**ADDENDUM NO. 1**
**February 28, 2023**
**225107**

RE: **ALBURGH VILLAGE WATER TANK REPLACEMENT**

FROM: DuBOIS & KING, INC.
P.O. Box 339
Randolph, Vermont 05060
(802) 728-3376

TO: **Prospective Bidders**

This Addendum forms part of the Contract Documents and modifies the original Bidding Documents issued by the Village of Alburgh, Vermont, for the Alburgh Village Water Tank Replacement project dated February 10, 2023. **Acknowledge receipt of this Addendum in the space provided on Page 1 of the Bid Form. Failure to do so will subject the Bidder to disqualification.**

## I. Pre-Bid Meeting

A Pre-Bid meeting was held at the Project Site on February 21, 2023 at 10:00 a.m. Attendees are listed on the attached Pre-Bid Meeting Attendance Log (**Attachment 1**). Jonathan B. Ashley, P.E., of DuBois & King, Inc. described key elements of the project. The following sections of the plans and documents were noted:

1. Elements of the plans that include site work including but not limited to grading, erosion controls, water mains, valves, and hydrants, fencing and gate.
2. Reference sections of the specifications include interested DBEs, geotechnical report, and construction permit.
3. Requirement for bid bond or certified check.
4. List of pre-qualified tank contractors.
5. Funding agency provisions that apply to the work on Page 3 of 3 of the Advertisement for Bids.
6. AIS requirements for Substitute and “Or Equal” Items (Instructions to Bidders Article 10.01).
7. AIS, DBE, and Wage Rate Requirements (Articles 24, 25, and 26 of the Instructions to Bidders).
8. Article 2 – Attachments to This Bid (Bid Form for Construction Contract).
9. Contract Time: Days (Article 4.03 of Agreement Between Owner and Contractor for Construction Contract).
10. Exhibit C – General Wage Determinations (Supplementary Conditions of the Construction Contract).
11. Pay Item inclusions that apply to all relevant Measurement and Payment descriptions (Section 01150, 3.01.C and D).
12. Section 33 1619 – Spherical Elevated Water Storage Tank.
13. Section 46 4141 2.02.B water circulation requirements.

## II. Bid Opening Date Change

Bids for the construction of the Project will be received at the Village of Alburgh located at 1 North Main Street, Suite 2, Alburgh, VT 05440 until **Friday, March 24, 2023 at 10:00 AM local time**. At that time the Bids received will be opened and read.

## III. Questions Deadline Date Change

All questions pertaining to this Bid should be submitted to Jonathan Ashley via email at jashley@dubois-king.com no later than **Friday, March 10, 2023 at 5:00 PM** local time.

## IV. Contract Documents (Specification) Changes

**REVISION** of BID FORM FOR CONSTRUCTION CONTRACT, ARTICLE 1.02: **REMOVE** the first sentence and **REPLACE** with the following:

**This Bid is submitted by the following pre-qualified tank contractor, or by a Bidder who has subcontracted 100% of the tank construction to the following pre-qualified tank contractor (check one):**

## V. Questions & Answers

**The following addresses questions received at the pre-bid meeting and by email and provides additional information and clarifications.**

**Question 1: Are the pre-qualified tank contractors required to be the General Contractors/Bidders for the Project?**

**Answer 1:** The Advertisement for Bids indicates that Contractors and subcontractors who will be completing the demolition of the existing storage tank and construction of the new storage tank are required to be prequalified. It is not required that the listed pre-qualified tank Contractors serve as the General Contractor, although it is the Engineer's opinion that the majority of the work on the project is the demolition of the existing tank and construction of the new storage tank.

Demolition of the existing storage tank can be completed by a qualified subcontractor that is not on the pre-qualified tank contractors list.

**Question 2: Are substitute tank mixers acceptable?**

**Answer 2:** Substitute tank mixers can be considered with pre-approval required during the submittal review process through the Engineer. Requirements for substitutions are included in the specifications.

**Question 3: Will alternative technical specifications for tank mixing be considered? (Proposed modifications have been submitted with this question).**

**Answer 3:** The proposed modifications to the technical specification for the tank mixer will be reviewed and addressed in a subsequent Addendum.

**Question 4: Is there a need for Geopier Ground Improvement on the project?**

**Answer 4:** A geotechnical report has been provided in the Contract Documents. The Bidder shall determine the necessary ground improvements and foundation design for the new storage tank.

**Question 5: Do the water main and hydropneumatic tanks need to be installed prior to the tank demolition?**

**Answer 5:** Yes.

**Question 6: Does the existing tank concrete foundation remain in place, or does it need to be removed?**

**Answer 6:** Elements of the existing tank concrete foundation within three feet of the proposed finish grade shall be removed. Concrete foundation below that depth can remain in place, and if left in place, shall be marked with underground warning tape.

**Question 7: Is there an existing tank inspection report for the old tank?**

**Answer 7:** Tank inspection reports from 2009 and 2015 are attached for reference.

**Question 8: Is there an old paint analysis available for the old tank?**

**Answer 8:** No.

**Question 9: Can the existing tank be tipped like a tree in the southeasterly direction?**

**Answer 9:** The means and methods of tank demolition are the responsibility of the Contractor. The Contractor shall submit a demolition plan at least four (4) weeks in advance of initiating the demolition work. Demolition means and methods shall be compliant with all applicable regulations and codes, and shall be conducted solely on Village property without damaging adjacent and neighboring properties. If the proposed demolition activities have the potential to

cause vibration on adjacent properties, the Contractor shall complete a pre-demolition survey of all structures on adjacent properties.

**Question 10: Does the existing tank need to remain in service until the new tank is online?**

**Answer 10:** Yes; see Sheet C4.

**Question 11: Are the pre-qualified tank contractors the only tank contractors allowed for construction of the new tank?**

**Answer 11:** Yes.

**Question 12: Will capping of the water main be requested?**

**Answer 12:** Yes; see Sheet C4 and Section 02720 of the Specifications.

**Question 13: Can C900 blue brute pipe be used in place of ductile iron pipe? If suppliers don't have the ductile iron pipe in stock, the lead time to get it from the manufacturer is 30-plus weeks.**

**Answer 13:** Assume ductile iron pipe for the purposes of this Bid. If a substitution is proposed during construction due to lead time, Contractor shall provide a substitution submittal to the Owner and Engineer for review including the proposed effects of the substitution on pricing and schedule.

**Question 14: For paving the road back, is a trench patch allowed, or is full width paving of the road required?**

**Answer 14:** Pavement limits are shown on the Pavement Replacement Detail on Sheet C8.

## VI. Additional Information/Clarifications

a. Controls work shown on the Plans is currently being re-evaluated based on equipment availability. Revisions to the controls design will be issued in a subsequent Addendum.

**This document constitutes Addendum 1 for this project.**

ATTACHMENT 1

# PRE-BID MEETING

## ALBURGH VILLAGE
## WATER TANK REPLACEMENT
## ALBURGH, VERMONT
## 225107

**FEBRUARY 17, 21, 2023**
**10:00 AM**

**ATTENDANCE LOG**
**(Please Print)**

| NAME | AFFILIATION & TITLE | PHONE # | E-MAIL ADDRESS |
|---|---|---|---|
| Goodhue Excavation, Inc | Owner President | 802-343-2364 | goodhueut@gmail.com |
| ROGER BERGERON | STATE OF VT - WLD | 802-760-8135 | ROGER.BERGERON@VERMONT.GOV |
| Jason Beaudin | Village of Alburgh | 802-782-1652 | alburghwater@gmail.com |
| Cheryl Dion | Village of Alburgh | 802-999-7707 | villageofalburgh@gmail.com |
| SKip J Lewis | Village of Alburgh | 254-317-0416 | bcosupply@yahoo.com |
| Jonathan Ashley | DuBois & King, Inc. | 802-465-8396 x4810 | jashley@dubois-king.com |
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| | | | |
| | | | |
| | | | |

ATTACHMENT 2A: 2015 TANK INSPECTION REPORT

Liquid Engineering Corporation

# Steel Potable Water Reservoir Inspection Report

Job Number: 48554 | Utility: Alburg Water Department | Tank: tower

Inspector: M. Frantz | Dive Controlier: Z. Reeves | Date: 10/4/2015

## AMERICAN WATER WORKS ASSOCIATION
ANSI/AWWA M42 / D101-53

### SSPC Legend

| Grade | Description |
|---|---|
| 10 | No Rusting, or <0.01% of surface is rusted |
| 9 | Minor rusting, or <0.03% of surface is rusted |
| 8 | Isolated rust, <.01% of surface is rusted |
| 7 | Isolated rust, <.03% of surface is rusted |
| 6 | Extensive rusting, <1% of surface is rusted |
| 5 | Approximately 3% of the surface is rusted |
| 4 | Approximately 10% of the surface is rusted |
| 3 | Approximately 17% of the surface is rusted |
| 2 | Approximately 33% of the surface is rusted |
| 1 | Approximately 50% of the surface is rusted |
| 0 | Approximately 100% of the surface is rusted |

### NACE Legend

| Grade | Description |
|---|---|
| A | None |
| B | Uniform Surface Corrosion |
| C | Pitting |
| D | Concentration Cell Corrosion |
| E | Galvanic Corrosion |
| F | Stress Corrosion Cracking |
| G | Erosion Corrosion |
| H | Intergranular Corrosion |
| I | Dealloying |

### AWS Legend

| Grade | Description |
|---|---|
| L | Satisfactory |
| M | Spatter |
| N | Porosity |
| O | Convexity / Concavity |
| P | Cracks |
| Q | Inclusions |
| R | Incomplete Fusion |
| S | Incomplete Penetration |
| T | Undercut |
| U | Underfill |
| V | Overlap |
| W | Unable to evaluate |

## INTERIOR RESERVOIR ROOF

| | QUADRANT 1 | | | QUADRANT 2 | | | QUADRANT 3 | | | QUADRANT 4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SSPC | NACE | AWS | SSPC | NACE | AWS | SSPC | NACE | AWS | SSPC | NACE | AWS |
| Vents | 7 | B | L | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Roof Panels | 6 | B | L | 6 | B | L | 6 | B | L | 6 | B | L |
| ~~Roof Support~~ | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| ~~Roof Gussets~~ | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| ~~Painting Ring~~ | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Overall Coating Rating Good | Average Blister Diameter None | Average Pit Depth N/A

Coating Deficiencies: Blistering ☐ Delamination ☐ Chalking ☑ Checking ☐ Cracking ☐ Growth ☐ Pinholes ☐ Staining ☑ Sags/Runs ☐

## INTERIOR RESERVOIR WALLS

| | SSPC | NACE | AWS | SSPC | NACE | AWS | SSPC | NACE | AWS | SSPC | NACE | AWS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Wall to Roof weld | 6 | B | L | 6 | B | L | 6 | B | L | 6 | B | L |
| Lower Ring Panels | 7 | B | L | 7 | B | L | 7 | B | L | 7 | B | L |
| Middle Ring Panels | 5 | B | L | 5 | B | L | 5 | B | L | 5 | B | L |
| Upper Ring Panels | 7 | B | L | 7 | B | L | 7 | B | L | 7 | B | L |
| Interior Ladder | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Overall Coating Rating Good | Average Blister Diameter 1/16" | Average Pit Depth N/A

Coating Deficiencies: Blistering ☑ Delamination ☐ Chalking ☑ Checking ☐ Cracking ☐ Growth ☐ Pinholes ☐ Staining ☑ Sags/Runs ☐

## INTERIOR RESERVOIR FLOOR

| | SSPC | NACE | AWS | SSPC | NACE | AWS | SSPC | NACE | AWS | SSPC | NACE | AWS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Perimeter Weld | 7 | B | L | 7 | B | L | 7 | B | L | 7 | B | L |
| Floor Panels | 7 | B | L | 7 | B | L | 7 | B | L | 7 | B | L |

Overall Coating Rating Good | Average Blister Diameter None | Average Pit Depth N/A

Coating Deficiencies: Blistering ☐ Delamination ☐ Chalking ☑ Checking ☐ Cracking ☐ Growth ☐ Pinholes ☐ Staining ☑ Sags/Runs ☐

Liquid Engineering Corporation

# Steel Potable Water Reservoir Inspection Report

Job Number: 48554 | Utility: Alburg Water Department | Tank: tower

Inspector: M. Frantz | Dive Controller: Z. Reeves | Date: 10/4/2015

## INTERIOR RESERVOIR SUPPORT COLUMNS

| | QUADRANT 1 | | | QUADRANT 2 | | | QUADRANT 3 | | | QUADRANT 4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SSPC | NACE | AWS | SSPC | NACE | AWS | SSPC | NACE | AWS | SSPC | NACE | AWS |
| Column Structures | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Column Bases | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Column to Roof | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Overall Coating Rating Good | Average Blister Diameter | Average Pit Depth N/A

Coating Deficiencies: Blistering ☑ Delamination ☐ Chalking ☑ Checking ☐ Cracking ☐ Growth ☐ Pinholes ☐ Staining ☑ Sags/Runs ☐

## INTERIOR RESERVOIR PLUMBING COMPONENTS

| | QUADRANT 1 | | | QUADRANT 2 | | | QUADRANT 3 | | | QUADRANT 4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SSPC | NACE | AWS | SSPC | NACE | AWS | SSPC | NACE | AWS | SSPC | NACE | AWS |
| Inlet Plumbing | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | 5 | B | L |
| Outlet Plumbing | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | 5 | B | L |
| Manways | N/A | N/A | N/A | 8 | B | L | N/A | N/A | N/A | N/A | N/A | N/A |
| Floor Drains | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Interior Overflow | N/A | N/A | N/A | 7 | B | L | N/A | N/A | N/A | N/A | N/A | N/A |

## EXTERIOR RESERVOIR ROOF

| | QUADRANT 1 | | | QUADRANT 2 | | | QUADRANT 3 | | | QUADRANT 4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SSPC | NACE | AWS | SSPC | NACE | AWS | SSPC | NACE | AWS | SSPC | NACE | AWS |
| Vents | 8 | B | L | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Roof Panels | 8 | B | L | 8 | B | L | 8 | B | L | 8 | B | L |
| Access Hatches | 8 | B | L | N/A | N/A | N/A | 8 | B | L | N/A | N/A | N/A |

Overall Coating Rating Good | Average Blister Diameter None | Average Pit Depth N/A

Coating Deficiencies: Blistering ☐ Delamination ☐ Chalking ☑ Checking ☐ Cracking ☐ Growth ☐ Pinholes ☐ Staining ☑ Sags/Runs ☐

## EXTERIOR RESERVOIR WALLS

| | QUADRANT 1 | | | QUADRANT 2 | | | QUADRANT 3 | | | QUADRANT 4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SSPC | NACE | AWS | SSPC | NACE | AWS | SSPC | NACE | AWS | SSPC | NACE | AWS |
| Wall to Roof Weld | 8 | B | L | 8 | B | L | 8 | B | L | 8 | B | L |
| Lower Ring Panels | 7 | B | L | 7 | B | L | 7 | B | L | 7 | B | L |
| Mid Ring Panels | 7 | B | L | 7 | B | L | 7 | B | L | 7 | B | L |
| Upper Ring Panels | 8 | B | L | 8 | B | L | 8 | B | L | 8 | B | L |
| Exterior Overflow | N/A | N/A | N/A | 8 | B | L | N/A | N/A | N/A | N/A | N/A | N/A |

Overall Coating Rating Good | Average Blister Diameter None | Average Pit Depth N/A

Coating Deficiencies: Blistering ☐ Delamination ☐ Chalking ☑ Checking ☐ Cracking ☐ Growth ☐ Pinholes ☐ Staining ☑ Sags/Runs ☐

## FOOTINGS / FOUNDATION

| | | | | |
|---|---|---|---|---|
| Footings / Foundations: | Satisfactory ☑ | Cracking ☐ | Spalling ☐ | Erosion/Exposed Aggregate ☐ |
| Anchor Bolts: | Satisfactory ☑ | Loose ☐ | Rusted Corroded ☐ | (If excessive) Diameter = |

## TOWER SUPPORT STRUCTURES

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Tower Legs/Columns: | Satisfactory ☑ | Alignment | Good | Settling | Good | Rust /Corrosion | Yes |
| Riser Pipe: | Satisfactory ☑ | Alignment | Good | Frost Casing | Good | Rust /Corrosion | Yes |
| Rods & Turnbuckles: | Satisfactory ☐ | Turnbuckle Tension | ---- | Rod Tension | ---- | Cotter Pins/Rod Nuts | ---- |
| Leg shoes/Brackets: | Satisfactory ☐ | Coating | ---- | Rust/Corrosion | ---- | Pitting/Cracking | ---- |

Liquid Engineering Corporation

# Potable Water Reservoir Contamination, Health and Safety Report

| | | |
|---|---|---|
| Job Number: 48554 | Utility: Alburg Water Department | Tank: tower |
| Inspector: M. Frantz | Dive Controller: Z. Reeves | Date: 10/4/2015 |

**Complies With: AWWA • OSHA • ANSI • NIOSH • NAVFAC • NFPAC**

## CONTAMINATION & HEALTH

| | | | | | |
|---|---|---|---|---|---|
| **Air Vents** | Type: Mushroom | | #: 1 | Screen Condition(s): Good | |
| **Hatches** | Type: Round | | #: 2 | Secured Properly: Yes | Properly Sealed: Yes |
| **Exterior Overflow** | Flapper: No | Screen: Yes | | Gasket: No | Condition: Good |
| **Cathodic Covers** | ~~In Place:~~ | | ~~#:~~ | ~~Gasket:~~ | ~~Properly Sealed: Yes~~ |
| **Roof to Wall Joint** | Welded: Yes | Properly Sealed: Yes | | | |
| **Roof Integrity** | Holes: No | Cracking: No | Standing Water: No | | |
| **Wall Integrity** | Holes: No | Cracking: No | | | |
| **Manway Integrity** | Leaks: No | Condition: Good | | | |
| **Water Clarity** | General Appearance: CLEAR | | | Odor: NONE | |
| **Floating Surface Debris** | Type: NONE | | | Source: N/A | |
| ~~**Hypalon Floating Cover**~~ | ~~Condition:~~ | ~~Holes:~~ | ~~Tears:~~ | | |
| **Telemetry Penetrations** | Properly Sealed: Yes | | | | |

## FACILITY SAFETY COMPLIANCE

**Exterior Ladder**

| | | | | | | |
|---|---|---|---|---|---|---|
| **Overall Ladder** | Condition: Good | #: 1 | Offset Landing: No | Height: 138' | | |
| **Vandal Guard** | Present: Yes | Vandal Guard Locked: Yes | | | | |
| **Ladder Rails & Rungs** | Condition: Good | Missing/Damaged Rungs: No | | | | |
| **Rung Spacing & Depth** | Spacing: 12 | in. *(max 12")* | Toe Depth: 7 | in. *(min 7")* | | |
| **Rail Spacing & Size** | Width: 2 | in. *(min 2")* | Thickness: 1/4 | in. *(min 1/4")* | Rail to Rail: 16 | in.*(min 16")* |
| **Safety Climb System** | Type: Rail | Condition: Good | | | | |
| **Number & Locations** | Wall: | Leg: | Roof: | Riser Pipe: 1 | Other: | |
| **Ladder Attachments** | | | | | | |

**Manways**

| | | | | |
|---|---|---|---|---|
| ~~Type and size~~ | ~~Type: Oval~~ | ~~#: 1~~ | ~~Size: 18x22 inches (24" – 18"x22" min)~~ | |
| **Support Structure** | Type: Dogged | Condition: Good | | |
| **Number & Locations** | Wall: | Roof: | Riser Pipe: 1 | Other: |

**Hatches**

| | | | | | |
|---|---|---|---|---|---|
| **Hatch Type & Size** | Type: Round | #: 2 | Size: 30 | in. *(24" – 24"x15" min)* | |
| **Hatch & Lid Lip Height** | Hatch: 4 | in. *(min 4")* | Lid: 4 | in. *(min 2")* | |

**Balconies & Railing**

| | | | | | |
|---|---|---|---|---|---|
| **Deck / Walkways** | Condition: Good | Width: | | | |
| **Hand Rails** | Condition: Good | Height: | in. *(min 42")* | No. Rails: | *(min 2)* |
| **Toe Rail** | Condition: Good | Height: | in. *(min 4")* | | |
| **Welds / Attachments** | Condition: Good | | | | |

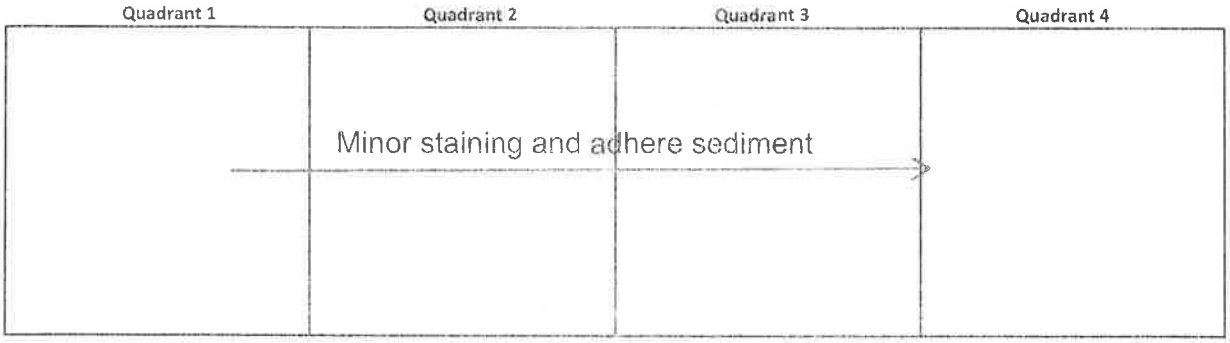
**Roof**

| | | | |
|---|---|---|---|
| **Safety Tie-Off Points** | Condition: Good | #: 3 | |
| **Antennas** | Type: Point to Point | #: 2 | |

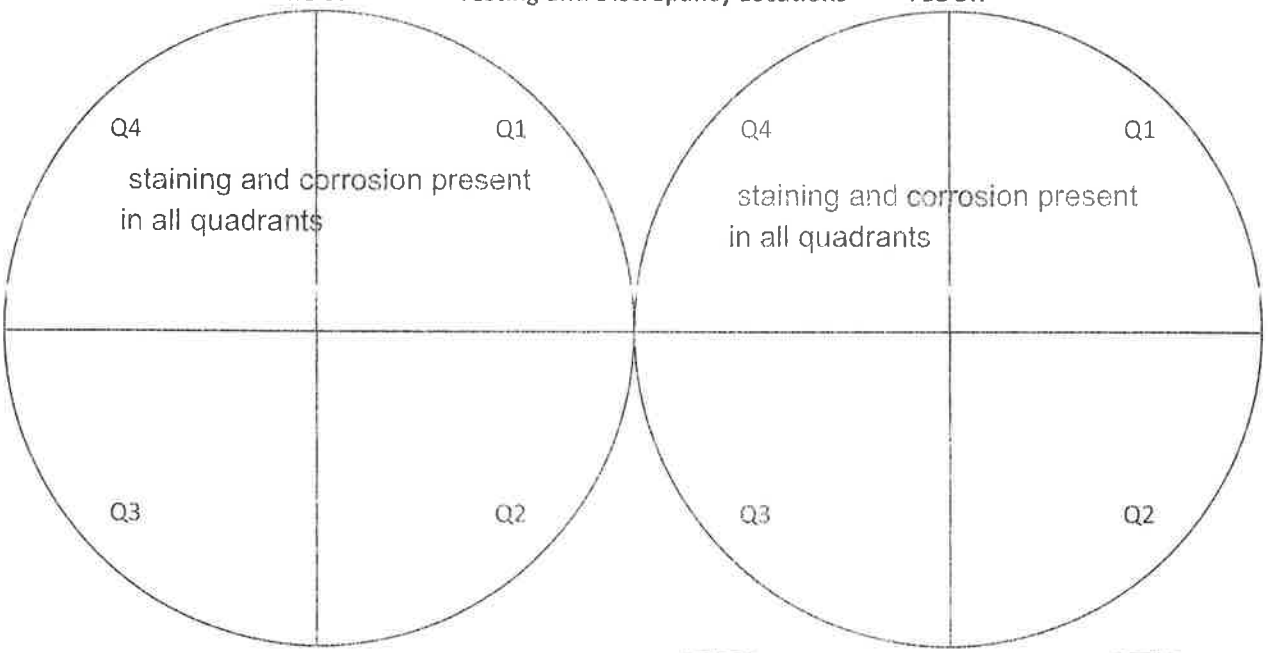
Liquid Engineering Corporation

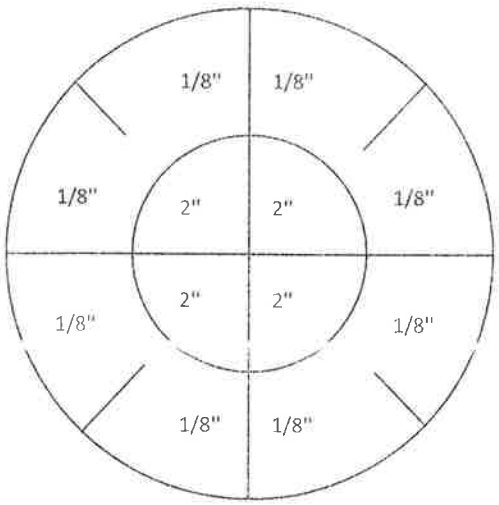
# Circular Tank Diagram / Information Worksheet

Job Number 48554 Utility Name Alburg Water Department Tank Name tower




ROOF Testing and Discrepancy Locations FLOOR

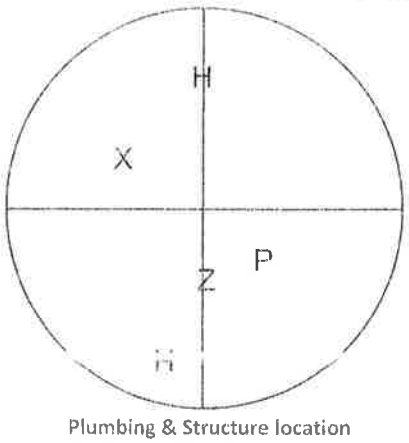



**Sediment Depth Measurements**

Average Sediment Depth = The sum of all measurements taken, divided by the number of measurements taken

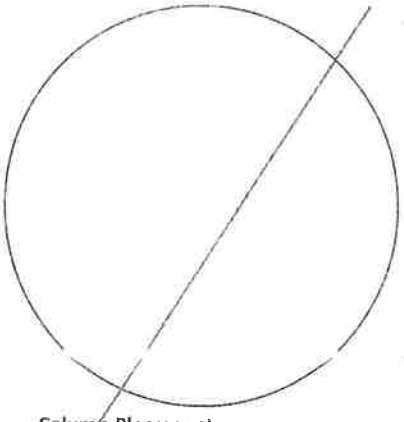
**Avg. Depth** 1" **Cubic Yardage** **Sediment Type** Iron




**Plumbing & Structure location**

Plumbing and structure codes

O=Outlet X=Inlet Z=Manway
V=Vent D=Drain S=Sump
L=Ladder H=Hatch P=Overflow
F=Float Level Indicator
T=Telemetry



**Column Placement**

Type of Column

Base Structure

Top Structure

Column Construction -----

Liquid Engineering Corporation

# Steel Potable Water Reservoir Security / Measurement Worksheet

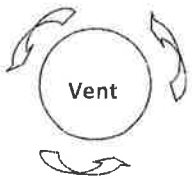
Job Number 48554 Utility Name Alburg Water Department Tank Name tower

## Security

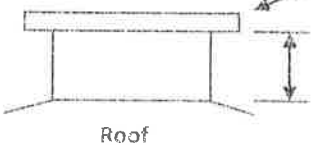
| | |
|---|---|
| Is the area surrounding the tank well lit? | No |
| Is the tank surrounded by a Security Fence? | No |
| Are the access gates locked? | N/A |
| Is the tank equipped with a Vandal Guard on the primary access ladder? | Yes |
| If so, is the Vandal Guard locked? | Yes |
| Are the vents equipped with security vent shrouds? | No |
| Are all of the hatches equipped with electronic monitoring devices? | No |
| Are the external plumbing components housed in a secure vault or out-building? | Yes |
| Does the surrounding geography of the tank obscure it from public view? | No |
| Does the exterior of the tank show signs of trespass? | No |

## Measurements

Vent is build into the top 4" of the dry rise




Outside Circumference
Inches



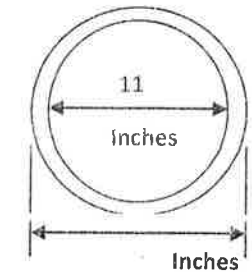

Flange Metal Thickness Inches

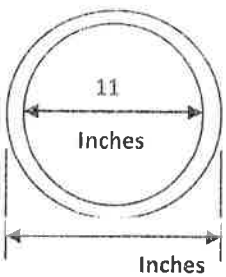
Roof to Screen or Flange 0 Inches

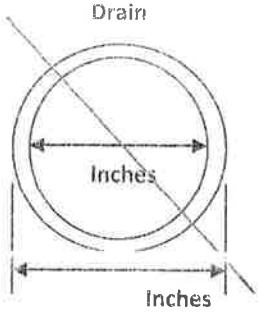
Flange

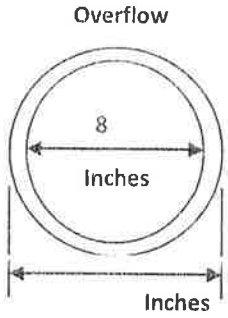
Number of Bolt Holes Inches

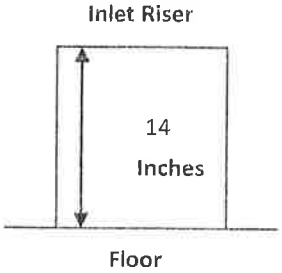
Size of Bolts Inches

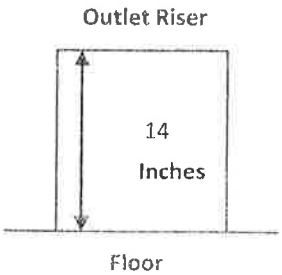


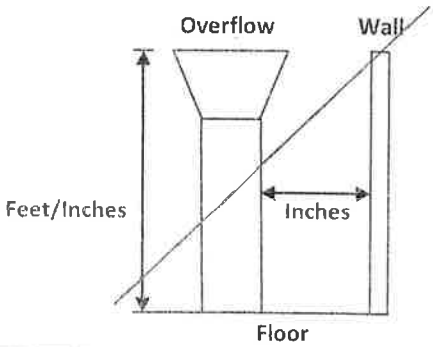



Liquid Engineering Corporation

# Steel Potable Water Reservoir Immediate Needs Assessment

Job Number: 48554 | Utility: Alburg Water Department | Tank: tower

Inspector: M. Frantz | Dive Controller: Z. Reeves | Date: 10/4/2015

1. **Health and Safety Items**
   - ☐ Safety Climb System Installation: NOT RECOMENEDED
   - ☐ Vent Screen Repairs: NOT RECOMENDED

2. **Testing Items**
   - ☐ Dye Testing for Leak Evaluation: NOT RECOMENDED
   - ☐ Presence of Lead Test (Interior/Exterior): NONE DETECTED

3. **Destructive Testing Items**
   - ☐ % of Lead Test (Interior/Exterior) *(Coating samples are removed for laboratory analysis)* NOT PERFORMED
   - ☐ Coating Adhesion Test (Interior/Exterior): NOT PERFORMED

   *Specific written authorization required to perform destructive testing. Destructive tests include touch-up of coating system.*

4. **Repair Items**
   - ☐ Epoxy Coating Repairs: NOT RECOMENDED
   - ☐ Temporary Leak Repairs: NOT RECOMENDED
   - ☐ Float Operated Level Indicator Repairs / Maintenance: NOT RECOMENDED
   - ☐ Hypalon Repairs: N/A

5. **Security Related Items** *(Critical security upgrade information is immediately available)*
   - ☑ Tank vents are not equipped with a security vent shroud:
   - ☑ Tank hatches are not equipped with a security hatch locking device:
   - ☐ Tank perimeter not adequately secured:

The above mentioned additional work is considered immediately necessary and is recommended to be completed. Some items may be completed in conjunction with work currently being performed while the crew is on site.

## Reservoir Inspection Condition Supplemental

The tower was in good overall condition. We cleaned a estimated 2 inches of iron sediment off the floor of the tank. Structurally the floor of the tank is in good overall condition, though some concentration cells were found along the floor seams. Top to bottom the walls are in good condition and structurally sound throughout the tank. The man way appeared to be in good condition with the cap and gasket, no leaking was observed. The support beams and roof panels appear to have no signs of holes or leaking.

We recommend a cleaning and inspection every 3 years.

ATTACHMENT 2B: 2009 TANK INSPECTION REPORT

UNDERWATER SOLUTIONS INC.

# *INSPECTION AND CLEANING OF THE VANTINE AVENUE 200,000-GALLON ELEVATED WELDED STEEL WATER STORAGE TANK*

*VILLAGE OF ALBURGH*
*ALBURGH, VERMONT*

*DECEMBER 17, 2009*

# *INSPECTION AND CLEANING OF THE VANTINE AVENUE 200,000-GALLON ELEVATED WELDED STEEL WATER STORAGE TANK*

## *VILLAGE OF ALBURGH*
## *ALBURGH, VERMONT*

## *DECEMBER 17, 2009*

***SCOPE:***

On December 17, 2009, Underwater Solutions Inc. completed an inspection of the Vantine 200,000-gallon elevated welded steel water storage tank to provide information regarding the overall condition and integrity of this structure and removed the sediment accumulation found on the floor of the structure.

***EXTERIOR INSPECTION:***

The entire exterior of this water storage tank (and components) was inspected to include walls and coating, anchor bolts, manway, ladders, overflow, roof, vent and hatches.

*Walls and Coating*

The exterior wall panels and welds were inspected and found appearing sound while no obvious fatigue, (pitting) of the steel has occurred.

The protective coating applied to these surfaces shows decline in film thickness, caused by weathering and near expiration. This condition has caused the coating to become chalky throughout all elevations of the tank.

Numerous coating chips, ranging from 1/8" to 1" in diameter, exist throughout approximately 25% of the lowest 30' of the pedestal and cause exposure of the primer and the underlying steel.

These coating chips appear to be the result of objects striking the pedestal and cause mild surface corrosion at this time.

No fatigue, (pitting) of the steel was witnessed within these areas having steel exposure at the time this project was completed.

Moderate mildew has accumulated throughout the underside of the bowl causing poor aesthetics.

*Anchor Bolts*

Fourteen, 2" diameter anchor bolts extend up from the concrete pad through 16" tall chairs welded to the pedestal.

Each bolt was found sound and having a nut properly secured in place while the protective coating applied to all nut, bolt and chair surfaces was found with poor adhesion value causing metal exposure and mild surface corrosion, yet no metal fatigue was apparent.

*Manway*

One 20" by 14" inside diameter manway was inspected penetrating the riser column, located approximately 24" above the base of the bowl.

The protective coating applied to this manway shows decline in film thickness (near expiration) causing blotch rusting to show through the coating, and with mild surface corrosion on all hardware.

This manway was found properly and securely bolted in place and free of obvious leakage.

*Ladders*

Three ladders extend up to the roof dome providing good safe access from the interior of the pedestal.

The bottom ladder extends up from approximately 12" above the ground, supported to the pedestal wall with three sets of welded standoffs.

The middle ladder extends up from a rest platform, supported to the pedestal wall with twenty sets of welded standoffs.

The top ladder extends up through the riser to the roof dome, supported to the riser with five sets of welded standoffs.

A fall prevention device is securely bolted to each ladder, remaining in good working condition at this time.

*Overflow*

A 7" inside diameter overflow pipe exists the center riser column located approximately 30" below the overhead and extends down, supported to both the riser and the pedestal walls with ten welded standoffs.

Approximately 20" above the ground, this pipe exits the pedestal wall to the exterior through a series of elbows prior to terminating approximately 30" above the ground.

This overflow pipe was found unobstructed and unscreened, therefore allowing access to the tank interior.

*Roof*

All steel roof panels and welds were inspected and found sound while no obvious metal fatigue, (pitting) exists.

The protective coating applied to these roof dome surfaces shows decline in film thickness caused by weathering and near expiration. This condition has caused the coating to become chalky throughout all surfaces.

*Vent*

The vent is located within the center of the roof dome having a 48" inside diameter while standing 6" tall.

A 60" outside diameter cap and perimeter screening are properly and securely installed over this vent, preventing access to the interior of the tank.

*Hatches*

Two 30" inside diameter hatches provide access to the interior of the tank through the roof dome, while a third hatch, having a 30" inside diameter, provides access to the roof from the center riser column.

All three hatches were found in good working condition. One of the two hatches providing access to the interior of tank is securely bolted while the second interior access hatch is unlocked, allowing unwanted access to the tank interior.

## *INTERIOR INSPECTION:*

The entire interior of this water storage tank (and components) was inspected to include sediment accumulations, floor, manway, piping, walls and coating, center riser column, overhead, overflow and aesthetic water quality.

*Sediment Accumulations*

A uniform layer of accumulated precipitate was found on all floor surfaces averaging 6" in depth.

Upon completing this inspection, all floor surfaces were vacuumed.

*Floor*

After removing all accumulated precipitate, these steel floor panel and welded surfaces were inspected and found appearing sound while coating failure exposes the underlying steel throughout these surfaces.

The protective coating applied to the floor has failed due to adhesion loss, resulting in coating blisters throughout approximately 10% of all panels and welds.

Approximately 20% of these coating blisters have ruptured, resulting in exposure and causing corrosion of the exposed steel. Mild, non-measurable pitting of the steel also was found within these exposed areas.

*Manway*

One 21" by 16" outside diameter manway was inspected from the interior of the tank penetrating the center riser column, located approximately 24" above the floor.

Numerous coating blisters have ruptured throughout all surfaces of this manway, resulting in exposure of the steel and moderate surface corrosion due to adhesion loss.

This manway was found properly and securely bolted in place and free of obvious leakage at the time of this inspection.

*Piping*

A 12" inside diameter pipe penetrates the floor of the tank, located approximately 5" in from the center riser column and stands 14" tall.

This pipe was found without obstructions or flow at the time of this inspection.

*Walls and Coating*

All interior wall panel and weld surfaces were inspected beginning at the floor and by spiraling the circumference up to the water surface.

These interior wall panel and weld surfaces appeared sound while the protective coating applied to these wall panel and weld surfaces has failed (expired) throughout all elevations of the tank.

Coating blisters, found throughout approximately 45% of all wall panels and welds, exist due to adhesion loss.

Approximately 30% of these coating blisters have ruptured, exposing the underlying steel and cause moderate surface corrosion throughout causing moderate surface corrosion. Mild, non-measurable pitting of the steel also was found within these exposed areas.

*Center Riser Column*

The 40" outside diameter center riser column appeared sound while the protective coating applied to these surfaces has failed throughout all elevations of the column.

Coating blisters, found throughout approximately 50% of all column surfaces, exist due to adhesion loss.

Approximately 80% of these coating blisters have ruptured, exposing the underlying steel and cause moderate surface corrosion at this time.

*Overhead*

All overhead panels and welds were inspected from the water surface.

These overhead panels and welds appeared sound while no obvious metal fatigue, pitting of the steel was seen at the time of this inspection.

The protective coating applied to these overhead surfaces was found with reduced film thickness, (expiration) causing blotch rusting to show through the coating throughout approximately 10% of these surfaces.

*Overflow*

A 7" inside diameter overflow pipe penetrates the center riser column, located approximately 30" below the overhead, and extends into the tank approximately 3". A 24" by 18" flat plate is welded in front of this overflow.

This overflow was found unobstructed at the time of this inspection.

*Aesthetic Water Quality*

The aesthetic water quality within this tank was found to be good.

This condition allowed our visibility during this inspection to be unlimited.

***CONCLUSION:***

It is the opinion of Underwater Solutions Inc. that although this welded steel water storage tank appears mostly sound and without leakage at this time, rehabilitation is required within the near future to preserve the integrity of the steel, as the interior coating system has failed (expired).

The exterior wall panels and welds appear sound and without obvious fatigue, (pitting) of the steel at this time.

The protective coating applied to these surfaces has weathered, causing reduced film thickness (near expiration) resulting in chalky coating throughout all elevations of the pedestal and tank while numerous coating chips, ranging from 1/8" to 1" in diameter, exist throughout approximately 25" of the lowest 30' of the pedestal causing exposure of the steel due to objects striking these surfaces.

All roof panels and welds were found free of metal fatigue, (pitting) of the steel.

The protective coating applied to these roof panels and welds was found with reduced film thickness, caused by weathering and near expiration, resulting in the coating becoming chalky.

We recommend re-coating all exterior wall and roof surfaces in an effort to protect and maintain the integrity of the steel and improve the overall aesthetic value of the structure.

All components affixed to this structure are properly installed while the screening on the vent is secure. The overflow pipe was found unscreened, allowing access to the tank interior.

We recommend immediately installing a screen on the overflow in an effort to prevent access to the interior.

One of the two hatches providing access to the tank interior was found without a lock, allowing access to the interior of the tank.

We recommend immediately installing a lock on this hatch in an effort to prevent unwanted access to the tank interior.

The coating applied to all interior floor, wall, center riser column and overhead surfaces of this structure has failed. Numerous coating blisters have ruptured, exposing the underlying steel, resulting in moderate surface corrosion due to adhesion loss.

We recommend removing all existing coating and re-coating all interior surfaces of this structure using an A.N.S.I. / N.S.F.61 approved coating for use in structures containing potable water and should be done within the immediate future, as continued exposure of the steel will result in metal fatigue, (pitting) and eventually result in failure (leakage).

All interior surfaces should be re-evaluated after all coating has been removed to determine the most suitable means of re-surfacing any areas that may have fatigue (pitting).

The pipe within this structures remains securely in place and free of obstructions at this time.

Upon completing this inspection, all floor surfaces were vacuumed.

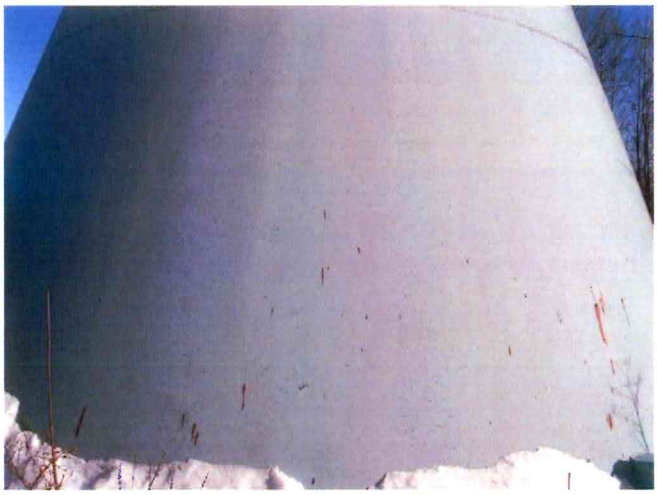
As always, we recommend re-inspection and cleaning of all water storage facilities in accordance with A.W.W.A. Standards and local guidelines.

William T. Cornish

UNDERWATER SOLUTIONS INC.
William T. Cornish, President

*This report, the conclusions, recommendations and comments prepared by Underwater Solutions Inc. are based upon spot examination from readily accessible parts of the tank. Should latent defects or conditions which vary significantly from those described in the report be discovered at a later date, these should be brought to the attention of a qualified individual at that time. These comments and recommendations should be viewed as information to be used by the Owner in determining the proper course of action and not to replace a complete set of specifications. All repairs should be done in accordance with A.W.W.A. and/or other applicable standards.*

WTC/jld



1 *Exterior Wall & Bowl Surfaces Found With Nearly Expired Chalky Coating, Chips Throughout Lowest 30' Of The Pedestal And Mildew Throughout The Underside Of The Bowl*

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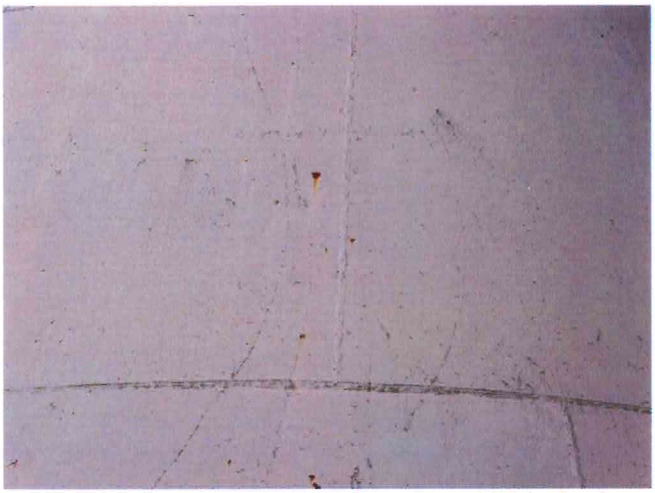

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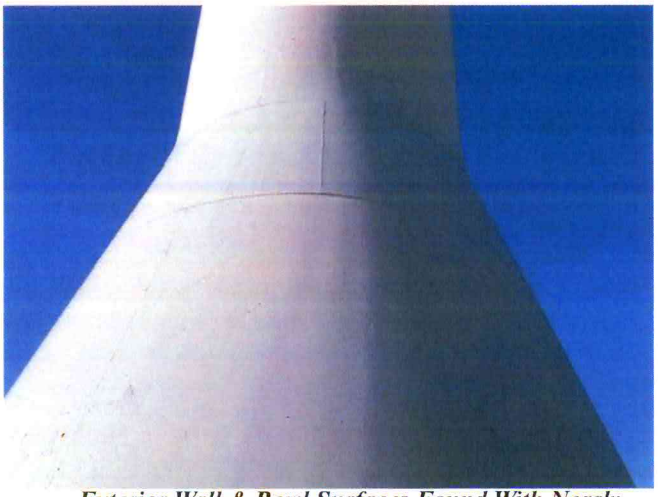

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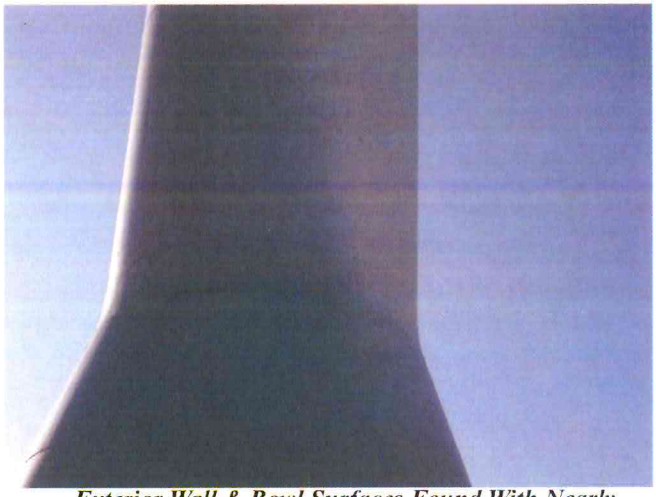

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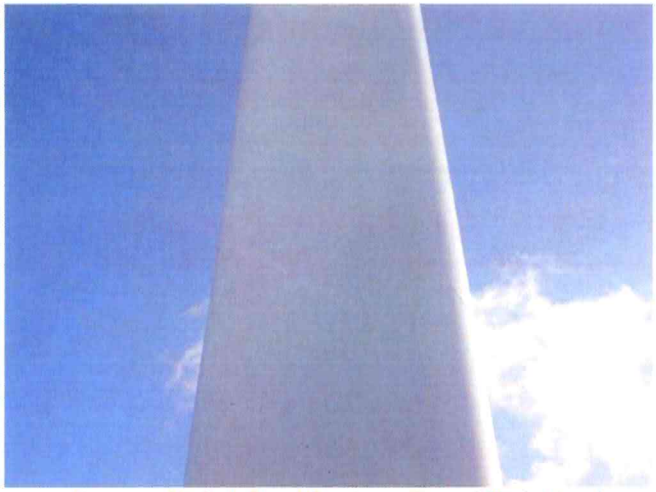

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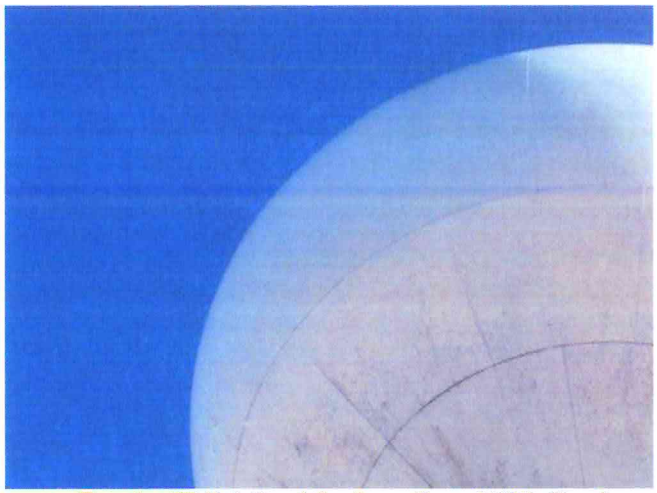

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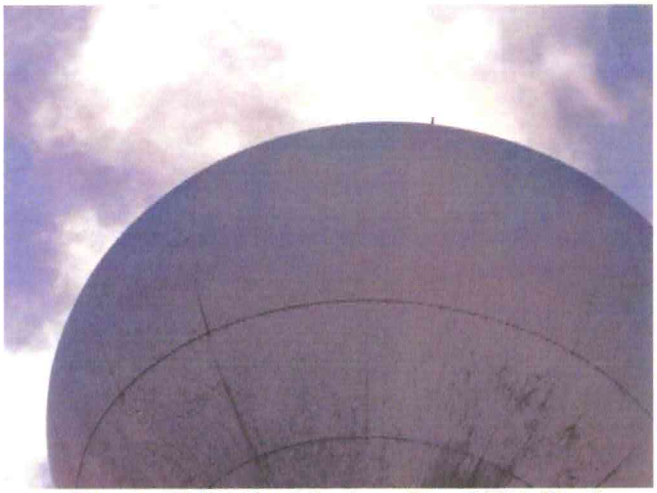

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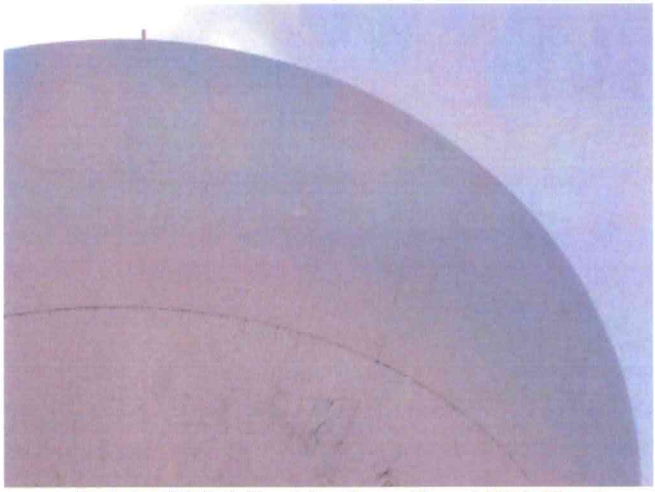

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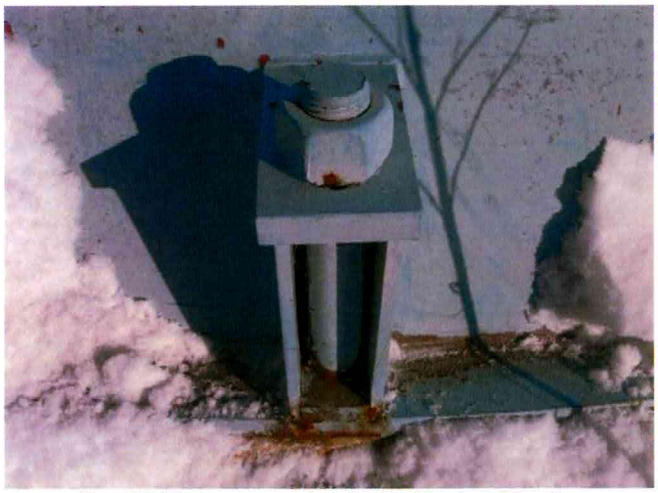
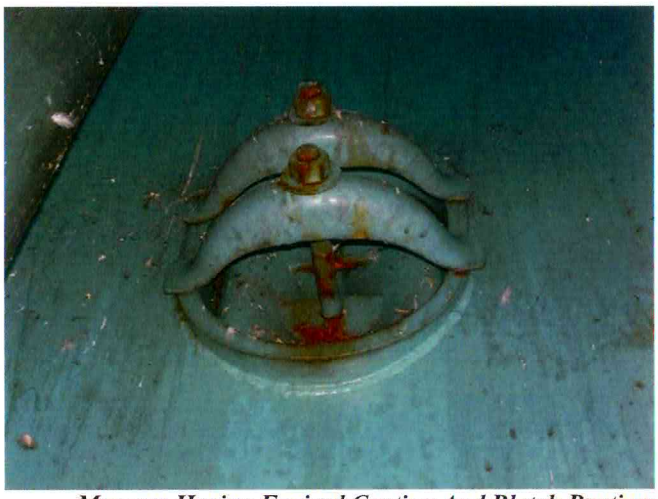


15 *One Of Fourteen Anchor Bolts Having Metal Exposure And Surface Corrosion*

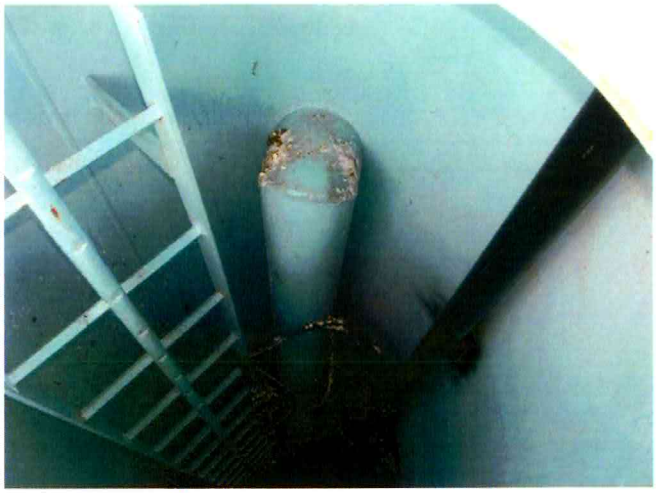


16 *Manway Having Expired Coating And Blotch Rusting With Surface Corrosion On All Hardware*

17 *Ladder*

18 *Ladder*

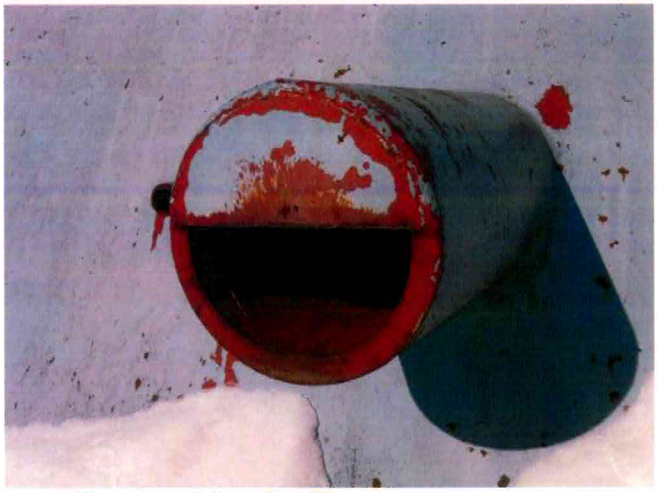
19 *Ladder*



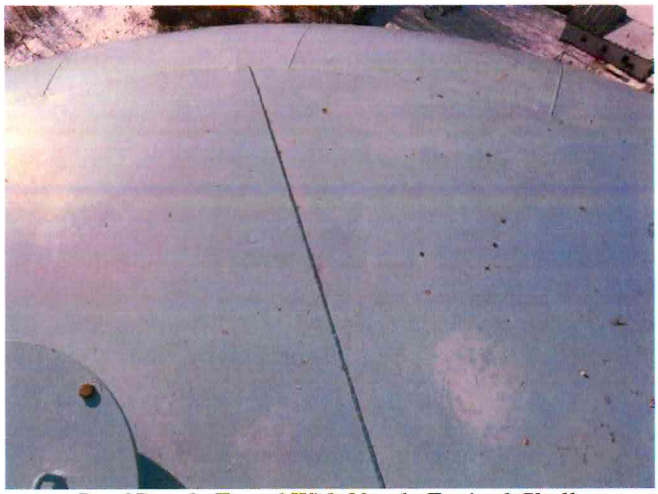
20 *Overflow Pipe*

21 *Overflow Pipe*

22 *Overflow Pipe*



23 *Unscreened Overflow Pipe*



24 *Roof Panels Found With Nearly Expired Chalky Coating*

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26 *Roof Panels Found With Nearly Expired Chalky Coating*

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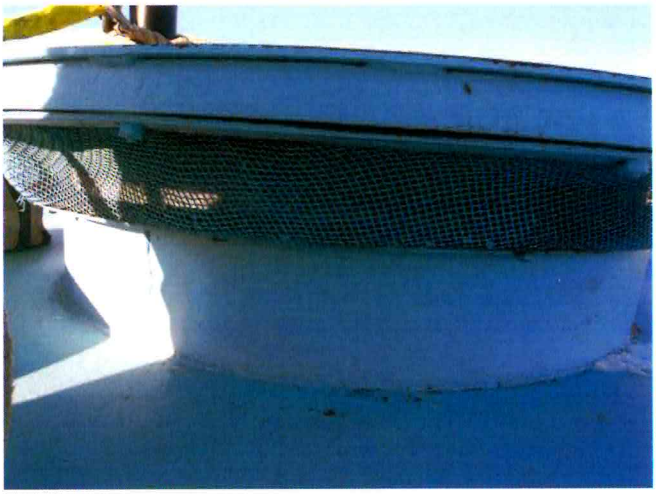
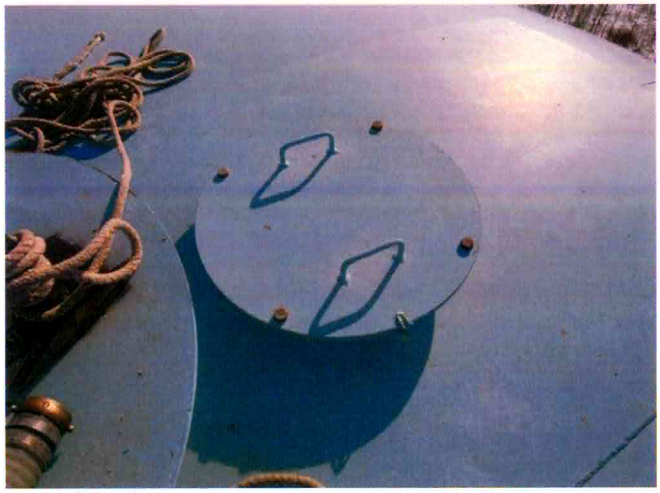


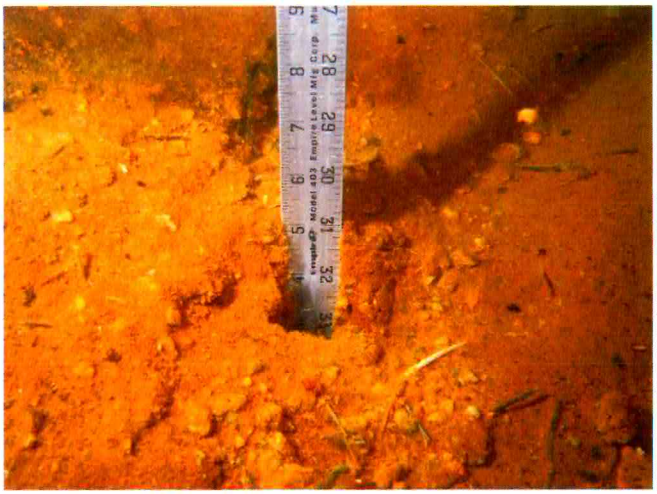
28 *Vent*



29 *Hatch*

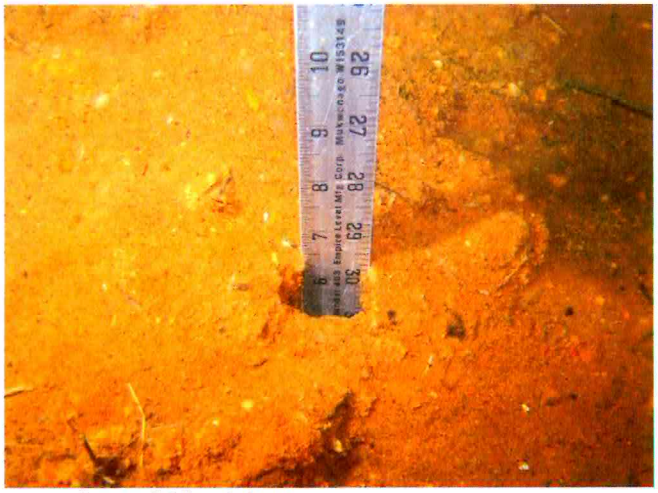
30 *Hatch*

31 *Hatch*



32 *Layer Of Precipitate*

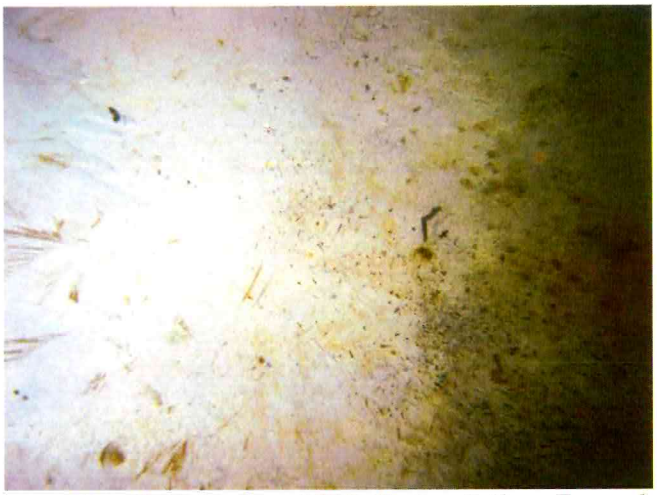
33 *Layer Of Precipitate*



34 *Layer Of Precipitate*

35 *Layer Of Precipitate*

36 *Layer Of Precipitate*



37 *Floor Surfaces Found With Coating Failure, Exposed Steel, Moderate Surface Corrosion And Pitting After Cleaning*

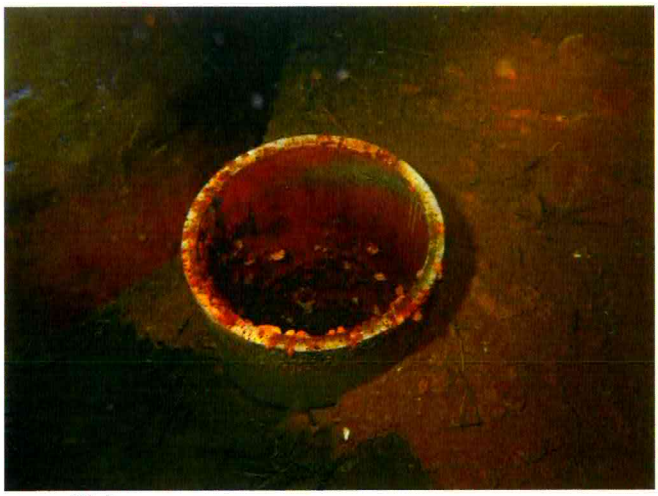
38 *Floor Surfaces Found With Coating Failure, Exposed Steel, Moderate Surface Corrosion And Pitting After Cleaning*

39 *Floor Surfaces Found With Coating Failure, Exposed Steel, Moderate Surface Corrosion And Pitting After Cleaning*

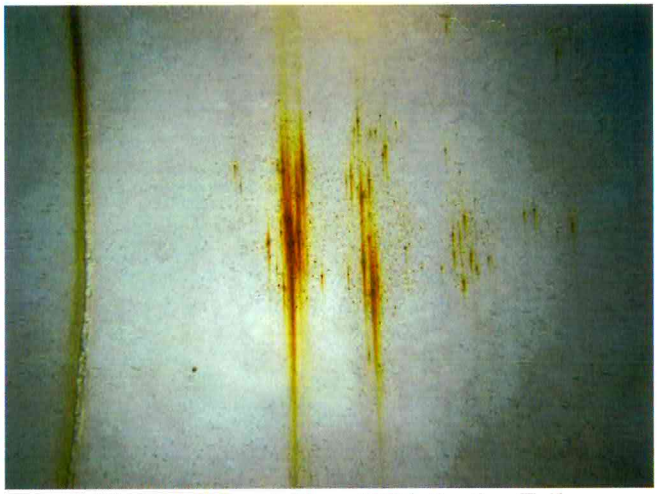
40 *Floor Surfaces Found With Coating Failure, Exposed Steel, Moderate Surface Corrosion And Pitting After Cleaning*

41 *Floor Surfaces Found With Coating Failure, Exposed Steel, Moderate Surface Corrosion And Pitting After Cleaning*

42 *Manway Found With Coating Failure, Exposed Steel And Moderate Surface Corrosion*



43 *Piping*



44 *Interior Wall Panels Found With Coating Failure, Exposed Steel, Moderate Surface Corrosion And Pitting*

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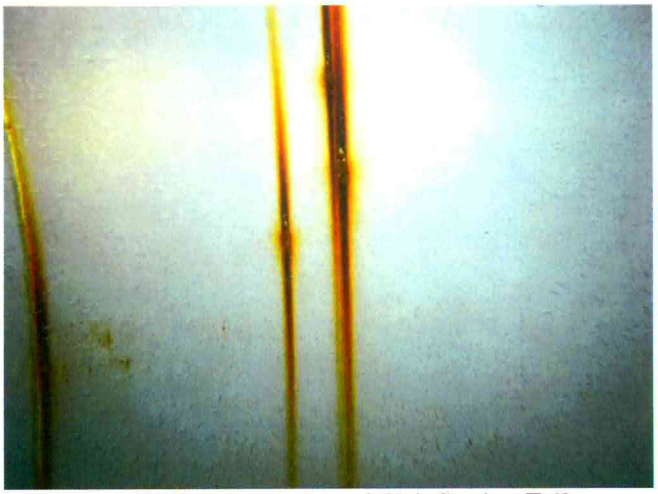
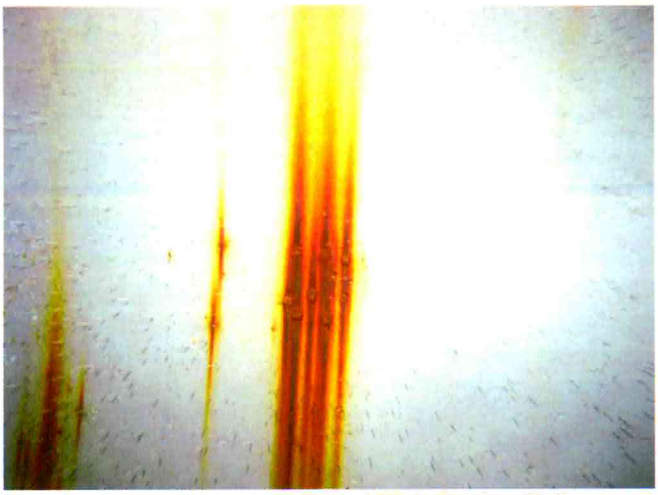
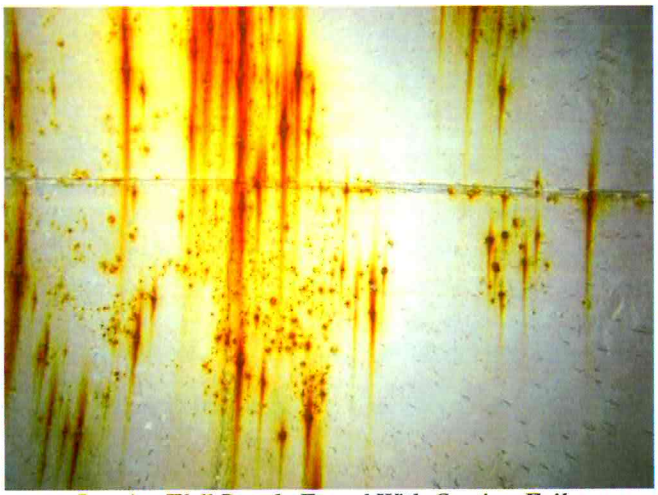


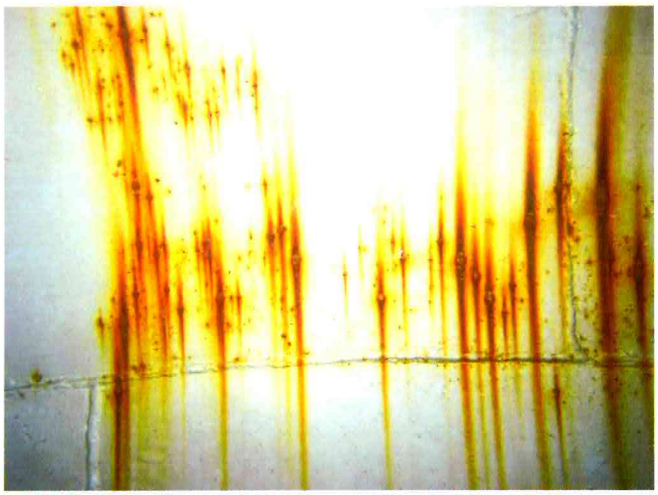
46 *Interior Wall Panels Found With Coating Failure, Exposed Steel, Moderate Surface Corrosion And Pitting*



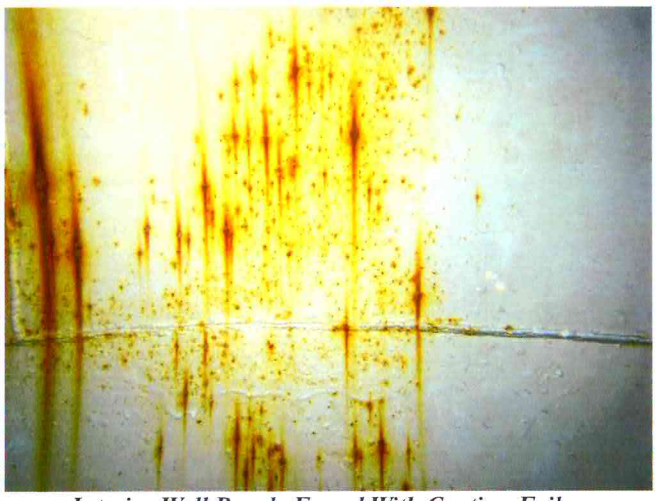
47 *Interior Wall Panels Found With Coating Failure, Exposed Steel, Moderate Surface Corrosion And Pitting*



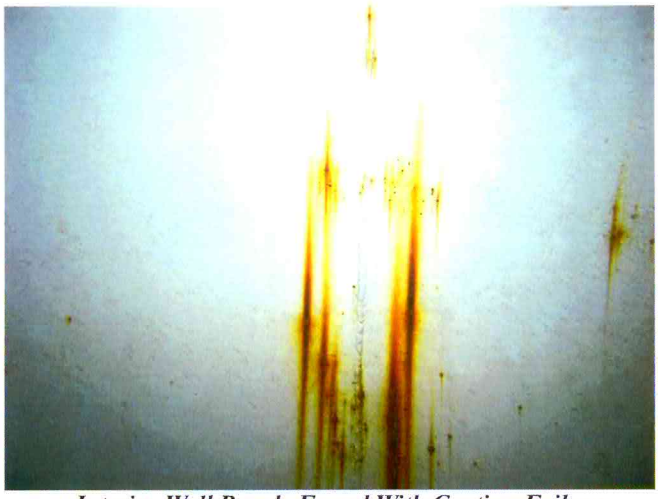
48 *Interior Wall Panels Found With Coating Failure, Exposed Steel, Moderate Surface Corrosion And Pitting*



49 *Interior Wall Panels Found With Coating Failure, Exposed Steel, Moderate Surface Corrosion And Pitting*



50 *Interior Wall Panels Found With Coating Failure, Exposed Steel, Moderate Surface Corrosion And Pitting*

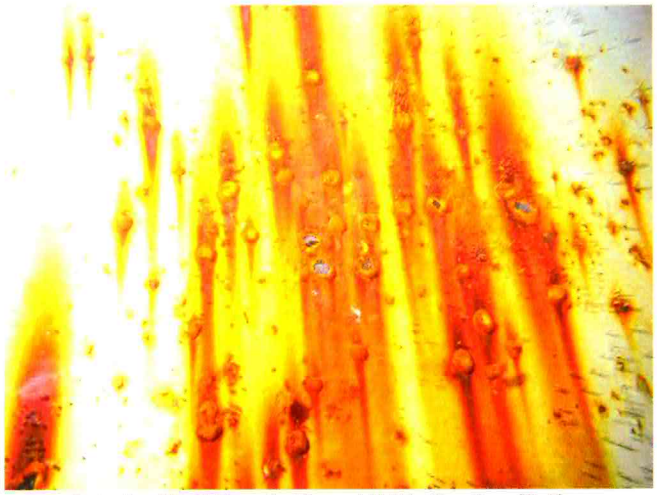


51 *Interior Wall Panels Found With Coating Failure, Exposed Steel, Moderate Surface Corrosion And Pitting*

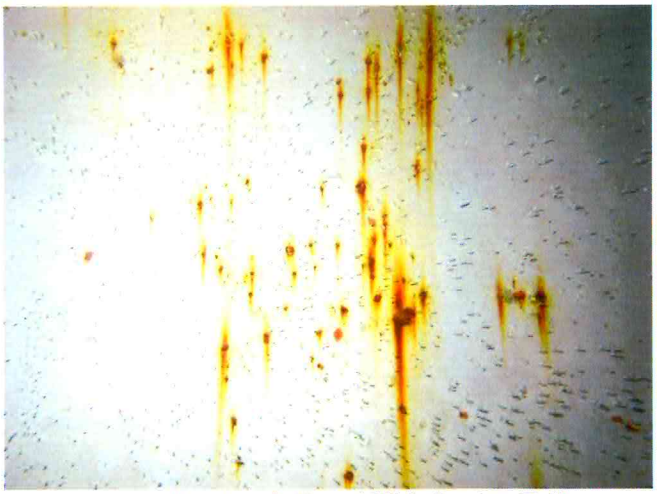
52 *Interior Wall Panels Found With Coating Failure, Exposed Steel, Moderate Surface Corrosion And Pitting*

53 *Interior Wall Panels Found With Coating Failure, Exposed Steel, Moderate Surface Corrosion And Pitting*

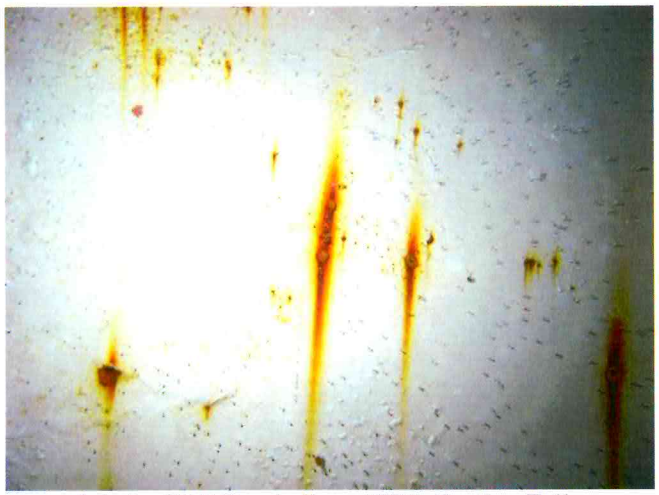
54 *Interior Wall Panels Found With Coating Failure, Exposed Steel, Moderate Surface Corrosion And Pitting*



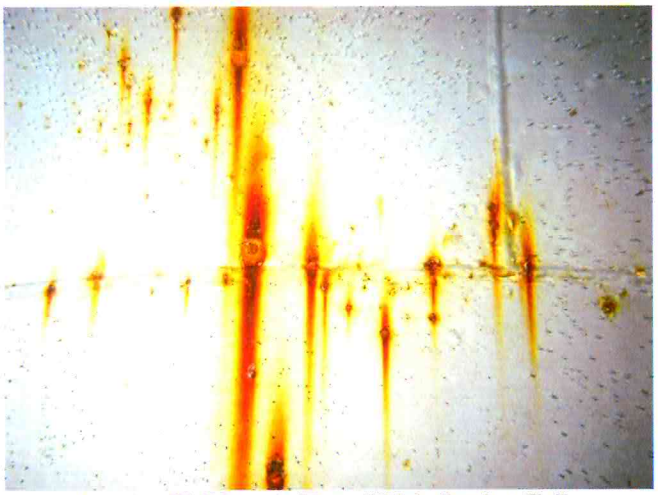
55 *Interior Wall Panels Found With Coating Failure, Exposed Steel, Moderate Surface Corrosion And Pitting*



56 *Interior Wall Panels Found With Coating Failure, Exposed Steel, Moderate Surface Corrosion And Pitting*

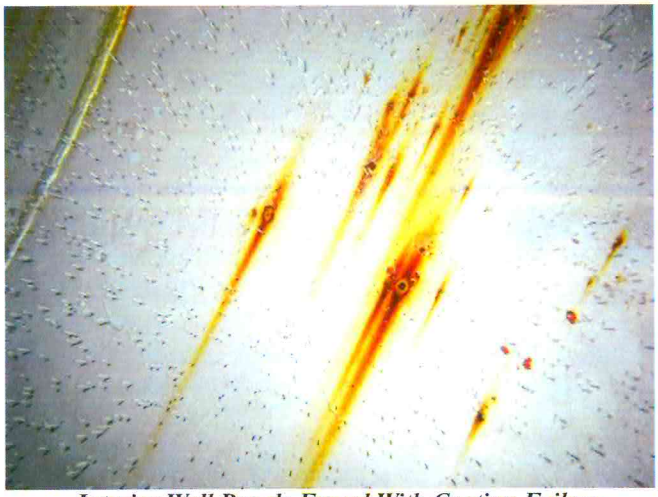


57 *Interior Wall Panels Found With Coating Failure, Exposed Steel, Moderate Surface Corrosion And Pitting*



58 *Interior Wall Panels Found With Coating Failure, Exposed Steel, Moderate Surface Corrosion And Pitting*

59 *Interior Wall Panels Found With Coating Failure, Exposed Steel, Moderate Surface Corrosion And Pitting*



60 *Interior Wall Panels Found With Coating Failure, Exposed Steel, Moderate Surface Corrosion And Pitting*

61 *Interior Wall Panels Found With Coating Failure, Exposed Steel, Moderate Surface Corrosion And Pitting*

62 *Interior Wall Panels Found With Coating Failure, Exposed Steel, Moderate Surface Corrosion And Pitting*

63 *Interior Wall Panels Found With Coating Failure, Exposed Steel, Moderate Surface Corrosion And Pitting*

64 *Interior Wall Panels Found With Coating Failure, Exposed Steel, Moderate Surface Corrosion And Pitting*

65 *Center Riser Column Found With Coating Failure, Exposed Steel And Moderate Surface Corrosion*

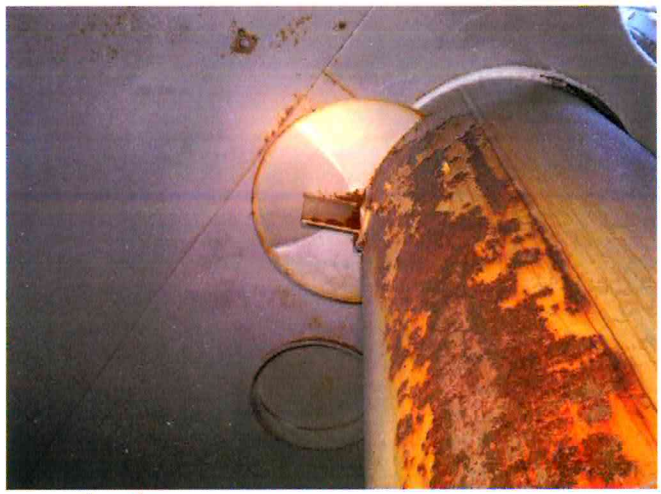
66 *Center Riser Column Found With Coating Failure, Exposed Steel And Moderate Surface Corrosion*

67 *Center Riser Column Found With Coating Failure, Exposed Steel And Moderate Surface Corrosion*

68 *Overhead Panels Found With Coating Failure And Blotch Rusting*

69 *Overhead Panels Found With Coating Failure And Blotch Rusting*

70 *Overhead Panels Found With Coating Failure And Blotch Rusting*



71 *Overflow*

72 *Discharge During Cleaning*