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ADDENDUM NO. 2
December 15, 2023

Red Hill Water Treatment Plant - Upgrades
IFB No. 403
Rivanna Sewer & Water Authority
Albemarle County, Virginia

SEH No. RIVAN 168434

From: Short Elliott Hendrickson Inc.
615 9th Street North
Virginia, MN 55792-3761
218.741.4284

To: Document Holders

DOCUMENT HOLDERS on the above-named project are hereby notified that this document shall be appended to, take precedence over and become part of the original bidding documents dated September 28, 2023, and previous addenda dated November 21, 2023, for this work. Bids submitted for the construction of this work shall conform to this document.

This addendum consists of 2 pages and attached Document 01 11 00b Dixon Engineering Inspection Report (30 pages).

Changes to Specifications:

1. Section 01 11 00 Summary of Work, ADD the following immediately after Article 1.24:

   1.25 HYDROPNEUMATIC TANK INSPECTION REPORT

   A. The hydropneumatic tank inspection used by the Engineer in the preparation of the Bidding Documents are attached to this document.

   B. This report is provided as a reference document ONLY and not to be considered for use in development of pricing for the Work.

   C. Owner will coordinate and pay for a coatings inspection of the existing hydropneumatic tank at the Red Hill WTP. Contractor is responsible for temporary bypassing and cleaning of the tank prior to inspection and any coatings work. The results of the coatings inspection will be used to determine the extent of the coatings to be applied to the hydropneumatic tank.

2. Section 01 11 00b Inspection Report, ADD new attachment as stated below:

   Report dated September 1, 2017, consisting of 30 pages, prepared by Dixon Engineering, Inc., titled:
   Preliminary Maintenance Inspection
   10,000 Gallon Hydropneumatic Tank
   (Red Hill)

3. Section 01 12 16 Work Sequence, Article 3.01.K, DELETE subparagraph 1 and REPLACE with the following:

   1. Owner will coordinate and pay for an inspection of the existing hydropneumatic tank.

4. Section 09 97 20 Coatings Systems for Industrial Facilities, Article 1.01, ADD the following immediately after subparagraph A:

   B Hydropneumatic tank coatings work
   1. Owner will coordinate and pay for a coatings inspection of the existing hydropneumatic tank at the Red Hill WTP. The results of the coatings inspection will be used to determine the extent of

the coatings to be applied to the hydropneumatic tank. The most recent inspection report is included following Section 01 11 00.

2. Contractor shall be permitted to use accelerators, as recommended by the coatings Manufacturer and approved by Owner/Engineer, to decrease the required cure time and minimize the duration the temporary hydropneumatic tank is required to be onsite.

3. Basis of Payment:
   a. All exterior surface preparation coating work for the hydropneumatic tank, coatings system H2, shall be included in the Part A lump sum bid amount.

   b. The interior surface preparation and coatings work for the hydropneumatic tank, coatings system H1, shall be included in the Part B Hydropnematic Tank – Select Interior Coatings as a unit price bid item. Assumptions have been made by the Engineer on quantity of spot-repair coatings work extents based upon the most recent inspection and good judgement. The final locations and extents of the interior coatings work will be determined as part of the hydropneumatic tank inspection process.

5. Section 09 97 20 Coatings Systems for Industrial Facilities, Article 3.09, Coatings Schedule, System Number H2, ADD the following immediately after the Notes text.

   Coatings manufacturer shall provide approval of tie coat. Contractor shall perform a 24” x 24” minimum test patch of first coat to verify adhesion of coatings to existing.

Changes to Drawings:

6. Drawing No. P101 Building Plan, Keynote 33, Change “09 97 21” to “09 97 20”.

Note: Receipt of this Addendum No. 2, dated December 15, 2023 shall be acknowledged on Page 00 41 00-2 of the submitted Bid Form. Failure to do so may subject Bidder to disqualification.

END OF ADDENDUM

Dixon Engineering, Inc.

Preliminary Maintenance Inspection
10,000 Gallon Hydropnuematic Tank
(Red Hill)

Albemarle County Service Authority
Charlottesville, Virginia

Inspection Performed: July 18, 2017
Report Prepared: September 1, 2017
Reviewed by Ira M. Gabin, P.E.: September 6, 2017

Phone (330) 983-0062
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Dixon Engineering Inc.
815 W. Liberty St. , Suite 1, Medina, OH 44256

CONCLUSIONS:

1. The exterior coating outside the building is a urethane system that is in good condition overall. The coating is slightly faded and there are no significant coating failures.

2. The exterior coating inside the building is a urethane system that is in good condition overall. The coating has good gloss retention and there are no significant coating failures.

3. The wet interior coating is a multi coat epoxy system that is in good condition overall. Below the high water line, the coating has minor delamination on the bottom and sidewall. Above the high water line, the coating is deteriorating in the form of rust bleedthrough in a few areas on the roof and endcaps.

RECOMMENDATIONS:

1. Schedule regular cleanings and inspections of the tank by an independent third party as recommended by AWWA, or once every five years.

2. Complete the recommended work pending the revised condition assessment after the next 5-year inspection. The coating work is the greatest cost and largest part of the recommendations. The repairs and upgrades should be completed during the next major tank rehabilitation process when coating work is completed.

3. Budget for exterior overcoating in seven years, or when aesthetics dictate. At that time, the coating would be entering the typical recoat window for modern urethane systems. The estimated cost is $10,000.

4. Coat the foundation to help prevent deterioration. Cost would be incidental to exterior coating.

5. Recaulk between the tank and building on the exterior. Cost would be incidental to exterior coating or could be done by in-house personnel.

COST SUMMARY:

Exterior Overcoat	$10,000
Engineering and Contingencies	$6,000
Total	$16,000

Note: Better prices will be obtained if work is combined with another larger coating project.

INSPECTION:

On July 18, 2017, Dixon Engineering, Inc., performed a preliminary maintenance inspection on the 10,000 gallon hydropneumatic water storage tank (Red Hill) owned by the Albemarle County Service Authority, in North Gordon, Virginia. Purposes of the inspection were to evaluate the interior and exterior coating's performance and life expectancy; assess the condition of metal surfaces and appurtenances; review safety and health aspects; and make budgetary recommendations for continued maintenance of the tank. All recommendations, with budgeting estimates for repairs are incorporated in this report. The inspection was performed by Kyle Lay, Staff Technician. The inspector was assisted by Larry Houck, Staff Technician. Scheduling and arrangements for the inspection were completed through Jeremy Lynn. A source of water for cleaning was provided by the County. Following the inspection, chlorine was added to disinfect the tank per AWWA Standard C652-11 method No. 3.

The tank was built in 2009 by RECO USA. The tank is installed horizontally with a diameter of 8 feet and a length of 28 feet. The exterior and wet interior coatings are original.

CONDITIONS and RECOMMENDATIONS:

EXTERIOR COATING CONDITIONS:

An exterior coating sample was taken and tested; the coating is a urethane system. The bottom, sidewall, and roof coating is in good condition with no significant coating failures.

The interior coating system is the same as the coating outside of the building. The end cap coating is in good condition with no significant coating failures.

EXTERIOR COATING RECOMMENDATIONS:

Take no immediate action on the exterior coating. Budget for overcoating in 7 years. At that time, the coating will be entering the typical recoat window for modern urethane systems. Perform a maintenance inspection in five years to update the recoating times and costs. Current adhesion showed the existing coating would support an additional recoat. The estimated cost to recoat with a urethane system is $10,000.

WET INTERIOR COATING CONDITIONS:

The bottom and sidewall coating is in good condition with deterioration in the form of delaminated topcoat and cracking.

The roof and end cap coating is in good condition with deterioration in the form of rust bleedthrough in a few areas. Minor failures are also present on weld seams and penetrations.

The bottom was covered with approximately ½ inch of sediment that was flushed from the interior.

The equator area was covered with moderate mineral staining which does not affect the integrity of the coating system.

Overall adhesion of the coating is good. Adhesion was tested using a low pressure power washer. With poor adhesion, it would be possible to notice the coating fluctuate and loose coating could be completely removed during cleaning. This is a crude form of testing, yet the least destructive. A destructive test involves cutting the coating to the substrate; the test area is then susceptible to corrosion.

WET INTERIOR COATING RECOMMENDATIONS:

The existing coating system has not deteriorated to the point where replacement is warranted. Reinspect in five years to update conditions and recommendations.

Long term budget to repaint in 10 years. The estimated cost is $25,000.

PIPING CONDITIONS:

There is piping located inside the control building that enters into the tank. The piping is in good condition. The piping is not coated and the pipes have minor surface rust.

PIPING RECOMMENDATIONS:

When the interior is repainted, abrasive blast clean the piping to a commercial (SSPC-SP6) condition and apply an epoxy system. The estimated cost is $3,000.

SITE CONDITIONS:

The size of the tank site is small and is fenced. There are woods surrounding the tank site. There is adequate room for the staging of contractor's equipment outside the fenced area.

FOUNDATION CONDITIONS:

The exposed saddle foundations are in good condition and showed no signs of deterioration. The exposed foundation is not coated.

FOUNDATION RECOMMENDATIONS:

Pressure wash and coat the exposed concrete with an epoxy coating system to help prevent deterioration. The cost would be incidental to exterior coating.

CAULK CONDITIONS:

The caulk between the tank and building is in good condition with approximately three total lineal feet missing on the top side.

CAULK RECOMMENDATIONS:

Repair the caulk by removing all dried and cracked caulk and fill missing areas with new caulking. Cost would be incidental to exterior coating or could be done by in-house personnel.

MANWAY CONDITIONS:

There is a 24 inch diameter bolted manway located in the end cap outside of the building that is in good condition. There were no signs of leakage.

PENETRATIONS AND CONTROL CONDITIONS:

The end cap has penetrations for the fill pipe, air lines, sight glasses, and pressure relief valve. There are seven total penetrations in the tank. The penetrations are in good condition.

An 8 inch fill line enters the east end cap inside of the building and stubs just inside of the tank. The pipe is in good condition.

An 8 inch draw line enters the east end cap inside of the building and routes across the bottom to within 5 feet of the west end cap. The pipe is in good condition.

There is a 2 inch drain line in the bottom of the tank. The drain line is in good condition.

WET INTERIOR METAL CONDITIONS:

The steel structure is in good condition above the high water line and in good condition below it. No significant steel loss was absent at the coating failures.

STEEL TANK INSPECTION REPORT
HYDROPNEUMATIC TANK

DATE: **July 18, 2017**

OWNER: **Albemarle County Service**
CLIENT CODE: **46-02-66-02**
TANK NAME: **Red Hill**
LOCATION: Street: **2885 Monacan Trail Rd.**
City: **North Garden**
State: **Virginia**
TANK SIZE: Capacity: **10,000 gallons**
Diameter: **8 feet (measured)**
Length: **28 feet (measured)**
CONSTRUCTION: **Welded**
Tank inside building: **Part in part out**
Tank underground: **No**
Amount of tank exposed: **Entire tank**
DATE CONSTRUCTED: **2009**
MANUFACTURER: **RECO USA**
CONTRACT NUMBER: **U-13596**
MAX PRESSURE: **125 psi** (from nameplate) at 250 ^{o}F; 125 psi (from nameplate) at -20^{o}F

COATING HISTORY	EXTERIOR	WET INTERIOR
DATE LAST COATED	**2009**	**2009**
CONTRACTOR	**Reco**	**Reco**
COATING SYSTEM	**Presumed urethane**	**Presumed epoxy**
SURFACE PREPARATION	**SSPC-SP6**	**SSPC-SP10**
COATING MANUFACTURER	**Unknown**	**Unknown**
HEAVY METAL COATING SAMPLES	**No**	**No**
HEAVY METAL BEARING	**No**	**No**

PERSONNEL: Inspector **Kyle Lay**, Ground person **Larry Houck**
TYPE OF INSPECTION: **Preliminary Maintenance**
METHOD OF INSPECTION: **Dry**
DATE LAST INSPECTED: **Unknown**

SITE CONDITIONS

Fenced: **Yes**
Control building: **Yes**
Neighborhood: **Woods**
Site drainage: **Away from tank**
Indications of underground leakage: **No**
Shrub, tree, etc. encroachment: **No**
Site Comments: **Propane tank approximately 12 feet south; fence approximately 6 feet west**

EXPOSED PIPING:

Door condition: **Good**
Locked: **Yes**
Describe coating: **Not coated**
Condition of metal: **Good**

FOUNDATION

Foundation exposed: **Yes**
Height exposed: **14-24 inches**
Type of foundation: **Saddles**
Foundation construction: **Metal on concrete**
Undermining of foundation: **No**
Exposed foundation condition: **Good**
Damage or deterioration: **No**
Foundation coated: **No**
Type of baseplate gap filler: **None**
Indications of foundation settlement: **No**
Foundation comments: **Gasket present between tank and saddle but not between saddle and concrete**

EXTERIOR COATING

Tank bottom (1/3):

Topcoat condition: **Good**
Primer condition: **Good**
Describe coating: **No significant coating deterioration**

EXTERIOR COATING

Mildew growth: **Yes**
Dry film thickness: **5-8 mils**
Coating adhesion: **Wet**
Metal condition: **Good**

Inside building tank bottom(1/3):

Topcoat condition: **Good**
Primer condition: **Good**
Describe coating: **No significant coating deterioration**
Mildew growth: **No**
Dry film thickness: **6-9 mils**
Coating adhesion: **Not taken**
Metal condition: **Good**

Tank Sidewall (1/3):

Topcoat condition: **Good**
Primer condition: **Good**
Describe coating: **No significant coating deterioration**
Mildew growth: **Yes**
Dry film thickness: **7-10 mils**
Coating adhesion: **Wet**
Metal condition: **Good**

Inside building tank sidewall (1/3):

Topcoat condition: **Good**
Primer condition: **Good**
Describe coating: **No significant coating deterioration**
Mildew growth: **No**
Dry film thickness: **7-10 mils**
Coating adhesion: **Not taken**
Metal condition: **Good**

Tank Roof Top (1/3):

Topcoat condition: **Good**
Primer condition: **Good**
Describe coating: **No significant coating deterioration**
Mildew growth: **Yes**
Dry film thickness: **7-10 mils**
Coating adhesion: **Wet**
Metal condition: **Good**

EXTERIOR COATING

Roof comments: **Caulking pulling away on top ⅓ between tank and building**

Inside building tank roof top (1/3):

Topcoat condition: **Good**
Primer condition: **Good**
Describe coating: **No significant coating deterioration**
Mildew growth: **No**
Dry film thickness: **7-10 mils**
Coating adhesion: **Not taken**
Metal condition: **Good**

End caps:

Topcoat condition: **Good**
Primer condition: **Good**
Describe coating: **No significant coating deterioration**
Mildew growth: **No**
Dry film thickness: **7-9 mils**
Coating adhesion: **Wet**
Metal condition: **Good**

Inside the building end caps:

Topcoat condition: **Good**
Primer condition: **Good**
Describe coating: **No significant coating deterioration**
Mildew growth: **No**
Dry film thickness: **7-9 mils**
Coating adhesion: **Not taken**
Metal condition: **Good**
End cap comments: **Two 8 inch fill/draw; two sight glass; one plug in center; one pressure relief; one pressure gauge**

EXTERIOR APPURTENANCES

Anchor bolts:

Number of bolts: **4 per saddle; 12 total**
Diameter: **1 inch**
Anchor bolt chairs: **No**
Coating condition: **Good**
Metal condition: **Good**
Anchor bolt comments: **Anchor bolts are stacked up in pairs**

EXTERIOR APPURTENANCES

Wet interior access:

Location: **In end cap**
Coating condition: **Good**
Dimensions: **24 inch diameter**
Metal condition: **Good**
Comments: **West end cap with bolted style hatch**

WET INTERIOR COATING

Tank bottom (1/3):

Topcoat condition: **Good**
Primer coating condition: **Good**
Describe coating: **Delaminating**
Mineral deposits: **Light**
Metal condition: **Good**
Active pitting: **No**
Previous pitting: **No**
Depth of sediment: **¼-½ inches**
Bottom comments: **25-50 spots of topcoat delamination**

Sidewall (1/3):

Topcoat condition: **Good**
Primer coating condition: **Good**
Describe coating: **Rust undrcutting**
Mineral deposits: **Light**
Metal condition: **Good**
Active pitting: **No**
Previous pitting: **No**
Sidewall comments: **Weld seam nearest building (not end cap) has moderate rust undercutting around 40%; another 30% of connection has hairline cracking in the coating; the metal appears to be solid in those locations**

Roof Top (1/3):

Topcoat condition: **Good**
Primer coating condition: **Good**
Describe coating: **Rust bleedthrough**
Mineral deposits: **Light**
Metal condition: **Good**
Active pitting: **No**

WET INTERIOR COATING

Previous pitting: **No**
Roof comments: **Bleedthrough around the roof penetration**

End caps:

Topcoat condition: **Good**
Primer coating condition: **Good**
Describe coating: **Rust undercutting and rust bleedthrough**
Mineral deposits: **Light**
Metal condition: **Good**
Active pitting: **No**
Previous pitting: **No**
End caps comments: **Some hairline coating cracks between sidewall and endcap connection with minor rust undercutting**

WET INTERIOR APPURTENANCES

Baffle Wall:

N/A

Draw Line:

Diameter: **8 inches**
Coating condition: **Good**
Metal condition: **Good**
Comments: **Routes across floor and discharges approximately 5 feet 6 inches from western end cap**

Fill Line:

Diameter: **8 inches**
Comments: **Stubs at end cap**

Troughs:

N/A

Drain Line:

Size: **2 inches**
Metal condition: **Good**
Comments: **Stubs out floor on western end of tank with ball valve to open and close**

WET INTERIOR APPURTENANCES

Tank penetrations (other than those noted above):

Number: **Three on roof; one bolted 1 ½ inch diameter with large cap and two 2 inch plugged**

Function: **Future use**

Coating condition: **Good**

Metal condition: **Good**

Field Inspection Report is prepared from the contractor's viewpoint. It contains information the contractor needs to prepare his bid for any repair or recoating. The engineer uses it to prepare the engineering report. Cost estimates are more accurate if the contractor's problems can be anticipated. While prepared from the contractor's viewpoint, the only intended beneficiary is the owner. These reports are completed with diligence, but the accuracy is not guaranteed. The contractor is still advised to visit the site.

10,000 gallon hydropneumatic tank (Red Hill) owned by
Albemarle County Service Authority, Virginia

1) Coating on bottom of the tank is in good condition.

2) Same.

3) Same.

4) The sidewall coating is in good condition.

5) Same.

6) Same.

7) The coating on roof is in good condition.

8) Same.

9) Original lifting lugs remain.

10) Concrete foundation and steel saddles are in good condition.

11) Same.

12) Same.

13) The coating on the exterior end cap is in good condition.

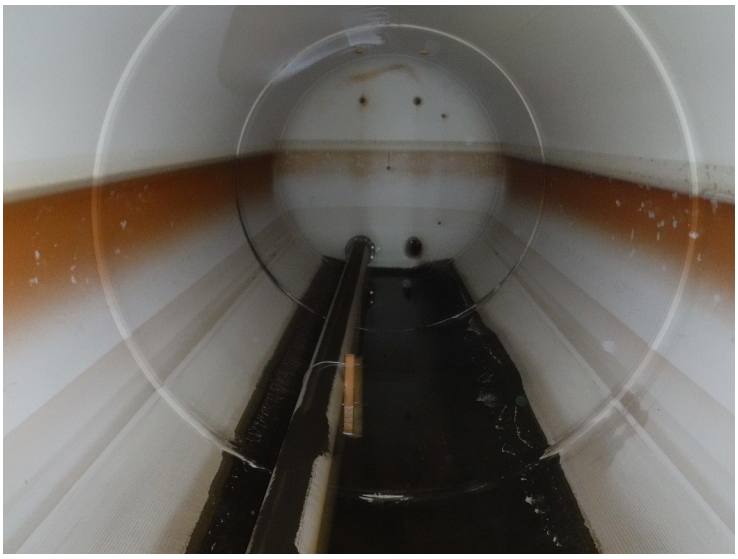
14) Interior end cap coating is in good condition.

15) Manway to wet interior on exterior endcap.

16) Caulking between the building and the tank is missing on the top.

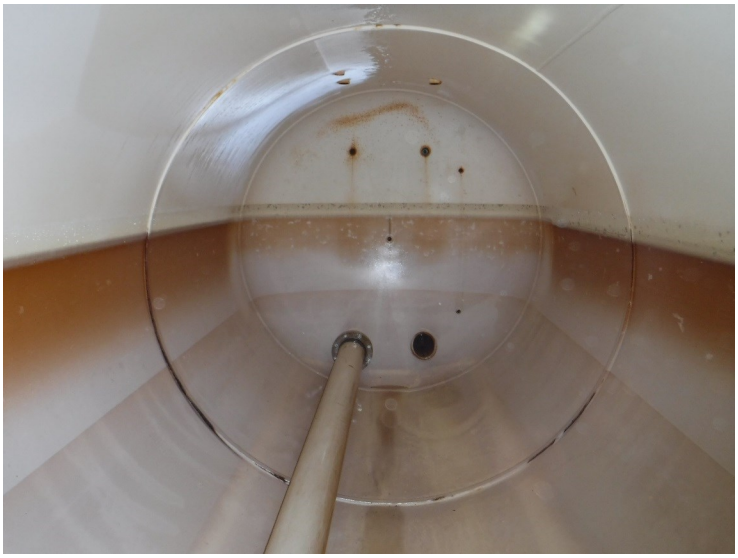
17) Piping inside of building is not coated and has some minor surface rust.

18) Drain line discharges to a concrete splash pad.



19) View of the wet interior.

20) Bottom of tank was covered with sediment.



21) Interior of tank was power washed and cleaned.

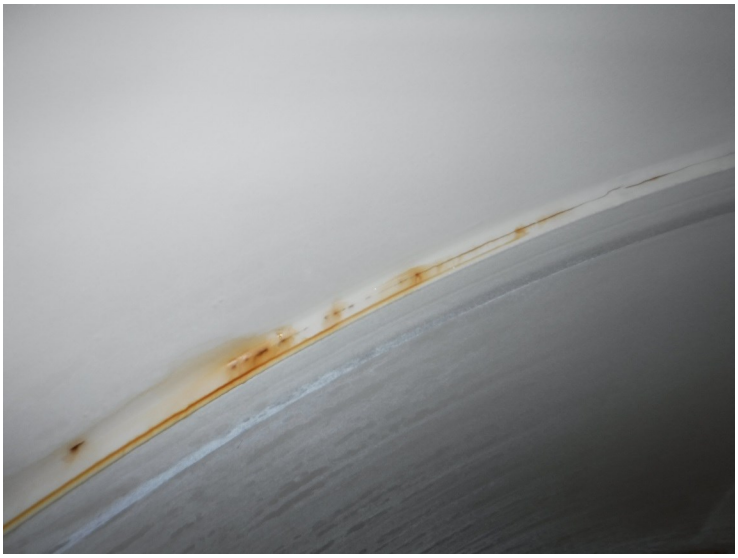
22) The sidewall coating is in good condition with mineral staining at the equator.

23) Same.

24) Minor topcoat delamination on the sidewall.

25) The roof coating is in good condition overall with coating failures on roof couplings.

26) Minor rust bleedthrough on the roof.



27) Minor rusting at the roof weld seam.

28) The roof coating is in good condition with minor cracking of coating at the weld seams.

29) Same.

30) Same.

31) Draw line routed across the floor.

32) Fill line stubs just inside of the tank.

33) Drain in the bottom of the tank.

34) Coating on endcap is in good condition with minor rust bleedthrough.

35) View of rust bleedthrough and couplings in the end cap.


PORTABLE H_2O PRESSURE


PORTABLE