

**Fiscal Year 2015 Cast Iron/Bare Steel Replacement Program
Results Filing
DG 15-104**

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**Submitted to:
New Hampshire
Public Utilities Commission**

**Submitted by:
Liberty Utilities (EnergyNorth Natural Gas) Corp.
d/b/a Liberty Utilities**

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INTRODUCTION

Pursuant to the settlement agreement approved by the New Hampshire Public Utilities Commission (the “Commission”) as part of the National Grid plc/KeySpan Corporation merger proceeding in Docket No. DG 06-107 and the settlement agreement in Docket No. DG 11-040 (the “Settlement Agreement”) approved by Order 25,370, Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities (“Liberty” or the “Company”) submits the results of the Cast Iron Bare Steel (“CIBS”) Replacement Program for fiscal year 2015 (April 1, 2014-March 31, 2015). As required by the Settlement Agreement, the Company submits the following information in connection with this report and the prefiled Joint Testimony of Gwyn M. Cassetty, and Ian Crabtree, and Testimony of David Simek: (1) A report detailing the actual amount of capital investments made in accordance with implementing the CIBS program during fiscal year 2015 (Attachment GMC/ITC-2 to Joint Cassetty- Crabtree Testimony); (2) A calculation of the incremental revenue requirement associated with placing the capital investments into rate base above a base spending level of \$506,240 (Attachment DBS-1 to Simek Testimony); (3) A description of variances between actual results and the original plan, and (4) A request for a permanent increase in base distribution delivery rates in the amount of \$311,610 effective for usage on and after July 1, 2015. In addition, this report and Mr. Simek’s Testimony will provide an update on the status of pending road degradation fee litigation between Liberty and the cities of Concord and Manchester; a discussion of Liberty’s treatment of the Concord and Manchester road degradation fees in this filing; and a description of the repairs tax deduction for which CIBS projects are eligible.

SECTION 1: ACTUAL CAPITAL EXPENDITURES

Actual capital expenditures incurred during implementation of the CIBS program for fiscal year 2015 are detailed in Attachment GMC/ITC-2 to the Cassetty- Crabtree Testimony. Through a series of technical sessions that began in 2008, the Commission Staff and the Company have agreed that the capital investments amounts to be included for recovery under CIBS may include all prudently incurred direct and indirect¹ costs associated with: (i) replacement or abandonment² of cast iron and bare steel mains, including replacement of existing pipe with replacement pipe of the same size³, with recovery for the costs of “upsizing” the pipe allowed only when specifically justified,⁴ (ii) replacement or abandonment of cast iron or bare steel service lines directly connected to bare steel or cast iron main replacement projects, and (iii) tie over of connected service lines not replaced or abandoned as part of a cast iron bare steel main replacement project.

Categories of costs that may not be included for recovery under CIBS include: (i) replacement or abandonment of plastic main, (ii) replacement or abandonment of coated steel main, regardless of vintage, unless approved by the Safety Division of the Commission, (iii) replacement or abandonment of plastic or coated steel services connected to cast iron or bare steel main replacement projects, (iv) the differential in cost to replace existing cast iron or bare steel mains with pipe of a diameter that is greater than the existing main and the cost to replace that

¹ Indirect costs mean overheads such as pension, OPEB's and other fringe benefits, payroll taxes, material handling costs and other general & administrative expenses that are loaded on all labor and material transactions. Categories of costs that may not be included for recovery under the plan include costs related to CIBS planning (other than normal engineering and project planning), reporting and filing.

² For purposes of ii and iii, abandonments such as mains that are not servicing a customer via a service will not be allowed. Other abandonments will be considered by Staff on a case by case basis.

³ 3-inch pipes, which are no longer standard size, will be routinely replaced with 4-inch pipes.

⁴ See Settlement Agreement in DG 11-040, Attachment J, section (20) n.

main with a pipe that is larger than the existing main, unless specifically justified, (v) relocation of customer meters from inside to out and (vi) random cast iron or bare steel service replacements not connected to a cast iron or bare steel main replacement project.

On January 15, 2014, the Company made its proposed FY 2015 CIBS program filing with the Commission. On February 21, 2014, the filing was reviewed with Staff for project selection and scope. In addition, the Company responded to four sets of discovery requests from Staff in relation to the FY 2015 CIBS program filing along with the report on the FY 2014 CIBS program that was docketed as DG 14-041.

Line 41 column V of Attachment GMC/ITC-2 shows the actual recoverable expenditures of the FY 2015 projects, totaling \$3,782,942. After removing the CIBS base amount of \$506,240 in accordance with the terms of the Settlement Agreement from the actual expenditures, the total incremental expenditures to be included in rate base amounts to \$3,276,702. Appendix A to this report is the Condition Bare Steel Main Replacement Program – Sample Analysis Report for FY 2015. This report contains photographs and descriptions of various pipe segments removed and catalogued as part of the FY 2015 CIBS program.

SECTION 2: CALCULATIONS OF INCREMENTAL REVENUE REQUIREMENT

In this filing, Liberty is seeking recovery in rates of the incremental revenue requirement associated with an additional \$3,276,702 of CIBS recoverable capital investments. As set forth in Attachment DBS-1, page 1 to Mr. Simek's Testimony, the

revenue requirement associated with the CIBS cumulative capital expenditures is \$1,855,442 (line 35(g)) with a corresponding revenue deficiency of \$311,610 (line 39 (g)). Consistent with prior delivery rate increases for the CIBS program, the Company proposes to apply the increase pro rata across all customer classes. Attachment DBS-1, page 4 to Mr. Simek’s Testimony also indicates the annual bill impacts for an average residential customer and commercial customers in rate classes G-41, G-42 and G-52. Attachment DBS-2 is a computation of the cumulative revenue requirement associated with the CIBS program since its inception in FY 2009.

SECTION 3: DIFFERENCES BETWEEN INITIAL ESTIMATED EXPENDITURES AND FISCAL YEAR-END ESTIMAED EXPENDITURES

The Company’s FY 2015 CIBS Plan provided for the replacement of 5.92 miles of cast iron and bare steel pipe at an estimated cost of \$6,310,209, (excluding the City of Manchester degradation fees). As shown on Attachment GMC/ITC-2, the Company eliminated 5.0 miles of cast iron and bare steel at a cost of \$4,921,902 (line 31, column AP), excluding the City of Manchester degradation fees. A reconciliation of the total costs to the total recoverable costs is shown in the table below:

		<u>Attachment GMC/ITC-2</u> <u>Reference</u>
Actual Loaded Costs (excl. Manchester degradation fees)	\$4,921,902	line 31, column AP
FY 2014 carry-over costs	275,181	line 40, column AP
Less: Expected FY 2015 carry-over costs	-912,607	line 31, column W
Non-recoverable main costs	-142,977	line 31, column Q
Non-recoverable service costs	-358,557	line 31, column R
Total Recoverable Costs	<u>\$3,782,942</u>	line 41, column V

Details of the variances between estimated and actual costs by project are shown in Attachment GMC/ITC-2 column AQ, direct cost variances are shown in column AM.

SECTION 4: STATUS OF THE PENDING LITIGATION BETWEEN LIBERTY AND THE CITIES OF CONCORD AND MANCHESTER

On June 15, 2010, National Grid filed an action in Hillsborough County Superior Court against the City of Manchester seeking an injunction against enforcement of regulations concerning street opening permit fees (“degradation fees”), as well as a request for a declaratory judgment invalidating such fees. The matter was docketed as NO 216-2010-EQ 001722. Similarly, on June 29, 2010, National Grid filed an action in Merrimack County Superior Court against the City of Concord seeking an injunction against enforcement of its degradation fee regulations, as well as a request for a declaratory judgment invalidating such fees. The matter was docketed as NO 217-2010-CV-00402. On April 6, 2011 the Company filed a motion for summary judgment in the Concord matter, and filed a motion for summary judgment in the Manchester matter on May 6, 2011.

On August 25, 2011, the Merrimack County Superior Court granted summary judgment to National Grid on the basis that the degradation fees at issue are pre-empted by state law. The City of Concord subsequently appealed that decision to the New Hampshire Supreme Court, which held that the City ordinance is not preempted by State law. The Supreme Court concluded that there was a factual dispute between EnergyNorth and the City regarding whether patching an excavated paved road with new pavement diminishes or restores the road’s original life expectancy. The case has been remanded to Superior Court,

and the trial is underway and scheduled to be completed in May 2015.

SECTION 5: TREATMENT OF CONCORD AND MANCHESTER DEGRADATION FEES

Liberty agreed to pay degradation fees to the City of Concord under protest while the litigation and appeal are pending. The City of Manchester agreed to allow Liberty to refrain from paying the fees, subject to the issuance of bonds in sufficient amount to pay any outstanding fees. Though Liberty has not been paying the Manchester degradation fees, it has been accruing the costs in its books and records. The FY2015 CIBS program recoverable costs are exclusive of the Manchester degradation fees. For the FY2016 program, Manchester degradation fees will also be excluded from the recoverable estimated and actual costs.

A summary of degradation fees included for recovery as part of the CIBS program costs is as follows:

<u>Period</u>	<u>City of Concord</u>	<u>City of Manchester</u>	<u>Total</u>
Fiscal 2011	\$19,856	\$275,035	\$294,891
Fiscal 2012	\$37,960	\$39,885	\$77,845
Fiscal 2013	\$9,747	\$382,335	\$392,082
Fiscal 2014	\$48,350	-0- (1)	\$48,350
Fiscal 2015	\$75,541	-0- (1)	\$75,541
Total	<u>\$191,454</u>	<u>\$697,255</u>	<u>\$888,709</u>

(1) Excludes FY 2014 and FY 2015 accrued Manchester degradation fees in the amounts of \$246,449 and \$236,710, respectively from the calculation of the revenue requirement.

Upon a successful outcome of the litigation, the Company will refund the revenue

previously collected in revenue requirement calculations. Attachment DBS-3 to Mr. Simek's Testimony shows an estimated calculation of this amount. Currently, the Company would need to return approximately \$90,995 to customers as shown on Page 1, Line 32(b). This is based on the assumption that the litigation will be conclusively resolved before the filing of the FY 2016 revenue requirement. It is estimated that the Concord and Manchester degradation fees to be incurred during the FY 2016 construction season will be \$145,075 and \$387,195, respectively.

SECTION 6: TAX DEDUCTION FOR REPAIR EXPENSES

In 2009, the Internal Revenue Service issued guidance, under Internal Revenue Code Section 162, regarding the eligibility of certain repair and maintenance expenses for an immediate deduction for income tax purposes, but capitalized by the Company for book purposes. This tax deduction has the effect of increasing deferred taxes and lowering the revenue requirement that customers will pay under the CIBS program. Repairs resulting in the replacement of less than 20 percent of an original unit of property qualify for a repairs tax deduction. A gas company's gas subsystem is considered a "unit of property" for the purposes of the repairs tax deduction. As explained in Mr. Simek's Testimony, projects included in the CIBS program are expected to qualify as repairs; thus, when computing the revenue requirement, the Company reflects a tax deductibility of 100 percent for all CIBS jobs.

SECTION 7: CAST IRON/BARE STEEL REPLACED UNDER MUNICIPAL PROJECTS AND THE CAST IRON ENCROACHMENT POLICY

In FY 2015, the Company replaced approximately 169 feet of cast iron through the Cast Iron Encroachment Policy and approximately 10,587 feet of cast iron and bare steel through municipal projects, totaling to approximately 2.04 miles of replacement. This amounts to approximately 7.04 miles of cast iron and bare steel replacement in FY 2015. A yearly summary of cast iron and bare steel replacement through municipal projects and encroachments can be seen below:

Year	Footage of Cast Iron/Bare Steel Replaced	
	Municipal Projects	Encroachments
2008	10,980	171
2009	19,920	28
2010	11,649	62
2011	17,791	40
2012	12,524	53
2013	19,118	55
2014	10,587	169
Total Footage	102,569	578
Total Mileage	19.43	0.11

APPENDIX A: FY 2015 CONDITION BARE STEEL MAIN REPLACEMENT PROGRAM – SAMPLE ANALYSIS

Over the course of the 2014 construction season, bare steel pipe and soil samples were collected from the CIBS main replacement program. These samples were taken with the intention of using the analysis and conclusions as a tool to assist in the selection of candidates for future CIBS replacement programs. Each sample was sand blasted to expose the pipe down to the bare metal and will be provided for visual representation. Soil samples were taken as close to the pipe samples as possible in an effort to retrieve ‘native’ soil. Each sample was collected in the field and a GPS point was captured. Chemical testing was conducted to determine the existing pH, chloride, sulfide and sulfate levels. Microbiological testing for Acid Producing Bacteria (APB) and Sulfate Reducing Bacteria (SRB) were performed as well. Both chemical and microbiological tests were conducted as soon as possible, most of which was tested on the same day as the sample was collected. The table below shows the threshold of bacteria levels based on the results of bacterial colonies per milliliter.

Number of Positive Bottles	Bacteria Colonies/ML	Reporting Value Colonies/ML	Bacteria Level
0	< 1 – 10	< 10	Low
1	10	10	Low
2	10 – 100	100	Medium
3	100 – 1000	1,000	Medium
4	1,000 - 10,000	10,000	High
5	> 10,000 - 100,000	100,000	High

Positive APB and SRB vials with corresponding reporting values.

Samples were taken at the following locations:

(1) **Pennichuck St & Caron Av, Nashua – WO# 8840-0001000433** – 2 inch bare steel (1956/1960), low pressure (LP) – 0.143” wall thickness.

- A soil sample was taken and analyzed. Chemical and microbiological testing was performed on 8/19/2014. The pH was measured to be 6.0 or neutral. Testing for chlorides was negative. Presence of sulfide tested negative (<5 mg/l) and sulfate levels measured 400 mg/l or in the low-medium range. The APB testing produced a reading of 100,000 bacteria colonies per ML or a high level of bacteria. The testing for SRB produced a reading of 100 bacteria colonies per ML or a medium level of bacteria. The soil was observed to be a light brown color, sandy and odorless.
- The pipe sample was observed to be in very poor condition. Multiple locations of

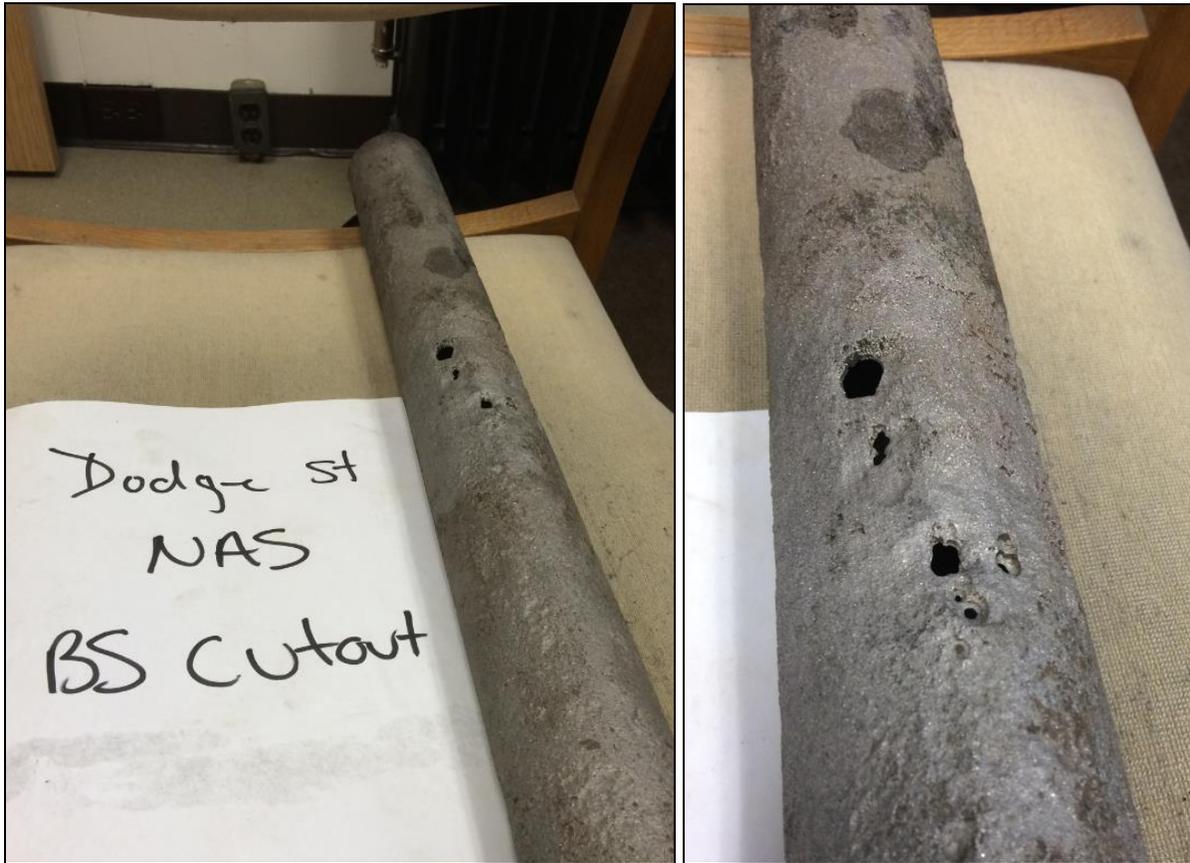
large holes with 100% wall loss on the exposed steel.

- The following pictures were taken:

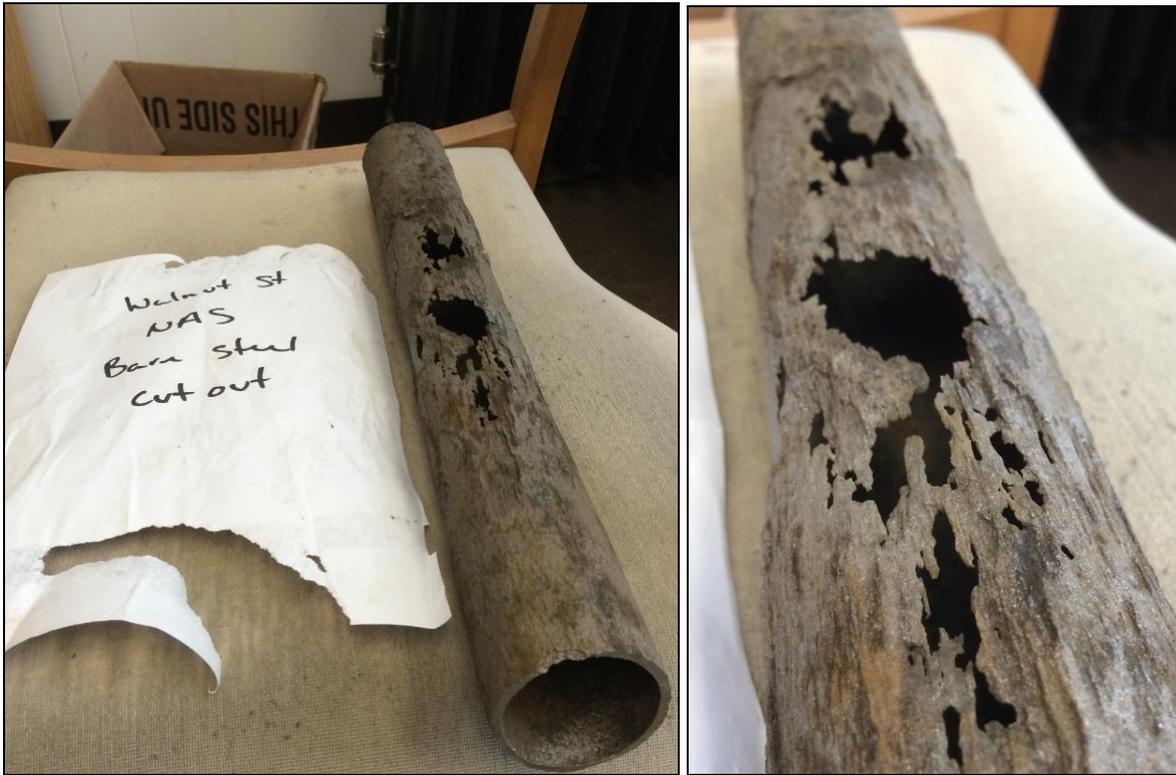


(2) **90 Dodge St, Nashua – WO# 8840-0001001269** – 2 inch bare steel (1959), low pressure (LP) – 0.160” wall thickness.

- A soil sample was taken and analyzed. Chemical and microbiological testing was performed on 9/02/2014. The pH was measured to be 6.0 or neutral. Testing for chlorides was negative. Presence of sulfide tested negative (<5 mg/l) and sulfate levels measured 400 mg/l or in the low-medium range. The APB testing produced a reading of 100,000 bacteria colonies per ML or a high level of bacteria. The testing for SRB produced a reading of 100 bacteria colonies per ML or a medium level of bacteria. The soil was observed to be a brown color, sandy with some stones and had a slight odor.
- The pipe sample was observed to be in very poor condition. Multiple locations of small holes with 100% wall loss on the exposed steel.
- The following pictures were taken:



- (3) **93 Walnut St, Nashua – WO# 8840-791853** – 2 inch bare steel (1913), low pressure (LP) – 0.160” wall thickness.
- A soil sample was taken and analyzed. Chemical and microbiological testing was performed on 9/24/2014. The pH was measured to be 6.0 or neutral. Testing for chlorides was negative. Presence of sulfide tested negative (<5 mg/l) and sulfate levels measured 200 mg/l or in the low range. The APB testing produced a reading of 100,000 bacteria colonies per ML or a high level of bacteria. The testing for SRB produced a reading of 100 bacteria colonies per ML or a medium level of bacteria. The soil was observed to be a dark brown color, sandy and odorless.
 - The pipe sample was observed to be in very poor condition. Multiple locations of large, flakey holes with 100% wall loss on the exposed steel.
 - The following pictures were taken:



- (4) **57 Spalding St, Nashua – WO# 8840-0001000431** – 2 inch bare steel (1956), low pressure (LP) – 0.139” wall thickness.
- A soil sample was taken and analyzed. Chemical and microbiological testing was performed on 10/09/2014. The pH was measured to be 6.0 or neutral. Testing for chlorides was negative. Presence of sulfide tested negative (<5 mg/l) and sulfate levels measured 400 mg/l or in the low-medium range. The APB testing produced a reading of 1,000 bacteria colonies per ML or a medium level of bacteria. The testing for SRB produced a reading of <10 bacteria colonies per ML or a low level of bacteria. The soil was observed to be a brown color, sandy with some stones and had a slight odor.
 - The pipe sample was observed to be in very poor condition. Multiple locations of large and small holes with 100% wall loss on the exposed steel.
 - The following pictures were taken:



(5) **95 Shaker Rd, Concord (Shaker Rd School) – WO# 8840-0001001106** – 1 inch bare steel (YOI Unknown), 60 psig pressure – 0.133” wall thickness.

- A soil sample was taken and analyzed. Chemical and microbiological testing was performed on 11/18/2014. The pH was measured to be 6.0 or neutral. Testing for chlorides was negative. Presence of sulfide tested negative (<5 mg/l) and sulfate levels measured 400 mg/l or in the low-medium range. The APB testing produced a reading of 100,000 bacteria colonies per ML or a high level of bacteria. The testing for SRB produced a reading of 1,000 bacteria colonies per ML or a medium level of bacteria. The soil was observed to be a brown color, moist sand and odorless.
- The pipe sample was observed to be in fair condition with minor pitting. The deepest pit was measured 0.036” or 27% wall loss.
- The following pictures were taken:



- (6) **249 Medford St, Manchester – WO# 8840-0001000434** – 2 inch bare steel (1956/1960), 60 psig pressure – 0.160” wall thickness.
- A soil sample was taken and analyzed. Chemical and microbiological testing was performed on 12/22/2014. The pH was measured to be 6.0 or neutral. Testing for chlorides was negative. Presence of sulfide tested negative (<5 mg/l) and sulfate levels measured 200 mg/l or in the low range. The APB testing produced a reading of 1,000 bacteria colonies per ML or a medium level of bacteria. The testing for SRB produced a reading of 10,000 bacteria colonies per ML or a high level of bacteria. The soil was observed to be a dark brown color, sandy and odorless.
 - The pipe sample was observed to be in very poor condition. Multiple locations of small holes with 100% wall loss on the exposed steel.
 - The following pictures were taken:



- (7) **348 Lincoln St (Alley) – WO# 8840-0001000443** – 3 inch bare steel (1954), 60 psig pressure – 0.234” wall thickness.
- A soil sample was taken and analyzed. Chemical and microbiological testing was performed on 1/02/2015. The pH was measured to be 6.0 or neutral. Testing for chlorides was negative. Presence of sulfide tested negative (<5 mg/l) and sulfate levels measured 200 mg/l or in the low range. The APB testing produced a reading of 100,000 bacteria colonies per ML or a high level of bacteria. The testing for SRB produced a reading of <10 bacteria colonies per ML or a low level of bacteria. The soil was observed to be a brown color, sandy with small stones and odorless.
 - The pipe sample was observed to be in fair condition with minor pitting. The deepest pit was measured 0.029” or 12% wall loss.
 - The following pictures were taken:



Conclusions/Recommendations:

- (1) Samples should continue to be taken as close to the area of leak activity as possible. The designs will call out these locations and field sketches showing dimensions to the leak repairs will be provided.
- (2) A representative should be on site to verify that the pipe sample is acceptable and that the soil taken is valid for analysis. The soil sample should be tested as soon as possible as opposed to testing samples once all samples are collected. Testing the soil when it is "fresh" will provide more accurate results as it relates to the existing chemical and microbiological conditions at each location.
- (3) The criteria used for the segment selection process should continue to include exposed main reports that include references to deep pitting and/or poor condition. This data has proven to be useful and indicative of pipe that is in need of replacement.
- (4) Special attention should be paid to locations where the pH is highly acidic or highly alkaline.

- (5) Special attention should be paid to locations where high levels of bacteria are recorded.
- (6) MSES Consultants, Inc. – Corrosion Products Division recommended incorporating results from sulfide and sulfate levels as it relates to the aggressiveness of potential corrosion. Special attention will be paid to locations where high levels sulfide and/or sulfate are recorded.
- (7) GPS points will be taken at locations of where samples were collected. Soil condition and chemical/microbiological testing results should be added as attributes to each point once determined.

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