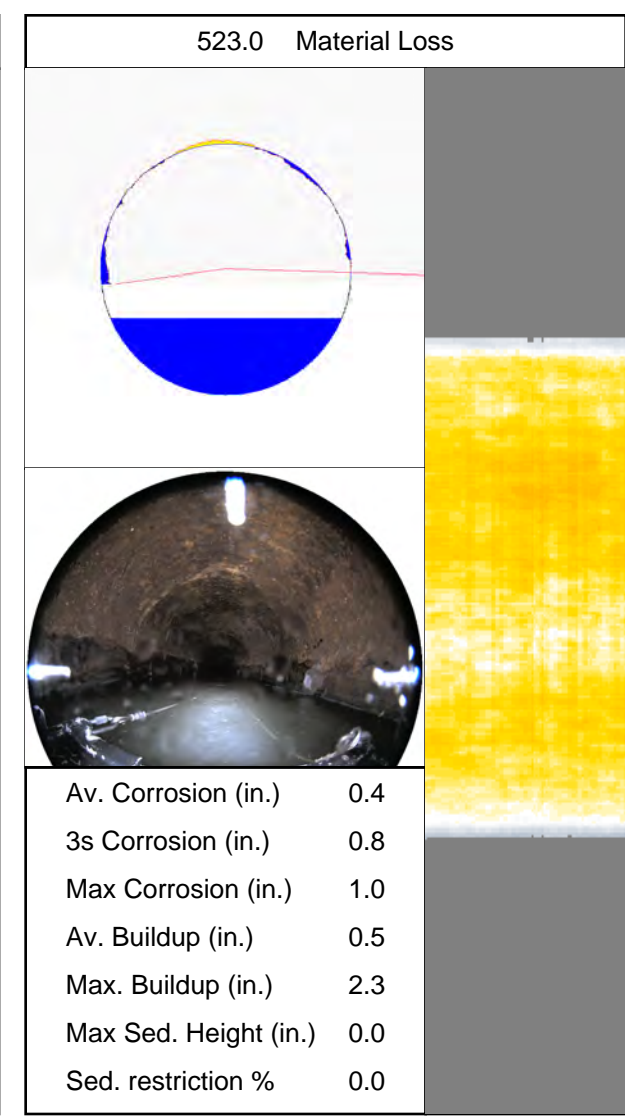
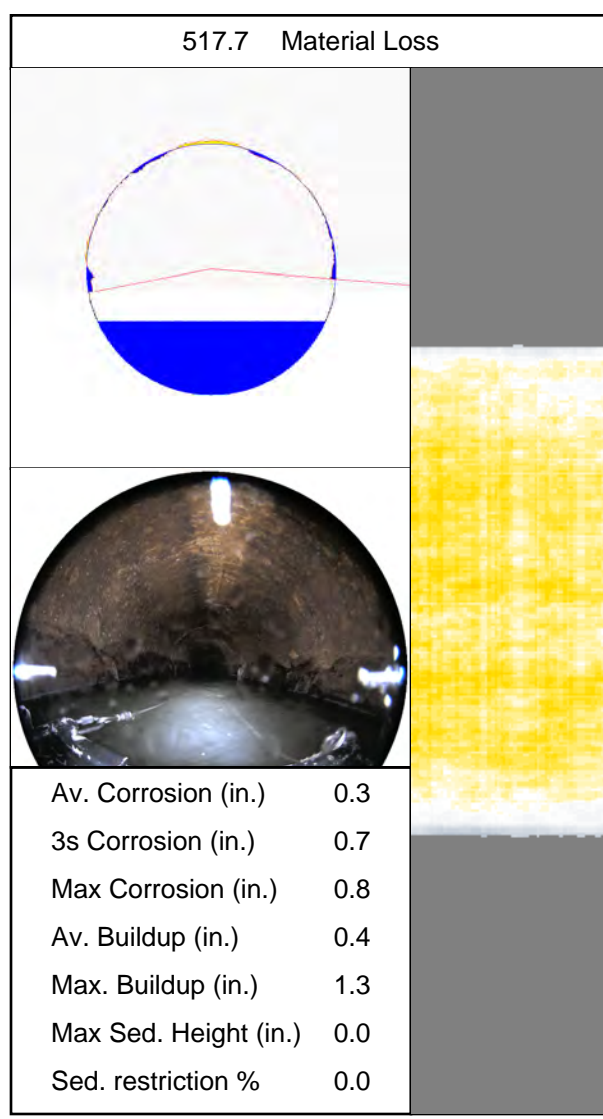
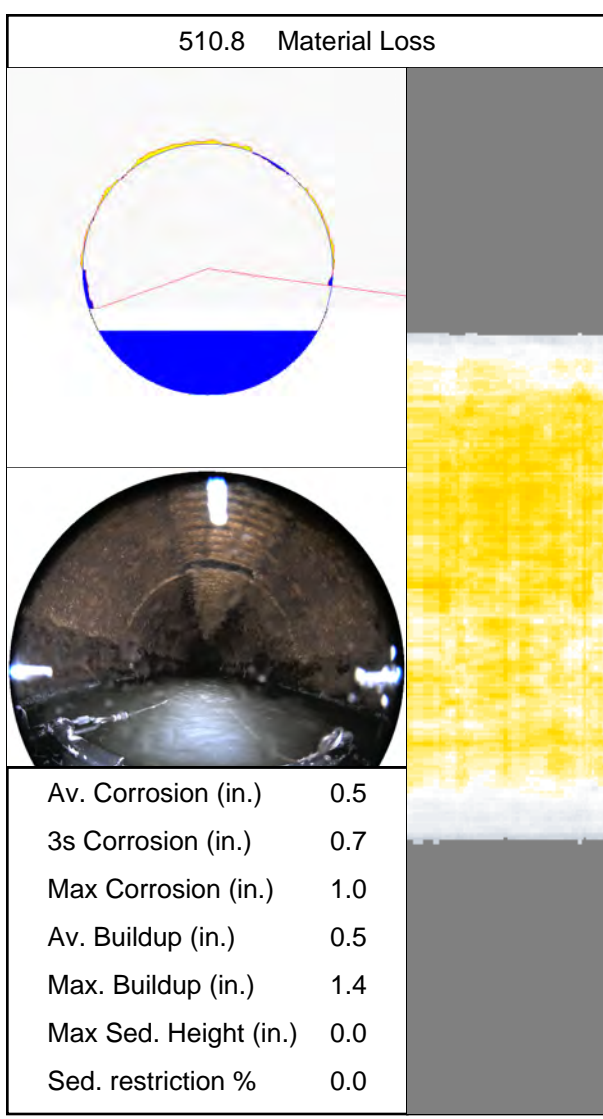
492.2 Material Loss	
Av. Corrosion (in.)	0.6
3s Corrosion (in.)	1.1
Max Corrosion (in.)	1.5
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.3
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

500.1 Regular Interval	
Av. Corrosion (in.)	0.7
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.3
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

504.6 Material Loss	
Av. Corrosion (in.)	0.5
3s Corrosion (in.)	1.0
Max Corrosion (in.)	1.2
Av. Buildup (in.)	0.4
Max. Buildup (in.)	2.2
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

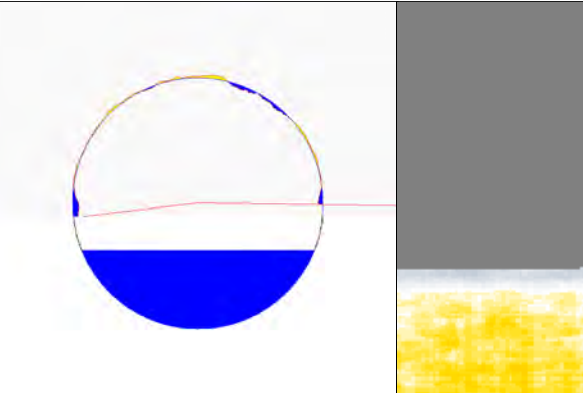


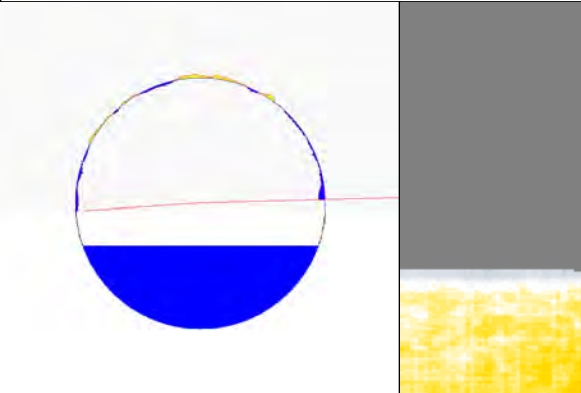
Distributed Cross-Sections

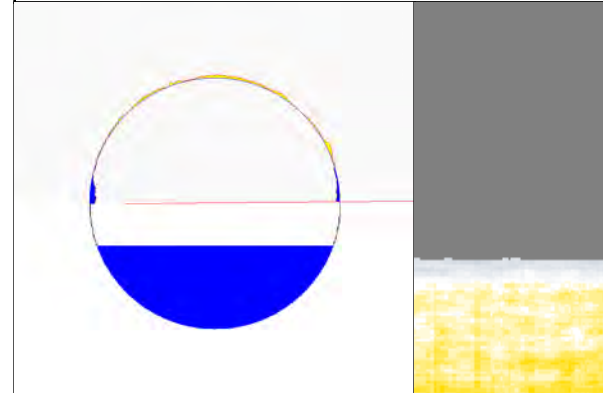




Distributed Cross-Sections

525.1 Regular Interval	
	
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.9
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.3
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

528.8 Material Loss	
	
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.6
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.4
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

534.7 Material Loss	
	
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.2
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

540.9 Material Loss	
Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.9
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.2
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

546.5 Material Loss	
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.5
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.1
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

550.1 Regular Interval	
Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.4
Max Corrosion (in.)	0.6
Av. Buildup (in.)	0.5
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

553.2 Material Loss

Av. Corrosion (in.)	0.3
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.8
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.8
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

558.9 Material Loss

Av. Corrosion (in.)	0.6
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.5
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.1
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

565.5 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.4
Av. Buildup (in.)	0.3
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

575.1 Regular Interval	
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.4
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

578.5 Material Loss	
Av. Corrosion (in.)	0.5
3s Corrosion (in.)	1.1
Max Corrosion (in.)	1.2
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.3
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

583.4 Material Loss	
Av. Corrosion (in.)	0.7
3s Corrosion (in.)	1.6
Max Corrosion (in.)	2.4
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.4
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections

590.0 Material Loss

Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.6
Max Corrosion (in.)	0.9
Av. Buildup (in.)	0.3
Max. Buildup (in.)	0.8
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

596.8 Material Loss

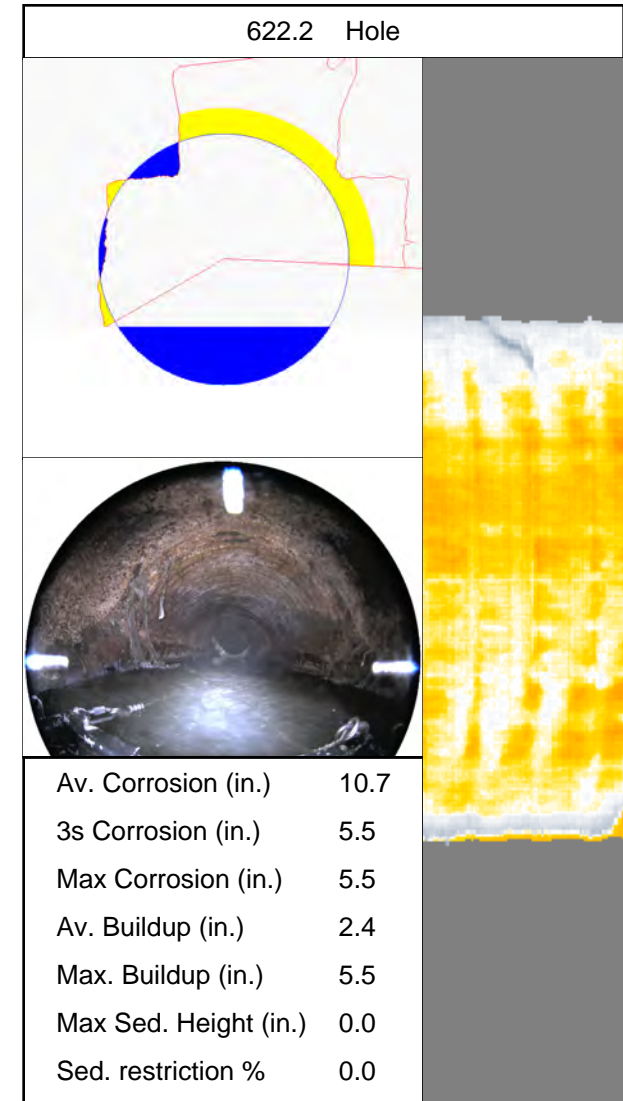
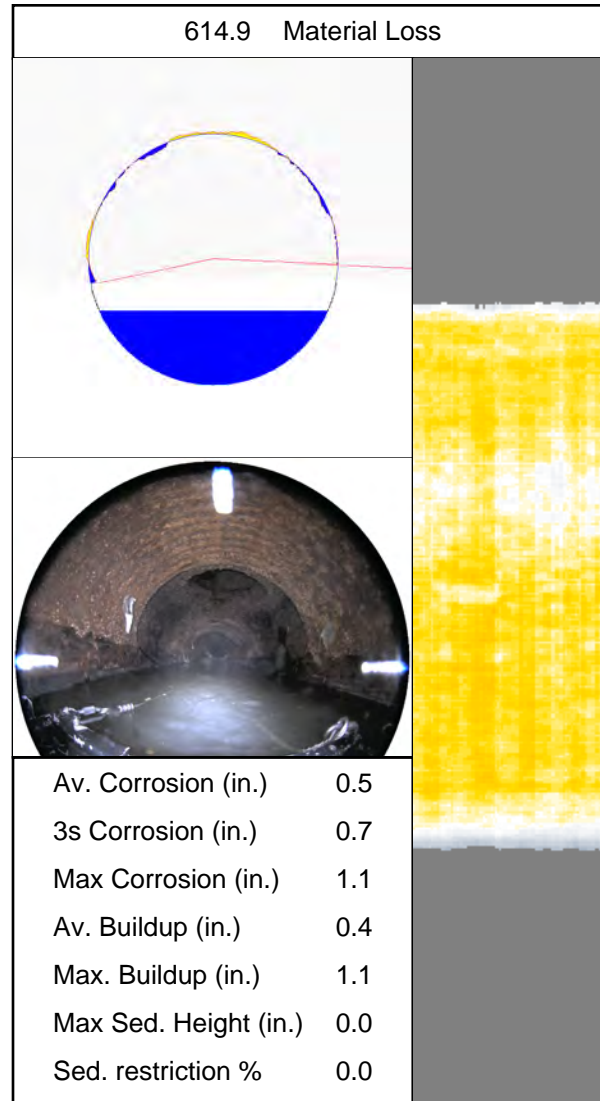
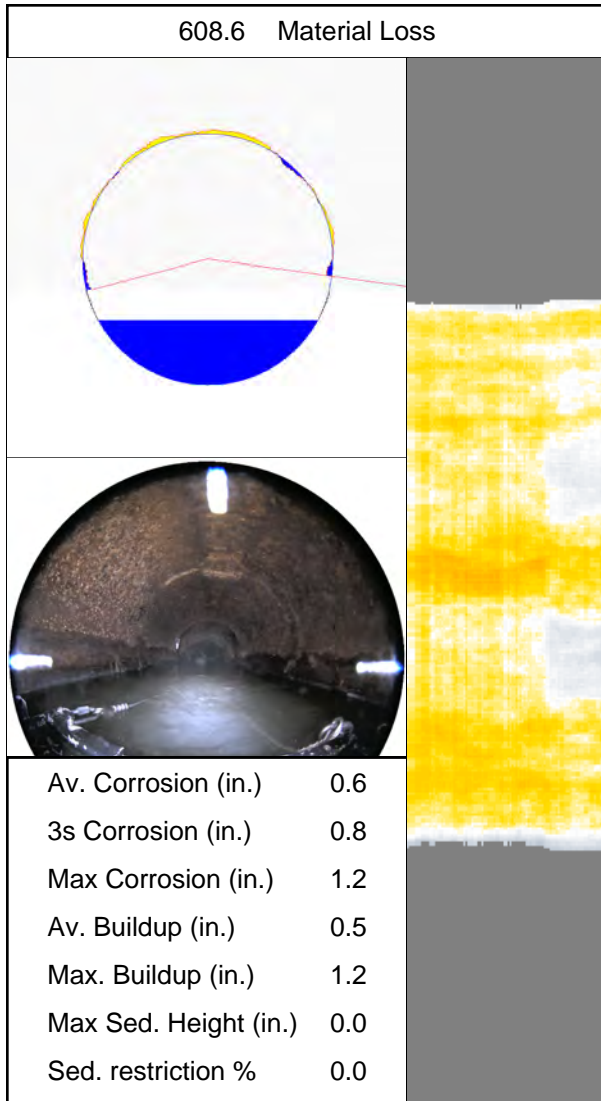
Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.8
Max Corrosion (in.)	1.0
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0

600.1 Regular Interval

Av. Corrosion (in.)	0.6
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.3
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.2
Max Sed. Height (in.)	0.0
Sed. restriction %	0.0



Distributed Cross-Sections



CES Baton Rouge

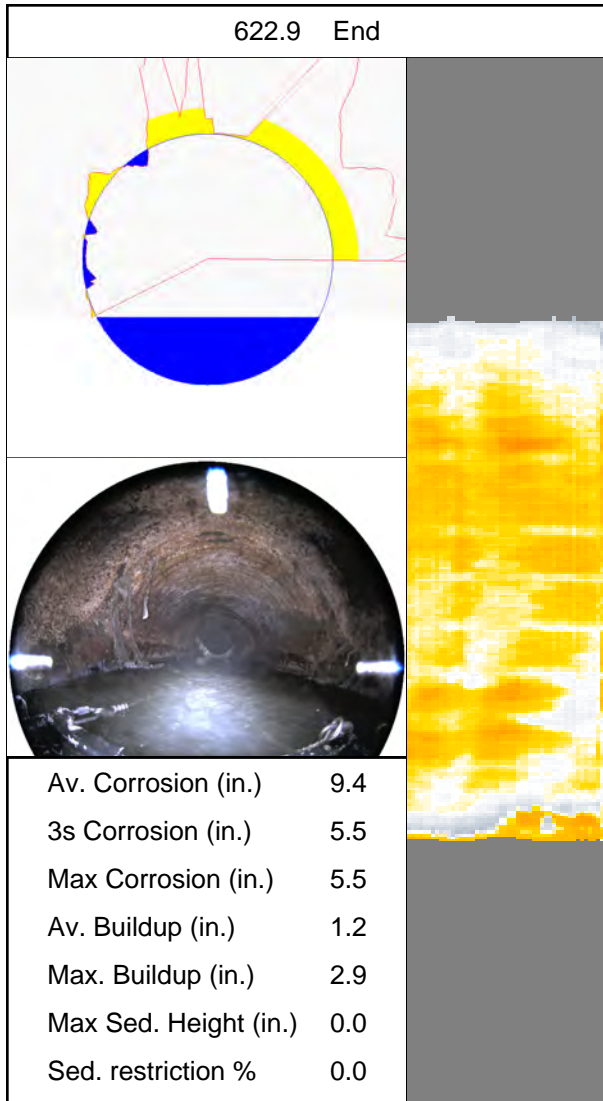
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Distributed Cross-Sections



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058-00720A

Pipeline Inspection Partners Corp.

3600 Rio Vista Avenue
Orlando Florida 32805
Phone: 800.327.7791
Fax: 407.425.1569

Ed Diggs
800.327.7791
ediggs@cuesinc.com

Scott Thayer
412.839.1100
sthayer@cuesinc.com

Adam Slifko
412-656-5636
aslifko@cuesinc.com

Michelle Joy
724-601-1728
mjoy@cuesinc.com

Josh Graham
1401 Seaboard Dr.
Baton Rouge, LA 70810
Phone: 985.502.5667
jgraham@ces-ses.com

This report presents internal pipeline condition data collected by the CUES Multi Sensor Inspection (MSI) technology platform and is being provided to individuals who have experience with MSI data and civil engineering principles. Information provided within this report is not to take the place of or be a substitute for professional civil engineering advice and/or recommendations.

It is the sole responsibility of the client in regards to the following: Interpretation of the MSI data results provided within this report; evaluation of the pipeline segment; any remedial/rehabilitation procedures or processes; post MSI inspection decisions and processes such as additional investigations and/or subsequent cleaning operations.

Some information provided and utilized within this report for this specific pipeline segment such as distance and dimensions may incorporate or have been provided by others. Because this information may not always be accurate and complete the project engineer should confirm this information through their own assessments in regards to such information.

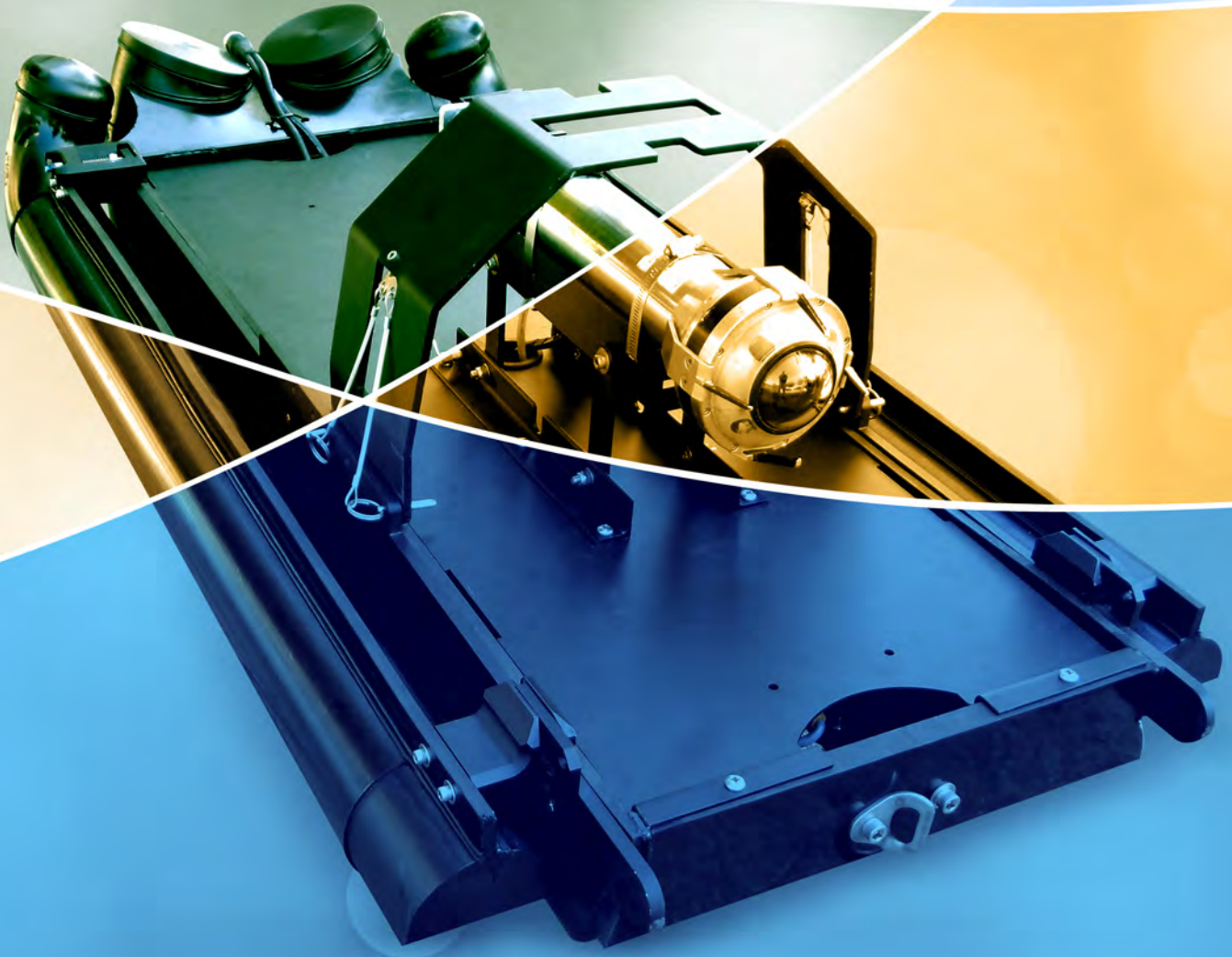


Pipeline Inspection Partners Corp.

SolidFX

Inspection Report

Prepared for



CES Baton Rouge
Inspected December 04, 2019



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Technology Comparison Analysis

Feature	SolidFX	Spinning Laser Profiling	Laser Profiling with Wand
Technology	LIDAR	Spinning Laser Profiling	Laser Profiling with Wand
Cross Sections Scan Rate	45 /second	1.25 /second	12 /sec 12 /second on
Cross Section Measurement Density	1080 points	20 -300 points	Function of Pipe diameter
Effective Range	6"- 30 meters	4" - 48"	18" - 100"
Accuracy	3 mm @ 10m	15mm @ 3m	3 mm @ 3mm
Resolution	1mm (constant)	+/- 0.5% (pipe diameter)	+/- 0.1% (pipe diameter)
Calibration	Precision Factory	Automatic	Factory
Limited by Shadowing	No	No	Yes
Requires Wand Change out	No	No	Yes
"Cork Screw" Distortion during Motion	No	Yes	No
Multiple Returns (fog resistance)	Yes	No	No
Sensor Cleaning during Inspection	Yes	No	No
Transport Mechanism	Tractor/Float	Tractor Only	Float Only
3D Option	Yes	No	No
Custom Reporting	Yes	No	No
Live Video	Yes	Yes	No
Sonar Available	Yes	No	Yes
Maximum Deployment Length (linear foot)	4000	2000	4000+
Made in USA	Yes	Yes	No
Data Viewable During Operations	Yes	Yes	No
Onsite PACP	Yes	Yes	No

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Inspection Information

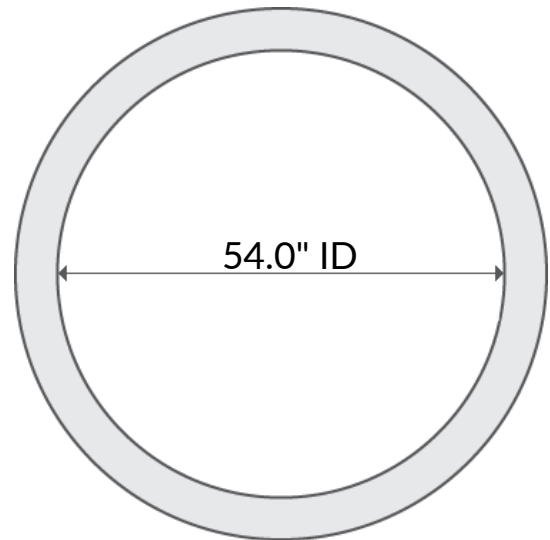
Transport

Float

Sensor(s)

LIDAR
 HD
 SONAR

As-Built Dimensions



Inspection Details

Service Area:	BATON ROUGE
Segment Reference:	1
Upstream Manhole:	058-00006B
Downstream Manhole:	058-00006H
Direction:	Downstream
Distance:	230.5
Scan Date:	December 04, 2019
Operator Notes:	None
Processing Notes:	Advanced corrosion present

Document Details

Report Prepared January 07, 2020
 Source Reference 62831

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Sediment and Corrosion Summary Metrics

Sediment/Sonar Metrics

Sediment Volume (cubic yard):	0.7
As-is Capacity/As-built Capacity (%):	99.5
Average cross-sectional restriction (%):	0.5

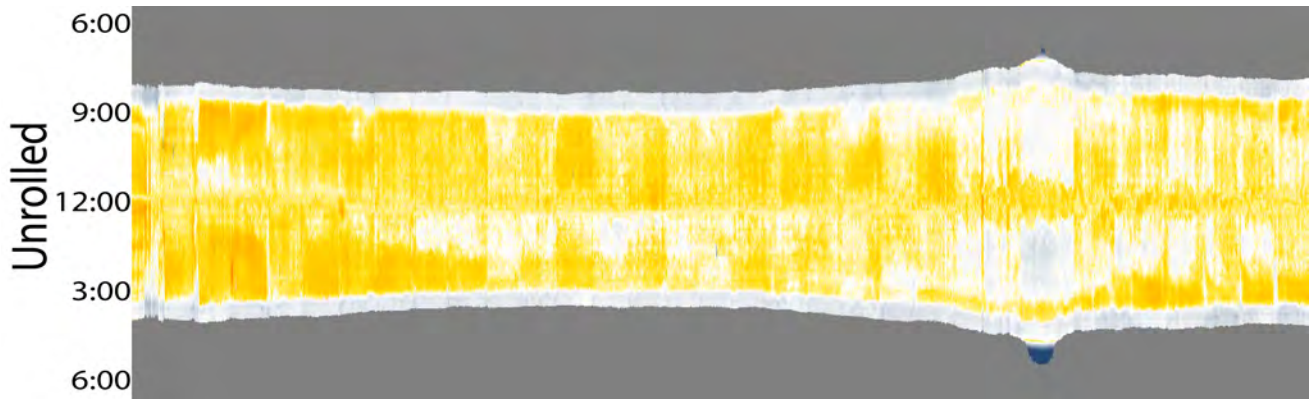
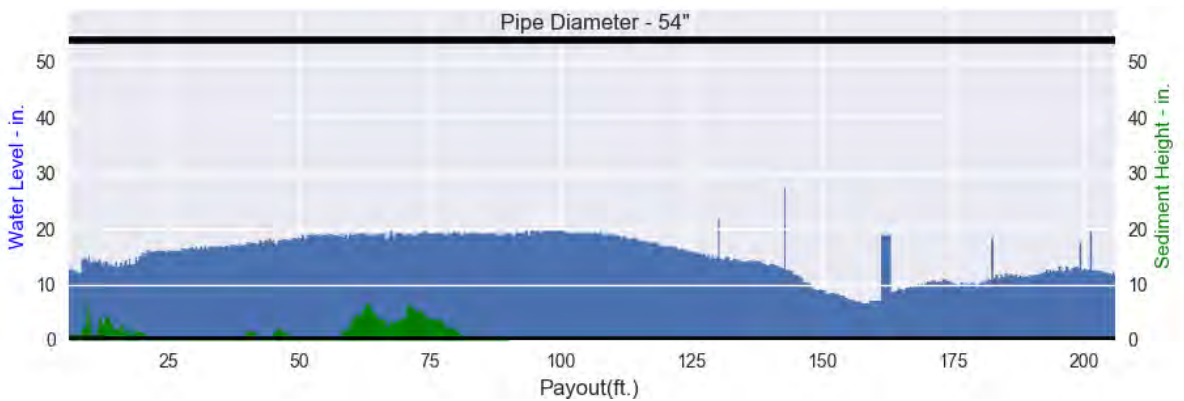
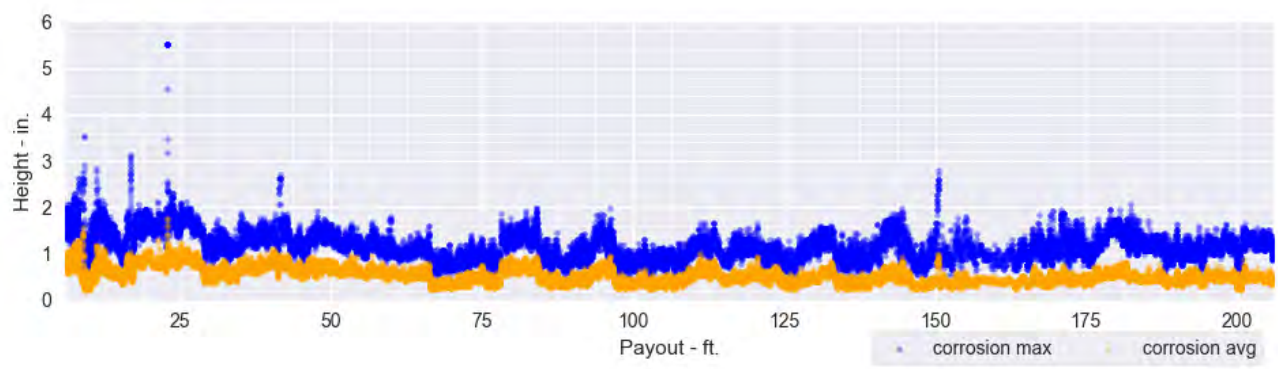
Corrosion/Lidar Metrics

Corroded Volume (cubic in):	132427.4
Wall/As-built (%):	95.4
Average Wall Loss (%):	4.6

Sediment and Corrosion Graphs(6'-206')

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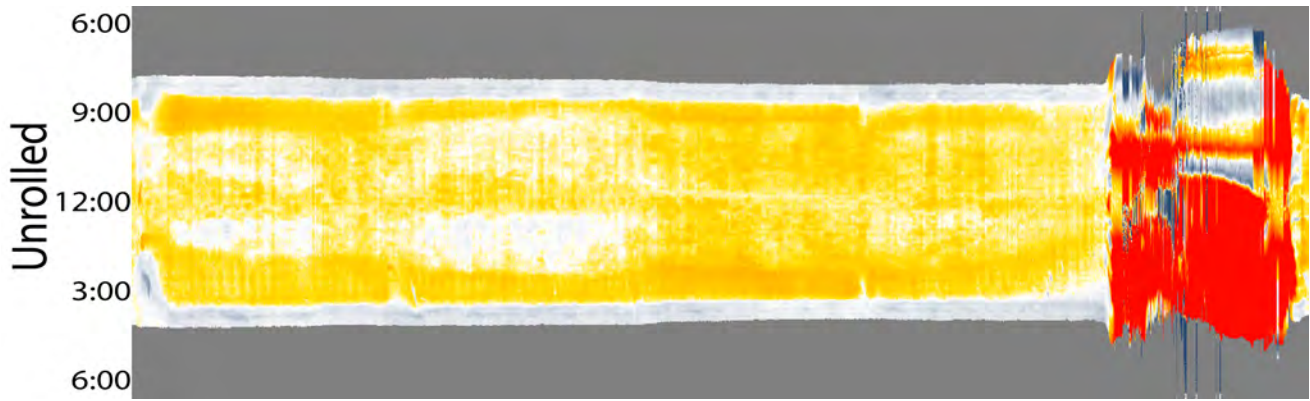
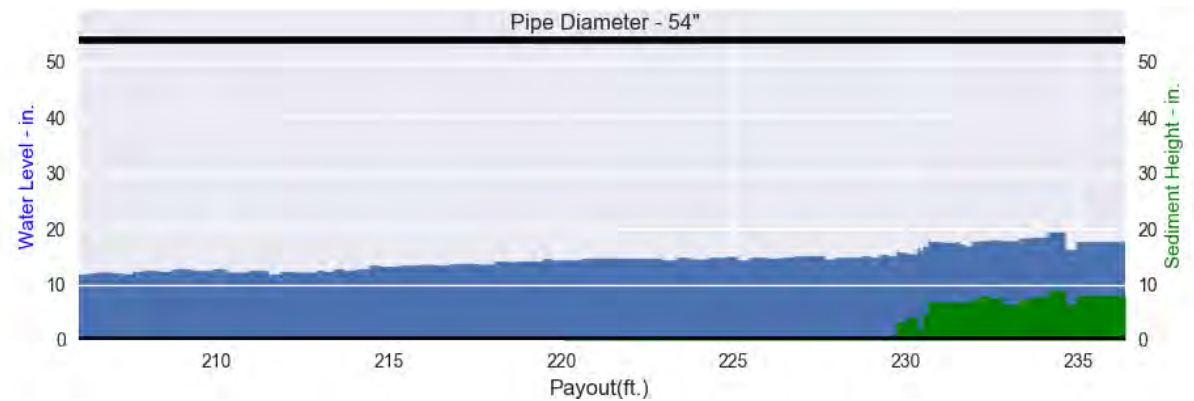
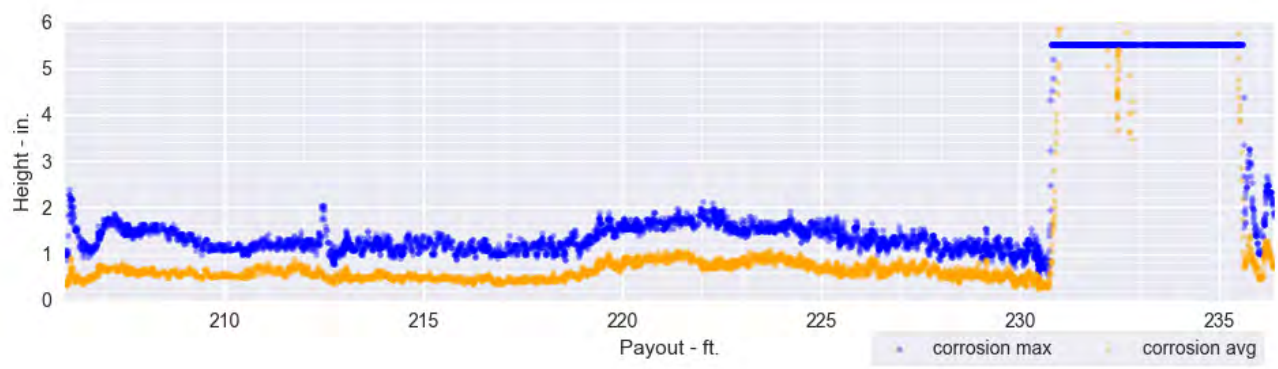


Sediment and Corrosion Graphs(206'-236')

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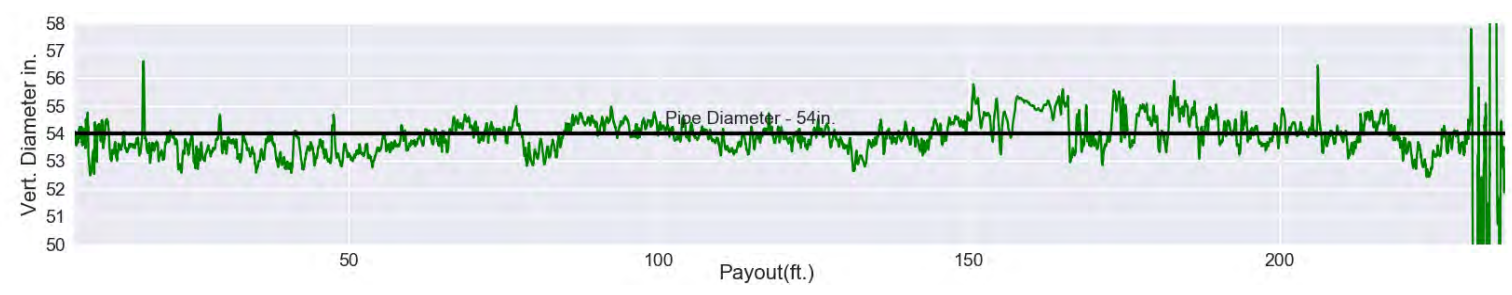
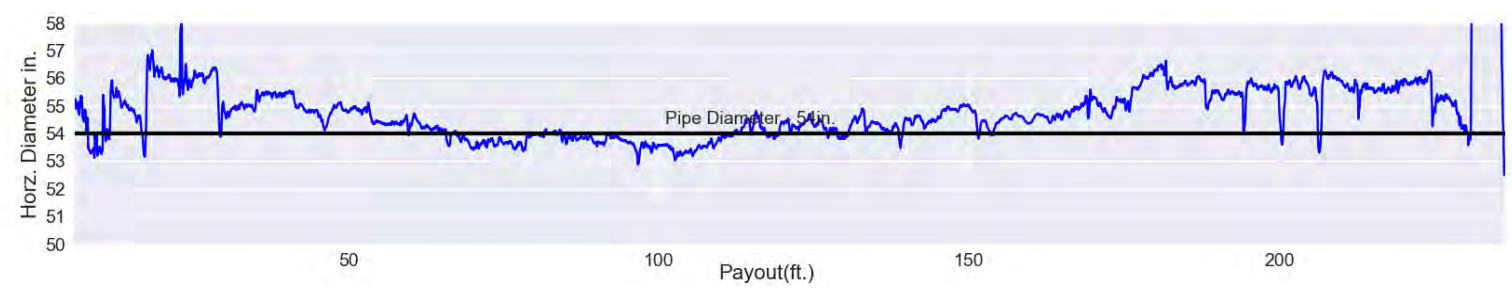
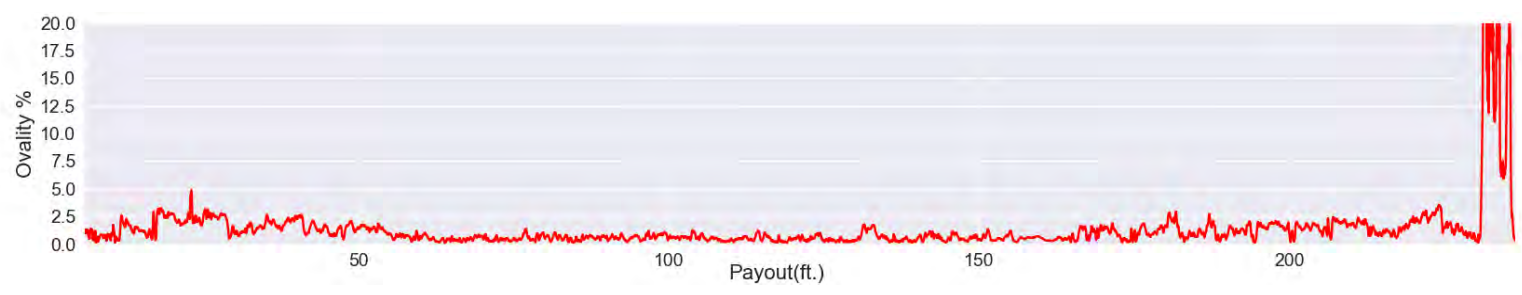


Pipe Ovality Graphs

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
5.9'	Start	Start of inspection	0.7"	1.1"	1.5"	0.6"	1.1"	1.1"	0.3%
11.0'	Material Loss	Material loss at joint	0.5"	0.9"	1.3"	0.4"	1.0"	1.0"	0.2%
16.9'	Material Loss	Material loss at joint	0.7"	1.2"	2.5"	0.5"	1.1"	1.7"	0.8%
22.8'	Material Loss	Material loss at joint	1.0"	2.7"	5.5"	0.6"	1.0"	0.3"	0.2%
29.0'	Material Loss	Material loss at joint	0.5"	0.9"	1.2"	0.8"	1.7"	0.5"	0.2%
30.9'	Regular Interval		0.5"	0.8"	1.2"	0.7"	1.5"	0.4"	0.1%
37.2'	Buildup	Buildup	0.7"	0.9"	1.3"	0.6"	1.1"	0.4"	0.2%
41.1'	Material Loss	Material loss at joint	0.7"	0.7"	1.2"	0.6"	1.0"	1.6"	0.4%
48.0'	Material Loss	Material loss at joint	0.6"	0.9"	1.5"	0.7"	0.9"	0.8"	0.3%
53.3'	Material Loss	Material loss at joint	0.7"	0.8"	1.4"	0.5"	0.9"	0.5"	0.1%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
55.9'	Regular Interval		0.5"	0.7"	1.2"	0.5"	1.0"	0.3"	0.2%
59.6'	Material Loss	Material loss at joint	0.6"	0.8"	1.5"	0.8"	1.5"	3.0"	2.1%
66.2'	Material Loss	Material loss at joint	0.6"	0.8"	1.1"	0.8"	1.2"	3.6"	3.0%
78.3'	Material Loss	Material loss at joint	0.7"	0.9"	1.3"	0.7"	1.1"	2.1"	1.3%
80.9'	Regular Interval		0.6"	0.8"	1.4"	0.5"	0.9"	0.9"	0.4%
84.2'	Buildup	Buildup	0.9"	0.9"	1.5"	0.7"	1.3"	0.3"	0.2%
96.1'	Material Loss	Material loss at joint	0.7"	0.9"	1.3"	0.6"	1.3"	0.0"	0.0%
105.2'	Buildup	Buildup	0.4"	0.6"	0.9"	0.7"	2.9"	0.0"	0.0%
105.9'	Regular Interval		0.4"	0.6"	1.0"	0.5"	1.1"	0.0"	0.0%
114.6'	Buildup	Buildup	0.5"	0.7"	1.1"	0.7"	1.3"	0.0"	0.0%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
120.4'	Material Loss	Material loss at joint	0.6"	0.7"	1.1"	0.6"	0.9"	0.0"	0.0%
126.6'	Material Loss	Material loss at joint	0.4"	0.5"	0.8"	0.7"	1.2"	0.0"	0.0%
130.9'	Regular Interval		0.5"	0.9"	1.3"	0.6"	1.3"	0.0"	0.0%
132.4'	Material Loss	Material loss at joint	0.6"	0.7"	1.2"	0.8"	1.3"	0.0"	0.0%
138.6'	Buildup	Buildup	0.4"	0.6"	0.9"	0.5"	1.2"	0.0"	0.0%
150.3'	Material Loss	Material loss at joint	0.8"	1.4"	1.8"	0.8"	1.2"	0.0"	0.0%
155.9'	Regular Interval		0.4"	0.9"	1.2"	0.4"	1.0"	0.0"	0.0%
161.1'	Buildup	Buildup	0.5"	0.7"	0.9"	1.0"	5.5"	0.0"	0.0%
167.7'	Material Loss	Material loss at joint	0.3"	0.8"	1.0"	0.4"	1.1"	0.0"	0.0%
175.1'	Material Loss	Material loss at joint	0.5"	0.7"	1.1"	0.4"	1.4"	0.0"	0.0%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
180.9'	Regular Interval		0.5"	1.1"	1.4"	0.3"	0.5"	0.0"	0.0%
182.1'	Material Loss	Material loss at joint	0.5"	0.9"	1.4"	0.5"	1.0"	0.0"	0.0%
187.9'	Material Loss	Material loss at joint	0.5"	0.7"	1.1"	0.6"	2.2"	0.0"	0.0%
193.9'	Material Loss	Material loss at joint	0.5"	0.6"	1.0"	0.7"	1.5"	0.0"	0.0%
200.2'	Material Loss	Material loss at joint	0.5"	0.8"	1.1"	0.5"	1.3"	0.0"	0.0%
205.9'	Regular Interval		0.5"	0.7"	1.3"	0.5"	1.2"	0.0"	0.0%
206.1'	Material Loss	Material loss at joint	0.4"	0.7"	1.0"	0.4"	1.0"	0.0"	0.0%
212.5'	Material Loss	Material loss at joint	0.5"	0.7"	1.6"	0.8"	1.6"	0.0"	0.0%
219.1'	Material Loss	Material loss at joint	0.6"	0.9"	1.3"	0.6"	1.0"	0.0"	0.0%
230.9'	Regular Interval		4.5"	5.5"	5.5"	0.3"	0.9"	7.0"	4.5%

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Summary Table

Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup	Sed. Max Ht.	Sed. Restriction %
232.1'	Hole	Incoming Lateral	9.7"	5.5"	5.5"	1.6"	5.5"	7.4"	5.4%
236.4'	End	End of inspection	0.7"	1.1"	1.9"	1.3"	2.8"	8.0"	6.7%



Distributed Cross-Sections

5.9 Start

Av. Corrosion (in.)	0.7
3s Corrosion (in.)	1.1
Max Corrosion (in.)	1.5
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.1
Max Sed. Height (in.)	1.1
Sed. restriction %	0.3

11.0 Material Loss

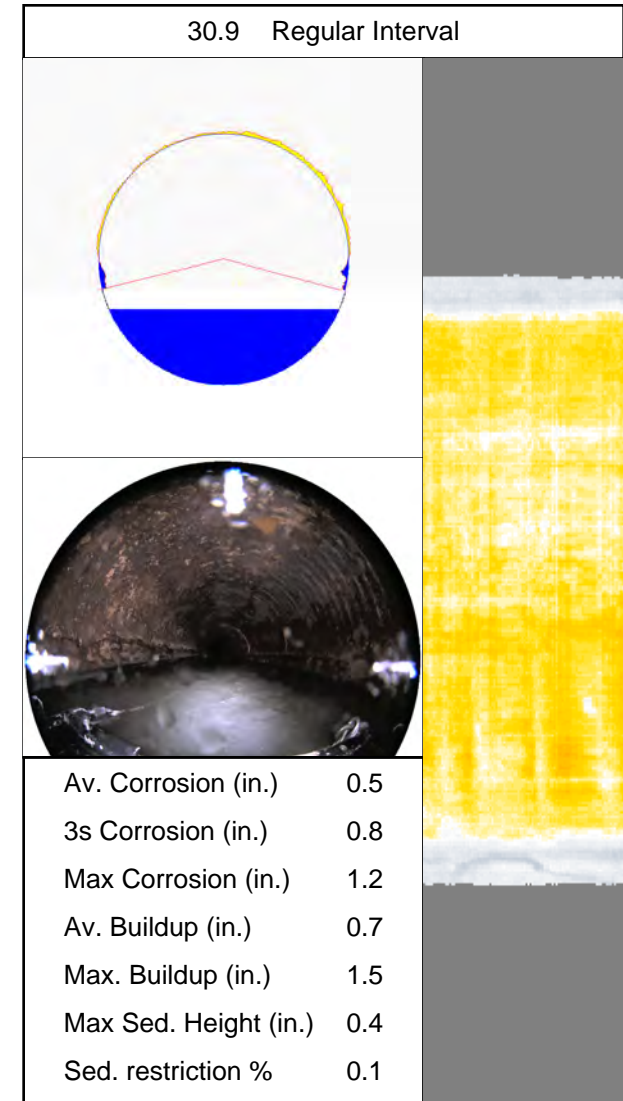
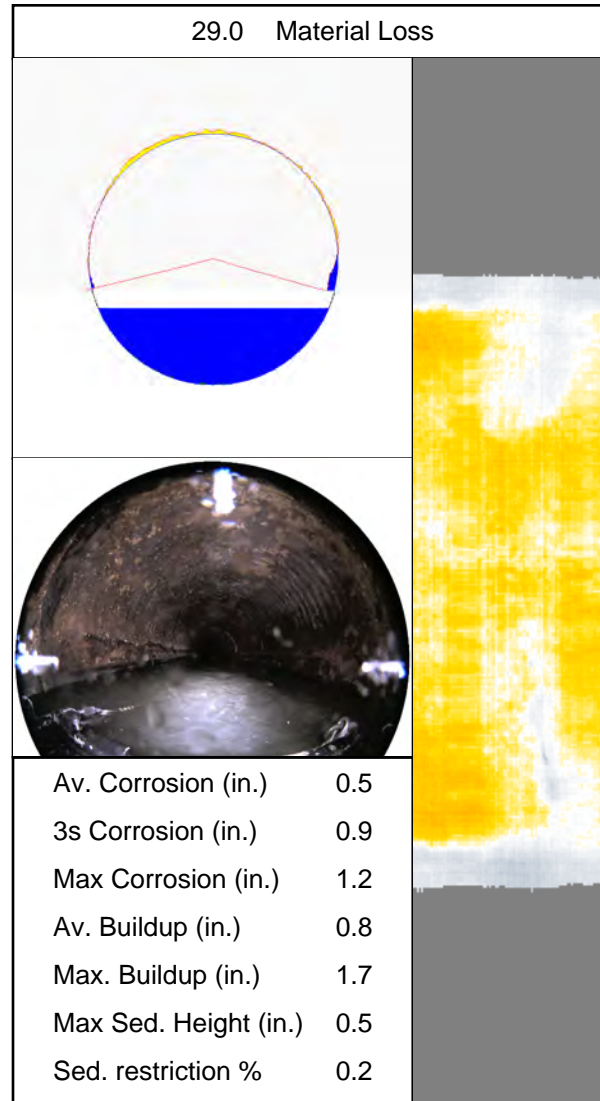
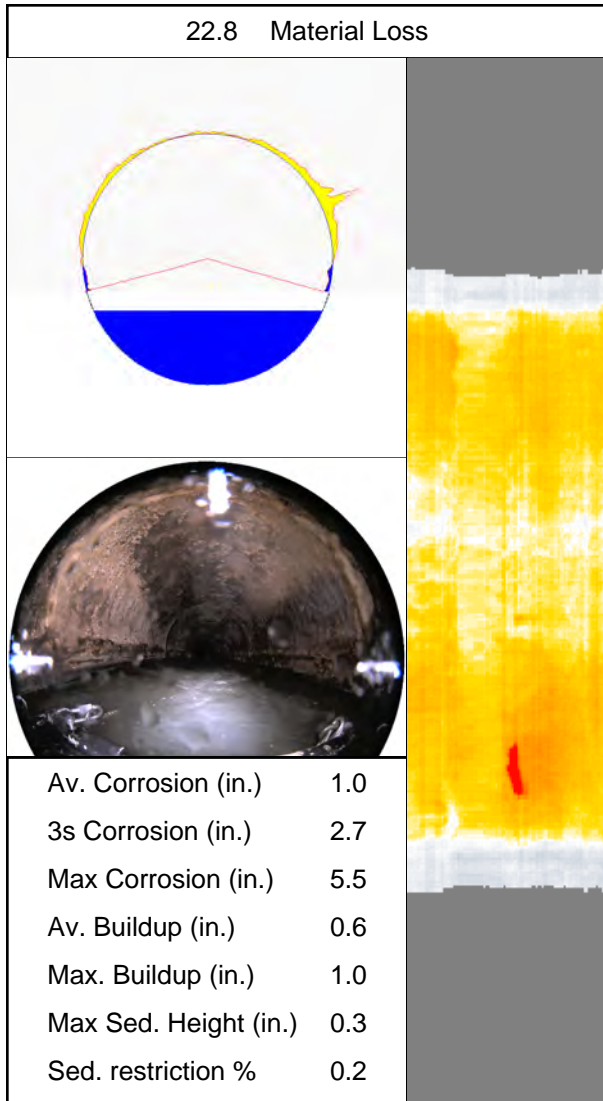
Av. Corrosion (in.)	0.5
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.3
Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	1.0
Sed. restriction %	0.2

16.9 Material Loss

Av. Corrosion (in.)	0.7
3s Corrosion (in.)	1.2
Max Corrosion (in.)	2.5
Av. Buildup (in.)	0.5
Max. Buildup (in.)	1.1
Max Sed. Height (in.)	1.7
Sed. restriction %	0.8



Distributed Cross-Sections





Distributed Cross-Sections

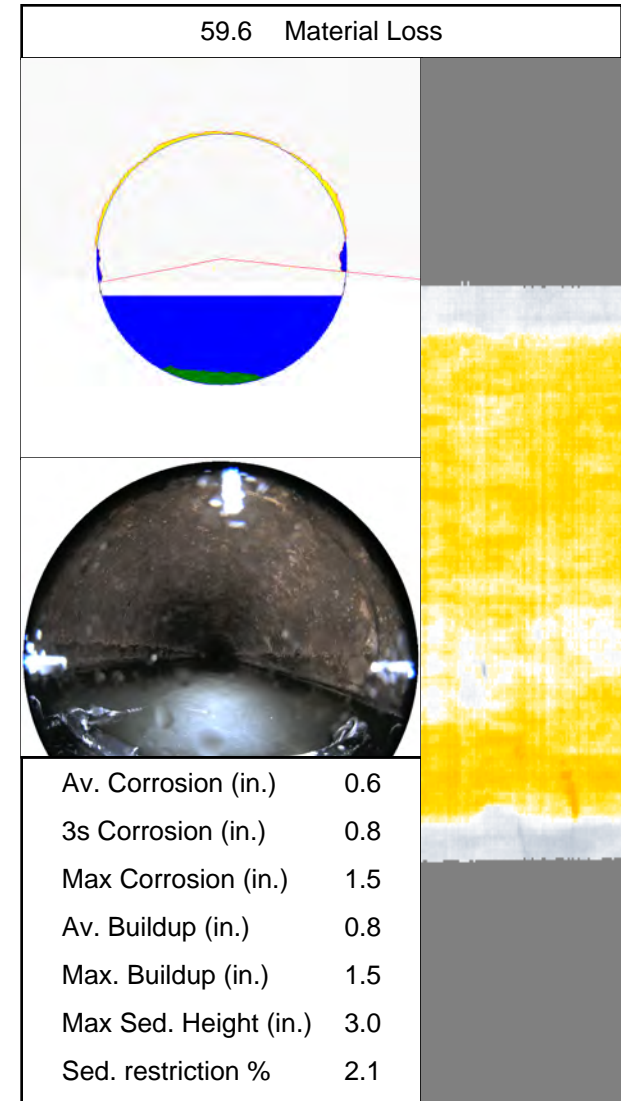
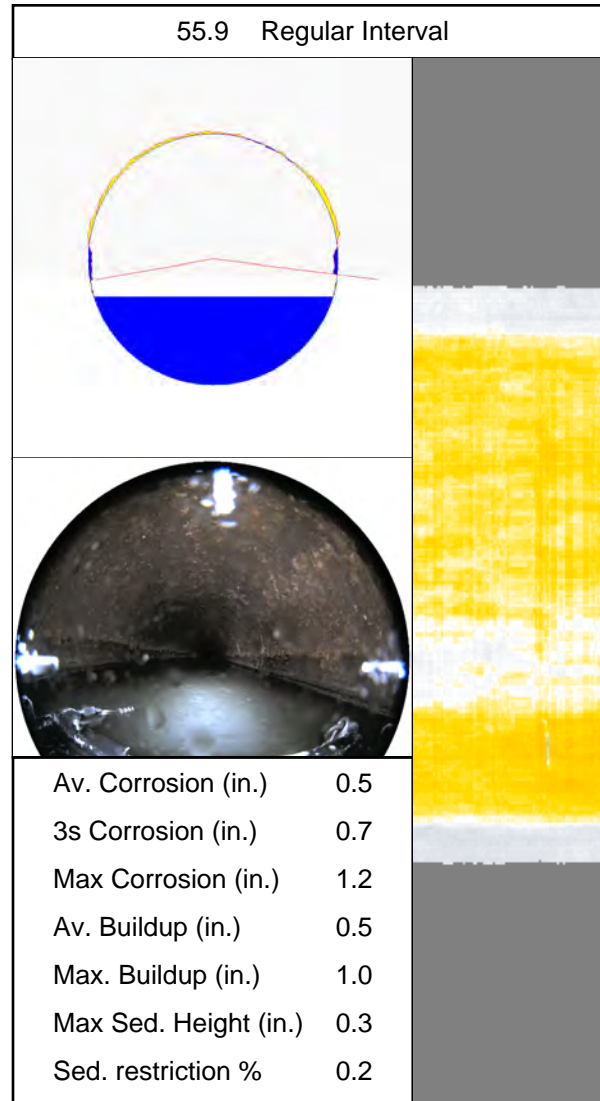
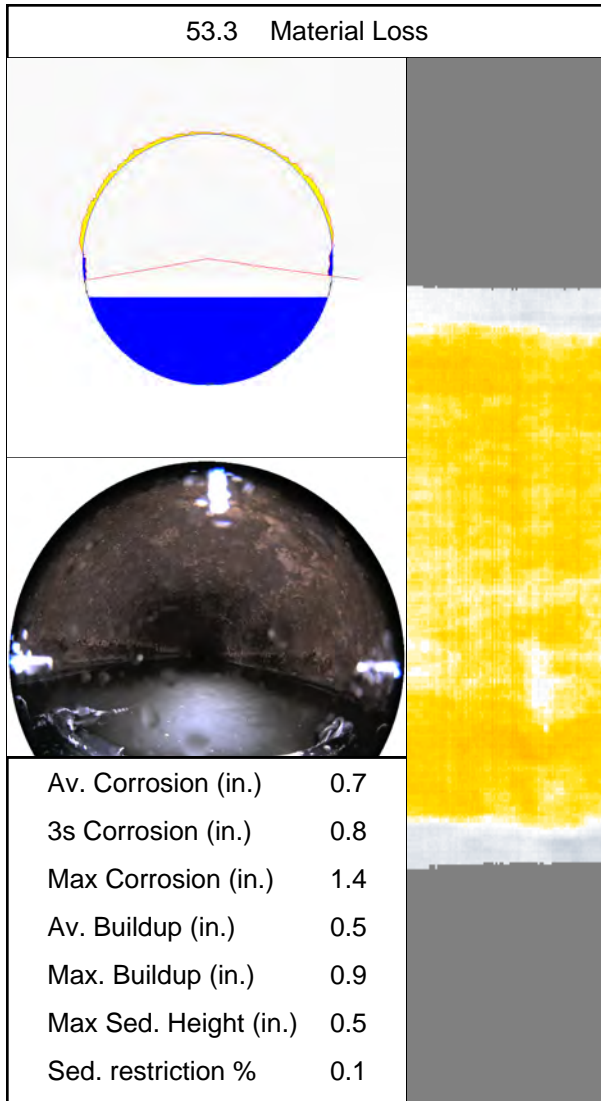
37.2 Buildup	
Av. Corrosion (in.)	0.7
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.3
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.1
Max Sed. Height (in.)	0.4
Sed. restriction %	0.2

41.1 Material Loss	
Av. Corrosion (in.)	0.7
3s Corrosion (in.)	0.7
Max Corrosion (in.)	1.2
Av. Buildup (in.)	0.6
Max. Buildup (in.)	1.0
Max Sed. Height (in.)	1.6
Sed. restriction %	0.4

48.0 Material Loss	
Av. Corrosion (in.)	0.6
3s Corrosion (in.)	0.9
Max Corrosion (in.)	1.5
Av. Buildup (in.)	0.7
Max. Buildup (in.)	0.9
Max Sed. Height (in.)	0.8
Sed. restriction %	0.3

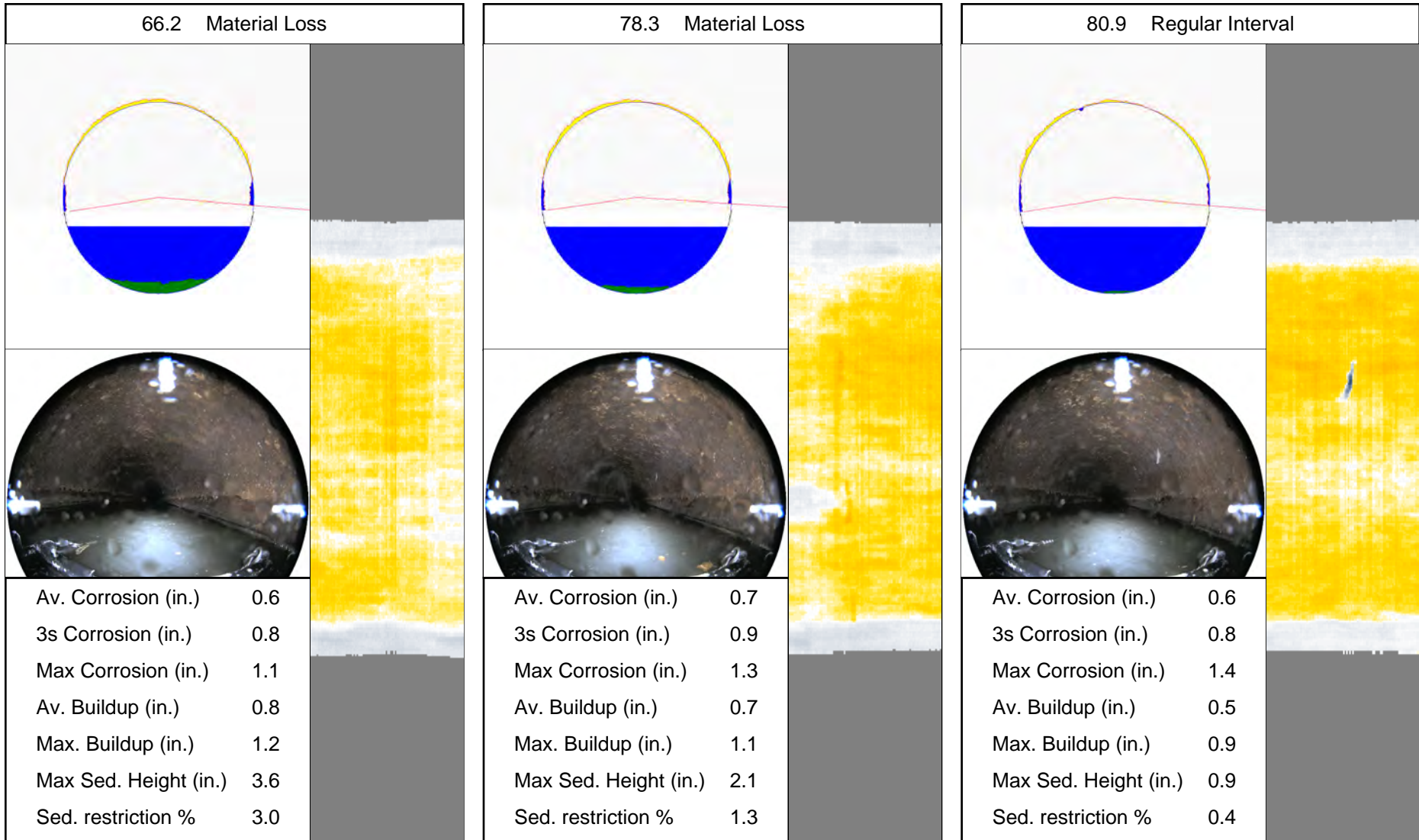


Distributed Cross-Sections





Distributed Cross-Sections



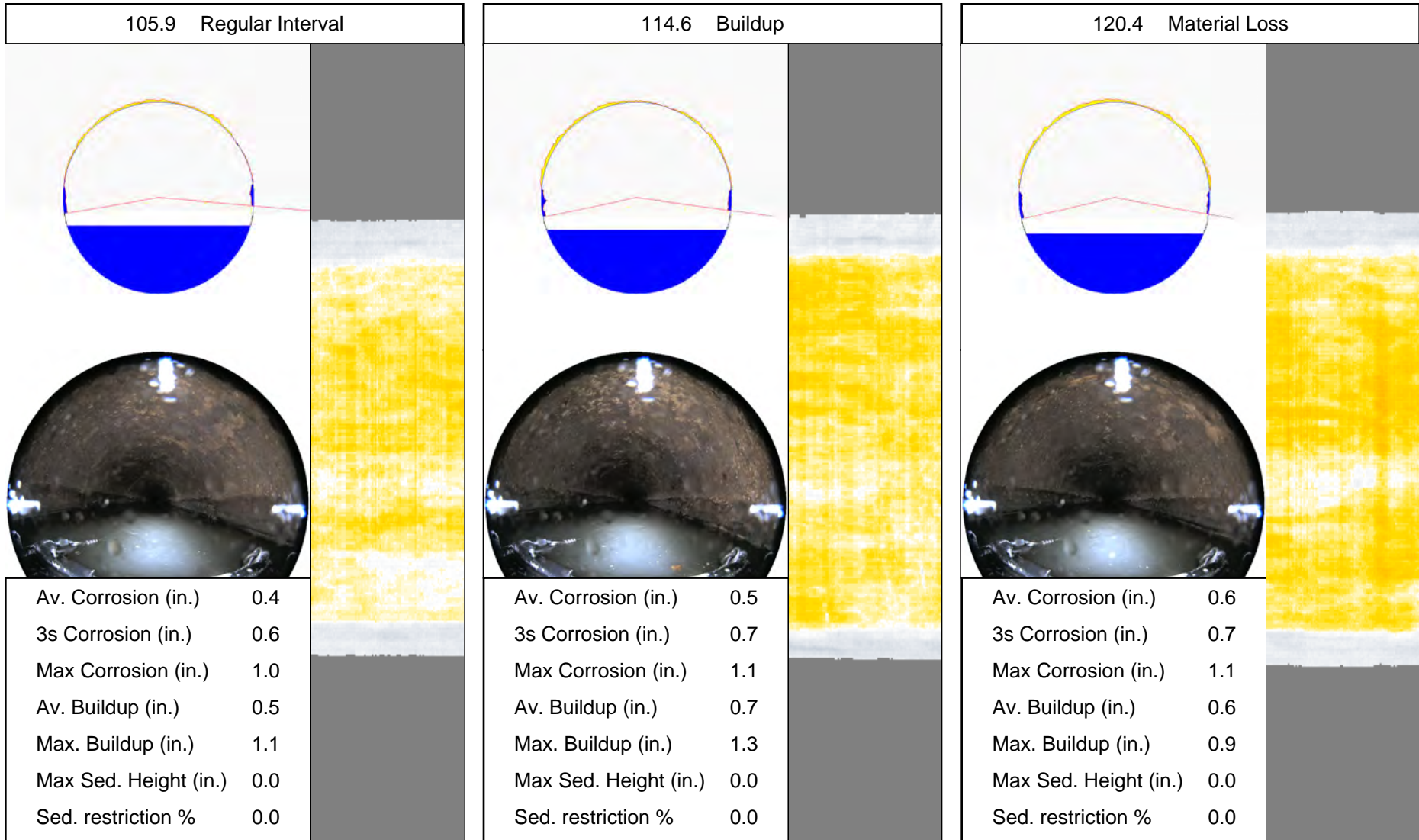


Distributed Cross-Sections

84.2 Buildup		96.1 Material Loss		105.2 Buildup	
Av. Corrosion (in.)	0.9	Av. Corrosion (in.)	0.7	Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.9	3s Corrosion (in.)	0.9	3s Corrosion (in.)	0.6
Max Corrosion (in.)	1.5	Max Corrosion (in.)	1.3	Max Corrosion (in.)	0.9
Av. Buildup (in.)	0.7	Av. Buildup (in.)	0.6	Av. Buildup (in.)	0.7
Max. Buildup (in.)	1.3	Max. Buildup (in.)	1.3	Max. Buildup (in.)	2.9
Max Sed. Height (in.)	0.3	Max Sed. Height (in.)	0.0	Max Sed. Height (in.)	0.0
Sed. restriction %	0.2	Sed. restriction %	0.0	Sed. restriction %	0.0

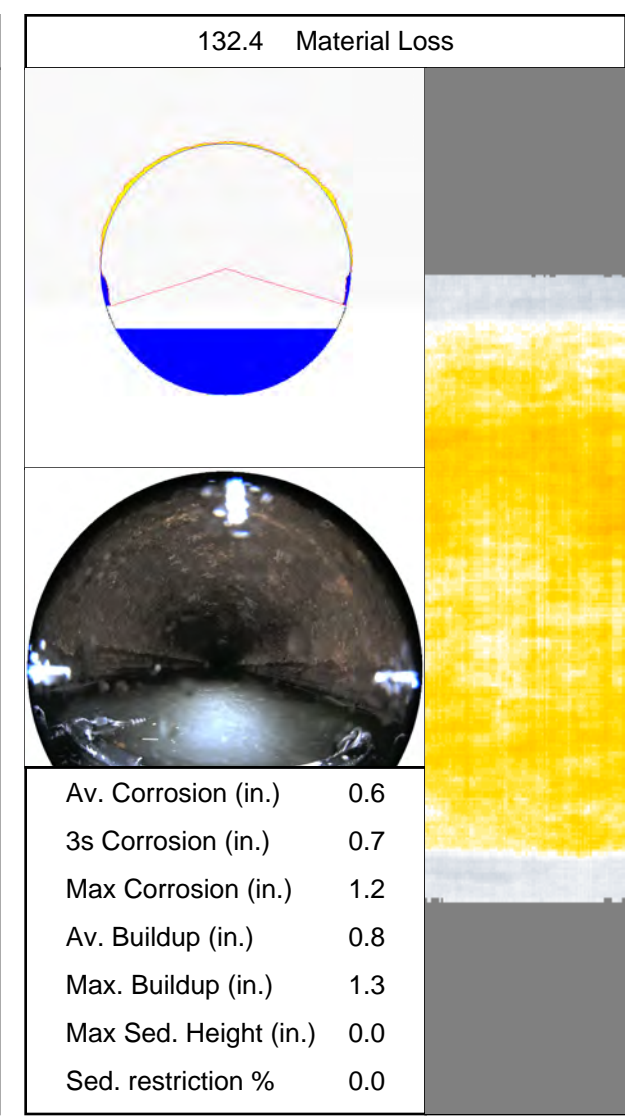
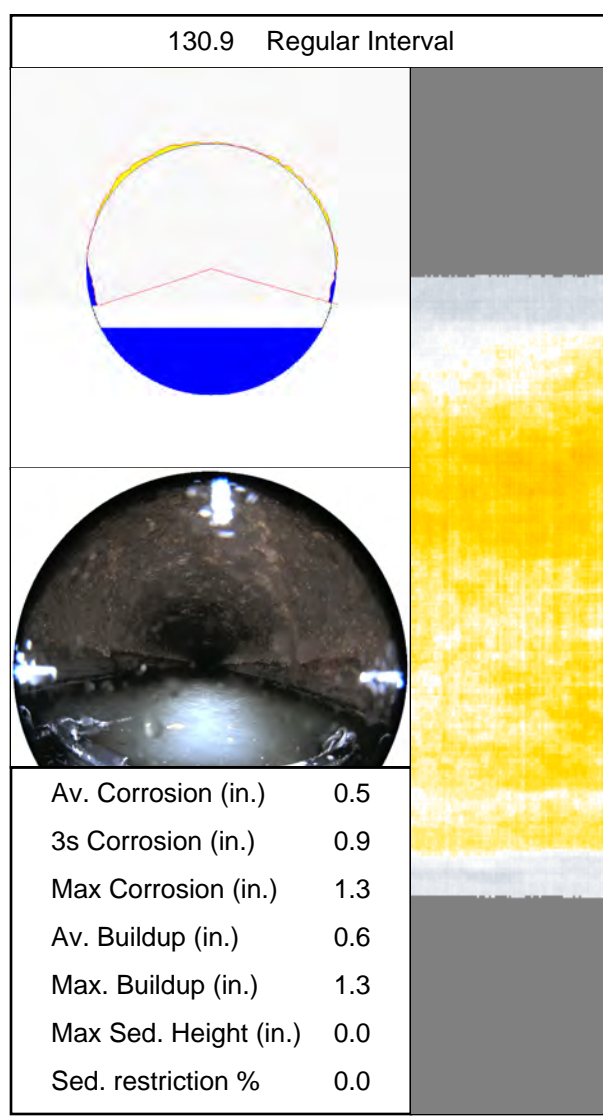
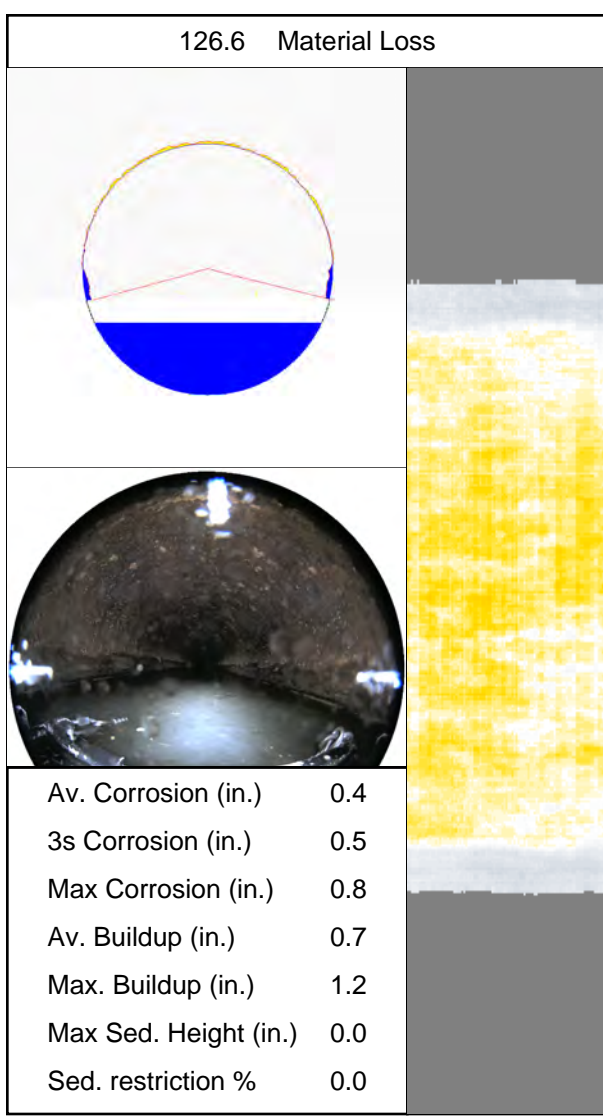


Distributed Cross-Sections





Distributed Cross-Sections



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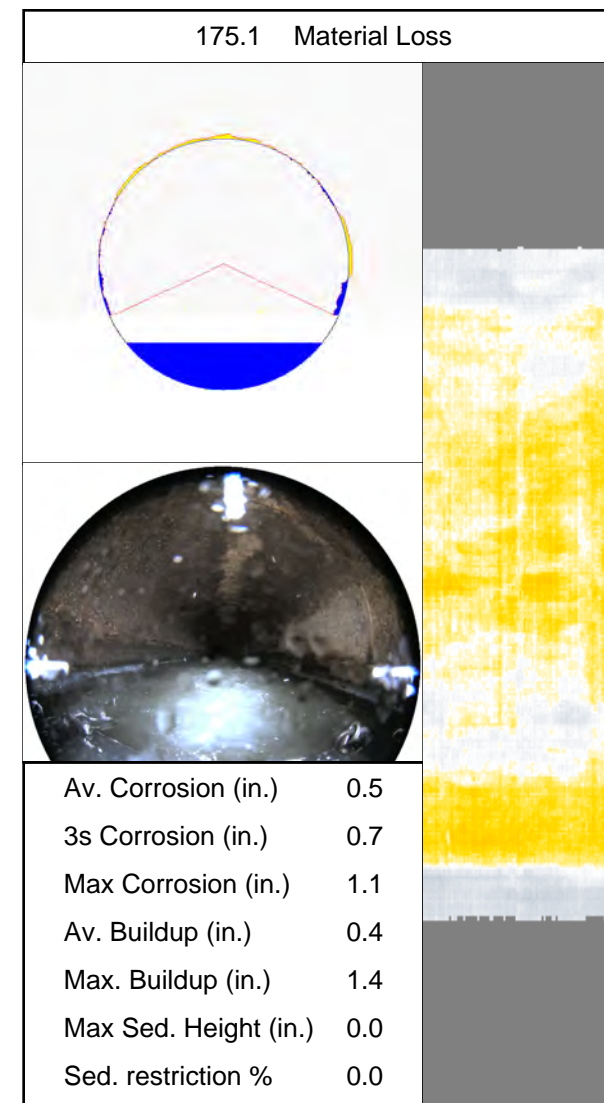
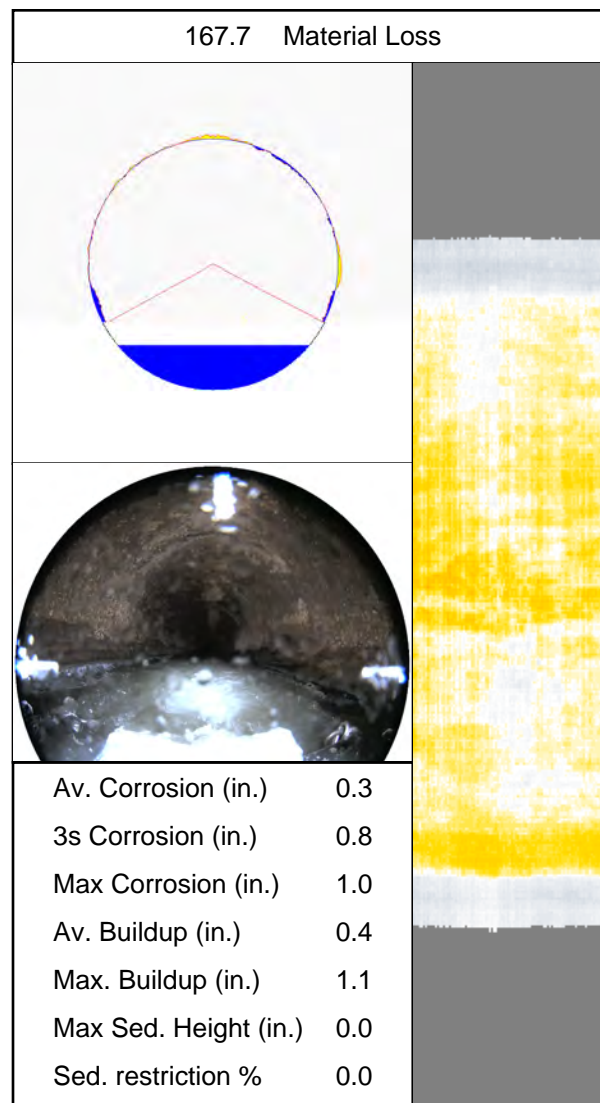
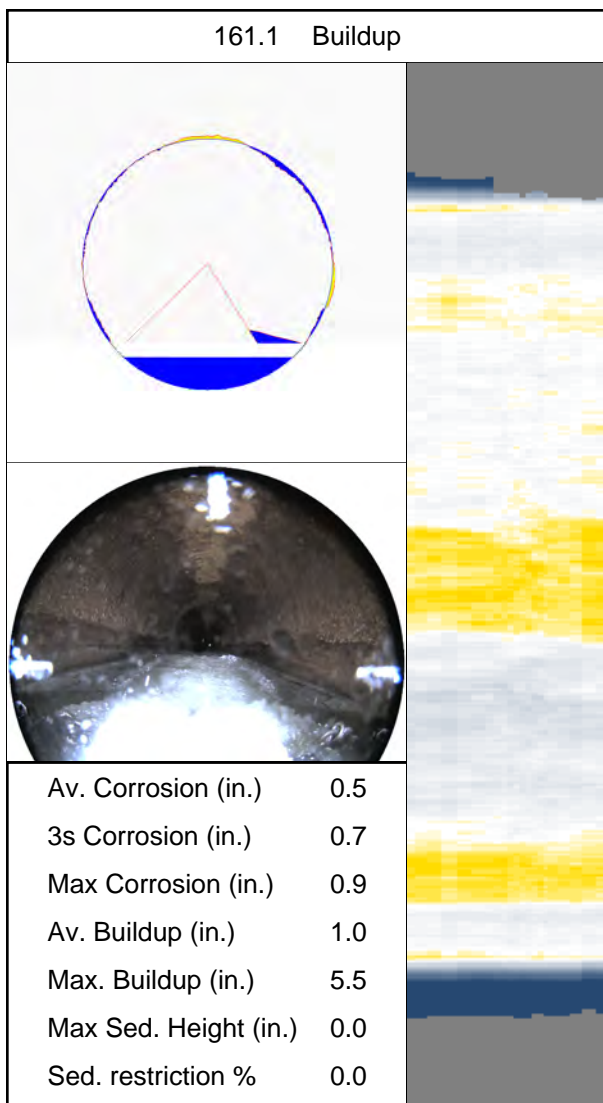
058-00006H

Distributed Cross-Sections

138.6 Buildup		150.3 Material Loss		155.9 Regular Interval	
Av. Corrosion (in.)	0.4	Av. Corrosion (in.)	0.8	Av. Corrosion (in.)	0.4
3s Corrosion (in.)	0.6	3s Corrosion (in.)	1.4	3s Corrosion (in.)	0.9
Max Corrosion (in.)	0.9	Max Corrosion (in.)	1.8	Max Corrosion (in.)	1.2
Av. Buildup (in.)	0.5	Av. Buildup (in.)	0.8	Av. Buildup (in.)	0.4
Max. Buildup (in.)	1.2	Max. Buildup (in.)	1.2	Max. Buildup (in.)	1.0
Max Sed. Height (in.)	0.0	Max Sed. Height (in.)	0.0	Max Sed. Height (in.)	0.0
Sed. restriction %	0.0	Sed. restriction %	0.0	Sed. restriction %	0.0

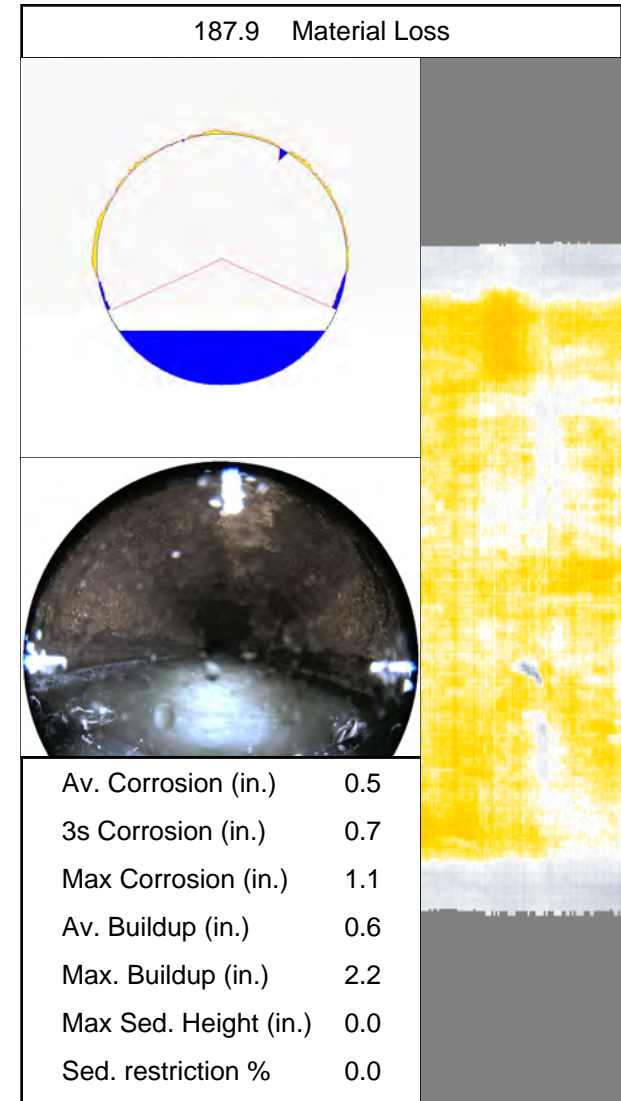
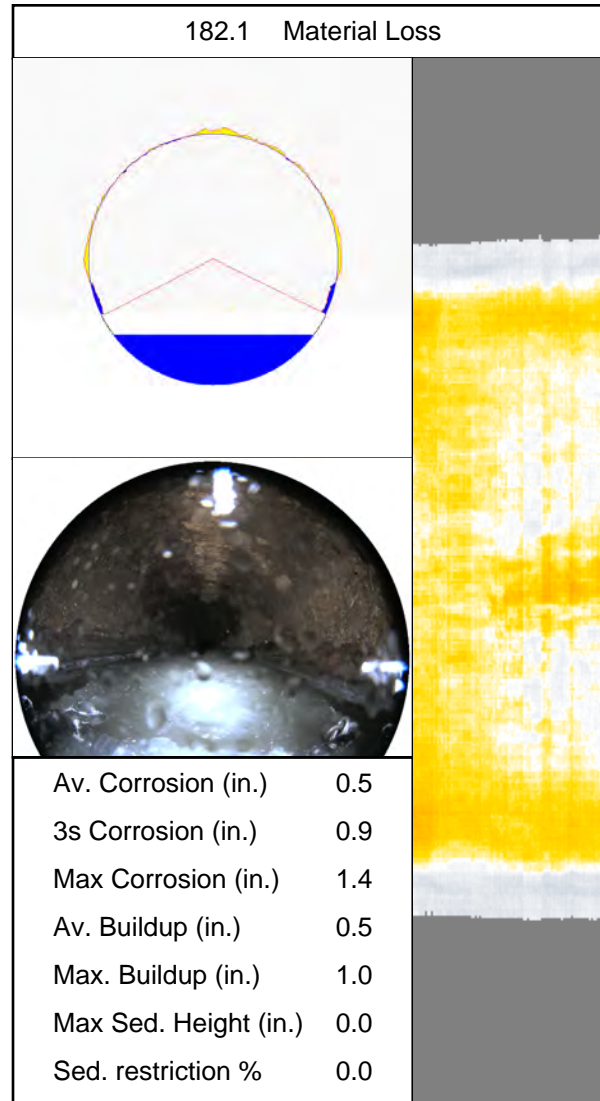
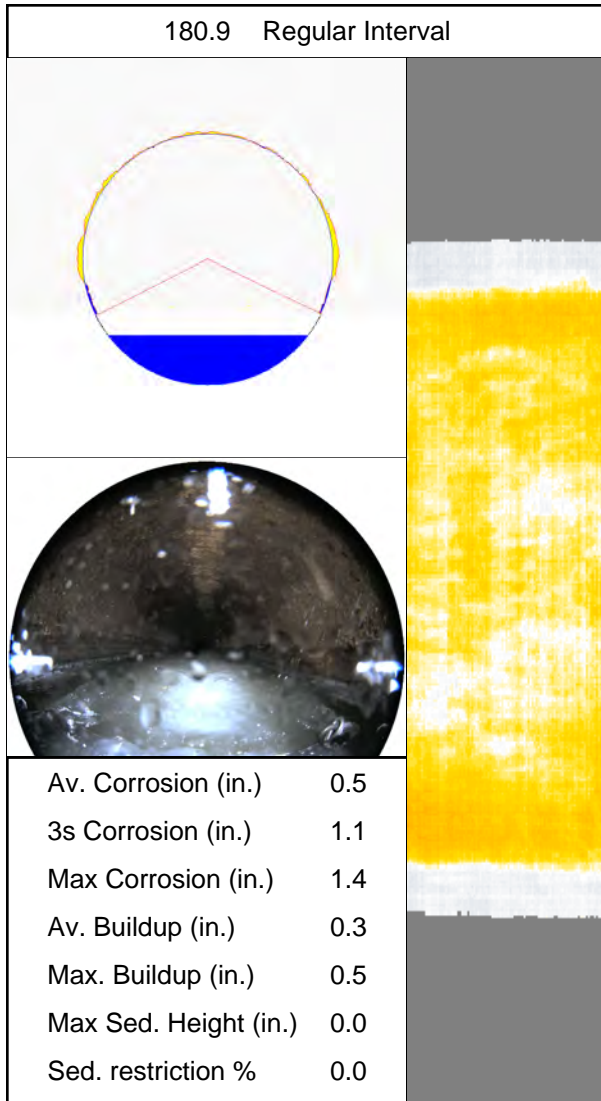


Distributed Cross-Sections



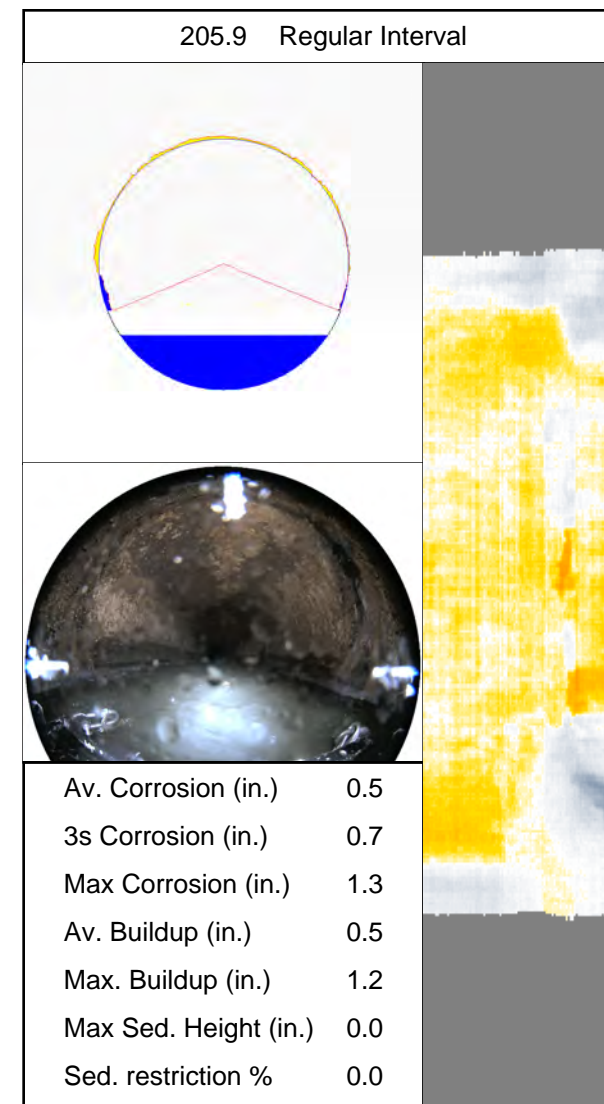
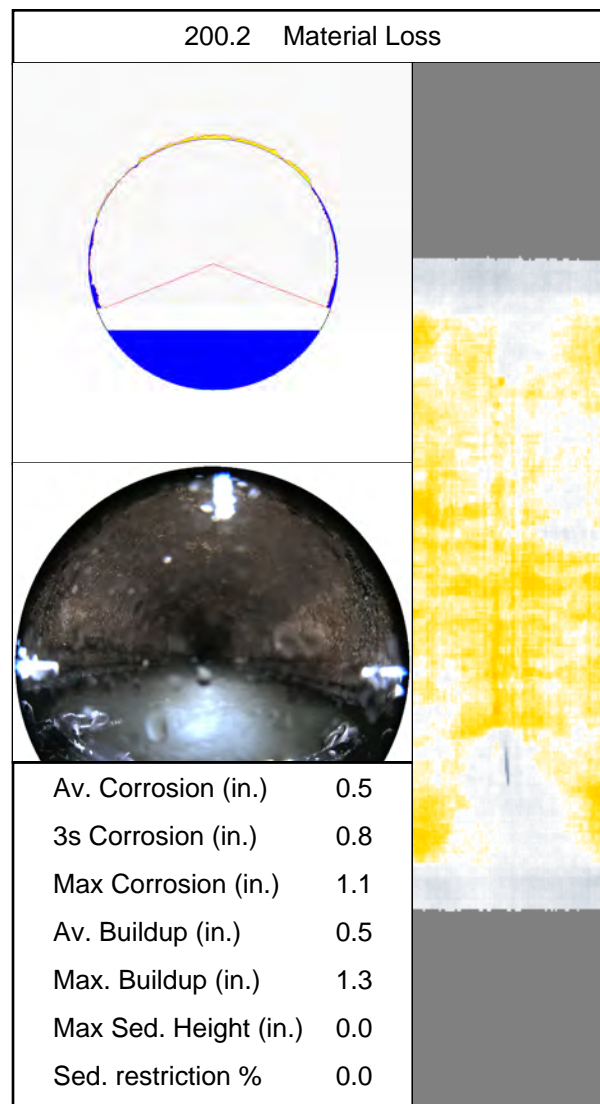
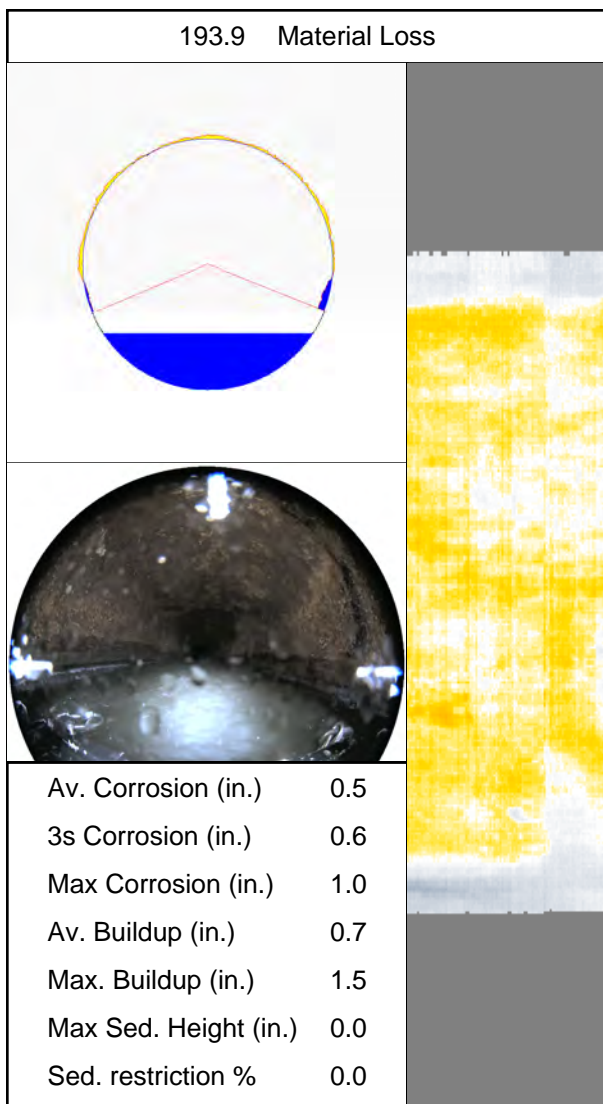


Distributed Cross-Sections



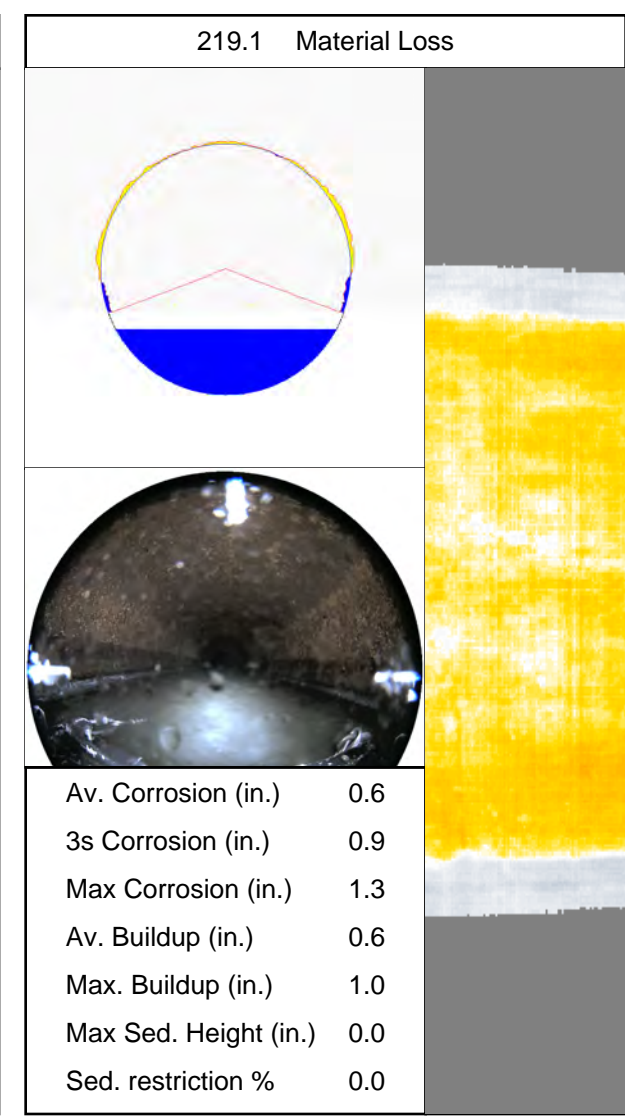
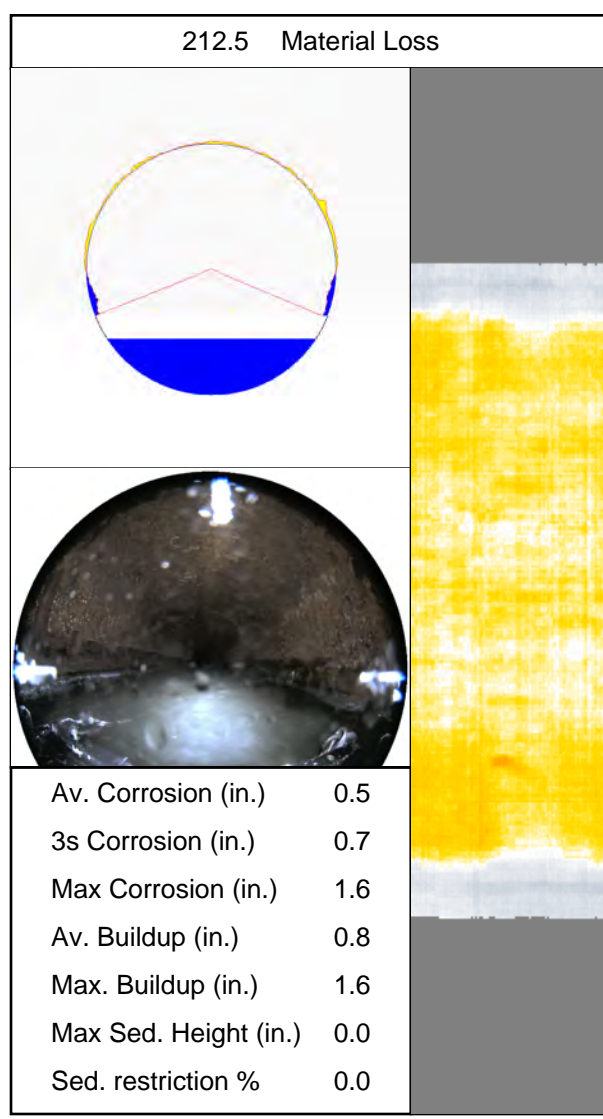
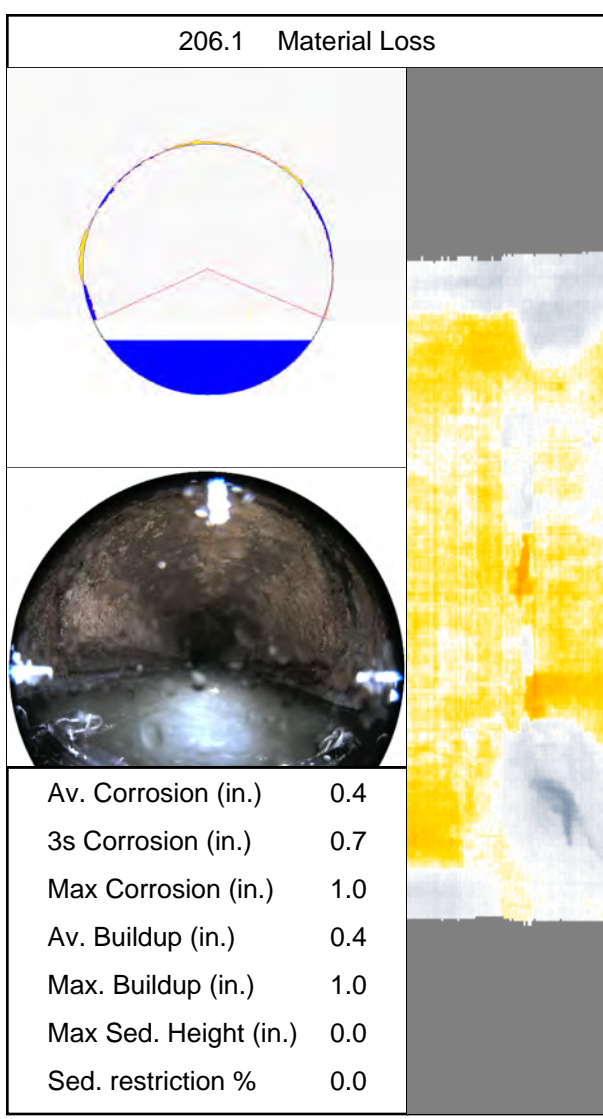


Distributed Cross-Sections





Distributed Cross-Sections



CES Baton Rouge

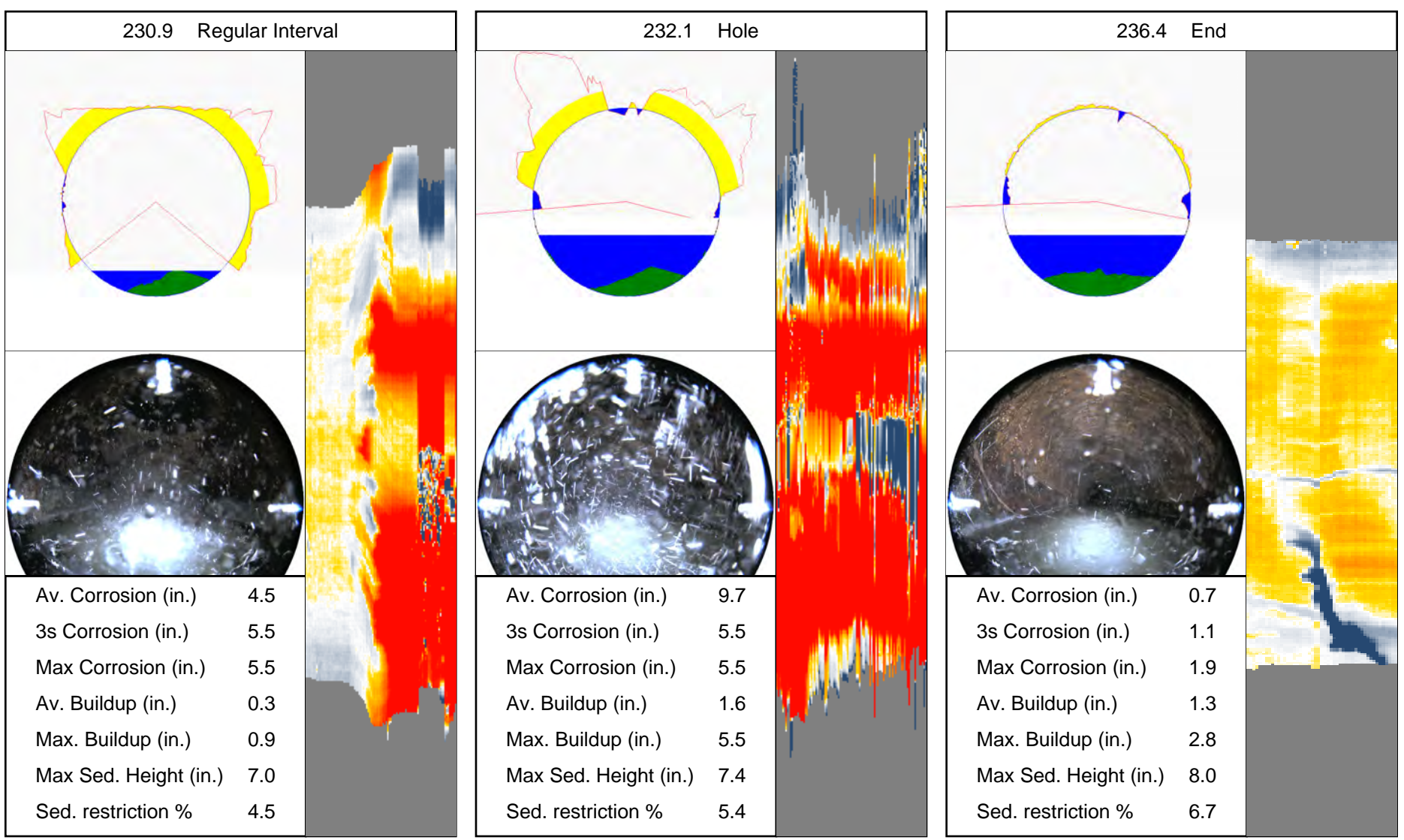
Inspected December 04, 2019



058-00006B

058-00006H

Distributed Cross-Sections



CES Baton Rouge
Inspected December 04, 2019



058-00006B
058-00006H

Pipeline Inspection Partners Corp.

3600 Rio Vista Avenue
Orlando Florida 32805
Phone: 800.327.7791
Fax: 407.425.1569

Ed Diggs
800.327.7791
ediggs@cuesinc.com

Scott Thayer
412.839.1100
sthayer@cuesinc.com

Adam Slifko
412-656-5636
aslifko@cuesinc.com

Michelle Joy
724-601-1728
mjoy@cuesinc.com

Josh Graham
1401 Seaboard Dr.
Baton Rouge, LA 70810
Phone: 985.502.5667
jgraham@ces-ses.com

This report presents internal pipeline condition data collected by the CUES Multi Sensor Inspection (MSI) technology platform and is being provided to individuals who have experience with MSI data and civil engineering principles. Information provided within this report is not to take the place of or be a substitute for professional civil engineering advice and/or recommendations.

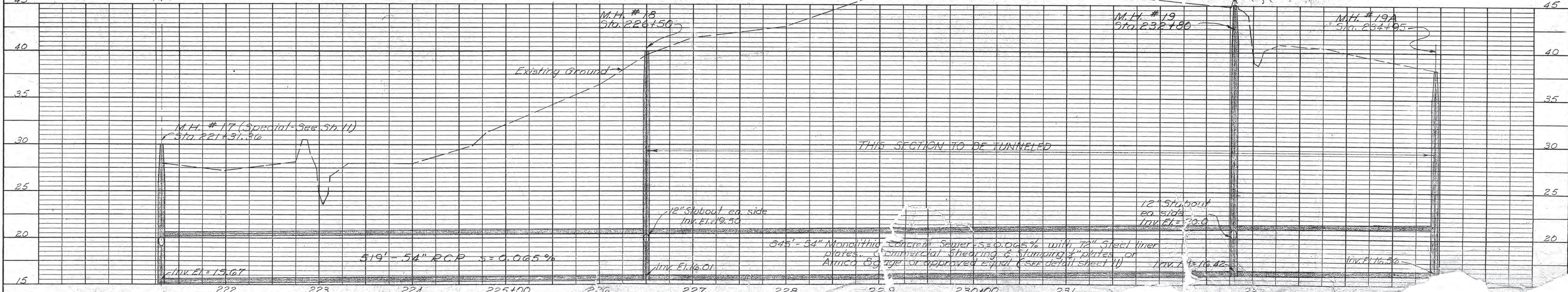
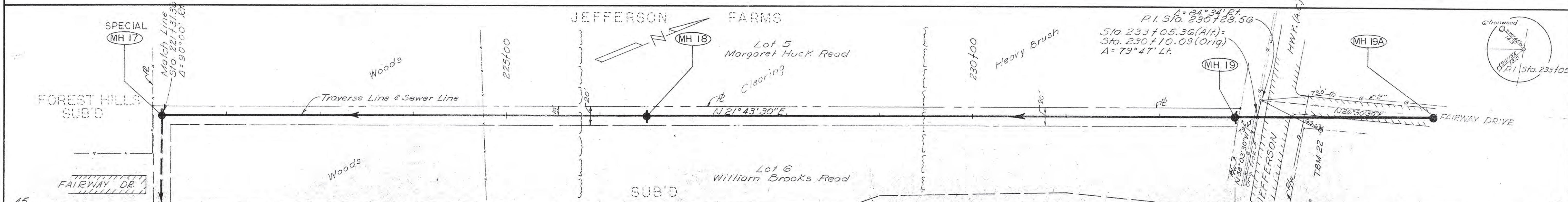
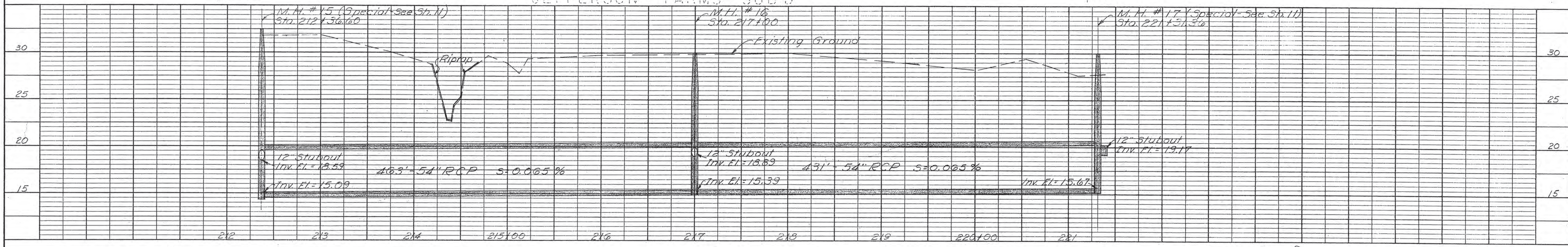
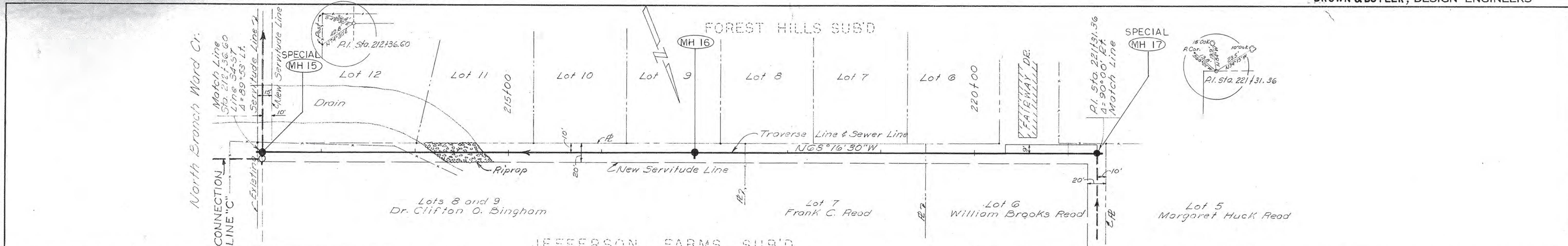
It is the sole responsibility of the client in regards to the following: Interpretation of the MSI data results provided within this report; evaluation of the pipeline segment; any remedial/rehabilitation procedures or processes; post MSI inspection decisions and processes such as additional investigations and/or subsequent cleaning operations.

Some information provided and utilized within this report for this specific pipeline segment such as distance and dimensions may incorporate or have been provided by others. Because this information may not always be accurate and complete the project engineer should confirm this information through their own assessments in regards to such information.

Appendix C:
Existing construction as-builts
for the
Essen/Staring Sewer Rehabilitation
CP#: 20-AR-MS-0089

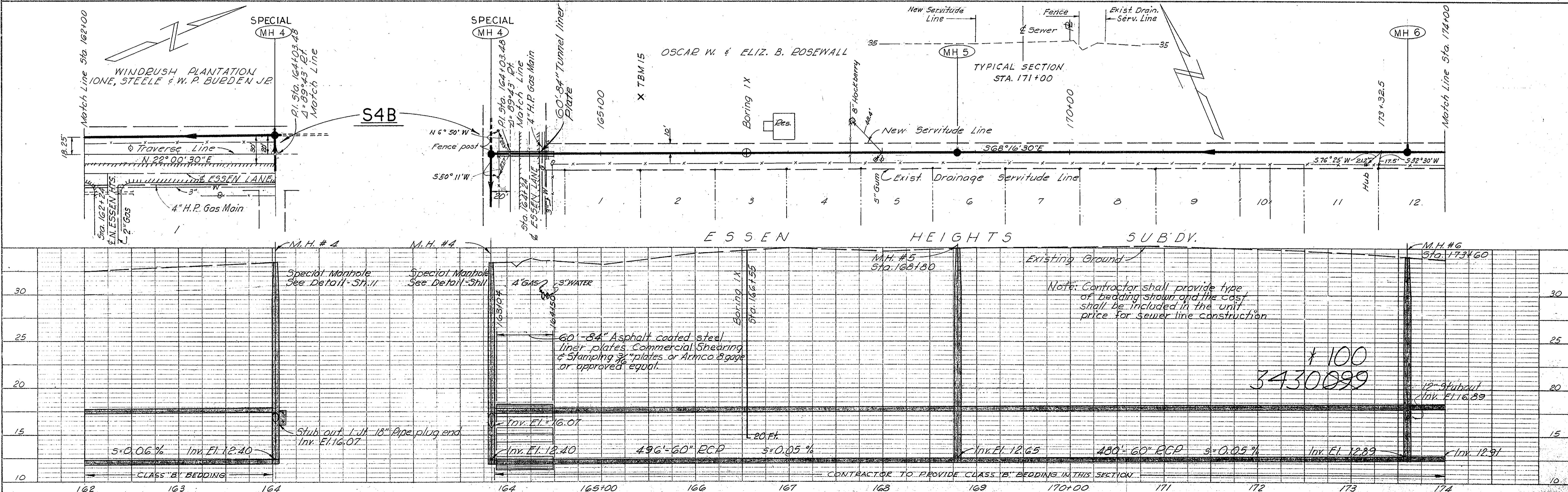
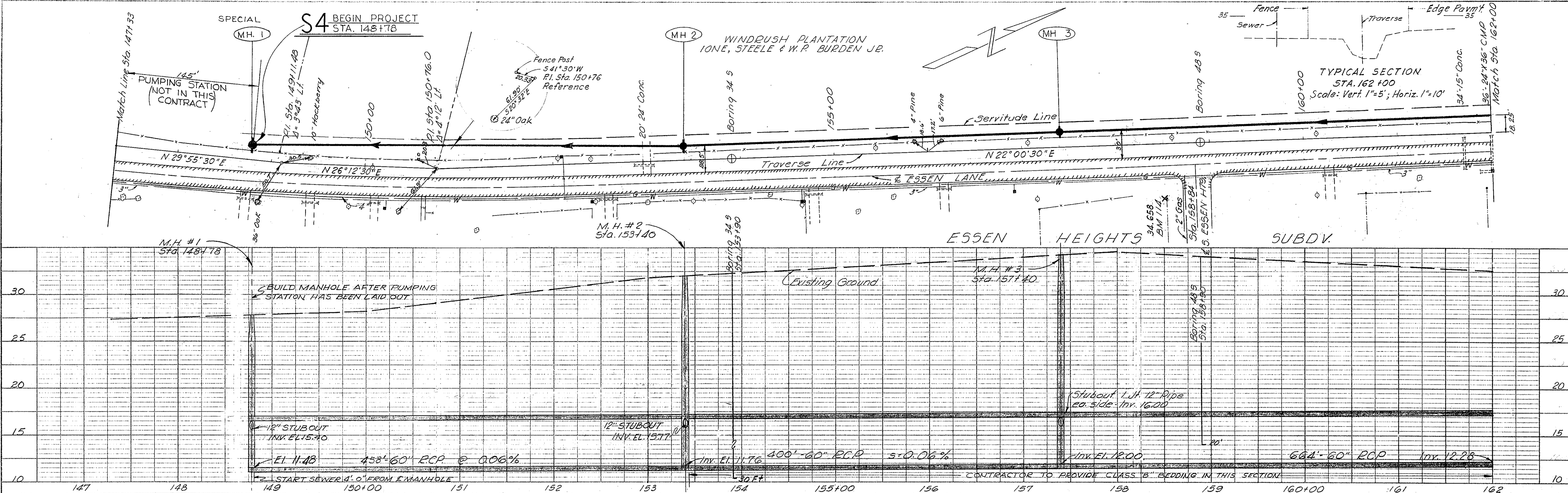
DATE	
BY	
SURVEYED	
PLOTTED	
CHECKED	
NOTE BOOK	
NO.	
FT. OF WAY CHECKED	

DATE	
BY	
SURVEYED	
PLOTTED	
CHECKED	
NOTE BOOK	
NO.	
STRUCTURE NOTATIONS CHECKED	

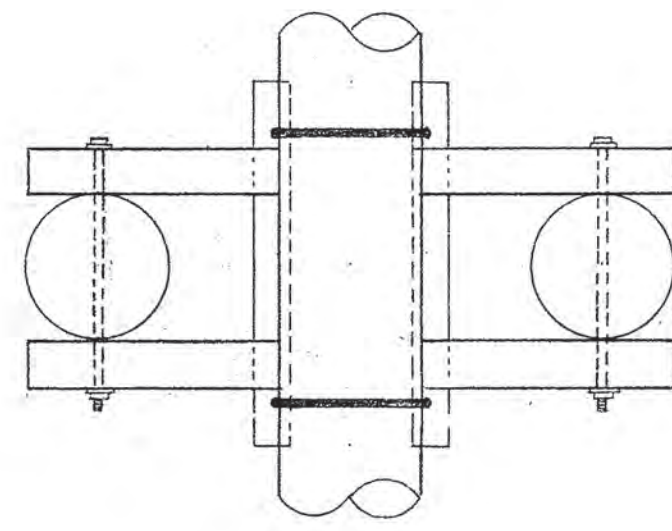


PLAN
 CHECKED BY
 A.D. McE. 6/17/60
 DATE
 BY
 CHECKED BY
 A.D. McE. 6/17/60
 DATE
 BY

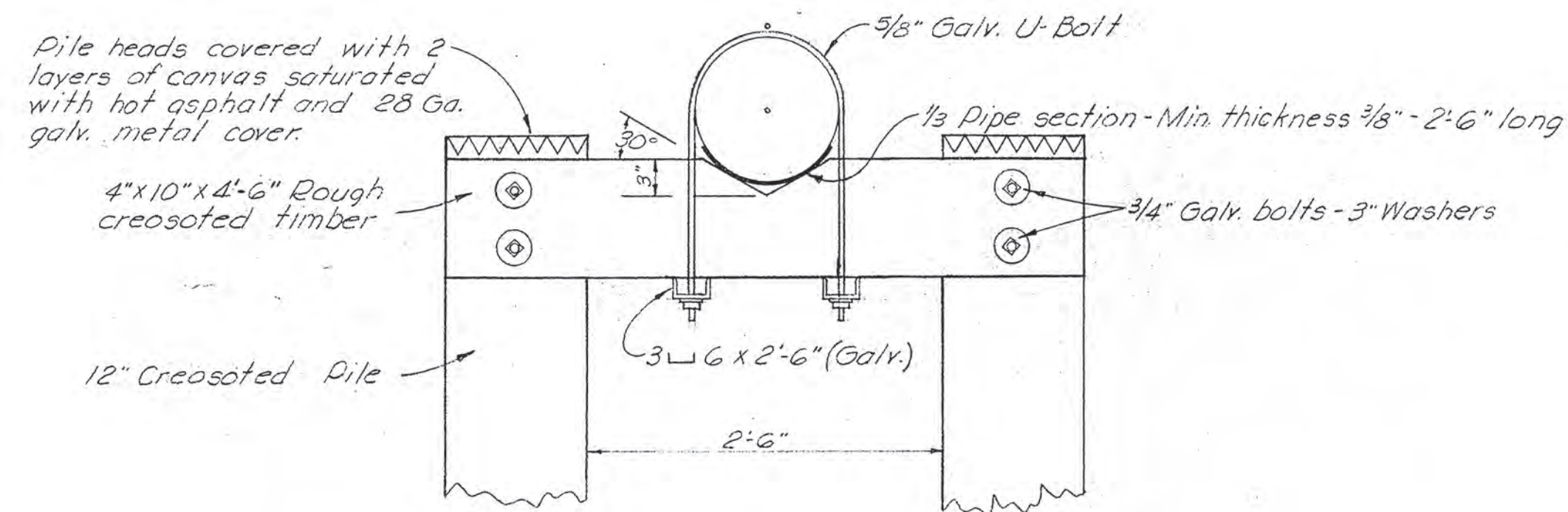
PROFILE
 CHECKED BY
 A.D. McE. 6/17/60
 DATE
 BY
 CHECKED BY
 A.D. McE. 6/17/60
 DATE
 BY



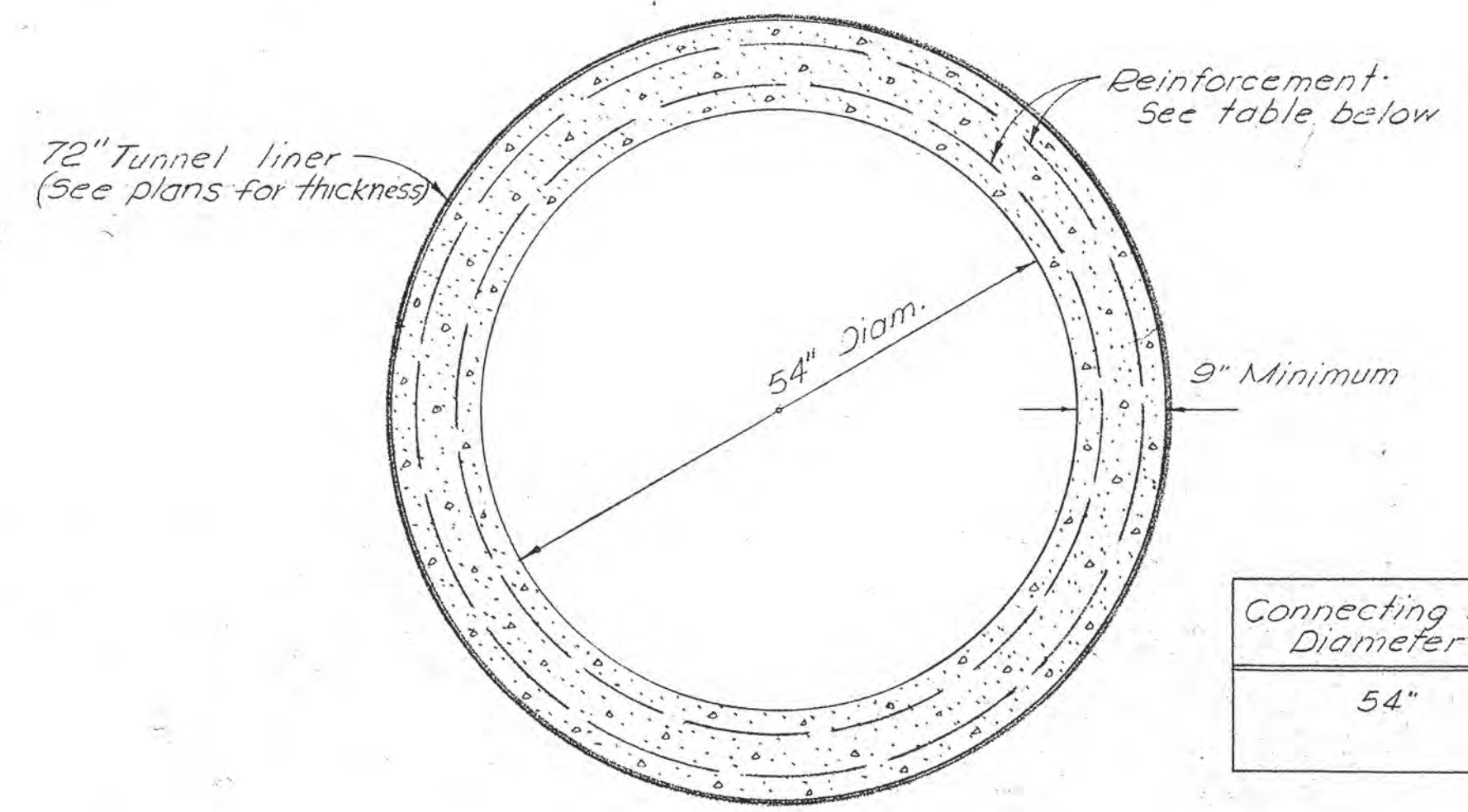
K & E Co. No. 347-2R ADJUSTMENT 1111. MADE IN U.S.A. 2246



TOP VIEW
Scale 3/4"=1'-0"

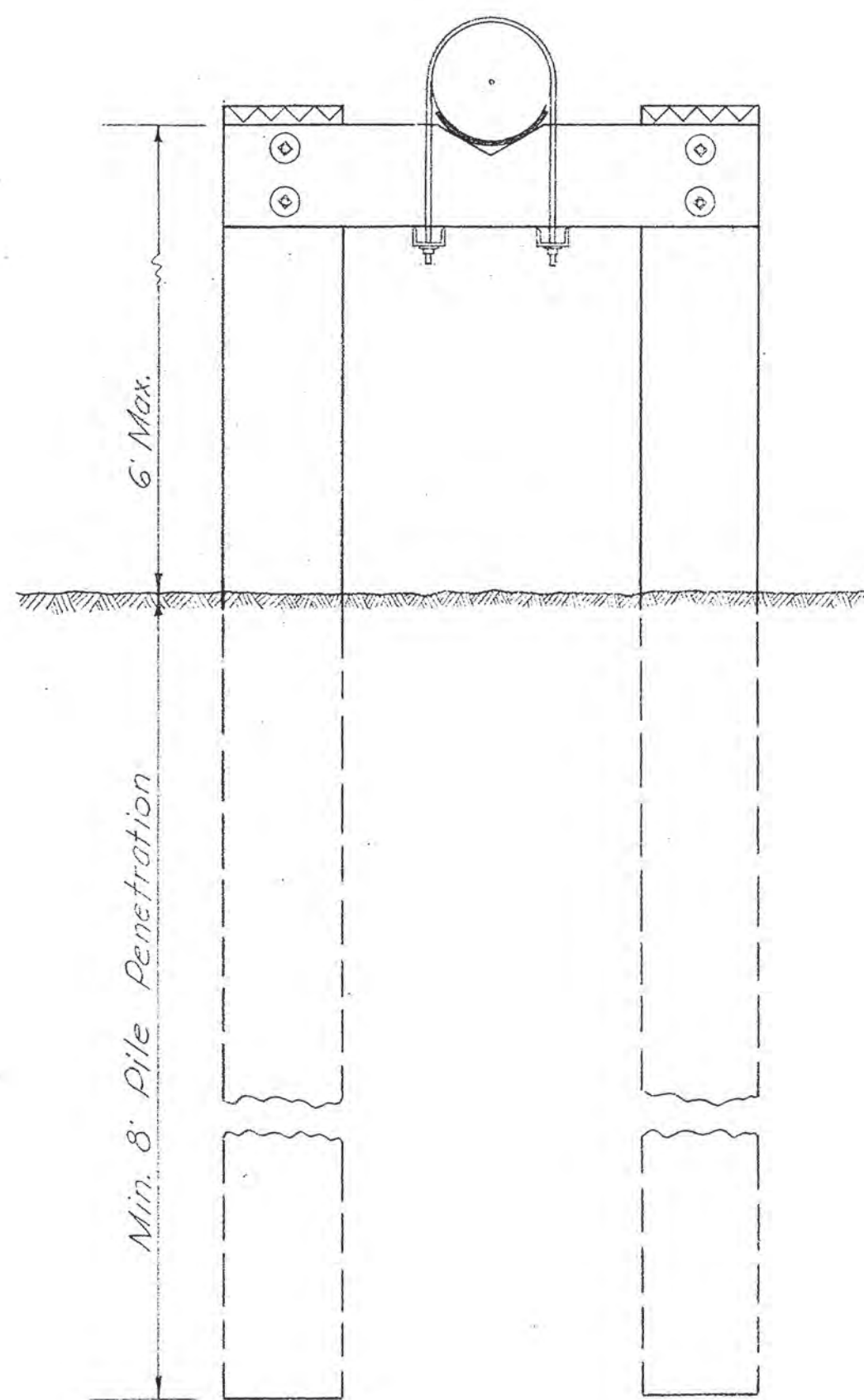


DETAIL-PIPE CRADLE
Scale 1"=1'-0"

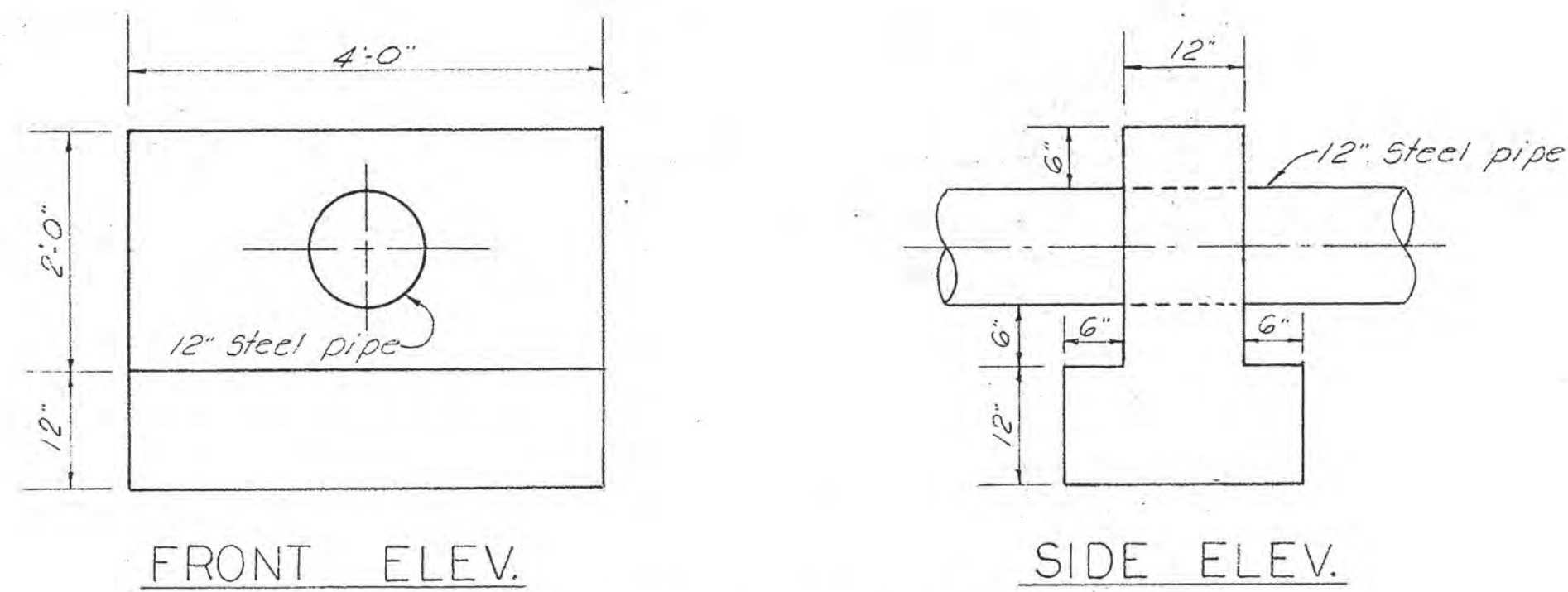


SECTION
MONOLITHIC LINED TUNNEL
Scale: 3/4"=1'-0"

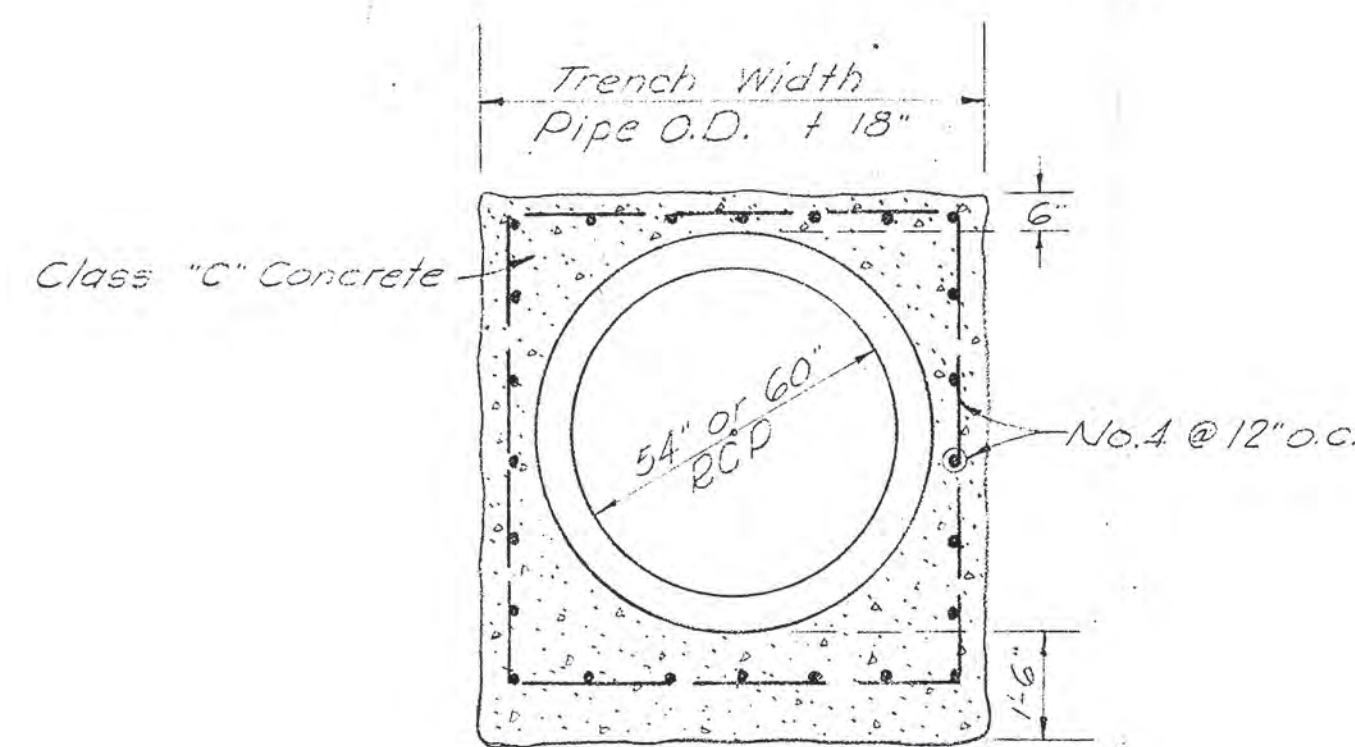
Connecting Pipe Diameter	Reinf. per L.F. of Pipe Barrel - Min.
54"	0.60 ^{sq} -0.30 ^{sq} ea-7'w



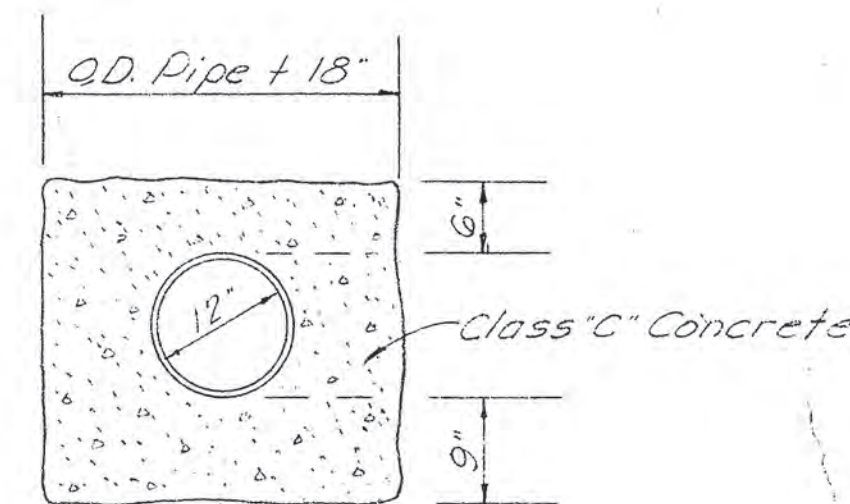
PILE BENT - ELEVATION
Scale 3/4"=1'-0"



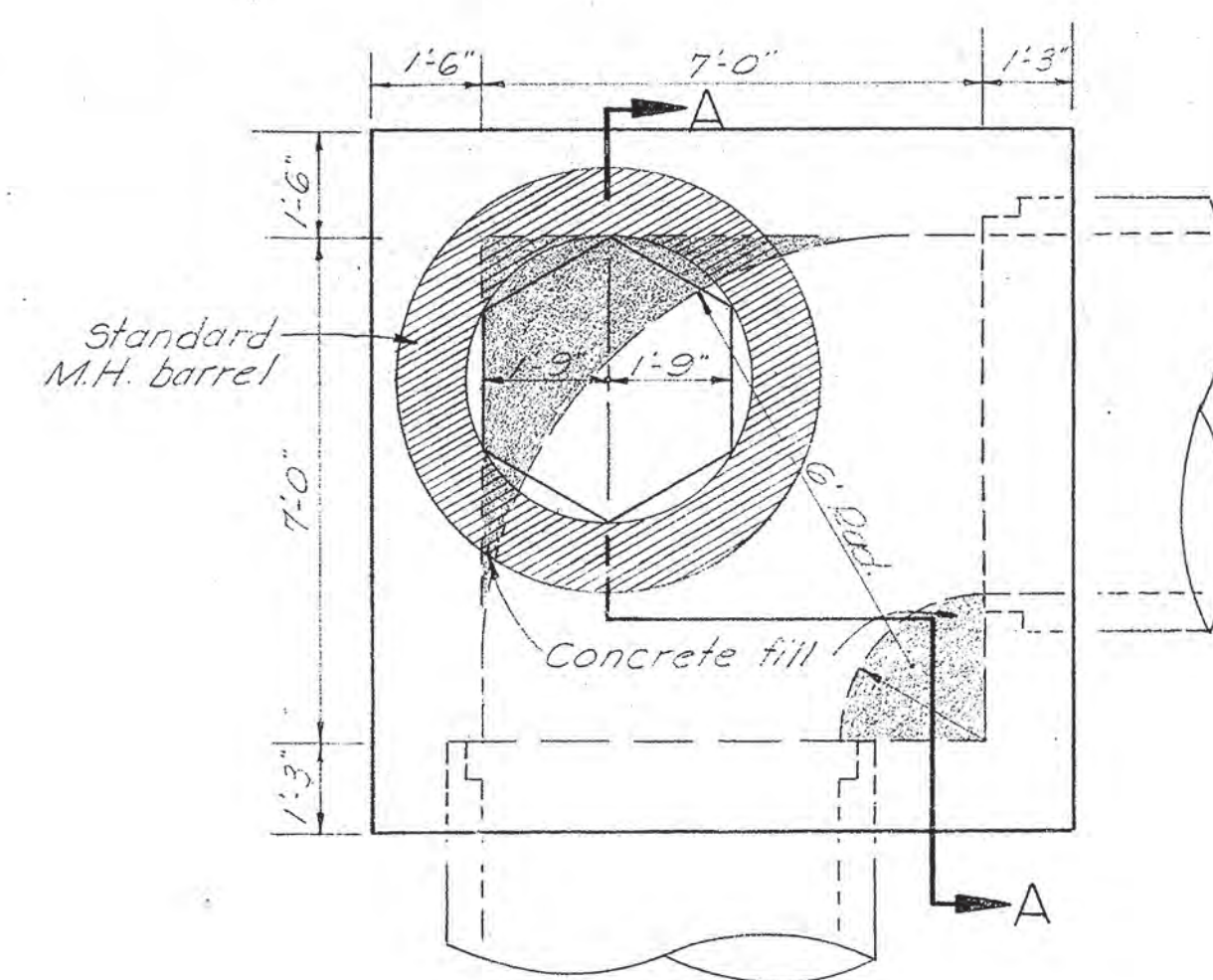
CONCRETE HEADWALL
DETAILS
Scale: 3/4"=1'-0"



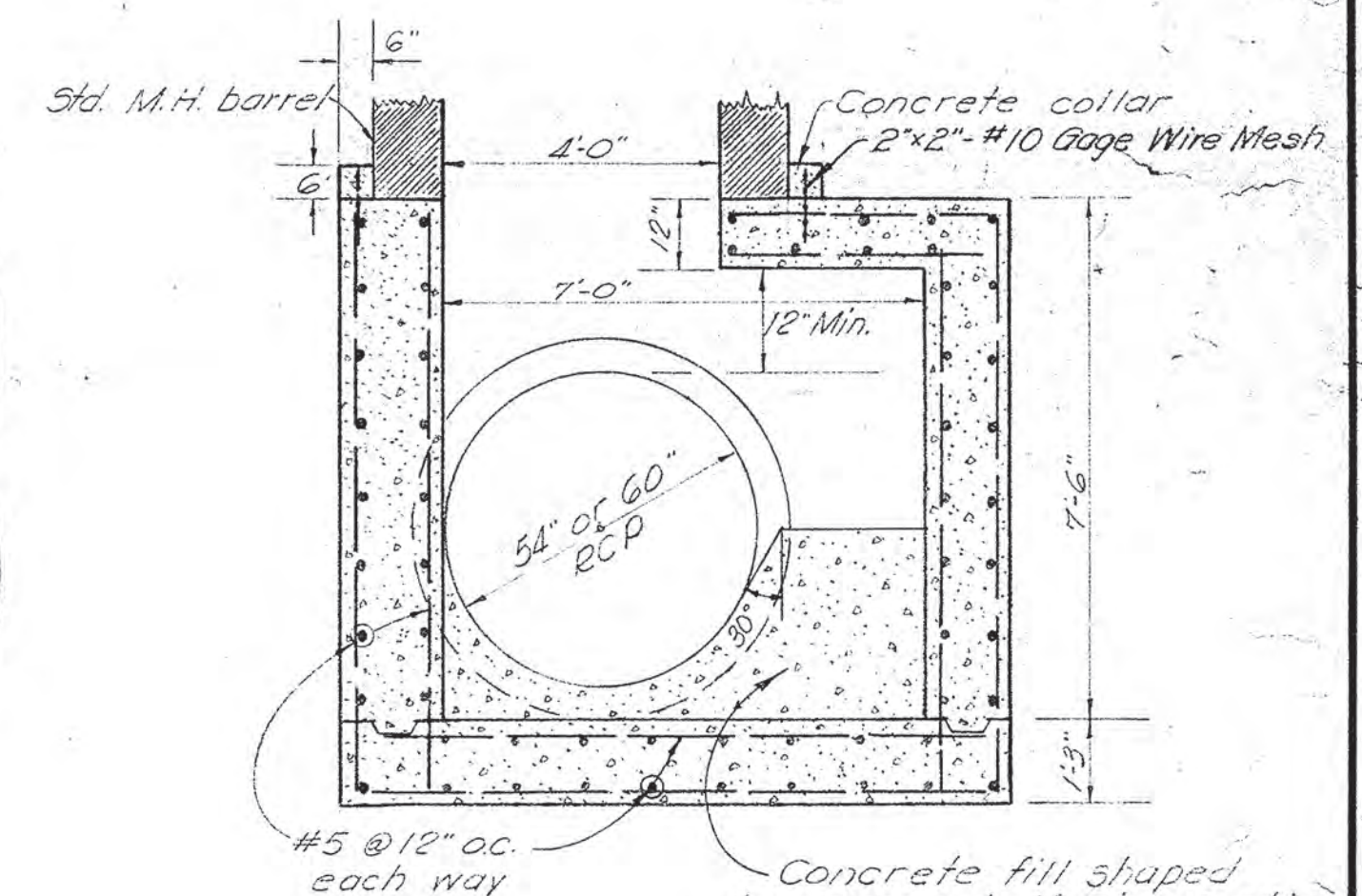
DETAIL-PIPE ENCASEMENT
Scale: 3/8"=1'-0"



DETAIL-PIPE ENCASEMENT
Scale: 3/4"=1'-0"



PLAN



SECTION A-A

SPECIAL MANHOLE DETAILS
Scale: 3/8"=1'-0"

Concrete fill shaped to approx. half pipe section around bend. (Large areas may be filled with brick or concrete blocks set in mortar and shaped to finish section with min. 4" thick concrete.)

DESIGNED:	BY	DATE	APPROVED: <i>Abbott</i>
DRAWN:			P. B. H. & M.
CHECKED:			DATE: May 1960

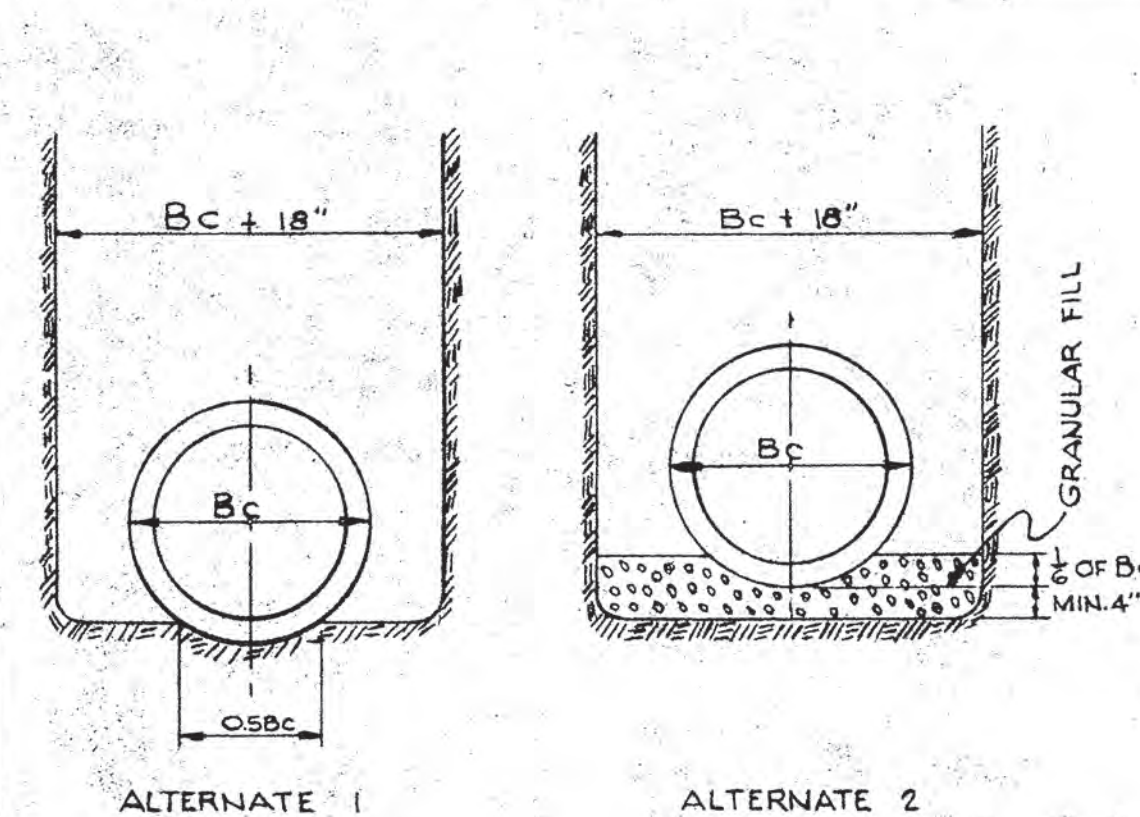
PARISH OF EAST BATON ROUGE, LA.
DEPARTMENT OF PUBLIC WORKS
GREATER BATON ROUGE CONSOLIDATED SEWERAGE DISTRICT

SPECIAL DETAILS

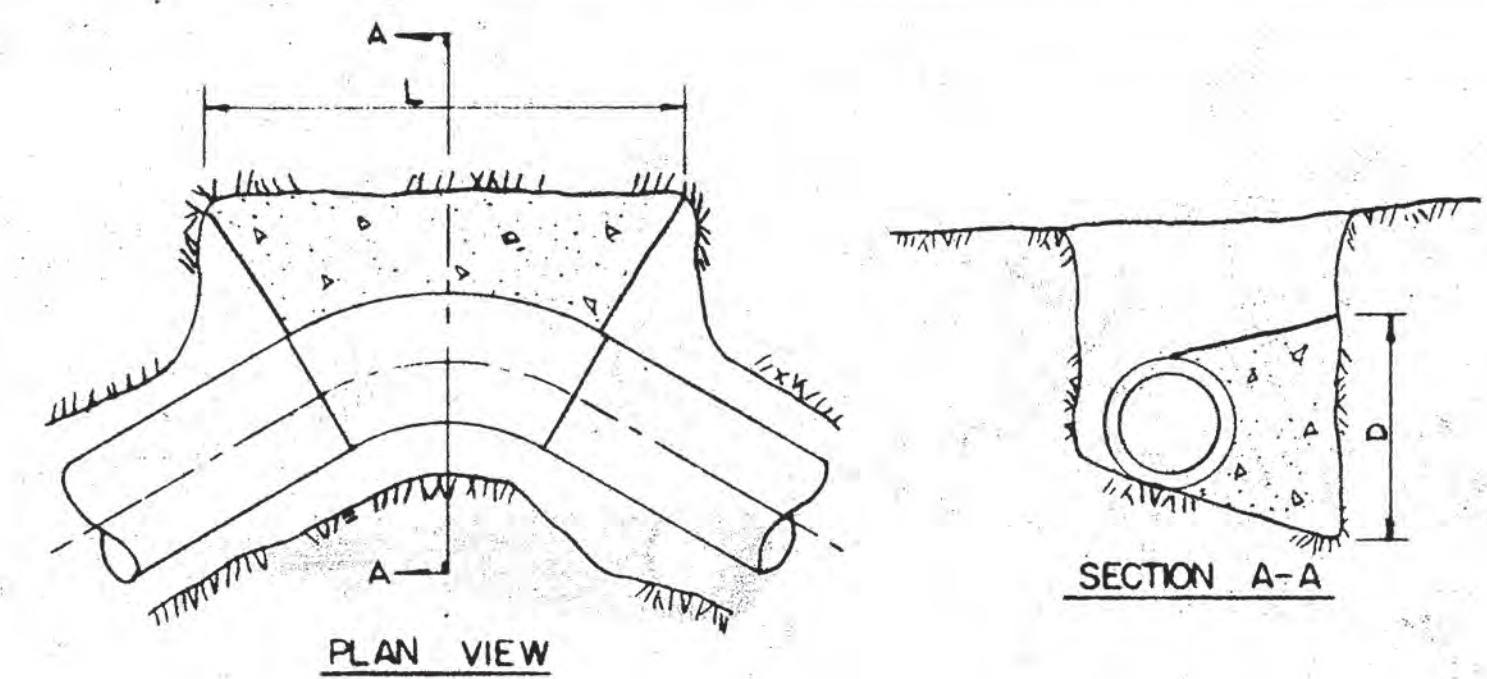
REVISIONS	
H.K.S.	MONOLITHIC LINED TUNNEL NOTE 3-14-61

CONTRACT CSD-53
DATE: MAY 9, 1960

SCALE
SHEET 11 OF 14

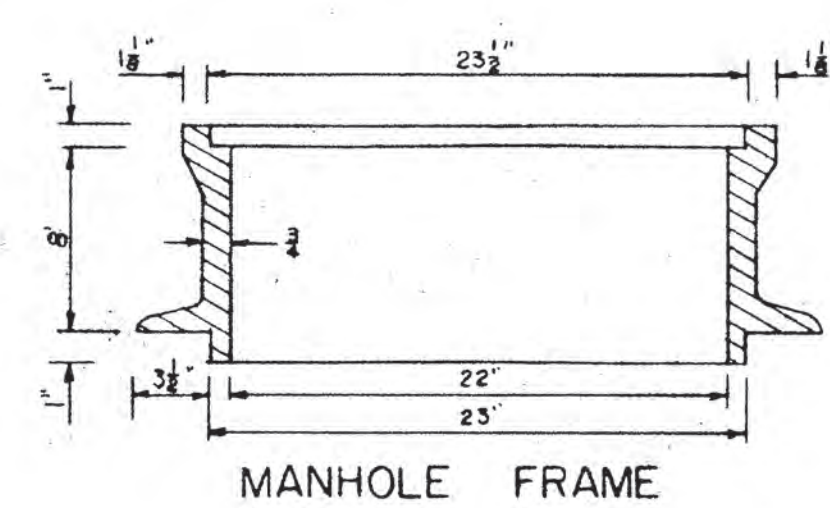


ALTERNATE 1 ALTERNATE 2
ORDINARY BEDDING (CLASS C)
 Contractor shall furnish this type of bedding with normal pipe installation

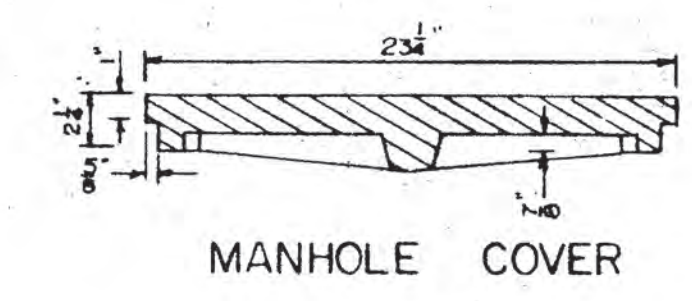


TYPICAL ELBOW BLOCKING DESIGN FOR FORCE MAINS

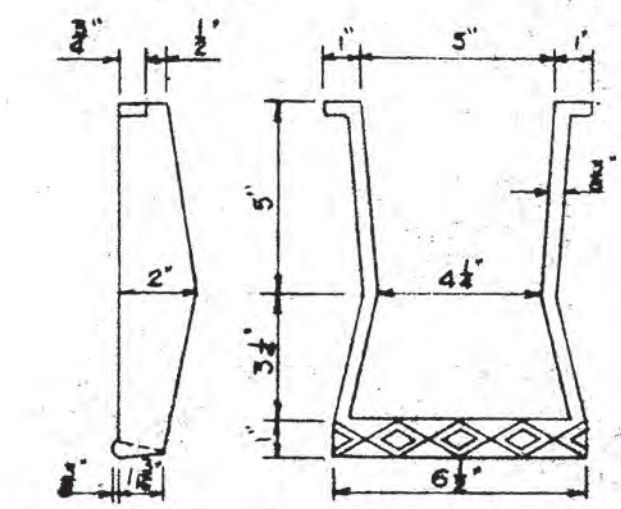
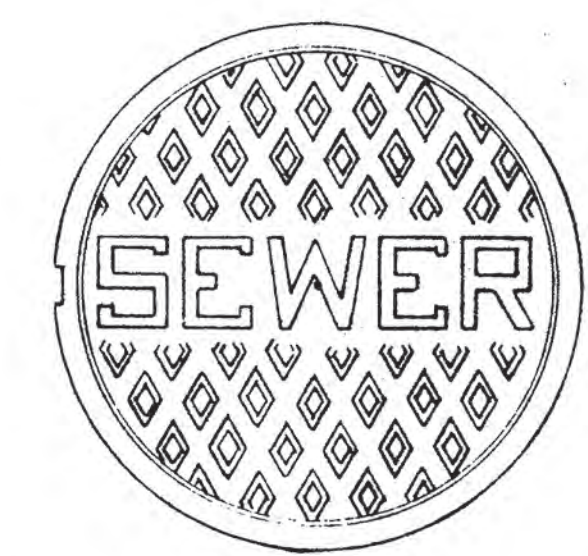
PIPE SIZE	L	D
8"	1.5'	1.5'
10"	1.5'	1.5'
12"	2.5'	2'
16"	3'	2'
18"	3'	2.5'
20"	3'	2.5'
24"	3'	3'
30"	4'	3.5'
36"	4'	4'



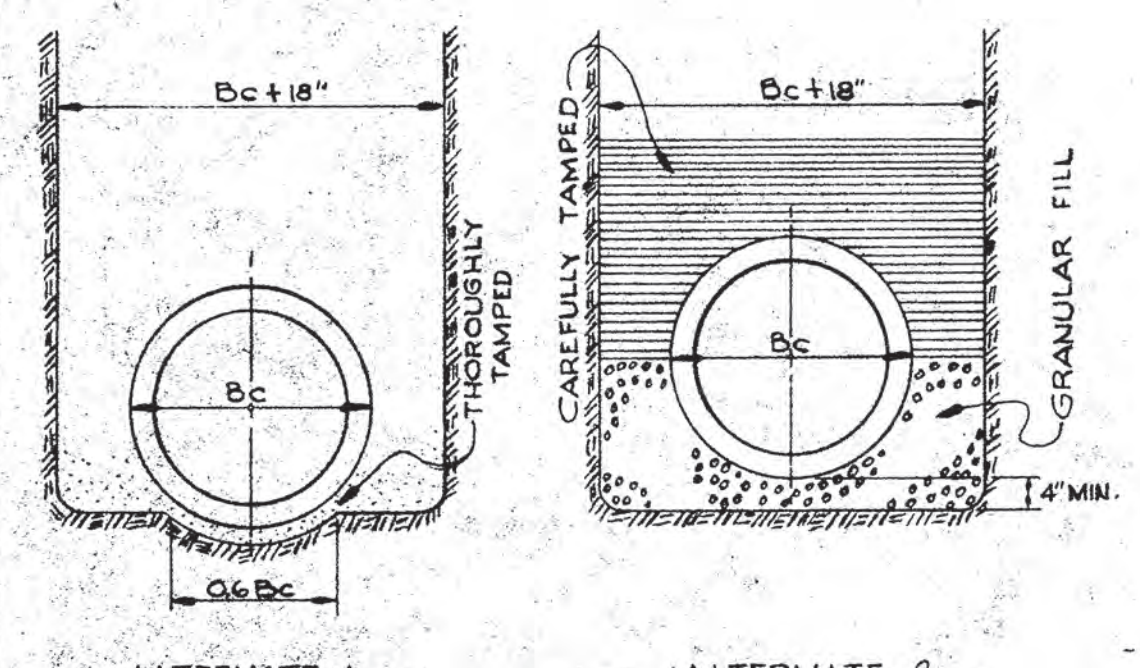
MANHOLE FRAME



MANHOLE COVER

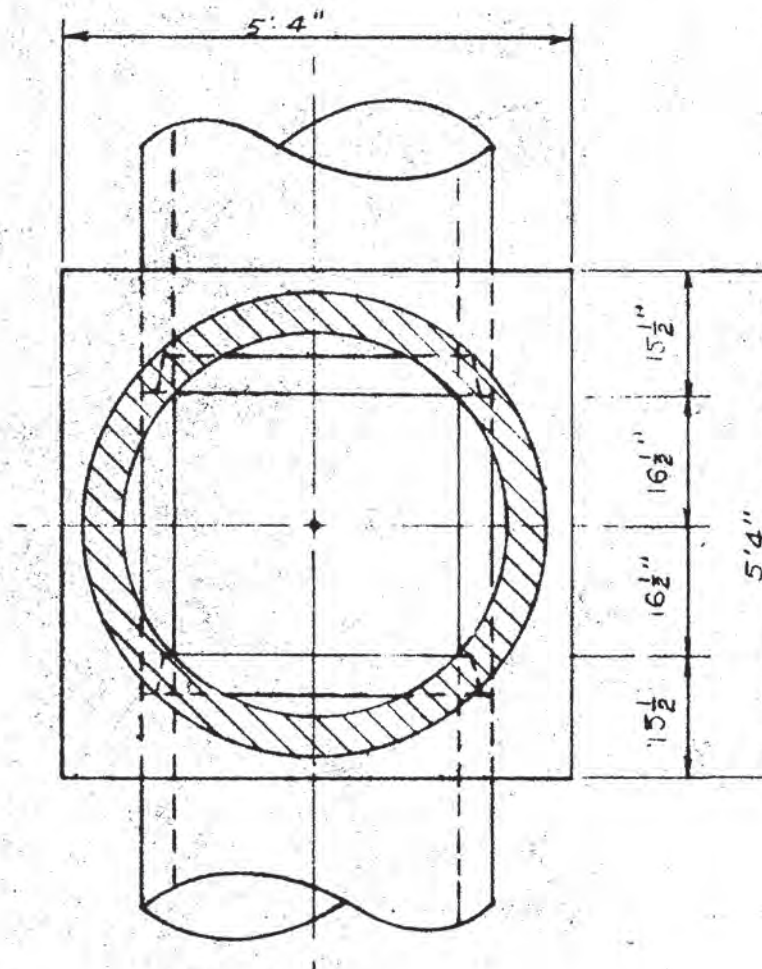
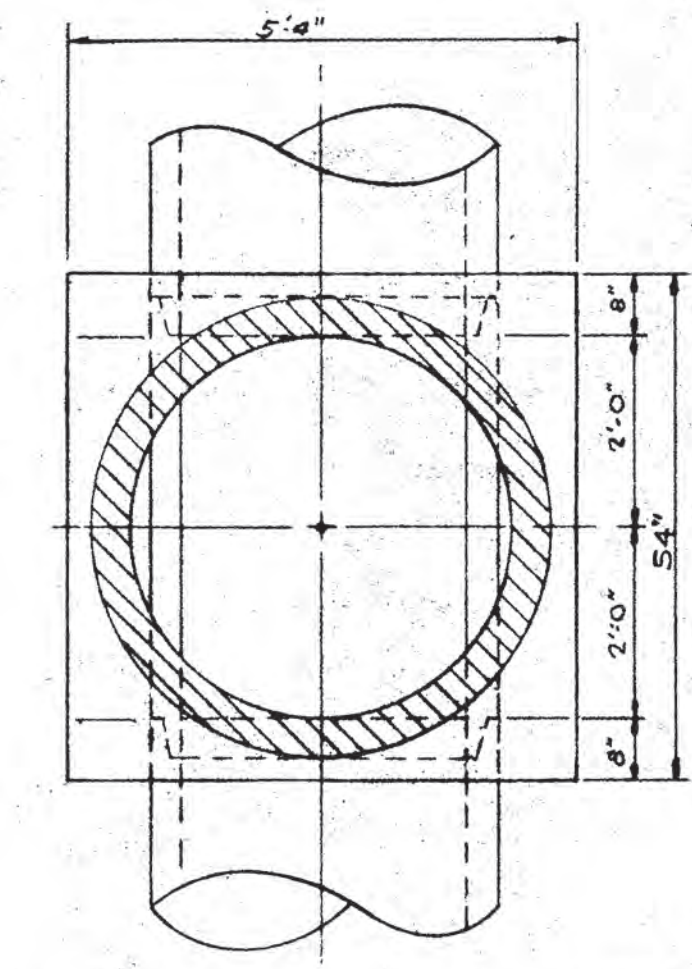
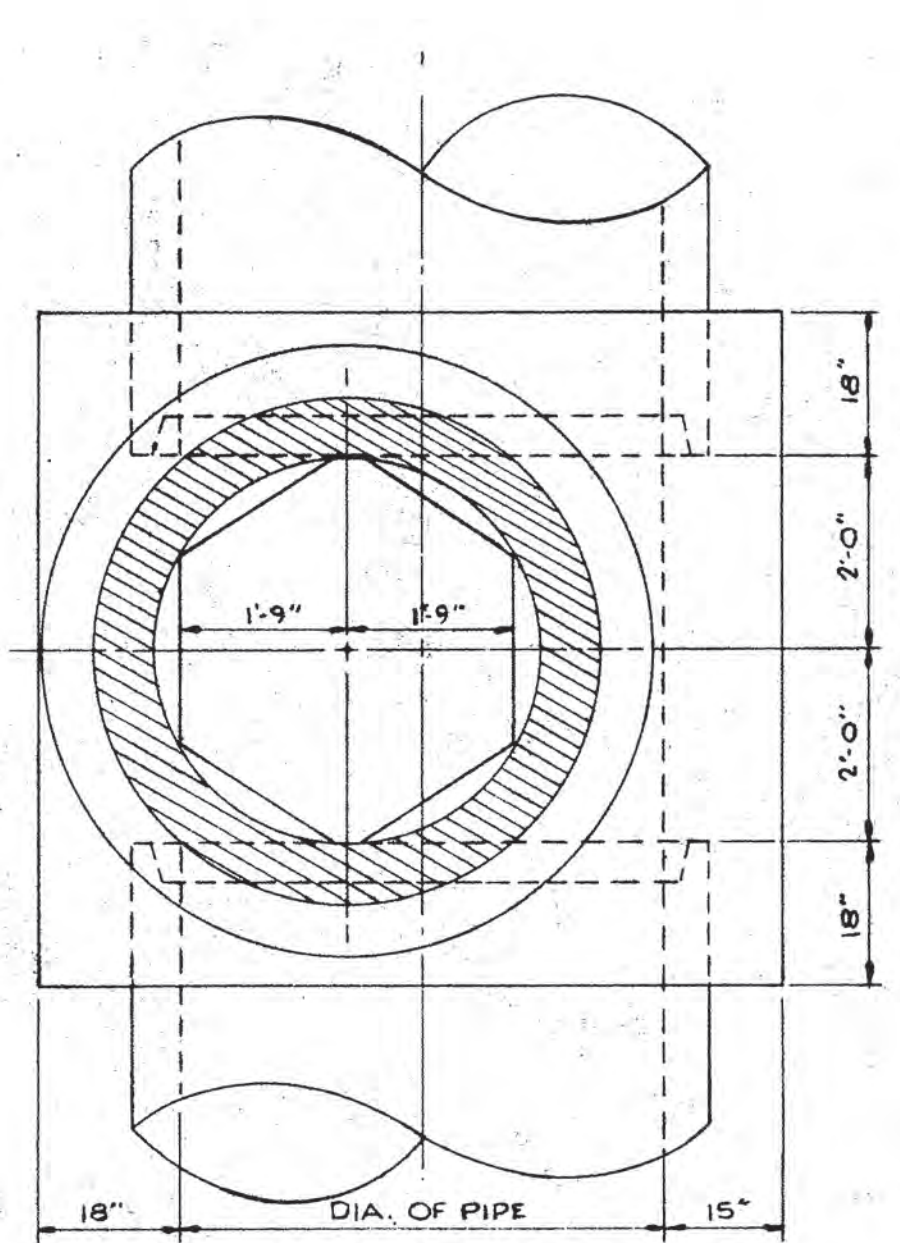


DETAIL OF STEP

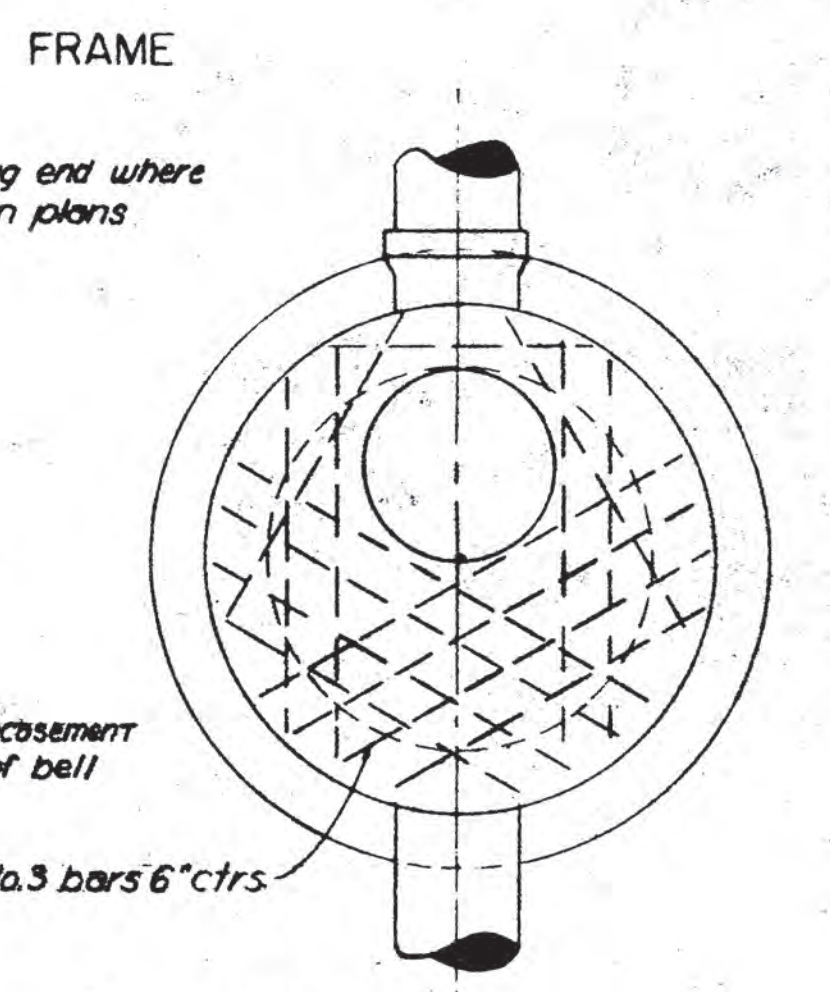
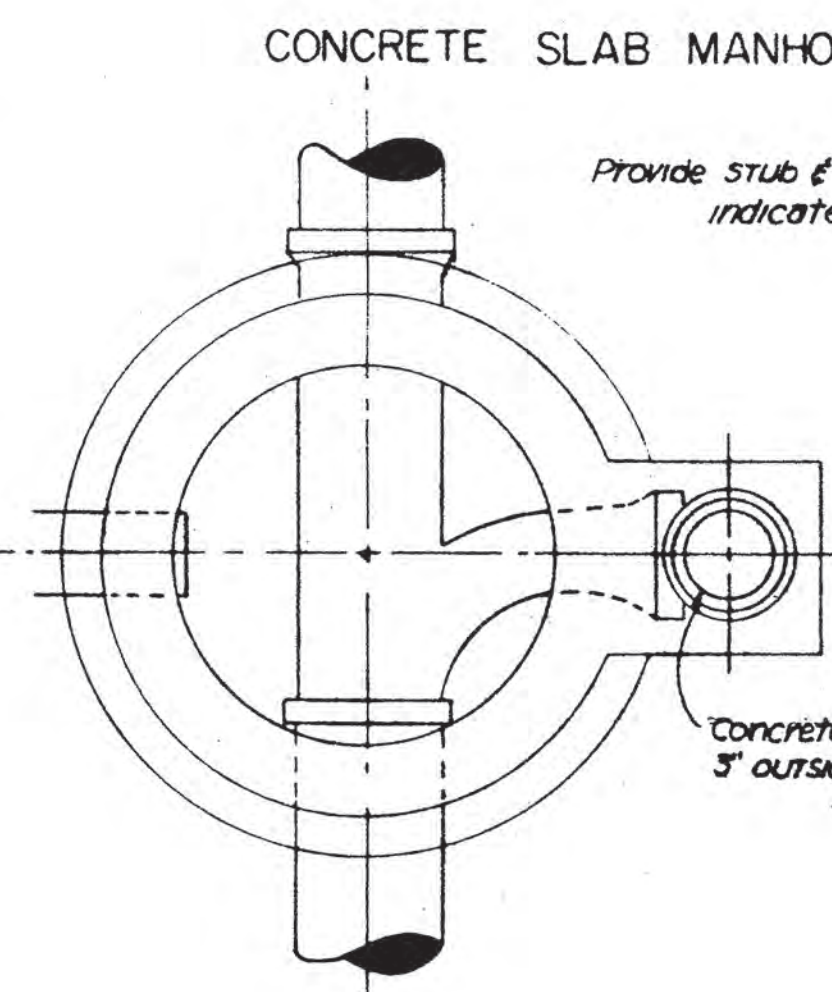
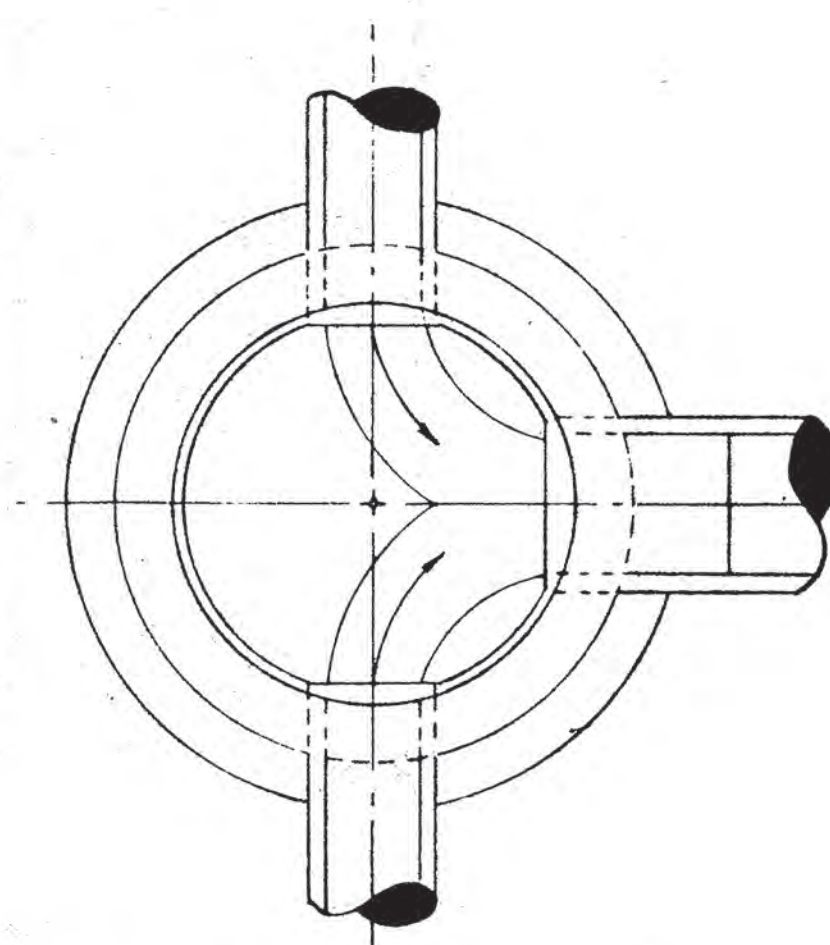


ALTERNATE 1 ALTERNATE 2
FIRST CLASS BEDDING (CLASS B)
 To be ordered by Engineer where required or where shown on plans. When shown on plans cost of bedding is to be included in unit price bid for sewer line construction.

TYPES OF TRENCH BEDDING



Concrete slab manhole frame
 For concrete pavement 1/2" For asphalt pavement

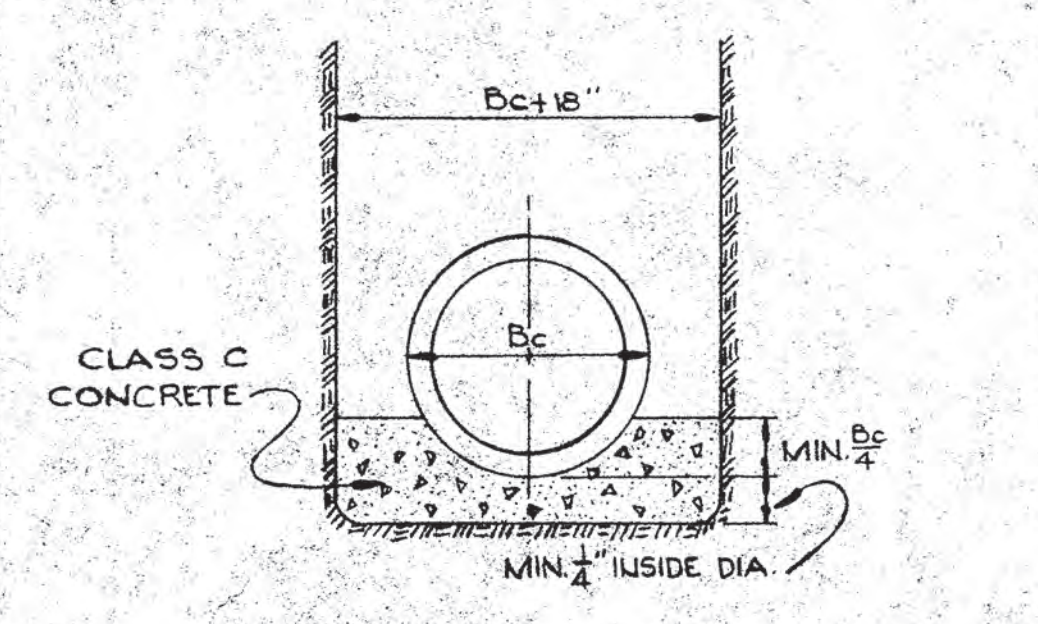


CONCRETE SLAB MANHOLE FRAME

Provide stub & plug end where indicated on plans

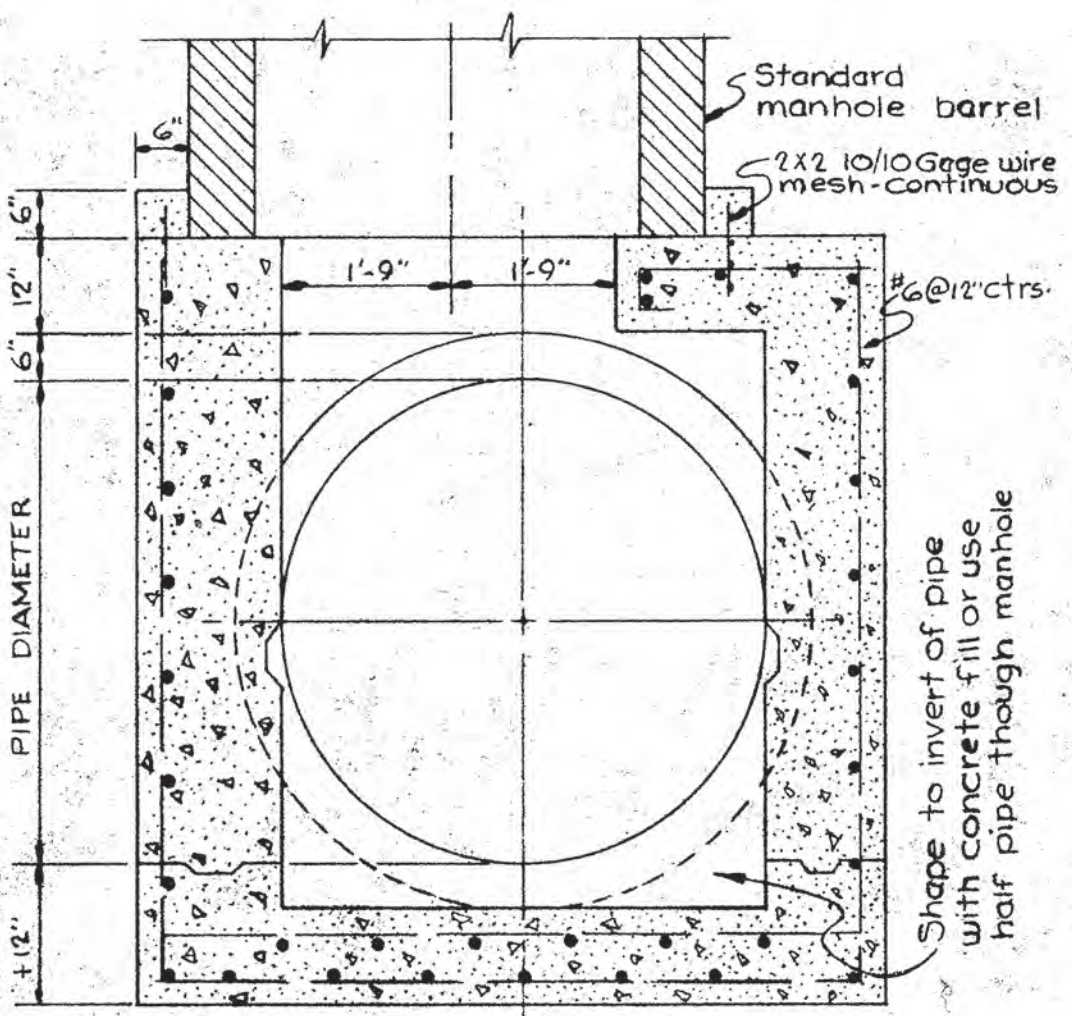
Concrete encasement 3" outside of bell

No. 3 bars 6" ctrs

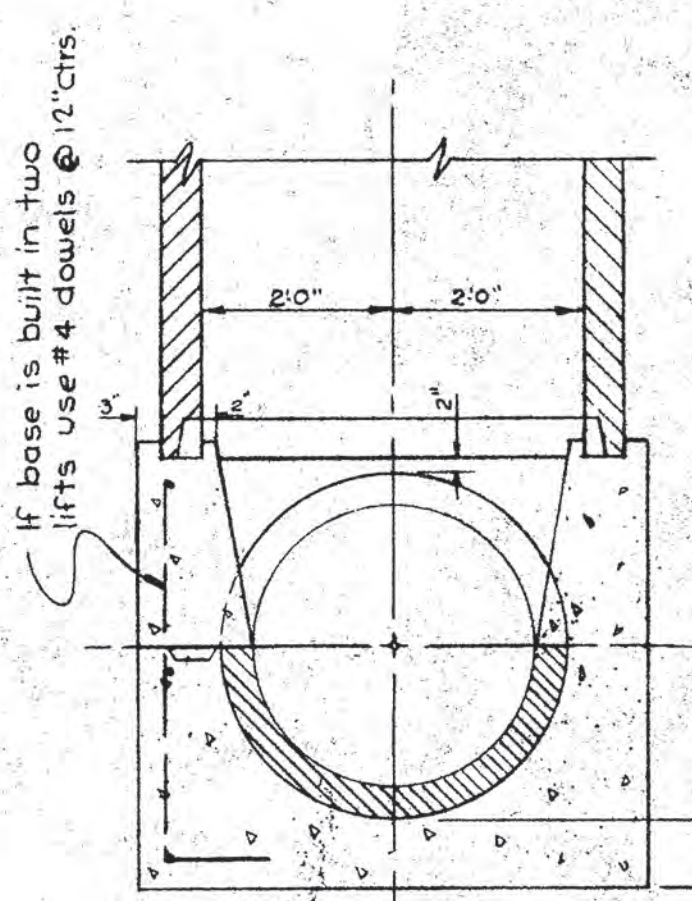


CONCRETE CRADLE

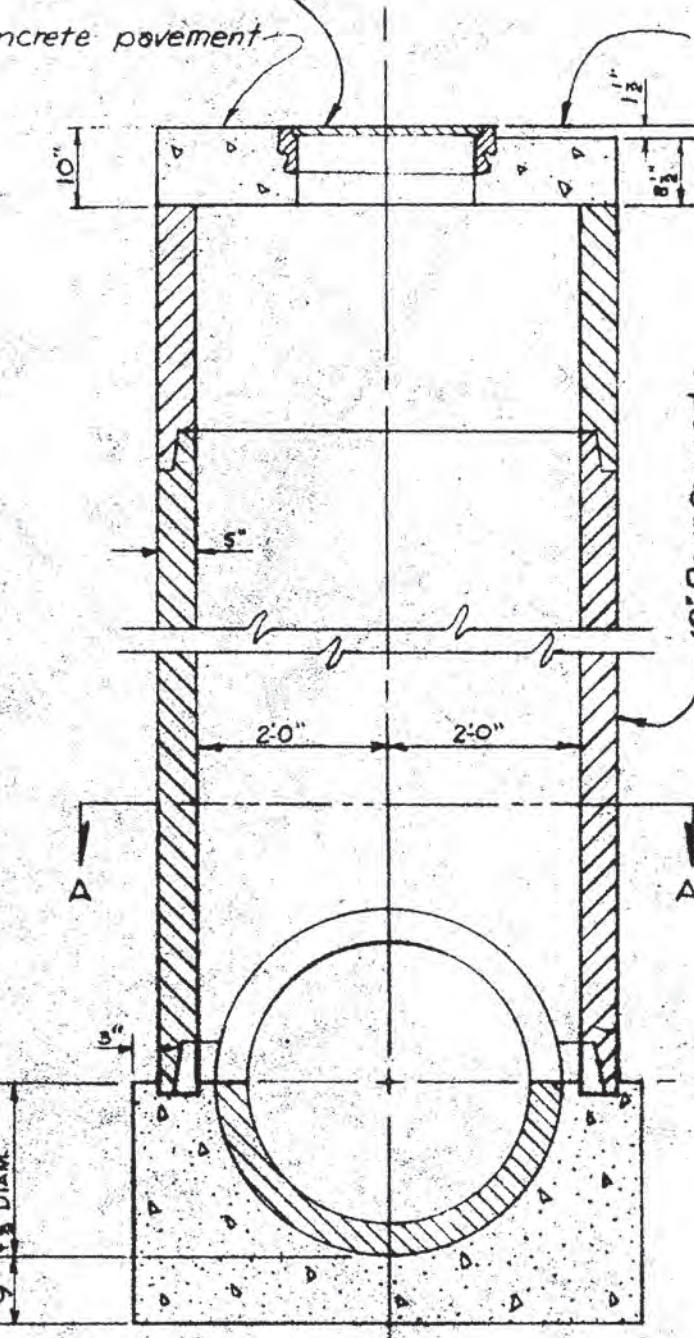
To be ordered by Engineer where required or where shown on plans. When shown on plans cost of bedding is to be included in unit price bid for sewer line construction.



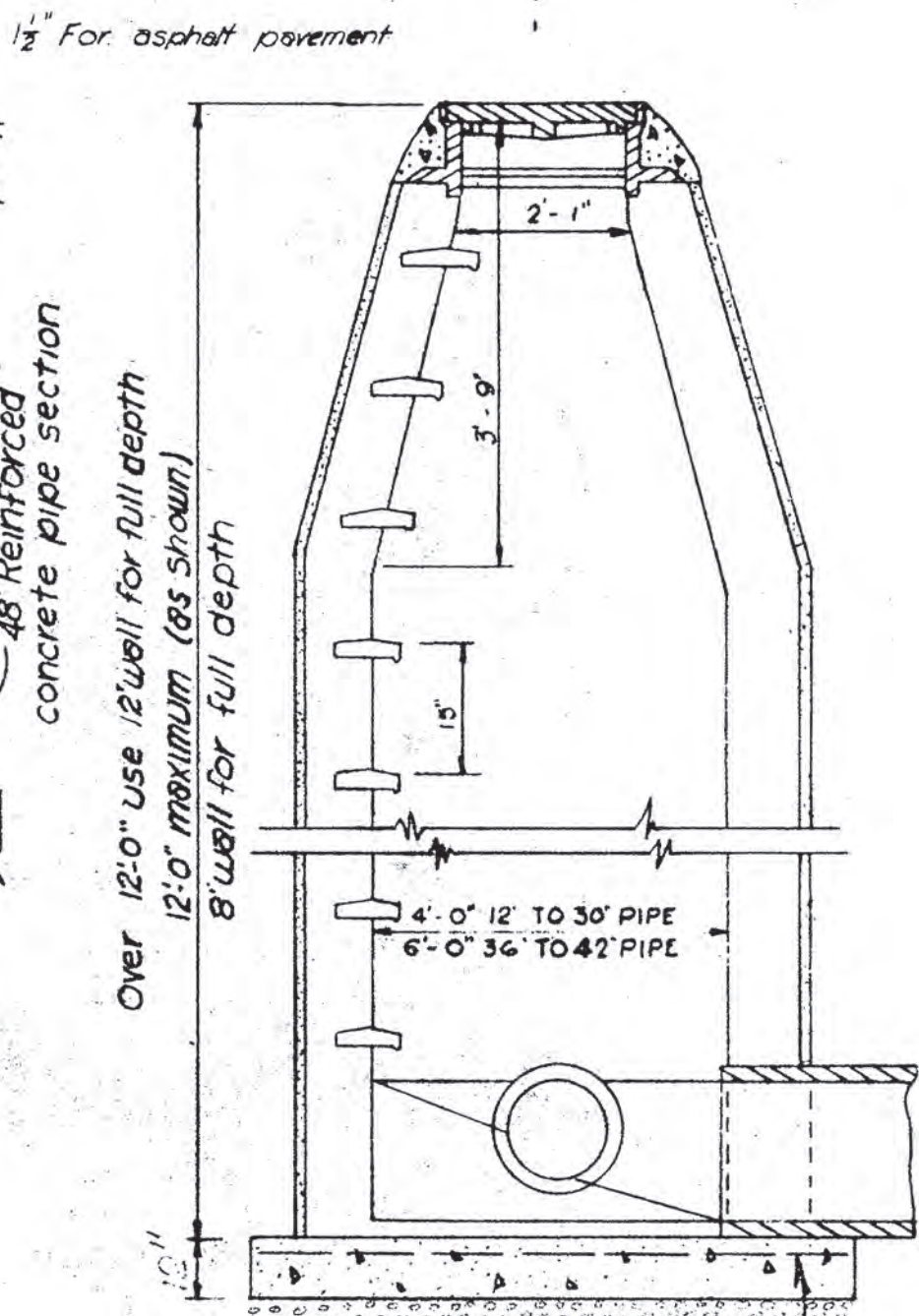
TYPICAL MANHOLE FOR 48" AND LARGER SEWERS
 SCALE 1/2" = 1'-0"



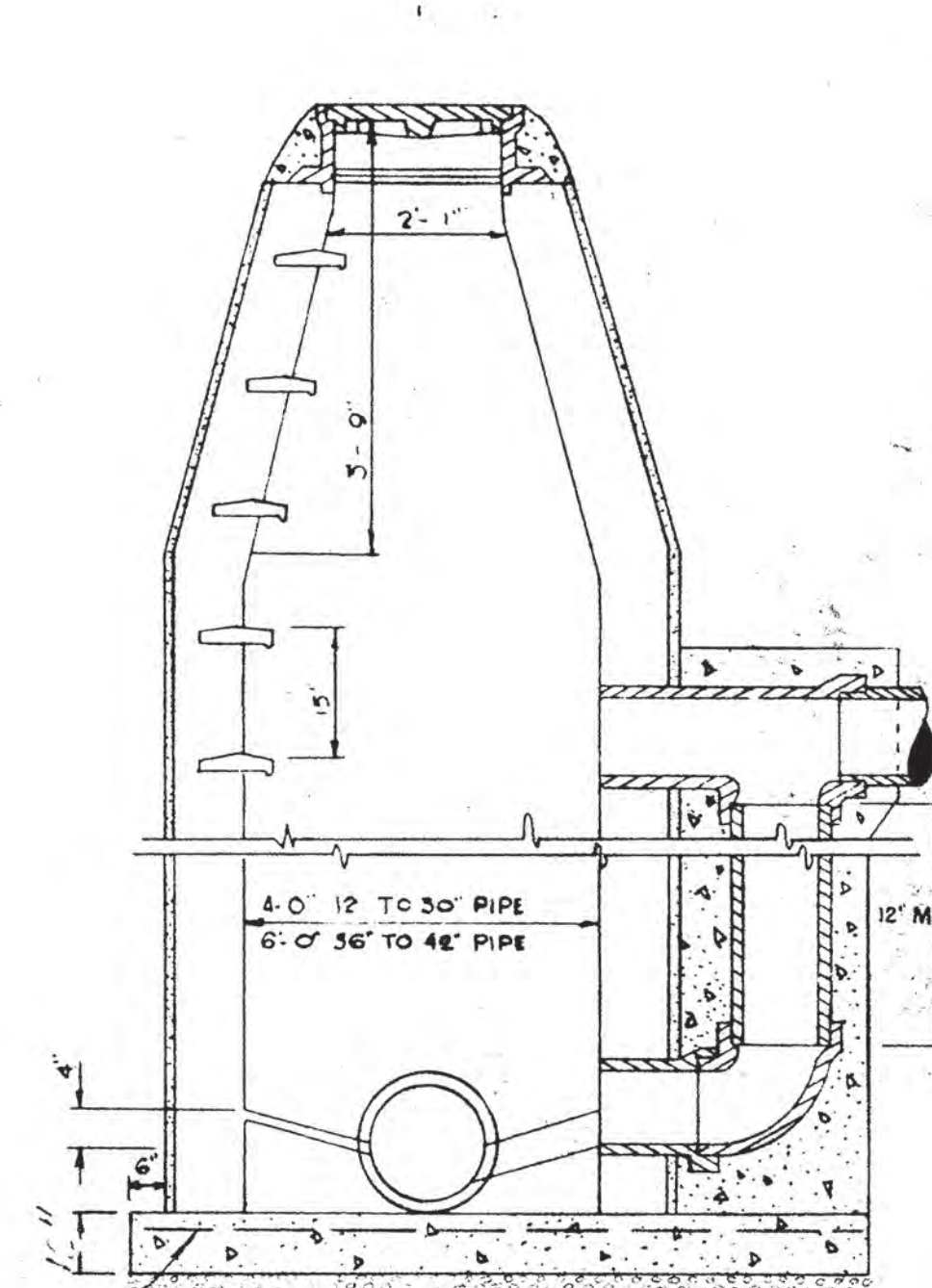
ALTERNATE MANHOLE BASE PRECAST MANHOLE FOR SEWERS 42" AND UNDER
 SCALE 1/2" = 1'-0"



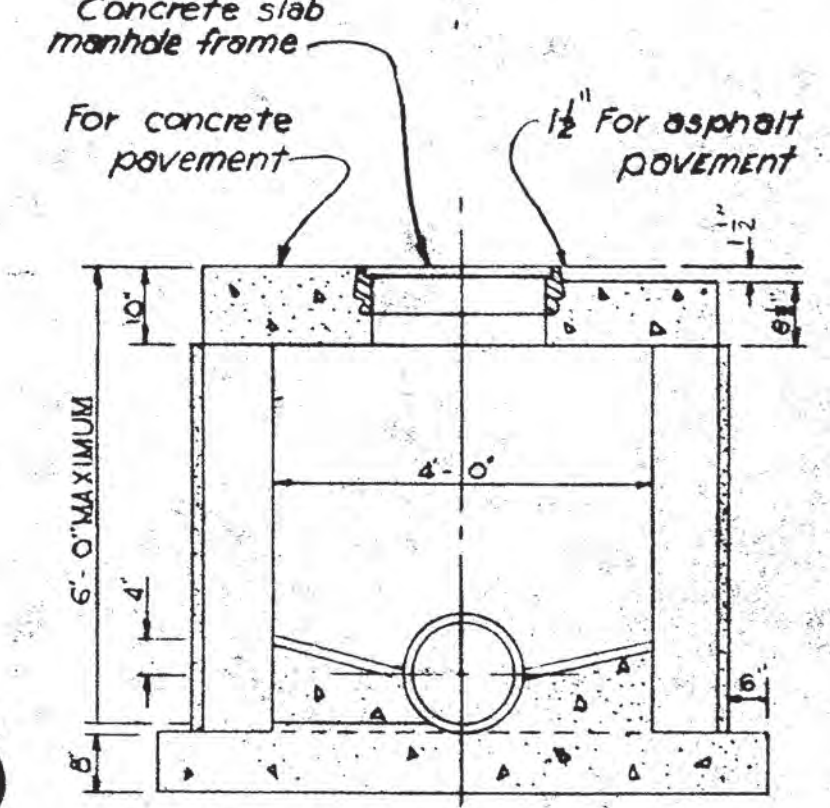
SECTION



MANHOLE - DEEP
 Scale 1/2" = 1'-0"



DROP MANHOLE
 Scale 1/2" = 1'-0"



SHALLOW MANHOLE
 Scale 1/2" = 1'-0"

NOTE:
 Manhole walls, except precast concrete, shall be constructed of brick, clay radial tile or radial concrete block. Outside walls to be plastered with 1/2" thick portland cement mortar and inside to be coated with a wash of neat cement. TOP OF MANHOLE ELEVATIONS.
 1. Where in street tops shall be set level with top of pavement.
 2. Where not in street tops shall be set of least 6 inches above the level of the surrounding ground except where flood levels require them to be higher.

DESIGNED:	BY	DATE	APPROVED:
DRAWN:	J.D.A.	Aug. 4, 1960	P.B.H. & M.
CHECKED:			DATE: Aug. 15, 1960

PARISH OF EAST BATON ROUGE, LA.
 DEPARTMENT OF PUBLIC WORKS
 GREATER BATON ROUGE CONSOLIDATED SEWERAGE DISTRICT

SANITARY SEWER AND MANHOLE DETAILS

REVISIONS	
H.K.S.	TOP MH. ELEV. NOTE 12-8-61

CONTRACT CSD-S3
 DATE: AUG. 4, 1960

SCALE AS NOTED
 SHEET 12 OF 14