

RedZone
ROBOTICS

Street:	N DELAWARE ST		Flow Control:	Not Controlled	
City:	Hobart, IN		Year Renewed:		
Location:	Light Highway		Tape/Media #:		
Purpose:	Routine Assessment		Dia/Height:	10"	
Use:	Sanitary		Material:	CP	
Drain Area:	NA		Lining:	Other	
Category:	NA				
Comment:					
Location Details:			Direction of Survey:	Upstream	
US MH:	M-503-030	DS MH:	M-503-029	Total Length Surveyed (ft):	144.6

O&M Index:	<u>2.00</u>	O&M Quick:	312D	O&M Rating:	<u>54.00</u>
Structural Index:	<u>3.03</u>	Structural Quick:	5241	Structural Rating:	<u>109.00</u>
Overall Index:	<u>2.59</u>	Overall Quick:	5241	Overall Rating:	<u>163.00</u>

	Position	Code	Observation	Video (sec)	Grade
<div><div>M-503-029</div><div>Camera Direction</div><div></div></div>	.0	AMH	Manhole	10	NA
	.0	MWL	Water Level	21	NA
	1.7	IS(S01)	Infil Stain	36	NA
	1.7	SAV(S02)	Surface Aggregate Visible	47	S 3
	5.3	DSZ(S03)	Deposits Settled Other	64	M 2
	18.6	IS(F01)	Infil Stain	102	NA
	22.9	IS	Infil Stain	121	NA
	26.3	FS	Fracture Spiral	140	S 3
	26.3	TF	Tap Factory	151	NA
	26.3	MMC	Material Change	162	NA
	26.3	SAV(F02)	Surface Aggregate Visible	172	S 3
	29.3	MMC	Material Change	188	NA
	29.4	FL	Fracture Longitudinal	199	S 3
	29.4	SAV(S04)	Surface Aggregate Visible	209	S 3
	31.8	IS	Infil Stain	225	NA
	44.4	CL	Crack Longitudinal	261	S 2
	44.4	SAV(F04)	Surface Aggregate Visible	272	S 3
	44.4	MMC	Material Change	282	NA
45.5	TFC	Tap Factory Capped	297	NA	

47.4	MMC	Material Change	313	NA
47.4	SAV(S05)	Surface Aggregate Visible	323	S 3
54.0	DSZ(F03)	Deposits Settled Other	346	M 2
56.9	TB	Tap Break-in	363	NA
62.1	IS	Infil Stain	385	NA
64.9	IS	Infil Stain	402	NA
71.2	RFJ	Roots Fine Joint	426	M 1
74.3	DAE	Deposits Attached Encrustation	443	M 2
80.6	SAV(F05)	Surface Aggregate Visible	467	S 3
80.6	MMC	Material Change	477	NA
80.7	TFD	Tap Factory Defective	488	M 2
80.9	B	Broken	500	S 5
80.9	HVV	Hole Void Visible	511	S 5
83.5	MMC	Material Change	527	NA
83.5	SAV(S06)	Surface Aggregate Visible	538	S 3
85.1	DAE	Deposits Attached Encrustation	552	M 2
85.1	FC	Fracture Circumferential	563	S 2
89.6	DAE	Deposits Attached Encrustation	583	M 2
89.7	FM	Fracture Multiple	595	S 4
92.7	FL	Fracture Longitudinal	612	S 3
92.7	DAE	Deposits Attached Encrustation	623	M 2
98.2	IS	Infil Stain	645	NA
98.7	SAV(F06)	Surface Aggregate Visible	657	S 3
98.7	MMC	Material Change	667	NA
100.0	TFC	Tap Factory Capped	682	NA
101.5	DAE	Deposits Attached Encrustation	697	M 3
101.9	MMC	Material Change	709	NA
101.9	SAV(S07)	Surface Aggregate Visible	719	S 3
104.6	DAE(S08)	Deposits Attached Encrustation	735	M 2
115.5	TB	Tap Break-in	767	NA
123.2	DAE	Deposits Attached Encrustation	793	M 2
123.2	FC	Fracture Circumferential	803	S 2
129.3	DAE	Deposits Attached Encrustation	826	M 2
129.3	FC	Fracture Circumferential	836	S 2
135.0	SAV(F07)	Surface Aggregate Visible	859	S 3
135.0	MMC	Material Change	869	NA
136.2	TF	Tap Factory	884	NA
138.3	MMC	Material Change	901	NA
138.3	SAV(S09)	Surface Aggregate Visible	911	S 3
144.0	DAE(F08)	Deposits Attached Encrustation	933	M 2
144.6	SAV(F09)	Surface Aggregate Visible	945	S 3
144.6	MSA	Abandoned Survey	955	NA

Code: **AMH**
Description: **Manhole**



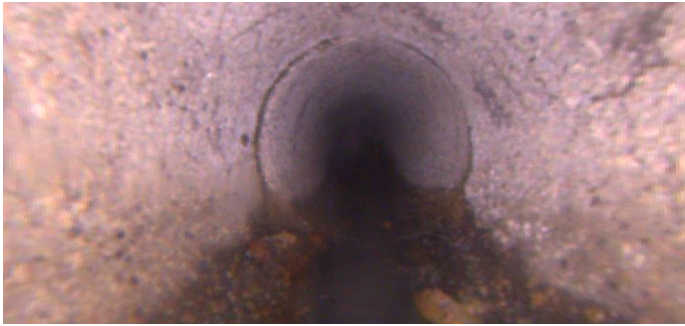
Distance (ft): **.0**
Structural Grade: **0**
O&M Grade: **0**
Clock Start/From:
Clock To:
1st Value:
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint: **NO**
Remarks: **M-503-029**

Code: **MWL**
Description: **Water Level**



Distance (ft): **.0**
Structural Grade: **0**
O&M Grade: **0**
Clock Start/From:
Clock To:
1st Value:
2nd Value:
Value Percent: **5.000**
Continuous Index:
Within 8" of Joint: **NO**
Remarks:

Code: **IS**
Description: **Infil Stain**



Distance (ft): **1.7**
Structural Grade: **0**
O&M Grade: **0**
Clock Start/From: **7**
Clock To: **5**
1st Value:
2nd Value:
Value Percent:
Continuous Index: **S01**
Within 8" of Joint: **YES**
Remarks:

Code: **SAV**
Description: **Surface Aggregate Visible**



Distance (ft): **1.7**
Structural Grade: **3**
O&M Grade: **0**
Clock Start/From: **7**
Clock To: **5**
1st Value:
2nd Value:
Value Percent:
Continuous Index: **S02**
Within 8" of Joint:
Remarks:

Code: **DSZ**
Description: **Deposits Settled Other**



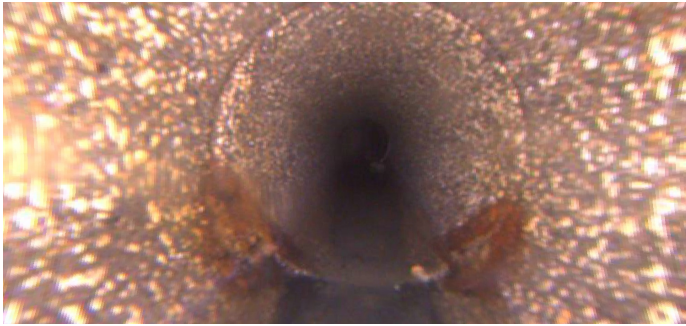
Distance (ft): **5.3**
Structural Grade: **0**
O&M Grade: **2**
Clock Start/From: **5**
Clock To: **7**
1st Value:
2nd Value:
Value Percent: **5.000**
Continuous Index: **S03**
Within 8" of Joint: **NO**
Remarks: **debris evident below water level**

Code: **IS**
Description: **Infil Stain**



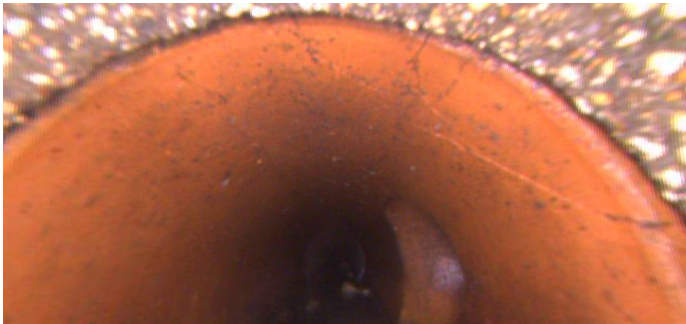
Distance (ft): **18.6**
Structural Grade: **0**
O&M Grade: **0**
Clock Start/From: **7**
Clock To: **5**
1st Value:
2nd Value:
Value Percent:
Continuous Index: **F01**
Within 8" of Joint: **YES**
Remarks:

Code: **IS**
Description: **Infil Stain**



Distance (ft): **22.9**
Structural Grade: **0**
O&M Grade: **0**
Clock Start/From: **7**
Clock To: **5**
1st Value:
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint: **YES**
Remarks:

Code: **FS**
Description: **Fracture Spiral**



Distance (ft): **26.3**
Structural Grade: **3**
O&M Grade: **0**
Clock Start/From: **12**
Clock To: **2**
1st Value:
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint: **YES**
Remarks:

Code: **TF**
Description: **Tap Factory**



Distance (ft): **26.3**
Structural Grade: **0**
O&M Grade: **0**
Clock Start/From: **3**
Clock To:
1st Value: **4.000**
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint:
Remarks:

Code: **MMC**
Description: **Material Change**



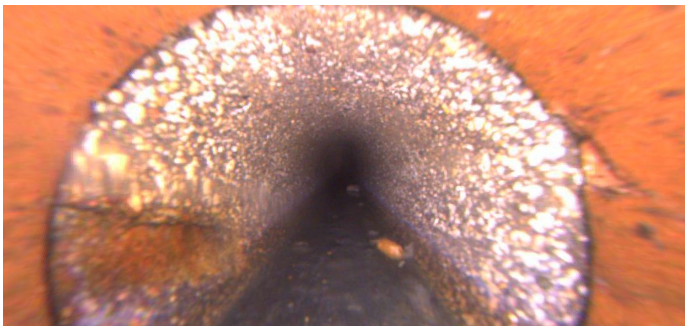
Distance (ft): **26.3**
Structural Grade: **0**
O&M Grade: **0**
Clock Start/From:
Clock To:
1st Value:
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint: **NO**
Remarks: **VCP**

Code: **SAV**
Description: **Surface Aggregate Visible**



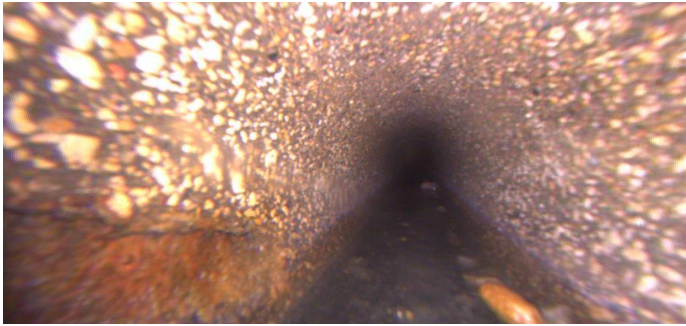
Distance (ft): **26.3**
Structural Grade: **3**
O&M Grade: **0**
Clock Start/From: **7**
Clock To: **5**
1st Value:
2nd Value:
Value Percent:
Continuous Index: **F02**
Within 8" of Joint:
Remarks:

Code: **MMC**
Description: **Material Change**



Distance (ft): **29.3**
Structural Grade: **0**
O&M Grade: **0**
Clock Start/From:
Clock To:
1st Value:
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint: **NO**
Remarks: **CP (non-reinforced)**

Code: **FL**
Description: **Fracture Longitudinal**



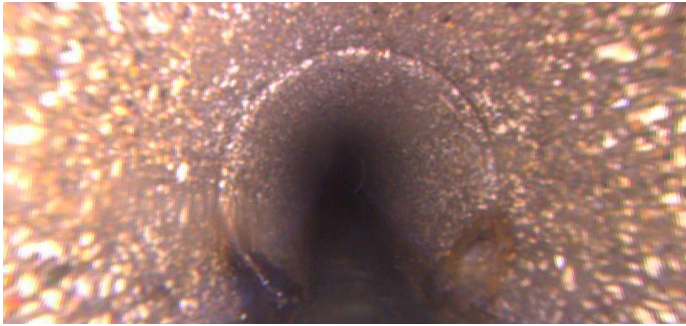
Distance (ft): **29.4**
Structural Grade: **3**
O&M Grade: **0**
Clock Start/From: **9**
Clock To:
1st Value:
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint: **YES**
Remarks:

Code: **SAV**
Description: **Surface Aggregate Visible**



Distance (ft): **29.4**
Structural Grade: **3**
O&M Grade: **0**
Clock Start/From: **7**
Clock To: **5**
1st Value:
2nd Value:
Value Percent:
Continuous Index: **S04**
Within 8" of Joint:
Remarks:

Code: **IS**
Description: **Infil Stain**



Distance (ft): **31.8**
Structural Grade: **0**
O&M Grade: **0**
Clock Start/From: **7**
Clock To: **5**
1st Value:
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint: **YES**
Remarks:

Code: **CL**
Description: **Crack Longitudinal**



Distance (ft): **44.4**
Structural Grade: **2**
O&M Grade: **0**
Clock Start/From: **2**
Clock To:
1st Value:
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint: **YES**
Remarks:

Code: **SAV**
Description: **Surface Aggregate Visible**



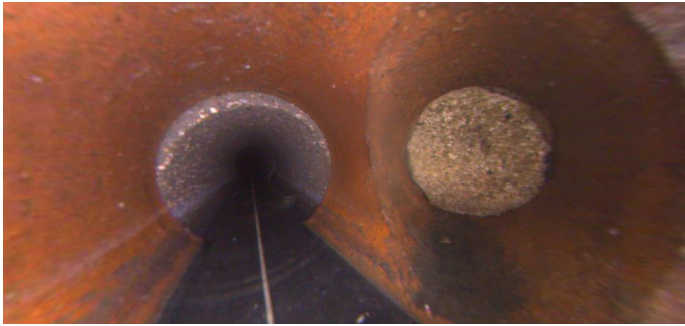
Distance (ft): **44.4**
Structural Grade: **3**
O&M Grade: **0**
Clock Start/From: **7**
Clock To: **5**
1st Value:
2nd Value:
Value Percent:
Continuous Index: **F04**
Within 8" of Joint:
Remarks:

Code: **MMC**
Description: **Material Change**



Distance (ft): **44.4**
Structural Grade: **0**
O&M Grade: **0**
Clock Start/From:
Clock To:
1st Value:
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint: **NO**
Remarks: **VCP**

Code: **TFC**
Description: **Tap Factory Capped**



Distance (ft): **45.5**
Structural Grade: **0**
O&M Grade: **0**
Clock Start/From: **9**
Clock To:
1st Value: **4.000**
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint:
Remarks:

Code: **MMC**
Description: **Material Change**



Distance (ft): **47.4**
Structural Grade: **0**
O&M Grade: **0**
Clock Start/From:
Clock To:
1st Value:
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint: **NO**
Remarks: **CP (non-reinforced)**

Code: **SAV**
Description: **Surface Aggregate Visible**



Distance (ft): **47.4**
Structural Grade: **3**
O&M Grade: **0**
Clock Start/From: **7**
Clock To: **5**
1st Value:
2nd Value:
Value Percent:
Continuous Index: **S05**
Within 8" of Joint:
Remarks:

Code: **DSZ**
Description: **Deposits Settled Other**



Distance (ft): **54.0**
Structural Grade: **0**
O&M Grade: **2**
Clock Start/From: **5**
Clock To: **7**
1st Value:
2nd Value:
Value Percent: **5.000**
Continuous Index: **F03**
Within 8" of Joint: **NO**
Remarks: **debris evident below water level**

Code: **TB**
Description: **Tap Break-in**



Distance (ft): **56.9**
Structural Grade: **0**
O&M Grade: **0**
Clock Start/From: **9**
Clock To:
1st Value: **6.000**
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint:
Remarks:

Code: **IS**
Description: **Infil Stain**



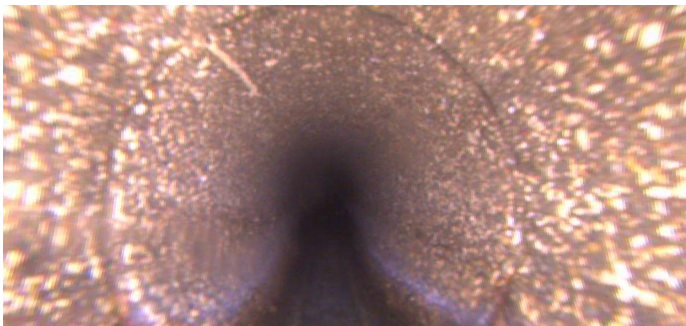
Distance (ft): **62.1**
Structural Grade: **0**
O&M Grade: **0**
Clock Start/From: **7**
Clock To: **8**
1st Value:
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint: **YES**
Remarks:

Code: **IS**
Description: **Infil Stain**



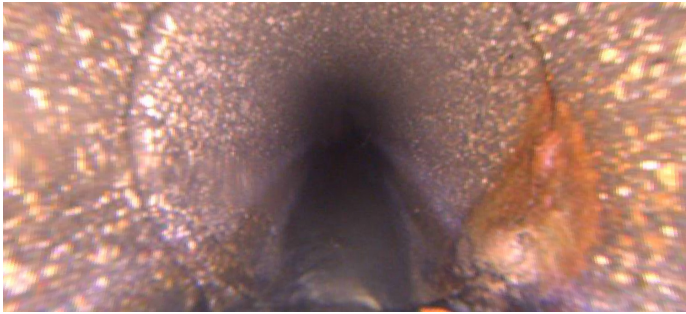
Distance (ft): **64.9**
Structural Grade: **0**
O&M Grade: **0**
Clock Start/From: **7**
Clock To: **5**
1st Value:
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint: **YES**
Remarks:

Code: **RFJ**
Description: **Roots Fine Joint**



Distance (ft): **71.2**
Structural Grade: **0**
O&M Grade: **1**
Clock Start/From: **11**
Clock To:
1st Value:
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint: **YES**
Remarks:

Code: **DAE**
Description: **Deposits Attached Encrustation**



Distance (ft): **74.3**
Structural Grade: **0**
O&M Grade: **2**
Clock Start/From: **3**
Clock To: **5**
1st Value:
2nd Value:
Value Percent: **10.000**
Continuous Index:
Within 8" of Joint: **YES**
Remarks:

Code: **SAV**
Description: **Surface Aggregate Visible**



Distance (ft): **80.6**
Structural Grade: **3**
O&M Grade: **0**
Clock Start/From: **7**
Clock To: **5**
1st Value:
2nd Value:
Value Percent:
Continuous Index: **F05**
Within 8" of Joint:
Remarks:

Code: **MMC**
Description: **Material Change**



Distance (ft): **80.6**
Structural Grade: **0**
O&M Grade: **0**
Clock Start/From:
Clock To:
1st Value:
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint: **NO**
Remarks: **VCP**

Code: **TFD**
Description: **Tap Factory Defective**



Distance (ft): **80.7**
Structural Grade: **0**
O&M Grade: **2**
Clock Start/From: **3**
Clock To:
1st Value: **4.000**
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint:
Remarks: **HVV**

Code: **B**
Description: **Broken**



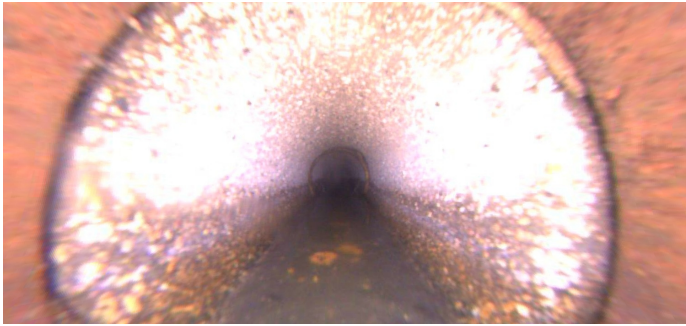
Distance (ft): **80.9**
Structural Grade: **5**
O&M Grade: **0**
Clock Start/From: **12**
Clock To: **5**
1st Value:
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint:
Remarks:

Code: **HVV**
Description: **Hole Void Visible**



Distance (ft): **80.9**
Structural Grade: **5**
O&M Grade: **0**
Clock Start/From: **12**
Clock To: **2**
1st Value:
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint:
Remarks:

Code: **MMC**
Description: **Material Change**



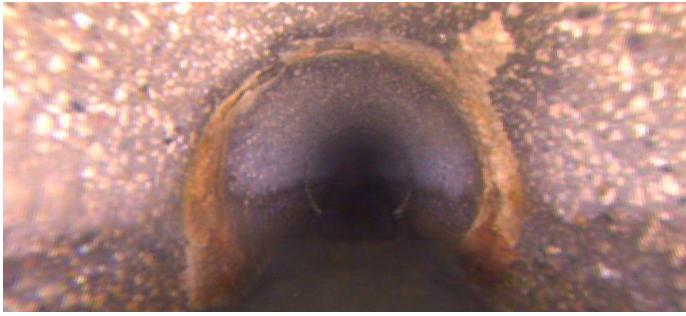
Distance (ft): **83.5**
Structural Grade: **0**
O&M Grade: **0**
Clock Start/From:
Clock To:
1st Value:
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint: **NO**
Remarks: **CP (non-reinforced)**

Code: **SAV**
Description: **Surface Aggregate Visible**



Distance (ft): **83.5**
Structural Grade: **3**
O&M Grade: **0**
Clock Start/From: **7**
Clock To: **5**
1st Value:
2nd Value:
Value Percent:
Continuous Index: **S06**
Within 8" of Joint:
Remarks:

Code: **DAE**
Description: **Deposits Attached Encrustation**



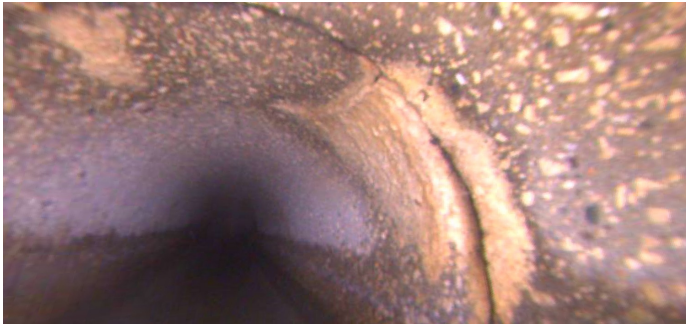
Distance (ft): **85.1**
Structural Grade: **0**
O&M Grade: **2**
Clock Start/From: **7**
Clock To: **5**
1st Value:
2nd Value:
Value Percent: **5.000**
Continuous Index:
Within 8" of Joint: **NO**
Remarks:

Code: **FC**
Description: **Fracture Circumferential**



Distance (ft): **85.1**
Structural Grade: **2**
O&M Grade: **0**
Clock Start/From: **7**
Clock To: **5**
1st Value:
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint:
Remarks:

Code: **DAE**
Description: **Deposits Attached Encrustation**



Distance (ft): **89.6**
Structural Grade: **0**
O&M Grade: **2**
Clock Start/From: **1**
Clock To: **3**
1st Value:
2nd Value:
Value Percent: **5.000**
Continuous Index:
Within 8" of Joint: **YES**
Remarks:

Code: **FM**
Description: **Fracture Multiple**



Distance (ft): **89.7**
Structural Grade: **4**
O&M Grade: **0**
Clock Start/From: **11**
Clock To: **1**
1st Value:
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint: **YES**
Remarks:

Code: **FL**
Description: **Fracture Longitudinal**



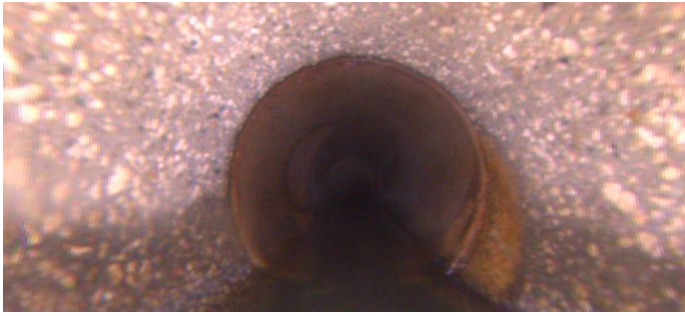
Distance (ft): **92.7**
Structural Grade: **3**
O&M Grade: **0**
Clock Start/From: **3**
Clock To:
1st Value:
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint: **YES**
Remarks:

Code: **DAE**
Description: **Deposits Attached Encrustation**



Distance (ft): **92.7**
Structural Grade: **0**
O&M Grade: **2**
Clock Start/From: **3**
Clock To: **4**
1st Value:
2nd Value:
Value Percent: **5.000**
Continuous Index:
Within 8" of Joint: **YES**
Remarks:

Code: **IS**
Description: **Infil Stain**



Distance (ft): **98.2**
Structural Grade: **0**
O&M Grade: **0**
Clock Start/From: **7**
Clock To: **5**
1st Value:
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint: **YES**
Remarks:

Code: **SAV**
Description: **Surface Aggregate Visible**



Distance (ft): **98.7**
Structural Grade: **3**
O&M Grade: **0**
Clock Start/From: **7**
Clock To: **5**
1st Value:
2nd Value:
Value Percent:
Continuous Index: **F06**
Within 8" of Joint:
Remarks:

Code: **MMC**
Description: **Material Change**



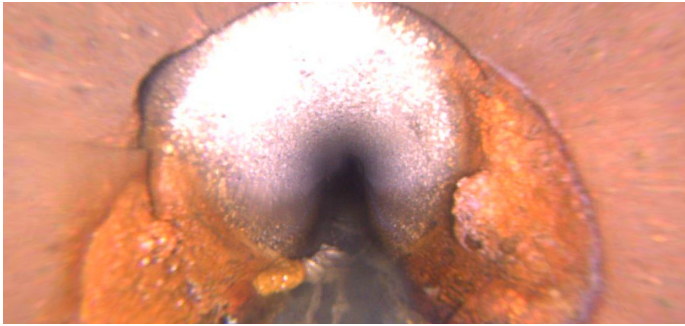
Distance (ft): **98.7**
Structural Grade: **0**
O&M Grade: **0**
Clock Start/From:
Clock To:
1st Value:
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint: **NO**
Remarks: **VCP**

Code: **TFC**
Description: **Tap Factory Capped**



Distance (ft): **100.0**
Structural Grade: **0**
O&M Grade: **0**
Clock Start/From: **9**
Clock To:
1st Value: **6.000**
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint:
Remarks:

Code: **DAE**
Description: **Deposits Attached Encrustation**



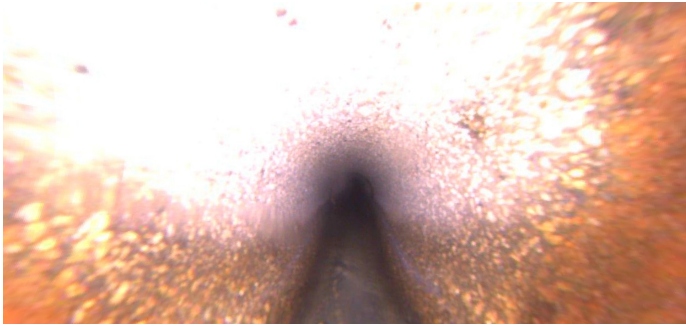
Distance (ft): **101.5**
Structural Grade: **0**
O&M Grade: **3**
Clock Start/From: **7**
Clock To: **5**
1st Value:
2nd Value:
Value Percent: **15.000**
Continuous Index:
Within 8" of Joint: **YES**
Remarks:

Code: **MMC**
Description: **Material Change**



Distance (ft): **101.9**
Structural Grade: **0**
O&M Grade: **0**
Clock Start/From:
Clock To:
1st Value:
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint: **NO**
Remarks: **CP (non-reinforced)**

Code: **SAV**
Description: **Surface Aggregate Visible**



Distance (ft): **101.9**
Structural Grade: **3**
O&M Grade: **0**
Clock Start/From: **7**
Clock To: **5**
1st Value:
2nd Value:
Value Percent:
Continuous Index: **S07**
Within 8" of Joint:
Remarks:

Code: **DAE**
Description: **Deposits Attached Encrustation**



Distance (ft): **104.6**
Structural Grade: **0**
O&M Grade: **2**
Clock Start/From: **7**
Clock To: **5**
1st Value:
2nd Value:
Value Percent: **10.000**
Continuous Index: **S08**
Within 8" of Joint: **YES**
Remarks:

Code: **TB**
Description: **Tap Break-in**



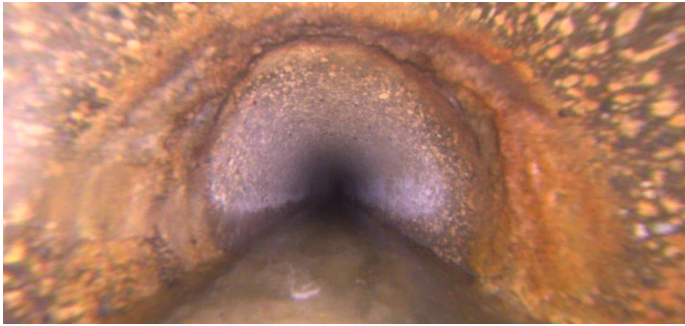
Distance (ft): **115.5**
Structural Grade: **0**
O&M Grade: **0**
Clock Start/From: **9**
Clock To:
1st Value: **6.000**
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint:
Remarks:

Code: **DAE**
Description: **Deposits Attached Encrustation**



Distance (ft): **123.2**
Structural Grade: **0**
O&M Grade: **2**
Clock Start/From: **7**
Clock To: **5**
1st Value:
2nd Value:
Value Percent: **10.000**
Continuous Index:
Within 8" of Joint: **NO**
Remarks:

Code: **FC**
Description: **Fracture Circumferential**



Distance (ft): **123.2**
Structural Grade: **2**
O&M Grade: **0**
Clock Start/From: **7**
Clock To: **5**
1st Value:
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint:
Remarks:

Code: **DAE**
Description: **Deposits Attached Encrustation**



Distance (ft): **129.3**
Structural Grade: **0**
O&M Grade: **2**
Clock Start/From: **8**
Clock To: **4**
1st Value:
2nd Value:
Value Percent: **10.000**
Continuous Index:
Within 8" of Joint: **NO**
Remarks:

Code: **FC**
Description: **Fracture Circumferential**



Distance (ft): **129.3**
Structural Grade: **2**
O&M Grade: **0**
Clock Start/From: **8**
Clock To: **4**
1st Value:
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint:
Remarks:

Code: **SAV**
Description: **Surface Aggregate Visible**



Distance (ft): **135.0**
Structural Grade: **3**
O&M Grade: **0**
Clock Start/From: **7**
Clock To: **5**
1st Value:
2nd Value:
Value Percent:
Continuous Index: **F07**
Within 8" of Joint:
Remarks:

Code: **MMC**
Description: **Material Change**



Distance (ft): **135.0**
Structural Grade: **0**
O&M Grade: **0**
Clock Start/From:
Clock To:
1st Value:
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint: **NO**
Remarks: **VCP**

Code: **TF**
Description: **Tap Factory**



Distance (ft): **136.2**
Structural Grade: **0**
O&M Grade: **0**
Clock Start/From: **3**
Clock To:
1st Value: **6.000**
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint:
Remarks:

Code: **MMC**
Description: **Material Change**



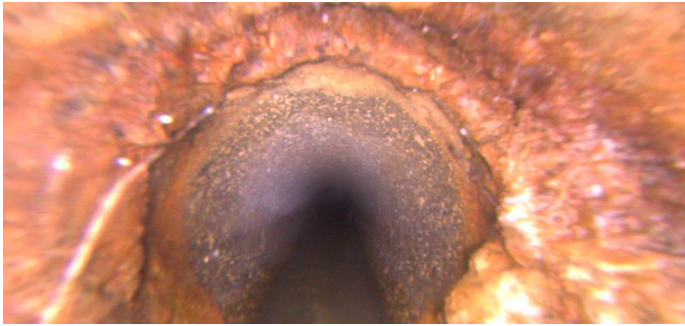
Distance (ft): **138.3**
Structural Grade: **0**
O&M Grade: **0**
Clock Start/From:
Clock To:
1st Value:
2nd Value:
Value Percent:
Continuous Index:
Within 8" of Joint: **NO**
Remarks: **CP (non-reinforced)**

Code: **SAV**
Description: **Surface Aggregate Visible**



Distance (ft): **138.3**
Structural Grade: **3**
O&M Grade: **0**
Clock Start/From: **8**
Clock To: **4**
1st Value:
2nd Value:
Value Percent:
Continuous Index: **S09**
Within 8" of Joint:
Remarks:

Code: **DAE**
Description: **Deposits Attached Encrustation**

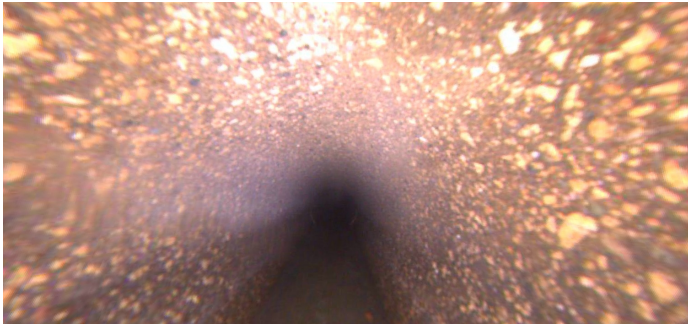


Distance (ft): **144.0**
Structural Grade: **0**
O&M Grade: **2**
Clock Start/From: **7**
Clock To: **5**
1st Value:
2nd Value:
Value Percent: **10.000**
Continuous Index: **F08**
Within 8" of Joint: **YES**
Remarks:

Code: **SAV**
Description: **Surface Aggregate Visible**



Distance (ft): **144.6**
Structural Grade: **3**
O&M Grade: **0**
Clock Start/From: **8**
Clock To: **4**
1st Value:
2nd Value:
Value Percent:
Continuous Index: **F09**
Within 8" of Joint:
Remarks:



Code:	MSA
Description:	Abandoned Survey
Distance (ft):	144.6
Structural Grade:	0
O&M Grade:	0
Clock Start/From:	
Clock To:	
1st Value:	
2nd Value:	
Value Percent:	
Continuous Index:	
Within 8" of Joint:	NO
Remarks:	DAE