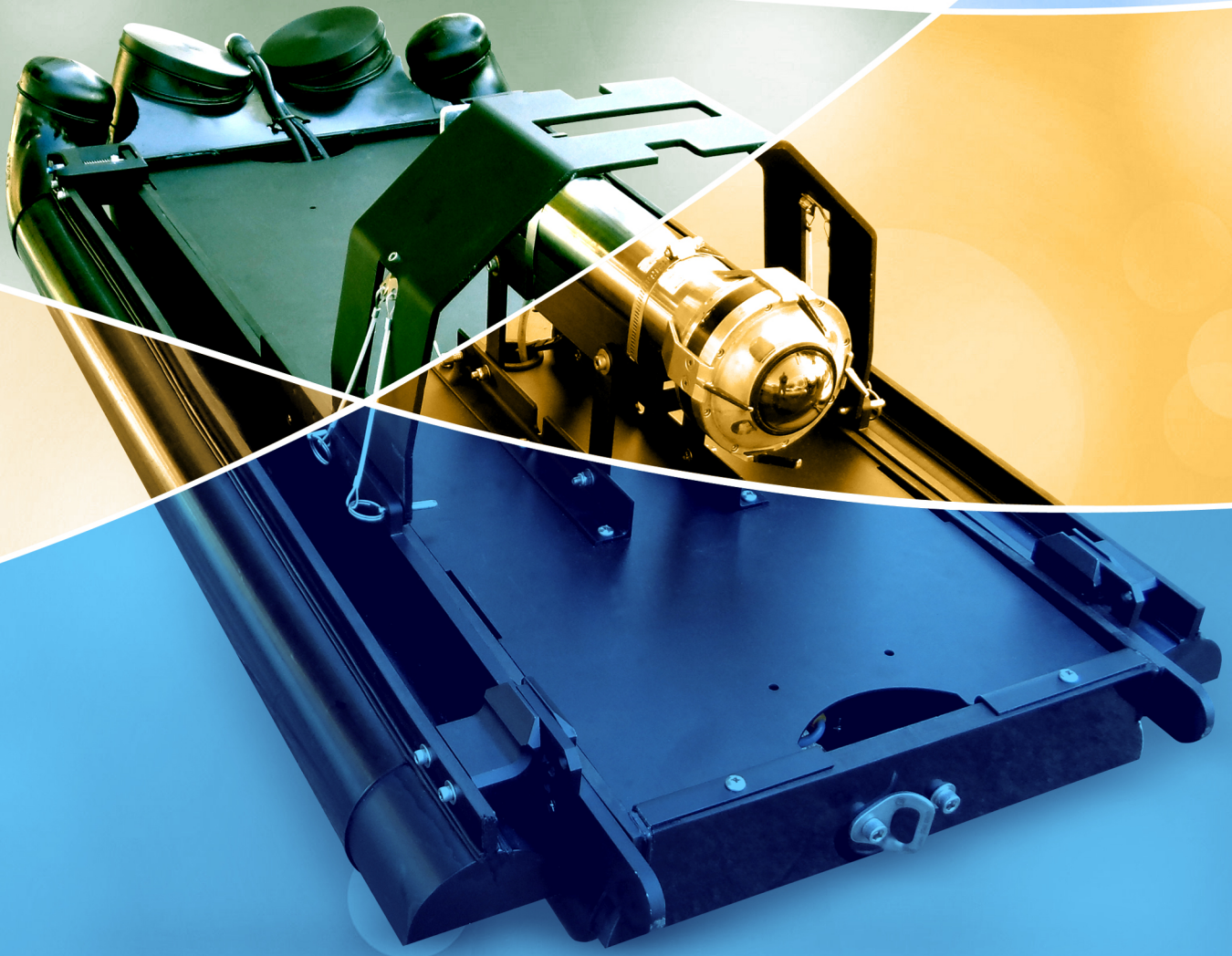




SolidFX

Inspection Report





Anytown, USA

Inspected November 16, 2018



SMH-11L901

SMH-11L092

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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

Mud Master

Sensor(s)

LIDAR

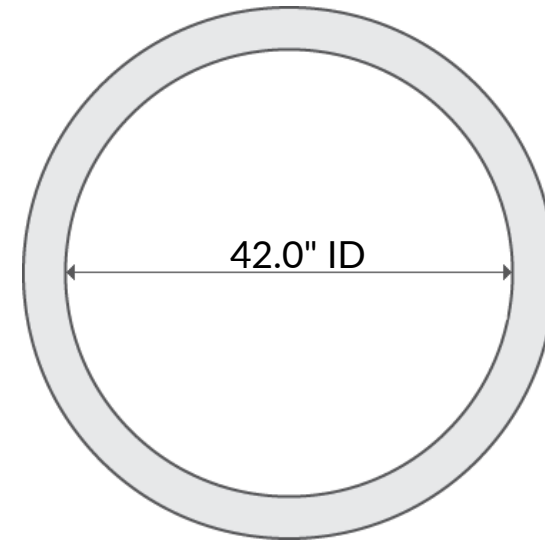
HD

SONAR

Inspection Details

Service Area:	ITO1
Segment Reference:	SMH-11L901 - SMH-11L092
Upstream Manhole:	SMH-11L901
Downstream Manhole:	SMH-11L092
Direction:	Upstream
Distance:	130.2
Scan Date:	November 16, 2018
Operator Notes:	None
Processing Notes:	Advanced corrosion present throughout the inspection

As-Built Dimensions



Document Details

Report Prepared January 17, 2019

Source Reference 58026



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Corrosion/Lidar Metrics

Corroded Volume (cubic in):	143948.4
Wall/As-built (%):	85.9
Average Wall Loss (%):	14.1

Sediment and Corrosion Graphs(0'-130')

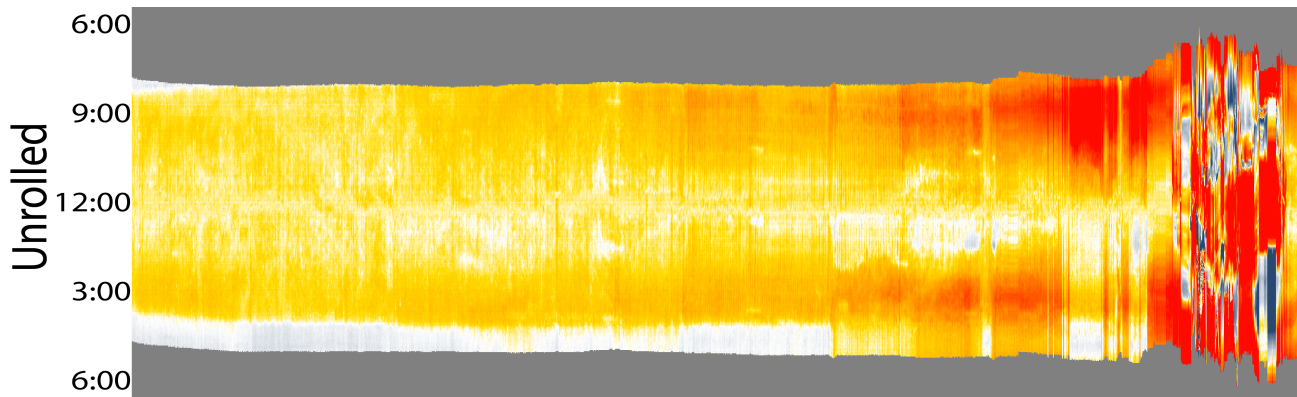
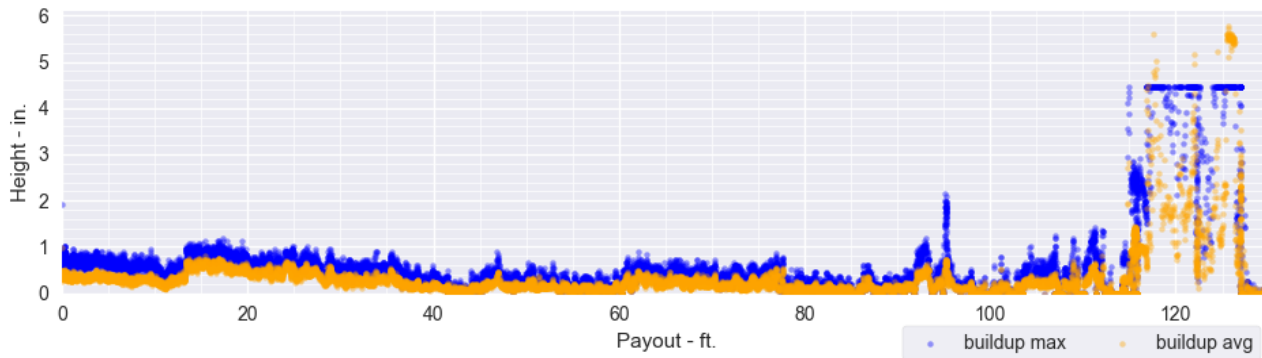
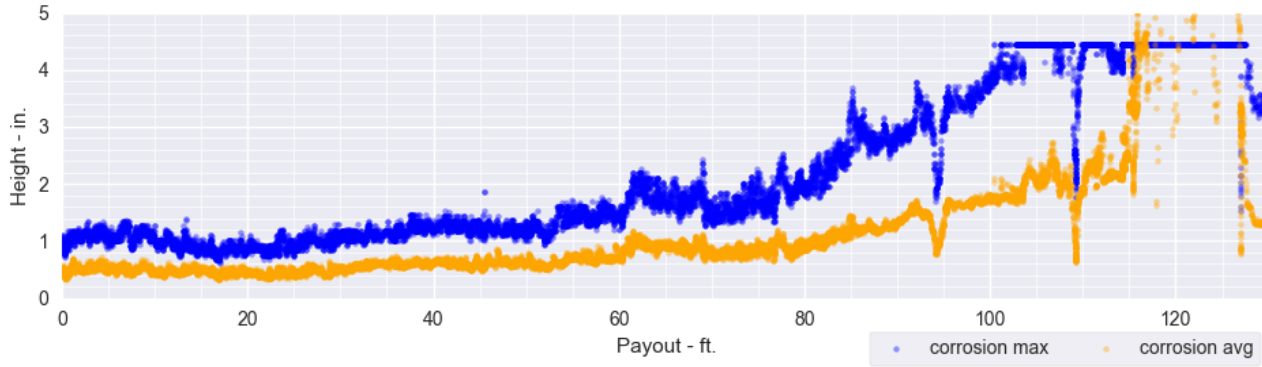
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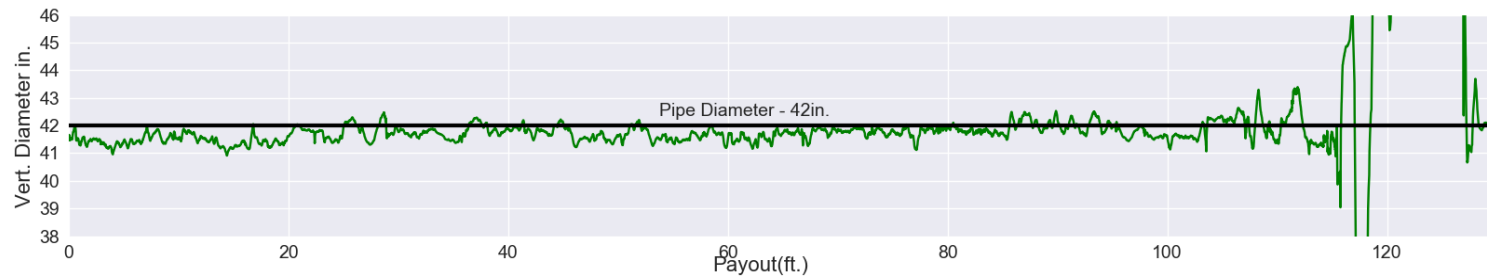
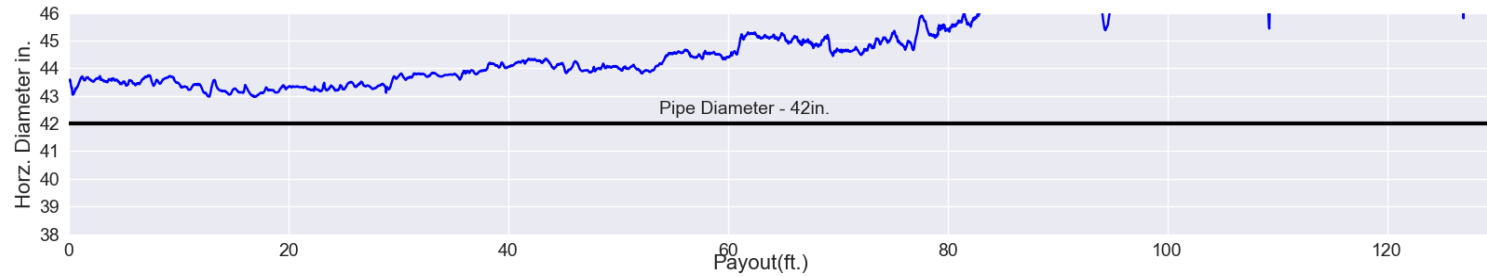
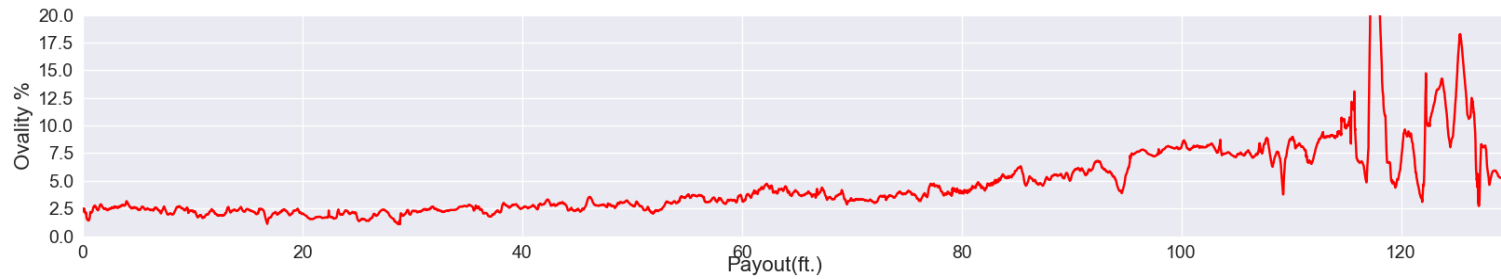


Pipe Ovality Graphs

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Summary Table

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Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup
0.0'	Start	Start of inspection	0.4"	0.6"	0.9"	1.0"	1.9"
12.9'	Material Loss	Material loss at joint	0.5"	0.5"	0.9"	0.4"	0.5"
25.0'	Regular Interval		0.4"	0.5"	0.8"	0.4"	0.7"
28.2'	Material Loss	Material loss at joint	0.4"	0.6"	0.9"	0.2"	0.4"
45.3'	Material Loss	Material loss at joint	0.6"	0.9"	1.3"	0.1"	0.2"
50.0'	Regular Interval		0.6"	0.7"	1.0"	0.2"	0.4"
60.9'	Material Loss	Material loss at joint	1.0"	1.1"	1.8"	0.3"	0.6"
75.0'	Regular Interval		0.8"	1.2"	1.6"	0.1"	0.3"
77.2'	Material Loss	Material loss at joint	1.1"	1.7"	2.2"	0.1"	0.1"
94.0'	Material Loss	Material loss at joint	1.0"	1.7"	2.3"	0.2"	0.3"



Summary Table

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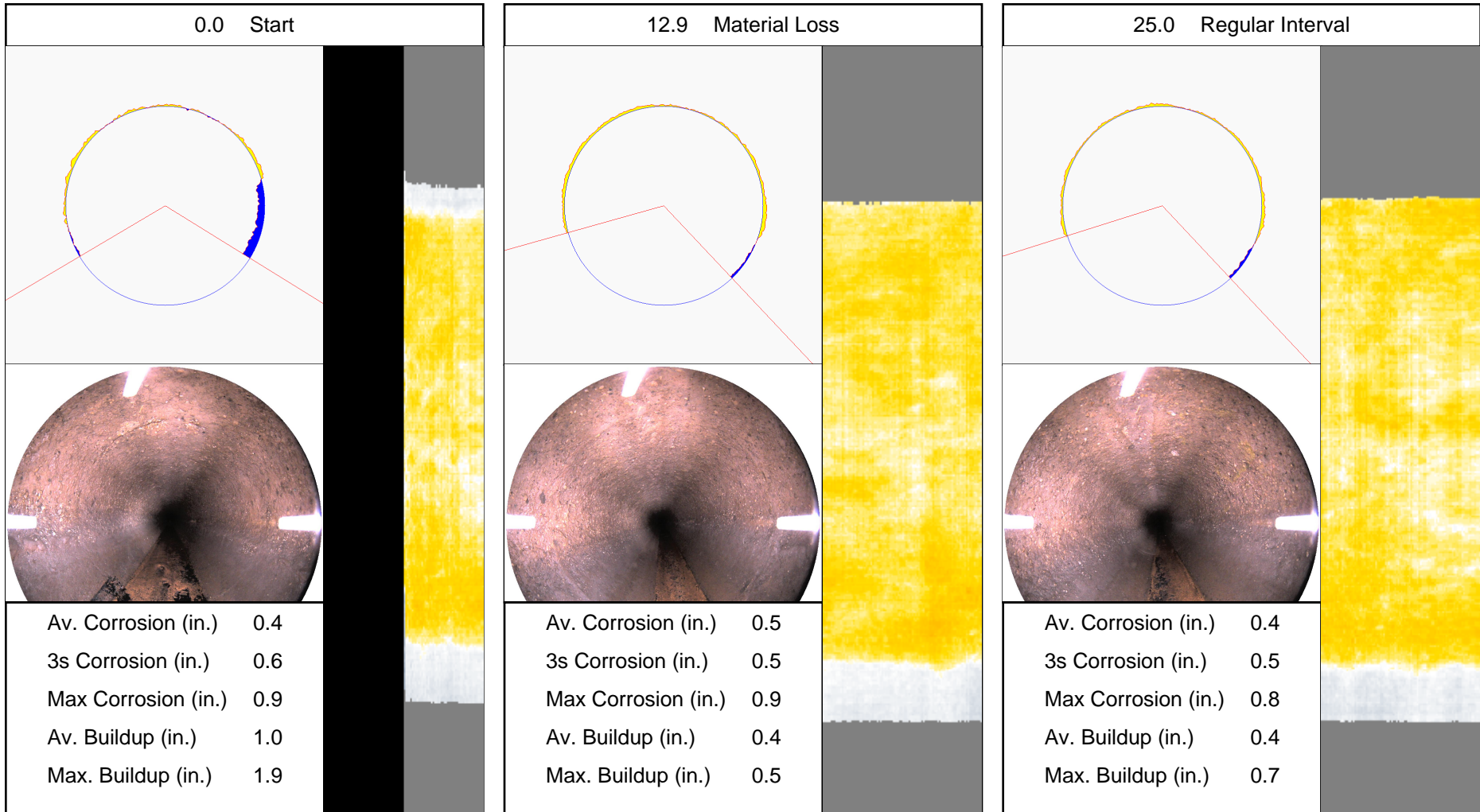


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Payout	Type	Note	Av. Corr.	3s Corr.	Max Corr.	Av. Buildup	Max Buildup
100.0'	Regular Interval		1.8"	3.0"	3.7"	0.0"	-0.0"
108.9'	Material Loss	Material loss at joint	1.6"	2.6"	3.5"	0.5"	0.9"
125.0'	Regular Interval		8.4"	18.7"	4.5"	1.4"	4.5"
130.2'	End	End of inspection	1.3"	2.4"	3.2"	0.1"	0.1"

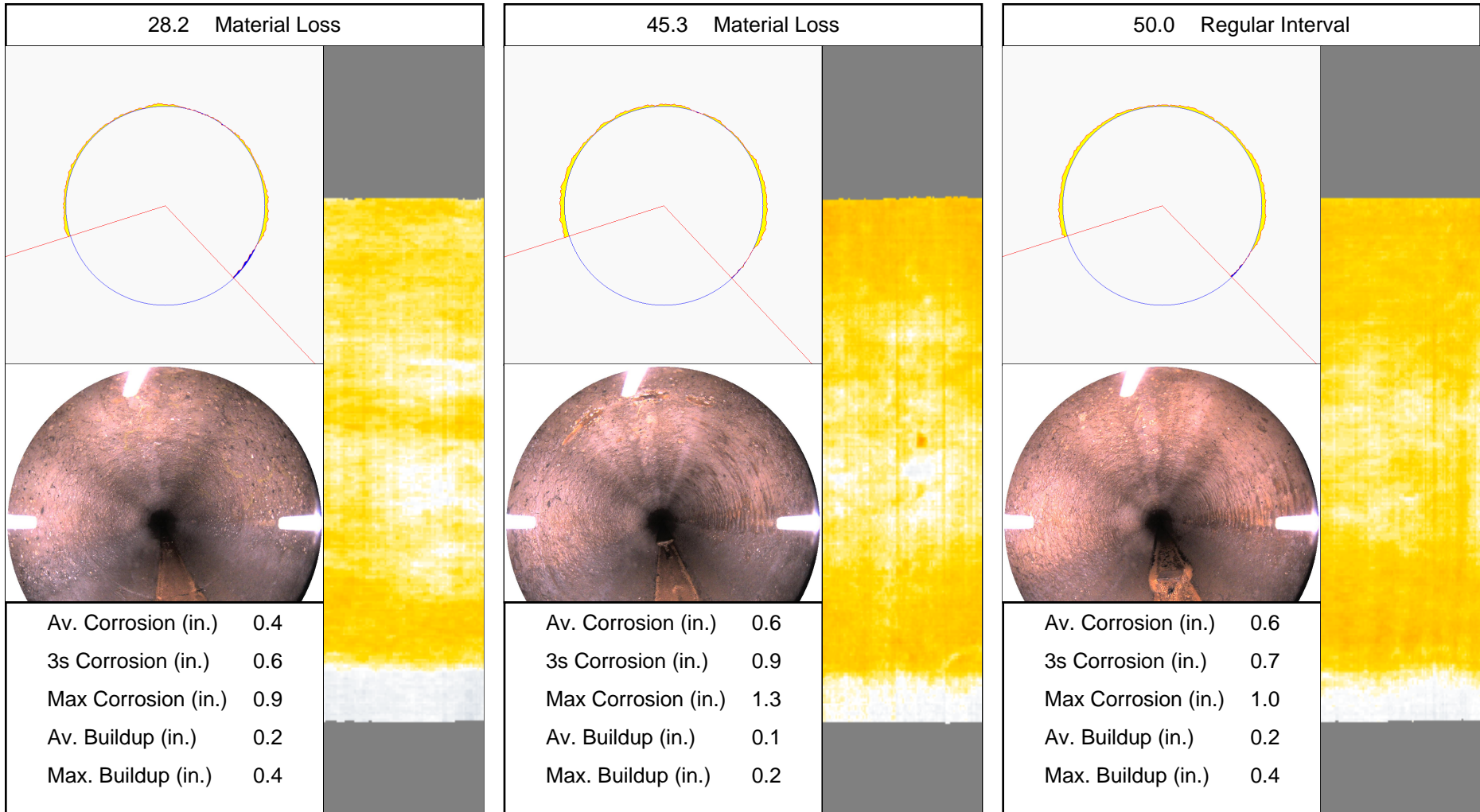


Distributed Cross-Sections



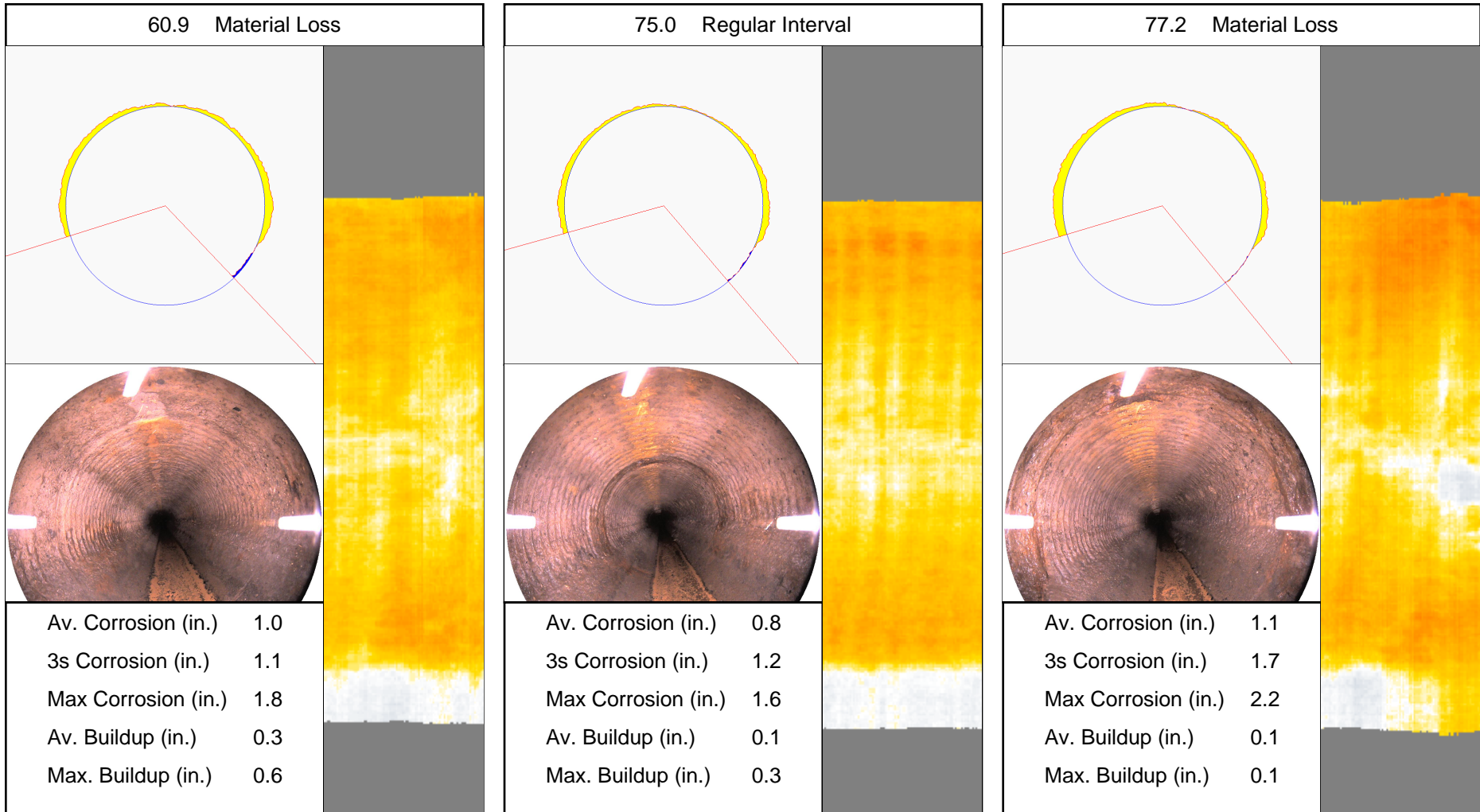


Distributed Cross-Sections



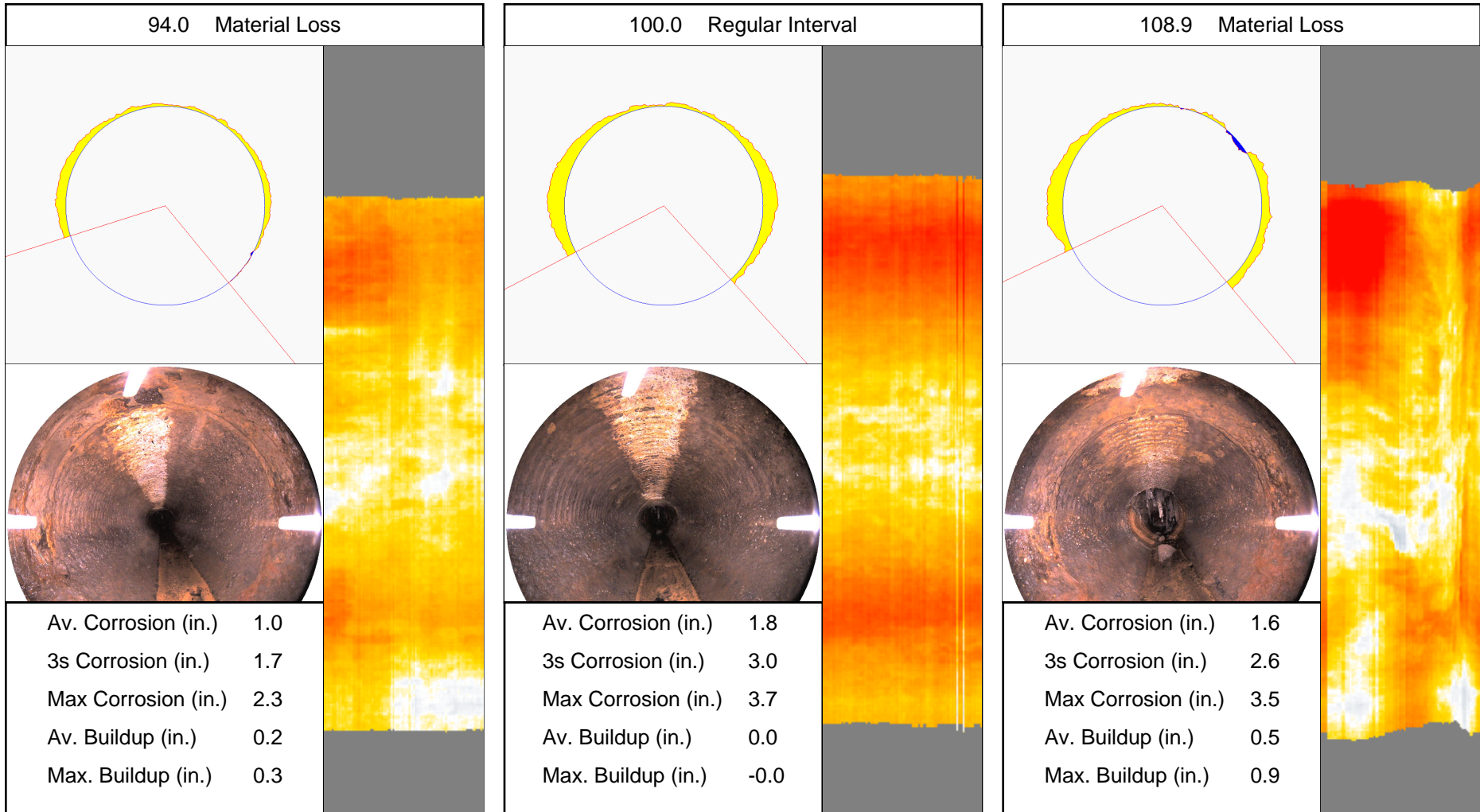


Distributed Cross-Sections





Distributed Cross-Sections



Anytown, USA

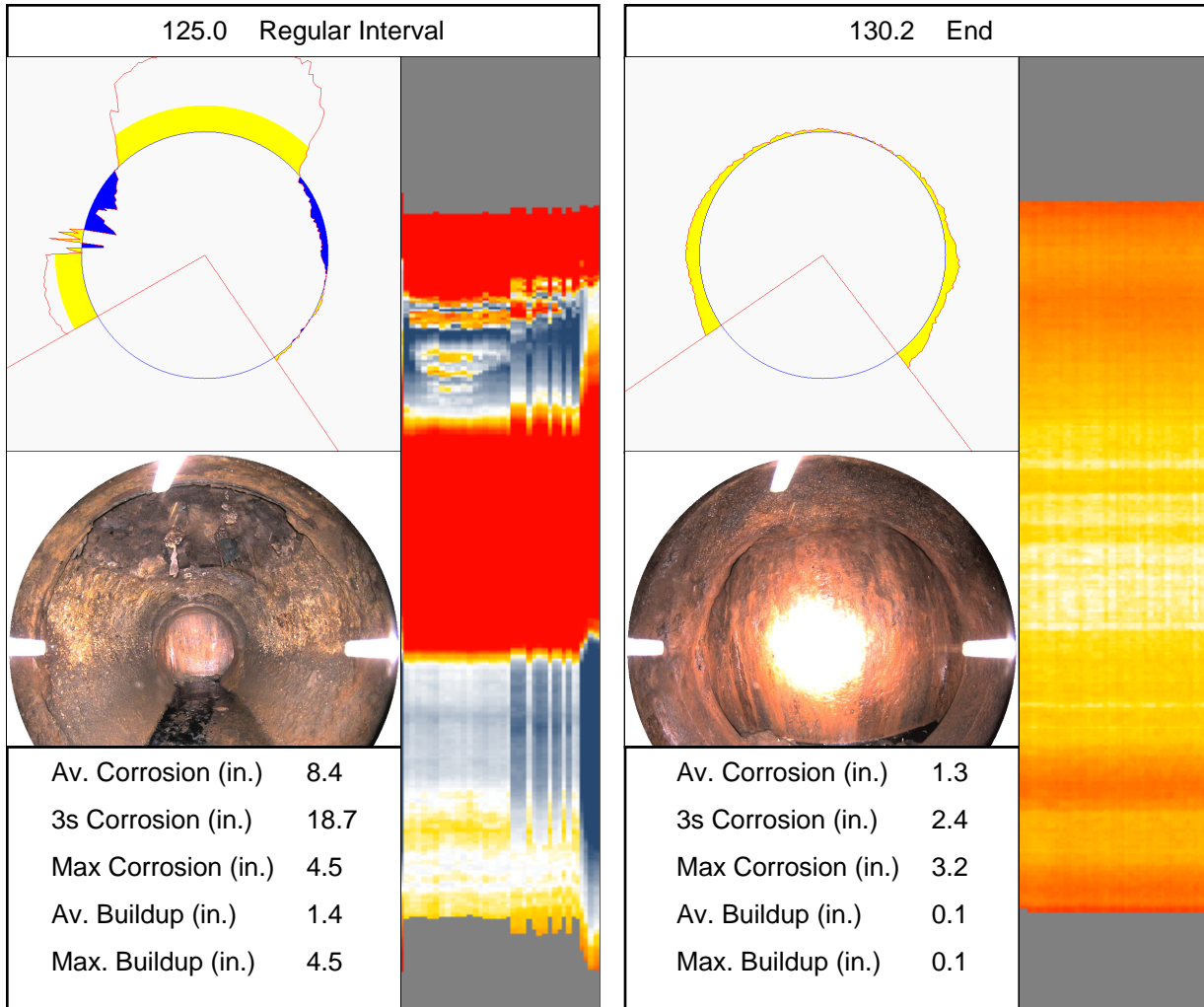
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Distributed Cross-Sections





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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.