State of Florida



Hublic Service Commission

CAPITAL CIRCLE OFFICE CENTER • 2540 SHUMARD OAK BOULEVARD
TALLAHASSEE, FLORIDA 32399-0850

-M-E-M-O-R-A-N-D-U-M

DATE:

April 17, 2012

TO:

Ann Cole, Commission Clerk, Office of Commission Clerk

FROM:

Stanley D. Rieger, Utilities System/Engineering Specialist, Division of Economic

Regulation 5012

RE:

Docket No. 110200-WU -- Application for increase in water rates in Franklin

County by Water Management Services, Inc.

Please include in the docket file the attached April 12, 2012 memo from Gene D. Brown to Stanley D. Rieger with attached Amended Bridge Contract and Inspection Reports. Thank You.

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02336 APR 17 2

WATER MANAGEMENT SERVICES, INC. $_$

250 John Knox Rd. # 4 Tallahassee, FL 32303 (850) 668-0440 Fax (850) 577-0441

MEMO

HAND DELIVERY

TO:

Stanley D. Rieger, Engineer

FROM:

Gene D. Brown

DATE:

April 13, 2012

RE:

Docket No. 110200-WU

Application for increase in water rates in Franklin County by

Water Management Services, Inc.

Amended Bridge Contract and Inspection Reports

Pursuant to your request, I am enclosing a copy of our amended contract regarding the inspection and maintenance of the supply main, together with the inspection reports.

Please let me know if you need anything else in this regard.

cc: Martin S. Friedman, Esq. /with enclosures

COURTER A SAME STALL

AMENDMENT TO INSPECTION AND MAINTENANCE CONTRACT

The above-referenced contract between Withers Coastal Marine Construction, Inc.

(Withers) and Water Management Services, Inc. (WMSI), a copy of which is attached as Exhibit

"A," is amended as follows:

- 1. The term of the contract, shown by section one of the contract, is extended by one year for a total term of 11 years, ending September 30, 2020. The final year shall extend from October 1, 2019 through September 30, 2020.
- 2. The total contract price, shown by section two of the contract, is increased from \$480,000 to \$498,000, payable over 11 years rather than 10 years. The payment schedule of \$12,000 per quarter shall remain the same, except that the payments for the 3rd and 4th quarters of 2011 and the 1st and 2nd quarters of 2012 shall be reduced from \$12,000 to \$4,500 for each of those 4 quarters, and shall be payable at the rate of \$1,500 per month.
 - 3. The scope of the work, shown by section three of the contract, is modified as follows:
- (a) All sections of the pipe that have not been completely recoated as of the effective date of this amendment, July 1, 2011, shall be recoated with the Termarust Series 2000 High Ratio Calcium Sulfonate Corrosion Control System using the techniques and specifications set forth in Exhibit "B" to this amendment. These remaining sections shall be recoated with the Termarust product on a pro-rata basis (segments of pipe divided by number of years remaining on contract) over the remaining term of the contract beginning July 1, 2012 in accord with the standards and specifications for spot repair and recoating set forth in Exhibit "B" to the original contract. WMSI's representative or engineer overseeing the work shall determine on a case-by-case basis which segments of pipe shall receive a full overcoat under section 1.1(B)(2) of Exhibit

"B" to the original contract and which segments shall receive a spot repair and touch-up coating under section 1.1(B)(3) of said Exhibit "B"; provided, however, that all segments of pipe identified by WMSI's representative or engineer during the quarterly inspections as needing additional repair and recoating shall be promptly repaired and recoated by Withers as provided by section 1.1(B)(3), even if such segments have been previously recoated, so long as the inspection and maintenance contract shown by Exhibit "A" remains in effect.

- (b) During the period from July 1, 2011 through June 30, 2012, Withers shall continue to perform the inspections of the entire pipeline as required by the original contract.
- 4. The reference to a 10-year term of the contract, shown by section 4, is amended to refer to the new 11-year term of this contract.
- 5. Except as specifically modified by this amendment, all the terms and conditions of the original contract shall remain in full force and effect.

IN WITNESS WHEREOF, the parties have executed this Amendment as of July 1, 2011.

WITHERS COASTAL MARINE

CONSTRUCTION, INC., a Florida corporation

WANESSES: Layda M. Chase	WATER MANAGEMENT SERVICES, INC., a Florida corporation By:
Jessica CiBlantonship	Gene D. Brown, as its President

Ben Withers, as its President

INSPECTION AND MAINTENANCE CONTRACT FOR THE WATER SUPPLY MAIN TO ST. GEORGE ISLAND

This inspection and maintenance contract, made and entered into as of this 1st day of October, 2009, by and between WITHERS COASTAL MARINE CONSTRUCTION, INC., P. O. Box 908, Panacea, Florida, 32346, hereinafter referred to as "Contractor" and WATER MANAGEMENT SERVICES, INC., 250 John Knox Road, No. 4, Tallahassee, FL 32303, hereinafter referred to as "Owner."

WITNESSETH:

WHEREAS, the owner is responsible for providing water service to St. George Island, Florida; and

WHEREAS, the water is provided via a 12" ductile iron water supply main extending approximately five miles under the bridge to St. George Island; and

WHEREAS, periodic inspection and constant maintenance of the supply main is critical to assure a reliable supply of fresh water to the island; and

WHEREAS, the Contractor has agreed to be solely responsible for such inspection and maintenance of the line for a period of 10 years from the date of this agreement under the following terms and conditions:

SECTION ONE

Term of the Contract

The term of this contract is 10 years, beginning October 1, 2009 and ending September 30, 2019. Each year shall include 4 quarters, or 12 months, referenced hereinafter as follows:

Year One	_	October 1, 2009 through September 30, 2010
Year Two	_	October 1, 2010 through September 30, 2011
Year Three	_	October 1, 2011 through September 30, 2012
Year Four	-	October 1, 2012 through September 30, 2013
Year Five	_	October 1, 2013 through September 30, 2014
Year Six	-	October 1, 2014 through September 30, 2015
Year Seven	-	October 1, 2015 through September 30, 2016
Year Eight	-	October 1, 2016 through September 30, 2017
Year Nine	<u>-</u> ·	October 1, 2017 through September 30, 2018
Year Ten		October 1, 2018 through September 30, 2019

SECTION TWO

Contract Price and Payment Schedule

The total contract price to be paid by the Owner to the Contractor shall be \$480,000, payable over 10 years at the rate of \$12,000 per quarter for each of the 40 quarters during the contract term. The Contractor will invoice the owner as of the beginning of each quarter, and the Owner will pay the invoice on or before the end of each quarter.

SECTION THREE

Scope of the Work

In consideration of the payment set forth under section two above, the Contractor will inspect and maintain the Owner's 12" ductile iron water supply line suspended under the bridge to St. George Island, Florida, beginning where the line surfaces at East Point, Florida and ending where the line goes back underground on St. George Island. A full and complete inspection of the line, including all of the hanger assemblies that hold the line in place, shall be performed during each of the 40 quarters of this contract at times to be determined by consultation and mutual agreement of the parties. If the Contractor finds any leak, malfunction, misalignment, excessive wear and tear or other problem of any nature during any inspection, the Owner will be immediately notified so that a joint inspection may be made by the parties. The Contractor will repair and remedy any and all problems found during such inspections; provided, however, that this shall not include catastrophic failures such as vessel collisions with the pipe, catastrophic failures, or damage caused by acts of God, such as hurricanes, acts of war, acts of terrorism. warlike actions, law or ordinance nonconformance or any willful, negligent, or accidental act of the Owner or the Owner's employees, which shall be the sole responsibility of the Owner. The Contractor and the Owner have inspected the pipe prior to signing this agreement and have agreed that the entire supply main will be repainted during the 10 year term of this contract. The Owner has also provided the Contractor with an assessment report by a qualified NACE inspector which assessed the condition of each of the 1281 sections of pipe under the bridge. After review of the report and inspecting the pipe, the Owner and the Contractor have agreed that the pipe should be classified into 6 categories, 1 through 6, with 1 being the pipe in the best condition and 6 being the pipe in the worst condition. Those assessments as to each section of pipe are set forth in the excerpts from the NACE assessment report, which are attached as Exhibit "A." The Contractor will completely remove the existing coating system from all sections of pipe in conditions 3, 4, 5 and 6, and shall recoat those sections in compliance with the "Maintenance Coating of Ductile Iror. Pipe" specifications attached as Exhibit "B." The Contractor shall also recoat the other sections of pipe in conditions 1 and 2 in accord with Exhibit "B," after preparing the surface to be coated in accord with those parts of the attached specifications dealing with spot or zone repair and coating. The Contractor will prepare and coat all 1281 sections of pipe during the first 6 years of this contract. As shown by Exhibit "A," there

are 504 sections in conditions 1 and 2; 226 sections in condition 3; 188 sections in condition 4; 133 sections in condition 5; and 230 sections in condition 6. At a minimum, the Contractor will prepare and coat the 230 sections in condition 6 during year 1; the 133 sections in condition 5 during year 2; the 188 sections in condition 4 during year 3; the 226 sections in condition 3 during year 4; and the 504 sections in conditions 1 and 2 during years 5 and 6; with at least 250 sections during year 5. If any of the sections now classified into conditions 1 or 2 deteriorate into conditions 3, 4, 5 or 6 by the end of year 5, as described in the above-referenced "NACE" inspection assessment, those sections will be prepared and coated in accord with the attached specifications applicable to pipe sections requiring complete removal of the existing coating, i.e., conditions 3, 4, 5, 6, by the end of year 6, at which time all 1281 sections of pipe will have been coated. During years 7, 8, 9 and 10, the Contractor will continue to coat any and all sections of pipe, or spots or zones on individual sections that need to be coated according to the standards set forth on Exhibit "B."

SECTION FOUR

Labor, Materials and Equipment

Contractor will furnish all labor, materials and equipment necessary to the performance of its duties under this contract; provided, however, that the Owner will provide its hydraplatform to the Contractor for use on its work under this contract during the 10 year term of this contract. The Owner will keep this hydraplatform in good and safe working order at all times. The materials shall include, but shall not be limited to, all of the necessary paint, which shall be selected by the Owner from the choices set forth on Table 1, page 8 of Exhibit "B."

SECTION FIVE

Compliance with Law

Contractor will secure all permits required to perform its duties under this contract, and will comply with all applicable workers' compensation employer's liability, and other federal, state and county laws, ordinances, rules and regulations.

SECTION SIX

Insurance and Indemnification

During the term of this contract, the Contractor shall maintain in full force insurance of the following types and minimum amounts with such company or companies as are acceptable to Owner, insuring both the Contractor and the Owner against damage or loss arising out of the performance of this contract:

Liability Insurance

Bodily Injury \$300,000 each person

\$1,000,000 each accident

Property Damage \$1,000,000 each accident

Workers' Compensation Minimum full statutory limit under

Florida law

In addition to this insurance, the Contractor will indemnify the Owner against any and all loss or damage the Owner may suffer in connection with this contract.

SECTION SEVEN

Termination for Default

If either party fails to perform any of its duties under this contract, the other party shall have the right to terminate this contract upon 30 days written notice and shall be entitled to \$25,000 as liquidated damages.

SECTION EIGHT

Assignment

This contract may not be assigned by the Contractor without the prior written consent of the Owner.

SECTION NINE

Notices

A party giving notice under this contract shall do so by sending such notice by U.S. Mail, postage prepaid, to the other party at the address set forth on page 1 of this contract or such other address as a party may designate in writing.

SECTION TEN

Inspections and Warranty

The Owner shall have the right to have a NACE inspector, engineer or other Owner's representative present at all times any coating work is being performed under this contract to assure that the coating is being applied in accord with the specifications set forth in Exhibit "B." Any decision or direction by such NACE inspector or other Owner's representative shall be binding on the Contractor with regard to all techniques and methods of preparing and coating the pipe, even if in conflict with the specifications attached as Exhibit "B." So long as the

Contractor follows such advice or direction by the Owner's representative, the Contractor shall not be liable for and does not warrant or guarantee the condition or duration of the coating system beyond the 10 year term of this contract; provided, however, that the Contractor shall recoat, in accord with the specifications in Exhibit "B," any pipes or sections of any pipe that exhibit conditions number 1-2, 2, 3, 4, 5, or 6 as described in Exhibit "A" attached, within the term of this contract. It is the intent and purpose of this contract that all of the Owner's pipe under the bridge to St. George Island shall be in condition number 1 when the 10 year term of the contract as expired, as condition 1 is described on page 3 of Exhibit "A."

IN WITNESS WHEREOF, the parties have executed this contract as of the day and year first above written.

WITNESSES:
Orndy Grzy

May 6 key

Boxus, Fonton

Penny Borton

WATER MANAGEMENT SERVICES, INC., a Florida corporation

By: Gere D. Brown, as its President

May 6 rey

Behry Balton

Permy Barton

WITHERS COASTAL MARINE CONSTRUCTION, INC., a Florida corporation

Bv: 1201

The criteria used to produce the condition assessment

- Condition #1 represents pipes that exhibit no visible manifestation of cracking, peeling, delamination, or rusting.
- 2) Condition #1-2 (1.5) represents pipes where only one or two minor rust Stains were visible (i.e. casting defects). (Note: in the early stages of the Pipe survey any amount of rust or rust staining was characterized as Condition #2, however during the survey a new condition, entitled Condition #1-2 was developed to indentify pipes that were very close to Condition #1, but exhibited a small amount of rust or rust stains.
- 3) Condition #2 pipe exhibits spot rusting, pinpoint rusting, or rust staining. Condition #2 does not include general rusting that sometimes accompanies Conditions #3, #4, #5, or #6.
- 4) Condition #3 pipes exhibit small isolated crack(s) and /or isolated delamination. Condition #3 is sometimes accompanied by spot rusting (Condition #2). (Note: Sixteen pipes were classified as both Conditions #3 and Condition #5, indicating additional peeling/ cracking in areas other than the end of the pipe).
- 5) Condition #4 pipes exhibit multiple isolated crack(s) and/or delamination(s) more plentiful than Condition #3, but not as extensive as Condition #6. Condition #4 may be accompanied by spot rusting (Condition #2) and or general rusting.
- 6) Condition #5 pipes exhibit major crack(s) and/or extensive delarmination(s)
 That occurs on the end(s) of the pipe. Condition #5 pipes exhibit Condition
 #3 or #4 in other areas of the pipe. Additionally, some Condition #6 pipes
 may exhibit Condition #5 but were not classified as Condition #5 due to extensive
 delamination on the entire pipe.
- 7) Condition #6 pipes exhibit massive, extensive, delamination and/or extensive cracks throughout the pipe. Condition #6 is often accompanied by general rusting Condition #6 precludes Condition #1 #5 inclusively. Some Condition #6 is often accompanied by general rusting. Condition #6 precludes Condition Condition #1 #5 inclusively.

EXHIBIT "A"
TO CONTRACT DATED 10/1/09

(Mainland End of Bridge) 1-97 PHASE I PIPE

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PIPE NUMBER	CONDITION ASSEMENT #
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PAGE 1 OF 3

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PAGE 2 OF 3

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PAGE 3 OF 3

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PAGE 1-7

242-385	<u>ت</u>	HASE	25	pipe

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PIPE			CONDITION		CONDITION
NUMBER :	ASSEMENT	PIPE	ASSEMENT	PIPE	ASSEMENT
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386	3	434		482	
387	3	435	3	483	
388	4	436	2	484	
389	4	437	4	485	
390		438	2	486	
391	4	439	3	487	
392	4	440	3	488	
393	4	441	3	489	
394	4	442	4		6
395	6	443		490	
396	5			491	6
397	5	444		492	6
398		445	2	493	<u>-</u> 6
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399	6	447	6	495	6
400	4	448	6	496	4
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402	3	450	6	498	5
403	4	451	6	499	5
404	4	452	6	500	<u></u>
405	4	453	4	501	
406	3	454	4		5
407	6	455	4	502	4
408	6	456	5	503	
409	3	457		504	4
410	3		5	505	4
411	3	458	6	506	4
412		459	6	507	4 6
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413	3	461	4	509	6]
414	3	462	5	510	6
415	4	463	5	511	6
416	4	454	_ 6	512	6.
417	4	465	3	513	2
418	4	466	4	514	5
419	4	467	ô	515	6
420	3	468	6	516	4
421	4	469	5	517	
422	4	470	5		3
423	3	471	5	518 [6
424	2	472		519	6
425	2		6	520	3
426	2	473	6	521	3
		474	6	522	5
427	2	475	6	523	5
428	2	476	5	524	6
429	2	477	6	525	6
430	2	478	6	526	6
431	2	479	6	527	6
432	2	480	6	528	5
433	3	481	- š	529	6

PAGE 3-7

530-673	PHASE	# # 2 4 2 4	

PIPE NUMBER	CONDITION ASSEMENT #	PIPE	CONDITION ASSEMENT	PIPE	CONDITIO ASSEMEN
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530	6	578	4	626	
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534	6	582	2	630	
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550	2	598	4	646	2
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554	5	602	3	650	2
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PAGE 5-7

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824	2	873	2	→ !	2
825	4	874		- <u>922</u>	2
826	5	875		923	2
827	4		2	924	2
828	5	876	2	925	2
829		877	2	926	2
830	4	878	2	927	2
831	4	879	2	928	
	2	880	2	929	2
832	3	881	2	***************************************	2
833	3	882		930	6
834	3	883		931	3
835	3	884	2	932	3
836	3		2	933	3
837	2	885	4	934	3
838		886	4	935	3
839	2	887	5	936	4
	2	888	2	937	4
840	6	889	3	938	
841	3	890	2	939	4
842	6	891	2	940	4
843	2	892	2		2
844	2	893	2	941	
845	2 2	894		942	3
846		895	3	943	4
847	3			844	4
848	2	896	4	945	2
849	2	897	2	946	4
850		898	2	947	4
851	2	899	2	948	
	2	900	2	949	4
852	2	901	2	950	2
653	6	902	2		4
854	6	903	3	951	5
855	3	904	3	952	2
856	6	905		953	6
857	2		2	954	2
858	2	906	2	955	4
859		907 -	2	956	4
360 360	2	908	2	957	4
361	2	909	27.	958	4
	2	910	2	959	
862	2	911	2	960	4
863	2	912	2		3
864	2	913	2	961	3
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	990	2	_	1039		6	
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PIPE	CONDITION ASSEMENT
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1071	4
1072	3
1073	3
1074	6

SURFACE PREPARATION AND COATING REQUIREMENTS FOR MAINTENANCE COATING-OF DUCTILE IRON PIPE FOR ST. GEORGES ISLAND, FLORIDA

Prepared for:

Mr. Gene D. Brown Water Management Services, Inc. 250 John Knox Road, Unit 4 Tallahassee, FL 32303

Prepared by:

KTA-Tator, Inc.

1436 Wexford Downs Lane

Nashville, TN 37211

Richard A. Burgess Senior Consultant

RAB/RST/kram IN280448 WMS-DIP Paint Spec.doc

TO CONTRACT DATED 10/1/09

SURFACE PREPARATION AND COATING REQUIREMENTS FOR MAINTENANCE COATING-OF DUCTILE IRON PIPE FOR ST. GEORGES ISLAND, FLORIDA

PART 1 GENERAL

1.1 SCOPE

- A. These specifications address the surface preparation and coating application requirements for the exterior of in-service ductile iron pipe segments and joints supplying potable water to St. Georges Island, Florida. The pipe segments and joints are suspended below the concrete bridge deck on the outside of east side fascia beams and piers and will remain in service during the work. The coating work includes removal and replacement of the existing coating system on pipes and joints designated by the Owner/Engineer and spot repair and coating other pipes and joints designated by the Owner/Engineer.
- B. The requirements include preparation and coating of previously coated ductile iron pipe and joint segments. The Owner/Engineer will identify which of the existing segments fall into one of the following four work categories;
 - Segments exhibiting extensive rusting and corrosion require removal of rust, scale, residual coating and full replacement of the coating system.
 - 2. Segments that exhibit moderate rusting and corrosion require spot or zone repair, touch-up coating and a full overcoat.
 - 3. Segments having limited rusting and corrosion require only spot repair and touch-up coating.
 - Segments requiring no cleaning or painting.
- C. Surface preparation will include Low Pressure Water Cleaning (LPWC) to remove soluble salts, dirt, bird droppings, etc. Hand and power tool cleaning will be used for spot repair and coating. High pressure water jetting (HPWI), power tool cleaning and/or abrasive blast cleaning shall be used when full removal of existing coating is required for application of the selected coating system.
- D. The release of debris and wastes into the waters of Apalachicola Bay shall be prevented with the use of tarpaulins, screen, supports, scaffolding and other materials as directed by the Owner/Engineer. Protect surfaces not to be painted against damage from cleaning, coating application and overspray. Protect the public and traffic from overspray damage.

1.2 RELATED DOCUMENTS

A. OWNER/ENGINEER REQUIREMENTS

1. Traffic Control and Safety

- 2. Restrictions on Work Days and Work Hours
- 3. Environmental Protection
- 4. Collection and Disposal of Liquid and Solid Waste
- 5. Annual Inspection and Warranty
- 1.3 REFERENCES: All references shall be the latest or most current edition unless otherwise indicated.
 - A. National Association of Pipe Fabricators, Inc. (NAPF) NAPF 500-03¹, "Surface Preparation Standard For Ductile Iron Pipe And Fittings In Exposed Locations Receiving Special External Coatings And/or Special Internal Linings"
 - 1. NAPF 500-03-01 Solvent Cleaning
 - 2. NAPF 500-03-02 Hand Tool Cleaning
 - 3. NAPF 500-03-03 Power Tool Cleaning
 - 4. NAPF 500-03-04 Abrasive Blast Cleaning for Ductile Iron Pipe
 - 5. NAPF 500-03-05 Abrasive Blast Cleaning for Cast Ductile Iron Fittings
 - B. SSPC The Society for Protective Coatings (SSPC)
 - 1. SSPC-SP 1 Solvent Cleaning
 - 2. SSPC-SP 12/NACE No. 5 Surface Preparation and Cleaning of Metals by Waterjetting Prior to Recoating.
 - SSPC-TU 4 Field Methods for Retrieval and Analysis of Soluble Salts on Substrates
 - 4. SSPC Guide 12 Guide for Illumination of Industrial Painting Projects
 - 5. SSPC-Guide 6 Guide for Containing Debris Generated During Paint Removal Operations.
 - 6. SSPC-PA 1 Shop, Field, And Maintenance Painting of Steel
 - 7. SSPC-PA 2 Measurement of Dry Coating Thickness with Magnetic Gages
 - C. ASTM International (ASTM) (formerly the American Society for Testing and Materials)
 - ASTM D4414 Standard Practice for Measurement of Wet Film Thickness by Notch Gages

¹ Some surface preparation standards currently in use may not be applicable to ductile iron and include, but are not limited to Steel Structures Painting Council (SSPC), National Association of Corrosion Engineers (NACE) Standards. Inherent metallurgical, manufacturing and processing differences between ductile iron and carbon steel preclude certain parts of the SSPC, NACE and other surface preparation standards, written specifically for steel surfaces, from being applied to ductile iron pipe and fittings.

- 2. ASTM D 4285 Standard Test Method for Indicating Oil or Water in Compressed Air
- 1.4 SUBMITTALS- Provide the Owner/Engineer with the following plans, programs and documents at least 14 days prior to beginning work.
 - A. Preparation and Coating Work Plan. Include a list of major equipment, cleaning and application process descriptions, sequence of operations, and a work schedule with milestones and staffing.
 - B. Manufacturer's data sheets and material safety data sheets (MSDS) for each cleaning and coating product to be used, including:
 - 1. Product characteristics.
 - 2. Preparation instructions and recommendations.
 - 3. Primer requirements and recommendations.
 - 4. Storage and handling requirements and recommendations.
 - C. Quality Control Inspection Plan. Include all inspection hold points and inspection activities. For each inspection activity identify the required inspection tool, inspection method and acceptance criteria. Provide a copy of the inspection reporting form(s) that will be used.
 - D. Project Specific Safety and Health Plan. Address the requirements of the Owner/Engineer Traffic Control and Safety Requirements. Identify project specific hazards (e.g. working over water), applicable OSHA standards, and protective measures to be taken including personal protective equipment. Include a copy of the Corporate Safety and Health Program:
 - E. Environmental Protection and Waste Management Plan. Address the requirements of the Owner/Engineer Environmental Protection and Collection and Disposal of Liquid and Solid Waste Requirements. Identify means and methods for protecting air, soil and water from contamination by products and wastes generated during the work. Describe the collection, containerization, storage and disposal procedures for all debris, waste water, empty containers, spent solvents and other wastes resulting from the work.
- F. Samples: Provide two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and sheen in the finish color specified by the owner.

1.5 TEST AREA PREPARATION AND COATING (MOCK-UP)

A. Perform surface preparation and application using the proposed equipment and processes to complete a mock up of the completed application for full replacement and a mock up for repair and coating. Each test area shall be a minimum of least 10 linear feet and include the exterior circumference of a pipe section selected by the Owner/Engineer.

- B. Provide access to the test area for the Owner/Engineer and coating manufacturer representative to inspect and examine the finished application. Refinish the area as required to produce acceptable work
- C. Do not proceed with production operations until the Owner/Engineer and manufacturer's representative are satisfied that the work meets the requirements of this section and the contract documents.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Verify the types and quantities of coating materials delivered to the project are those approved by the Owner/Engineer for use. Ensure the batch numbers and expiration dates are on the containers. Do not accept any coating materials that are past the manufacturer's published shelf life.
- B. Store products in manufacturer's unopened, 'labeled packaging within the temperatures recommended by the manufacturer until ready for use. Maintain the proper type and number of fire extinguishers in and near the materials storage area.
- C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of Local, State and Federal regulations authorities having jurisdiction.
- 1.7 PROJECT CONDITIONS: The ductile iron pipe will remain in service during the execution of the work required herein. The temperature of the potable water in the pipe may contribute to condensation on the pipe exterior depending on the existing weather conditions.
 - A. Do not apply coatings or perform final surface cleaning under environmental conditions outside manufacturer's absolute limits except as allowed by this section.
 - B. Do not apply coatings when atmospheric temperatures, relative humidity or material temperatures are outside the range recommended by the coating manufacturer.
 - C. Do not apply coatings to surfaces that have visible moisture, In the event visible moisture from condensation is present, it shall be removed immediately prior to coating application. Environmental controls, such as dehumidification of enclosures, may be used with the approval of the Owner/Engineer.
 - D. A representative of the coating manufacturer must be present for the Test Area preparation and application and at the start up of production work and at 25%, 50% and 75% project completion points.
 - 1. Reports prepared by the manufacturer's representative are to be prepared for each site visit made and address adequacy of all surface preparation and application observed and corrective actions if required.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable manufacturers include Termarust Technologies (Termarust), Sherwin Williams (SW), Wasser High-Tech Coatings (Wasser) and International Paint (International). System options are provided in Table 1- Exterior Coating Systems for Ductile Iron Pipe. Obtain a letter from the manufacturer confirming suitability of products for application to in service ductile iron pipe in accordance with these requirements.
- B. Option 1- Calcium Sulfonate modified alkyd coating 10-12 mils DFT
- C. Option 2- Moisture cure urethane (MCU) with options for a two or a three coat system
- D. Option 3-MCU zinc rich primer, epoxy, polyurethane -polyester.
- E. Option 4-One or two coat high solids epoxy coating
- F. Provide each coat for multi-coat systems in a contrasting color with the finish coat being the color selected by the Owner/Engineer.
- G. Substitutions: Other coating products suitable for application to the ductile iron substrate and of equivalent quality and performance may be submitted for review by the Owner/Engineer.
- H. Requests for substitutions must include all documents required for product submittals, Include a letter from the manufacturer stating the quality and performance of the proposed materials is equal or superior to the materials listed in Table 1 and that the materials are suitable for use per the requirements of this specification.

2.2 MATERIALS - GENERAL REQUIREMENTS

A. Coatings - General: Unless otherwise indicated, provide factory-mixed coatings. When required, mix coatings to correct consistency in accordance with manufacturer's instructions before application. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.

PART 3 EXECUTION

3.1 FXAMINATION

- A. Do not begin application of coatings until substrates have been properly prepared and atmospheric temperatures, relative humidity and material temperatures are within the range recommended by the coating manufacturer.
- B. If substrate preparation is the responsibility of another installer, notify the Owner/Engineer of unsatisfactory preparation before proceeding.

- C. Verify on a daily basis that protective covers, tarps, screens are installed prior to beginning surface preparation or coating application.
- D. Verify compressed air for surface preparation, mixing and atomization of coatings and blow down of surfaces is free of moisture and oil in accordance with ASTM D 4285.

3.2 PREPARATION

- A. Prior to surface preparation install screens, tarps, covers, as required by the Owner/Engineer to collect and contain debris.
- B. Clean surfaces thoroughly prior to coating application using the methods indicated in Table 1.
- C. Clean all surfaces to be coated using LPWC at 4,000 psi minimum. Verify surfaces meet the surface preparation requirements of WJ-4 as defined in SSPC-SP 12.
- D. Test LPWC cleaned surfaces for chlorides in accordance with SSPC-TU 4 using a cell retrieval method and a quantitative field method.
 - 1. Conduct a minimum of three chloride tests per pipe section including the back and bottom.
 - 2. Conduct additional pressurized water cleaning as necessary to reduce chloride levels to less than 7μg/cm². Proprietary additives for reducing water soluble chloride levels may be used if approved in writing by the coating manufacturer.
- E. Remove grease and oil and other surface contaminants not removed by LPWC in accordance with NAPF 500-03-01 Solvent Cleaning.
- F. Prepare existing coating and edges of existing coating in accordance with NAPF 500-03-02, NAPF 500-03-03 or NAPF 500-03-04 using the minimum methods for atmospheric exposure indicated in Table 1 unless otherwise directed by the coating manufacture or Owner/Engineer.
- G. Feather edges of existing coating on sections where adherent coating is encountered.

3.3 INSTALLATION

- A. Do not apply coatings to wet or damp surfaces, during inclement weather, when ambient temperatures are below 50°F or above 100°F, or when the relative humidity is greater than 85%.
- B. Mix coatings in accordance with the manufacturer's published instructions. Do not thin coatings unless within the limits permitted by the manufacturer and use only the manufacturer's approved thinners.
- C. Apply stripe coats of the primer to joint seams, edges of adherent existing coating and around support rollers using methods recommended by manufacturer.

- D. Apply coatings without runs, drips, or sags, without brush marks, and with consistent sheen.
- E. Determine the wet film thickness necessary to achieve the dry film thickness indicated in Table 1. Account for thinning. During application measure and record wet film thickness in accordance with ASTM D4414.
- F. Determine the dry film thickness of each coat in accordance with SSPC-PA 2.
- G. Do not apply subsequent coats until the preceding coat has cured adequately as indicated in the manufacturer's product data sheet.

3.4 PROTECTION

- A. Protect finished coatings until completion of project.
- B. Touch-up damaged coatings as recommended by the coating manufacturer.

3.5 QUALITY CONTROL INSPECTIONS

- A. Conduct Quality Control (QC) Inspections on a daily basis as follows:
 - 1. Coating material storage meets the requirements of the manufacturer.
 - 2. Containment and protective shielding are in place and properly secured.
 - 3. Compressed air cleanliness for surface preparation, atomization of coating and surface blow down is free of oil and water.
 - 4. Ambient conditions are appropriate for surface preparation, application, and/or curing
 - 5. Pressure washing equipment is generating the required operating pressures
 - 6. Surface are cleaned such that chloride tests are $< 7 \mu \text{ g/cm}^2$.
 - 7. Prepared surfaces meet the specified degree of cleanliness
 - 8. Document material batch numbers and verify coating mixing and thinning are in accordance with the manufacturers recommendations
 - 9. Verify surface preparation meets the required quality immediately prior to coating application.
 - 10. Document recoat times and cleanliness between coats
 - 11. Verify proper coating coverage and continuity
 - 12. Measure and record wet and dry film thickness of each coat.
 - 13. Identify surfaces of damaged, missed or improper coating application for touch up and repair.
 - 14. Verify all defective and deficient work has been corrected.

Table 1 Exterior Coating Systems for Ductile Iron Pipe

	Calcium Sulfonate	Moisture Cure Urethane			MGU/ Epoxy/ Polyurethane	Ероху
	Termarust One or Two Coat	Wasser Three Coat	Sherwin Williams Two- Coat	Sherwin Williams Three Coat	Sherwin Williams Three Coat	International One or Two Coat
Primer	TR2200LV	Wasser MC Ferro Clad Primer:	Corothane I MIO-Aluminum	Corothane Pre- Prime	SW Corothane 1 Galvpac primer	Interzone 954 Modified Epoxy
		3.0-5.0 mlls DFT	2.0 - 3.0 mlls	1.5 - 2.0 mlls	2.0 -4.0 mils DFT	10.0-15.0 mils DFT
Intermediale		Wasser MC Ferrox B Intermediate		.Corothane MIO-Aluminum	SW Macropoxy 646 FC Intermediate	Optional Second Coat
		3.0-5.0 mils DFT		2.0 - 3.0 mils	3.0-6.0 mils DFT	
Finish	TR2100	Wasser MC Luster: Semi- Gloss Finish	Gorothane I HS Aliphatio Urethane	Corothane I HS Aliphatic Urethane	SW Acrolon 218HS finish	Interzone 954 Modified Epoxy
	10-12 mils	2.0-4.0 mils DFT	2.0-3.0 mils	2.0-3.0 mils	2.0-3.0 mils DFT	10.0-15.0 mils DFT
Surface Preparation		Reference the following Standards: NAPF 500-03 SURFACE PREPARATION STANDARD FOR DUCTILE IRON PIPE AND FITTINGS IN EXPOSED LOCATIONS RECEIVING SPECIALEXTERNAL COATINGS AND/OR SPECIAL INTERNAL LININGS				
Cleanliness,	LPWC all surfaces, 4,000 psi minimum with potable water reduce chlorides to < 7μg/cm², achieve WJ-4. Proprietary chloride surface treatments (Chlor-Rid) may be used if approved by the coating manufacturer.					
Minimum		NAPF 500-03-01 Surface Preparations Standard for "Solvent Cleaning"				
Atmospheric Service		Hand and Power Tools: NAPF 500-03-02 Surface Preparations Standard for "Fland Tool Cleaning" or NAPF 500-03-03 Surface Preparations Standard for "Power Tool Cleaning" NAPF 500-03-03 "APF 500-03-03" "APF 500-03" "APF				
Additional Cleanliness, Preferred	None Stated	NAPF 500-03-04 Surface Preparations Standard for None Stated "Abrasive Blast Cleaning of Ductile Iron Pipe" None Stated				

END OF SECTION



THE BEST CORROSION CONTROL PERFORMANCE, GUARANTEED!

Condensed Specifications and Instructions for Cleaning and Over coating Steel Structures; including those with Crevice Corroded and Pack Rusted Joints, Connections and Bearings using the Termarust Series 2000 High Ratio Calcium Sulfonate Corrosion Control System

SURFACE PREPARATION AND CLEANING:

High Pressure Water Cleaning - The structure (or the portions of it to be coated) are to be cleaned using a 5,000 psi HP WC (high-pressure water cleaning) at 5 Gallons per minute with a zero degree rotating tip (at a maximum of a 4" standoff distance) to a (SSPC – SP12 WJ4 - NV2) to remove loose paint and loose rust, (SSPC SP2 &SP3 hand or power tool cleaning maybe used in inaccessible areas or when water cleaning is not possible). In some cases after HP WC there are areas of tightly adhered black oxide which was not removed. Although this rightly adhered black oxide meets the WJ4 standard – it must be removed, because the active corrosion under it is highly contaminated with Chloride &/or Sulfates &/or Nitrates and if it is allowed to remain it will result in delamination of the black oxide, and the coating which has adhered to it. Special attention must be paid to the crevice corroded joints and connections. The connections must be flushed out during the cleaning process with the 5,000 psi HP WC (high-pressure water cleaning) at 5 Gallons per minute with a zero degree rotating tip (at a maximum of a 4" standoff distance).

Note:

NV (Non Visible Contaminants) When it is expected (and/or confirmed by testing) that the surface of the steel is contaminated with soluble salts (Chlorides &/or Sulfates &/or Nitrates) the HP WC (high pressure water cleaning) should be finished with or incorporated into the wash water initially at a 100:1 solution of Chlor*Rid (manufactured by CHLOR*RID International. www.chlor-rid.com 1-800-442-3217 (USA) or 1-888-279-5497 (CDN) or equivalent to remove those salts. (Just washing with water is not adequate because the salts have a chemical and polar attraction to the steel) [For additional information on this topic please access chlor-rid's website]

<u>DRYING:</u>

- 1. It is required that even if the joints and connections look dry that they be blown dry with clean, DRY, oil free, high pressure (100 psi) compressed air.
- 2. <u>Application Temperature</u>. <u>Dew Point</u>, <u>Relative Humidity</u>: minimum + 2°C (5°F) application temperature, +2°C (5°F) temperature dew point spread, 99% relative humidity. See technical data sheets for special conditions.

314 AYITO ROAD SE, VIENNA, VA 22180-5983, FAX 703-938-T252 9100 EDISON, ANJOU (MONTREAL), QUEBEC H1J 1T3, FAX 514-354-2799 TOLL FREE 1-888-279-5497

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THE BEST CORROSION CONTROL PERFORMANCE, GUARANTEED!

<u>APPLICATION OF THE TERMARUST Series 2000 HIGH RATIO Co-</u> <u>Polymerized Calcium Sulfonate TR2200 Penetrant/Sealer and TR2100 Self</u> <u>Priming Topcoat</u>

Notes:

- 1. The Termarust system is considered to be a "one coat" system; which involves 3 steps and 2 materials. The steps are done one after the other, wet on wet with no waiting time between application of the materials; i.e. (a) application of the Penetrant/Sealer TR2200, and (b) application of a Caulk / Stripe coat and spot priming TR2100 Primer/Topcoat and (c) application of the 'finish' coat TR2100 Primer/Topcoat. The painter goes to a particular location only once, after surface preparation has been completed.
- 2. Each of the two materials (TR2100 & TR2200) is a single component material; which requires no mixing
- 3. For normal application the TR2100 Primer/Topcoat does not need to be thinned. If thinning is required use Thinner TRT01.
- 4. Cleanup can be done with Mineral Spirits.

Application of the Termarust Penetrant / Sealer (TR2200)

This material is to be applied liberally to all joints and connections, including around bolts, nuts and rivets were gaps exist. Care should be taken to minimize putting penetrant on surfaces other than in and around joints and connections. Excess Penetrant (on the surface) should be brushed out, primarily because excess Penetrant on the surface will make the surface look cosmetically poor.

<u>Application of a Caulk (or Stripe) Coat</u> - As soon as the Penetrant/Sealer TR2200 has been applied the Termarust TR2100 Self-Priming Topcoat can be applied into joints and connections, bolts, nuts and gaps around rivets.

Application of the Termarust Self Priming Topcoat (TR2100)

The TR2100 material is used for a caulk/stripe coat, spot prime and overcoat for existing paint or for recoating prepared steel.

Notes:

During caulk (or stripe) coat apply a minimum of 10 mils DFT (15-18 mils wet) TR2100
 Primer/Topcoat directly into joints and connections – where there is pack rust and crevice corrosion.





THE BEST CORROSION CONTROL PERFORMANCE, GUARANTEED!

2. Apply spot prime of a minimum of 5 mils DFT (7-9 mils wet) over bare steel and tightly adhered contaminant free rust; which includes the crevice corroded and pack rusted joints.

Application of the Final Overcoat (TR2100 Primer Topcoat)

As soon as the Caulk Coat and spot prime has been applied, the 'finish' coat of TR2100 should be applied at a minimum of 7-9 mils wet over all surfaces including tightly adhered paint (for a minimum of 5 mils DFT)

COATING PROCEDURES SUMMARY

The following is a summary of the steps used for applying the one-coat Termarust 2000 Series corrosion control system.

Overcoating Structure; including Crevices Joints and Connections

Step	Coating Material	DFT: (mils) Min-Max	Usage
1	Termarust TR2200 Penetrant / Sealer	Thoroughly wet the surface	Apply liberally to crevices and joints &/or spaces where a gap has been created between plates and around bolts, nuts and washers – allow material to soak into spaces. Brush out any excess material.
2	Termarust TR2100 Self Priming Topcoat	10 to 12	Liberally apply s a stripe or caulk coat – to crevice corroded and pack rusted joints and connections, provide extra material to bolts, nuts and any gaps around rivets.
2a	Termarust TR2100 Self Priming Topcoat	5 to 7	Over exposed metal areas and areas of tightly adhered contaminate free rust (flash rust) apply a spot prime of 5 to 7 mils DFT of Topcoat including areas mentioned in step 2.
3	Termarust TR2100 Self Priming Topcoat	5 to 7	Apply an additional 5 to 7 mils DFT over the entire structure including the joints and connections

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INSPECTION REPORT

TO: Water Management Services, Inc.

FROM: Withers Coastal Marine Construction, Inc.

DATE: January 7, 2010

RE: Inspection as per October 1, 2009 Contract

The water supply main on the St. George Island bridge was inspected by Withers Coastal Marine Construction, Inc. during the month of December 2009. The following is a summary report based on that inspection.

Leaks. No visible leaks were observed during the inspection.

<u>Hanger Assemblies.</u> The hanger assemblies all appeared to be secure and in good condition.

<u>Pipe.</u> The pipe all appeared to be secure and in good condition, except for the coating on certain sections of the pipe which is being recoated pursuant to the contract between the parties.

Ben Withers, President

INSPECTION REPORT

TO: Water Management Services, Inc.

FROM: Withers Coastal Marine Construction, Inc.

DATE: April 8, 2010

RE: Inspection as per October 1, 2009 Contract

The water supply main on the St. George Island bridge was inspected by Withers Coastal Marine Construction, Inc. during the month of March, 2010. The following is a summary report based on that inspection.

<u>Leaks</u>. We found a leak in the pipe on the island side of the bridge. (See below).

<u>Hanger Assemblies.</u> The hanger assemblies all appeared to be secure and in good condition.

<u>Pipe.</u> The exposed pipe at the foot of the bridge on the island side was found to be in the process of separating. When this was discovered, the pipe was less than 2 inches away from a total blow-out, which would have caused a termination of water service to the island. The pipe was promptly repaired and there was no interruption of service. Please see 3 photos attached. The rest of the pipe appeared to be secure and in good condition, except for the coating on certain sections of the pipe which is being recoated pursuant to the contract between the parties.

Ben Withers, President







INSPECTION REPORT

TO: Water Management Services, Inc.

FROM: Withers Coastal Marine Construction, Inc.

DATE: July 9, 2010

RE: Inspection as per October 1, 2009 Contract

The water supply main on the St. George Island bridge was inspected by Withers Coastal Marine Construction, Inc. during the month of June, 2010. The following is a summary report based on that inspection.

Leaks. No visible leaks were observed during the inspection.

<u>Hanger Assemblies.</u> The hanger assemblies all appeared to be secure and in good condition.

<u>Pipe.</u> The pipe all appeared to be secure and in good condition, except for the coating on certain sections of the pipe which is being recoated pursuant to the contract between the parties.

Ben Withers, President

INSPECTION REPORT

TO: Water Management Services, Inc.

FROM: Withers Coastal Marine Construction, Inc.

DATE: October 6, 2010

RE: Inspection as per October 1, 2009 Contract

The water supply main on the St. George Island bridge was inspected by Withers Coastal Marine Construction, Inc. during the month of September, 2010. The following is a summary report based on that inspection.

<u>Leaks.</u> No visible leaks were observed during the inspection.

<u>Hanger Assemblies.</u> The hanger assemblies all appeared to be secure and in good condition.

<u>Pipe.</u> The pipe all appeared to be secure and in good condition, except for the coating on certain sections of the pipe which is being recoated pursuant to the contract between the parties.

Ben Withers, President

INSPECTION REPORT

TO: Water Management Services, Inc.

FROM: Withers Coastal Marine Construction, Inc.

DATE: January 5, 2011

RE: Inspection as per October 1, 2009 Contract

The water supply main on the St. George Island bridge was inspected by Withers Coastal Marine Construction, Inc. during the month of December, 2010. The following is a summary report based on that inspection.

Leaks. No visible leaks were observed during the inspection.

<u>Hanger Assemblies</u>. The hanger assemblies all appeared to be secure and in good condition.

<u>Pipe.</u> The pipe all appeared to be secure and in good condition, except for the coating on certain sections of the pipe which is being recoated pursuant to the contract between the parties.

Ben Withers, President

INSPECTION REPORT

TO: Water Management Services, Inc.

FROM: Withers Coastal Marine Construction, Inc.

DATE: April 7, 2011

RE: Inspection as per October 1, 2009 Contract

The water supply main on the St. George Island bridge was inspected by Withers Coastal Marine Construction, Inc. during the month of March, 2011. The following is a summary report based on that inspection.

Leaks. No visible leaks were observed during the inspection.

<u>Hanger Assemblies.</u> The hanger assemblies all appeared to be secure and in good condition.

<u>Pipe.</u> The pipe all appeared to be secure and in good condition, except for the coating on certain sections of the pipe which is being recoated pursuant to the contract between the parties.

Ben Withers, President

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FROM: Withers Coastal Marine Construction, Inc.

DATE: July 8, 2011

RE: Inspection as per October 1, 2009 Contract

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Leaks. No visible leaks were observed during the inspection.

<u>Hanger Assemblies.</u> The hanger assemblies all appeared to be secure and in good condition.

<u>Pipe.</u> The pipe all appeared to be secure and in good condition, except for the coating on certain sections of the pipe which is being recoated pursuant to the contract between the parties.

Ben Withers, President

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FROM: Withers Coastal Marine Construction, Inc.

DATE: October 6, 2011

RE: Inspection as per October 1, 2009 Contract

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Ben Withers, President

INSPECTION REPORT

TO: Water Management Services, Inc.

FROM: Withers Coastal Marine Construction, Inc.

DATE: January 5, 2012

RE: Inspection as per October 1, 2009 Contract

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<u>Hanger Assemblies.</u> The hanger assemblies all appeared to be secure and in good condition.

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