Pittsburg Tank & Tower Maintenance Co., Inc.®

Since 1919

PAINT•REPAIR•DISMANTLE•INSPECT

TANKS RAISED, LOWERED AND MOVED • NEW AND PREOWNED TANKS

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Port of Lake Charles
P.O. Box 3753
Lake Charles, LA 70602
RE: 3501 Bayou D'Inde Road
200,000 Gallon EWT
July 21, 2016
Mr. Nick Pestello
Assistant Director of Engineering
(337) 794-3687
Job No. 316288

If you would like to speak with Patrick Heltsley concerning this report, call (270) 826-9000, Ext. 4601

For additional copies of this report call (270) 826-9000 Ext. 4601

Photo shows the condition of the foundations. NFPA 22-2013; 12.3.1 states, "The tops of foundation piers shall be level, shall be at least 6" (152 mm) above grade, and shall be located at the correct elevations." We recommend clearing any dirt, debris and other loose gravel away from the tank foundations, down to a minimum 6" below top of foundation. This should be done by a local excavating company.

Photo shows the condition of the foundations. We recommend sealing the foundations with a sealant.

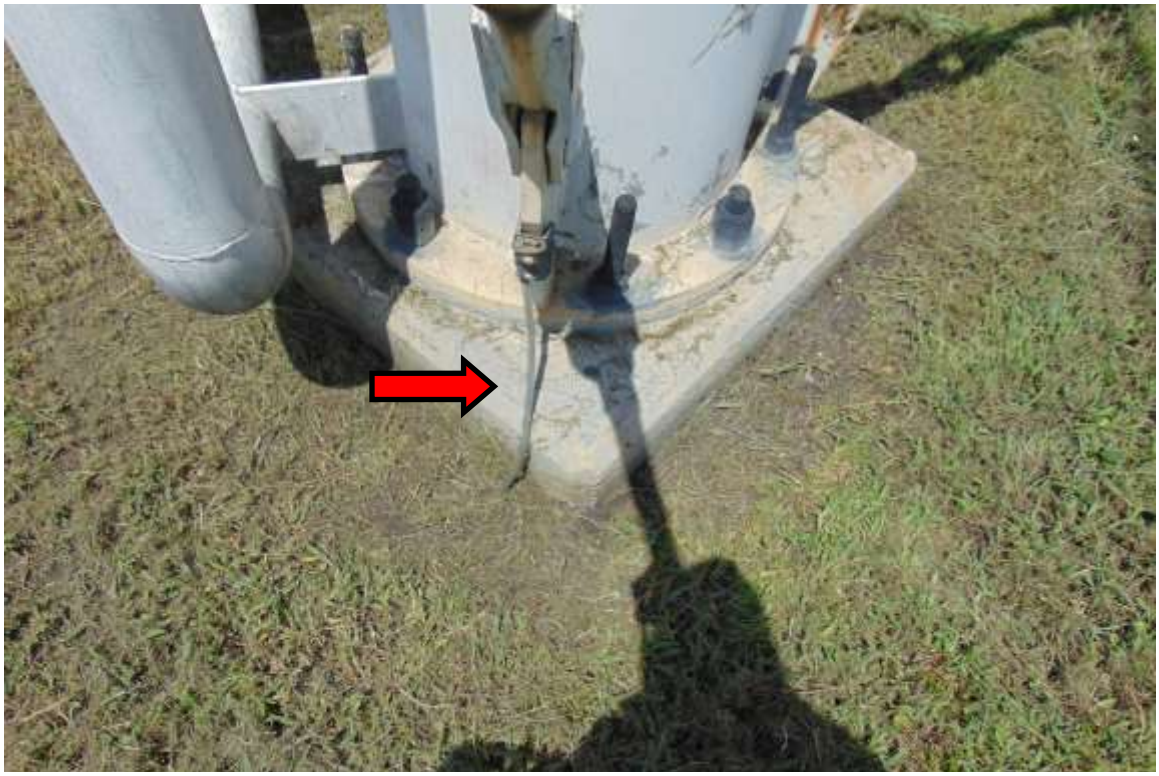


Photo shows the tank is electrically grounded for lightning protection as required by OSHA 29 CFR 1926 (K) and NFPA 780-2014; 5.4: Metal Towers and Tanks and appears to be in good condition.

Photo shows the condition of the anchor bolts. The structural integrity of the anchor bolts should be maintained to withstand 100 mph winds blowing from any direction as required by AWWA D100-11; 3.8: Anchorage. We recommend cleaning the area around the anchor bolts, tightening the anchor nuts to specifications, then welding around the circumference of the nut-to-base plate connections and tack welding the bolt-to-nut connections for preventive maintenance.

Photo shows the condition of the existing 6" drain valve. We recommend installing a locking device to prevent unauthorized draining of the tank and a splash pad to direct water away from the foundation.

Photo shows the tank name plate.

Photo shows the condition of the 18" riser manway. **This manway would restrict access in the case of an emergency**. We recommend replacing the existing riser manway with an AWWA D100-11; 5.4.4 Steel Riser Manhole, approved 24" manway, complete with davit arm and **Confined Space Entry** sign and maintenance free galvanized steel bolts.

Photos show the condition of the 6" overflow pipe system. It appears to be in good condition.

Tower access ladder in above photos is only 15" wide and is not equipped with anti-skid rungs. OSHA 1910.27 states, "Rungs… must be corrugated, knurled, dimpled, coated with skid-resistant material or treated to minimize slipping." We recommend installing an OSHA compliant tower access ladder complete with standoffs every 10' on center, a cable type ladder safety device, a lockable ladder guard to prevent unauthorized access and posting a **Fall Protection Required** sign.

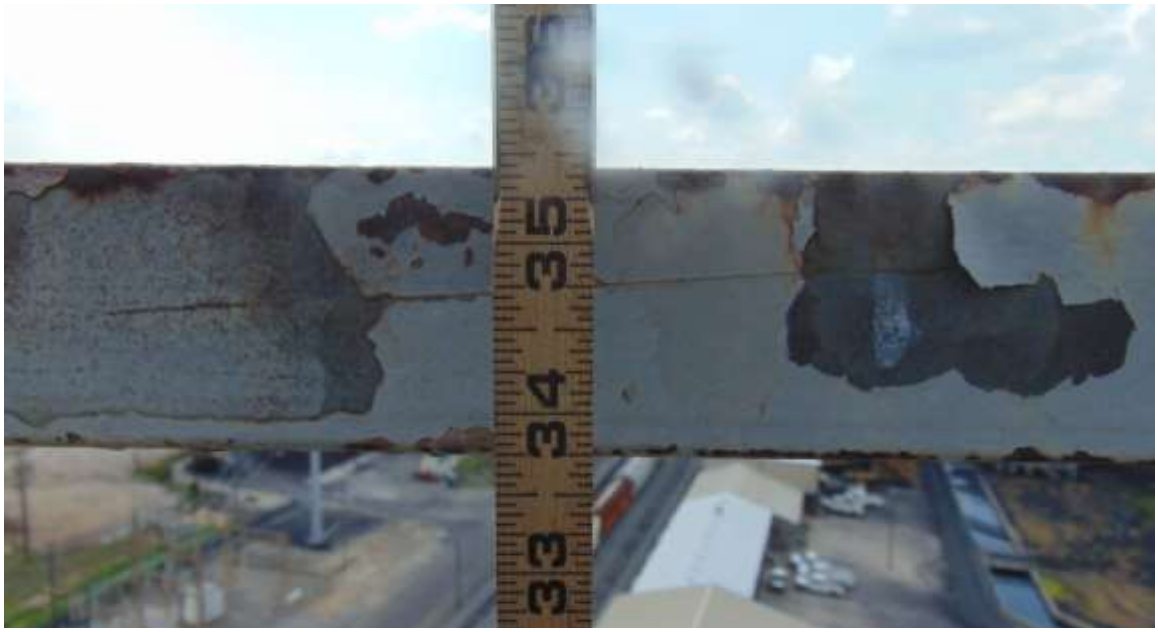
Photo shows more of the condition of the existing tower access ladder. Safe climbing procedure requires a person to climb a ladder with their hands on the side rails of the ladder and not the ladder rungs. **Notice a conduit is mounted on the ladder side rail, creating a climbing safety hazard.** We recommend removing the conduit from the ladder and securing it, with standoffs to the support column to eliminate this climbing safety hazard.

Photo shows the condition of the windage rods. The windage rods are designed to resist and stabilize the tower structure against wind and seismic loads combined with dead and live loads. The rods should withstand 100 mph winds blowing from any direction. **If the bracing remains loose, a sudden collapse could occur.** We recommend adjusting the windage rods and riser stay rods as needed, to withstand 100 mph winds blowing from any direction.

This work should be performed on an emergency basis.

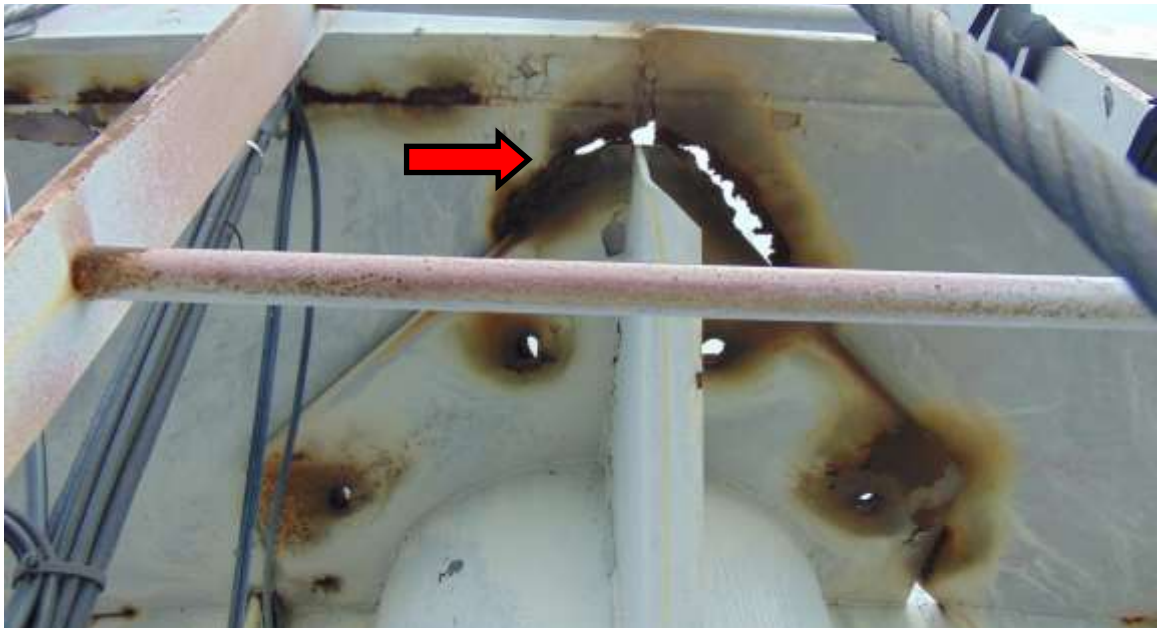
Photo shows the condition of the strut end connections. We recommend reinforcing the strut ends by welding.

Photo shows the condition of the riser pipe and bowl. The connection appears to be in good condition.



Photos show the condition of the existing handrail system. NFPA 22-2013; 13.7.5.2 states, "A rigid railing at least 42" (1067 mm) high shall be provided around the outside of the balcony." The handrail is only 35" high and is not equipped with an intermediate rail. We recommend raising the existing handrail system to the required 42", installing an intermediate rail, cutting out a section of the handrail at the junction of the tower access ladder and structural girder, the width of the tower access ladder and installing the necessary bracing to keep railing at design strength, complete with a swing gate at the opening in the handrail at the junction of the tower access ladder and structural girder.

Photo shows where water is ponding on the balcony floor, causing deterioration of the paint and steel. We recommend drilling additional weep holes in the balcony floor to prevent ponding of water.



Photos show underneath the tank catwalk where the metal is deteriorating. We recommend welding steel patch plates over the affected areas.

More photos of the deterioration.

Photo shows the condition of the tank shell. Shell manways installed on this tank will be in compliance with NFPA 22-2013; 14.7.2: Shell manholes, and OSHA 1910.146 (c) (2): Confined Spaces.

We recommend :

Install two (2) 30" shell manways 180º apart
Install davit slides on both manways
Post **Confined Space Entry** signs

Photo shows the condition of the posthead connections. The postheads secure the column legs to the tank shell and support the tank's live and dead load. The postheads have been welded around the circumference of the posthead-to-shell connection for reinforcement and appear to be in good condition.

Photos show the condition of the liquid level indicator. NFPA 25-2014; 9.3.1 requires liquid level indicators shall be tested every 5 years for accuracy and freedom of movement. We recommend cleaning and lubricating all moving parts on the liquid level indicator for preventative maintenance, then adjusting and calibrating the unit.

Shell/roof access ladder in above photos is not equipped with anti-skid rungs and is only 15" wide. OSHA 1910.27 states: "Rungs… must be corrugated, knurled, dimpled, coated with skid-resistant material or treated to minimize slipping "We recommend installing a anti-skid rung equipped, shell ladder complete with standoffs every 10' on center and a cable type ladder safety device.

Photo shows the antenna system located on top of the tank. We recommend performing a structural analysis to determine whether or not the tank can support the weight of the antenna system.

Photo shows that the roof is not equipped with a required fall protection system. OSHA 1910.23 (c) requires fall protection on the edges of all walking working surfaces. We recommend installing a 42" high handrail system around the circumference of the tank roof, complete with toeboard, intermediate rail and a swing gate at the junction of the shell-to-roof access ladder and tank roof.

Photo shows the condition of the 24" existing roof manway. Roof openings on this tank require the following to be in compliance with OSHA 1910.146 (c) (2), AWWA D100-11; 5.4.3: and NFPA 22-2013; 5.7.3: Roof Hatch.

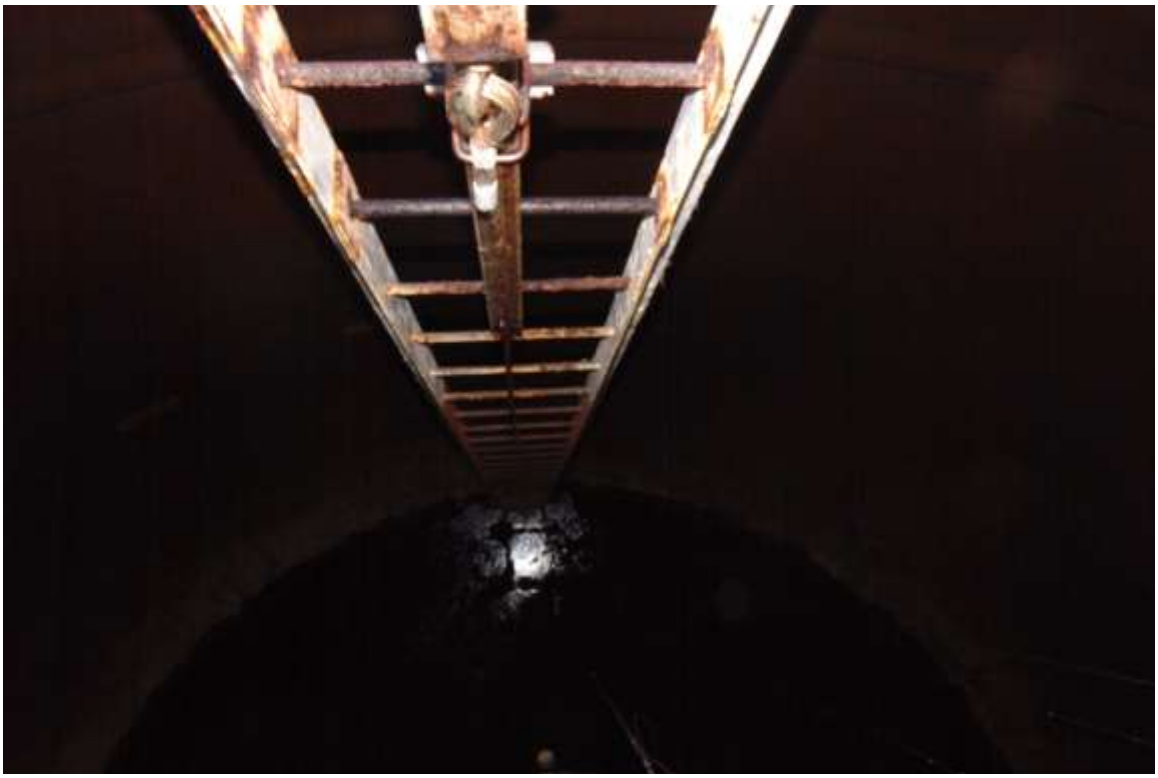
We recommend:

Install 30" secondary roof manway 180º from primary manway
Post **Confined Space Entry** signs
Install new lock on existing manway

Photos show the condition of the existing 16" roof vent. NFPA 22-2013; 4.15 Roof Vent. **An improperly vented tank may cause external pressure to act on the tank which can cause buckling even at low pressure differential.** We recommend replacing the existing roof vent with a vacuum-pressure vent and screen.

This work should be performed on an emergency basis.

Photos show the tank exterior coating system. We recommend pressure washing the tank exterior with biodegradable detergent injection (minimum 3,500 psi at 3.0 gpm) then remove all loose rust and scale with wire brushes and hand scrapers in accordance with SSPC #2 (hand tool cleaning), spot prime and apply one (1) finish coat of alkyd enamel, this includes replacing the existing logo.



Interior access ladder in above photo appears to be in good condition. We recommend installing an OSHA compliant interior access ladder complete with standoffs every 10' on center and cable type ladder safety devices at the suggested secondary roof manway.

We further recommend installing compliant interior bowl ladders complete with standoffs every 10' on center and cable type ladder safety devices at the suggested primary and secondary shell manways.

Photo shows the condition of the interior roof. Notice the rust forming at the roof seams. We recommend seam sealing using Sikaflex® 1a on all interior roof seams to prevent failure of a new interior liner. This work is to be performed in conjunction with application of new interior liner.

Photo shows the condition of the interior roof-to-shell connection. Notice the rust forming at the connection. We recommend seam sealing using Sikaflex® 1a around the entire circumference of this connection to prevent failure of the interior liner. This work is to be performed in conjunction with application of new interior liner.

Port of Lake Charles
RE: 3501 Bayou D'Inde Road
200,000 Gallon EWT

Photo shows sediment and debris in the tank. Silt ingested into the sprinkler system can clog the sprinkler heads, rendering the system deficient. We recommend that cleaning be performed in order to prevent damage to the sprinkler system.

This work should be performed on a emergency basis.

**Please note price for interior cleanout is based on removing 1" – 3" of sediment. Any additional accumulation discovered will be priced on site. In the event the tank has to be drained, tank will need to be drained by the owner, prior to our arrival.*

We further recommend installing a passive cathodic protection system.

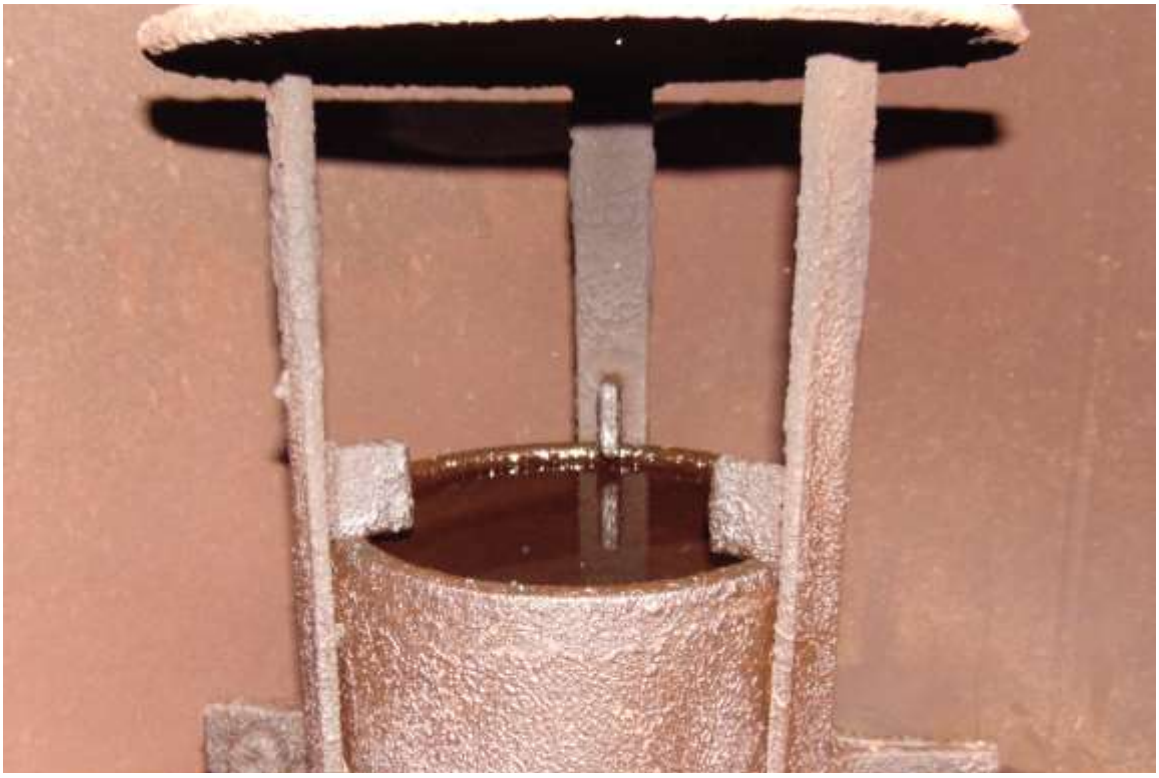


Photo shows a suction pipe on the interior of the tank, which is equipped with a properly sized anti-vortex plate to prevent formation of a vortex.

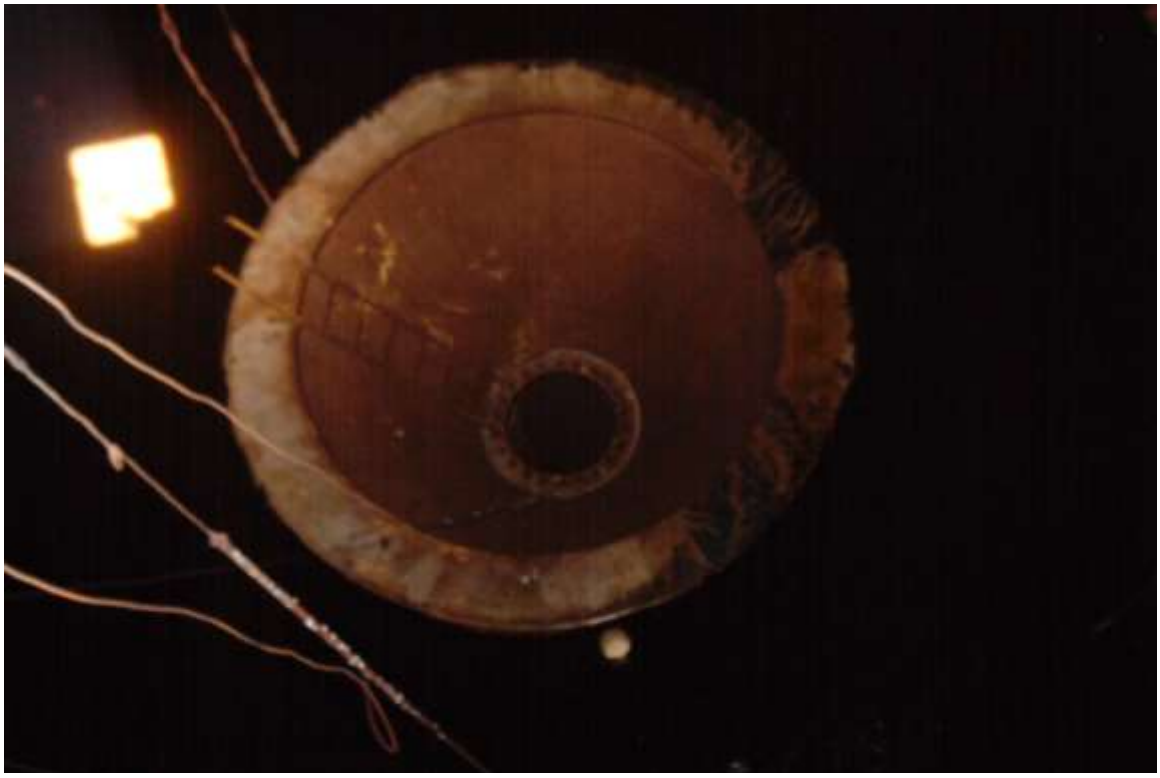


Photo shows the condition of the riser pipe opening. The riser opening is not equipped with a safety grating in accordance with AWWA D100-11; 5.1.1: Safety Grill and OSHA 29 CFR 1910.23 (a)(1). We recommend installing an approved safety grating, designed for fall protection, over the riser opening.

Riser ladder in above photo is not equipped with anti-skid rungs. OSHA 29 CFR 1926.1050-1060 states, "Rungs… must be corrugated, knurled, dimpled, coated with skid-resistant material or treated to minimize slipping." We recommend installing an OSHA compliant riser ladder complete with standoffs every 10' on center and a cable type ladder safety device.

Photos show the condition of the interior liner. We recommend to sandblast, SSPC-SP10 (near white), all rusted and abraded interior areas and brush blast, SSPC-SP7, all remaining interior areas. All areas sandblasted to a #10 as well as all weld seams will receive one (1) spot coat of epoxy primer and one full coat epoxy will then be applied to the entire tank to achieve 8 to 10 mils of total dry film thickness. Total milage includes a combination of the existing and new coating.

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ELEVATED TANK INSPECTION REPORT

JOB NO: 316288 INSPECTOR: Tommy McElveen Jr (LS)

TANK OWNER: Port of Lake Charles

OWNER'S REPRESENTATIVE: Mr. Nick Pestello

TITLE: Assistant Director of Engineering

MAILING ADDRESS: P.O. Box 3753 Lake Charles, LA 70602

PHYSICAL ADDRESS: 751 Bayou Pines East, Suite P Lake Charles, LA 70602

E-MAIL: npestello@portlc.com

CITY, STATE: Lake Charles, LA ZIP: 70602 COUNTY: Calcasieu Parish

TELEPHONE: (337) 794-3687 FAX: (337) 493-3623

LOCATION OF TANK: 3501 Bayou D'Inde Road Westlake LA 70669

Port of Lake Charles
P.O. Box 3753
Lake Charles, LA 70602
July 21, 2016
Mr. Nick Pestello
Assistant Director of Engineering
(337) 794-3687

ORIGINAL CONTRACT NO: 19768 YEAR BUILT: 1969

ORIGINAL MANUFACTURER: Pittsburg Des-Moines CAPACITY: 200,000 Gallon

DATE OF LAST INSPECTION: July 25, 2013 TYPE: Fire / Potable

HIGH WATER LEVEL: 155'-6" LOW WATER LEVEL: 120'-0"

DIAMETER: 31'-0" HEAD RANGE: 35'-0"

TYPE CONSTRUCTION: WELDED: X RIVETED: BOLTED:

ACCOUNT EXECUTIVE: Bobbie Shelton

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Testing	Exterior
Lead	Positive
Adhesion	A1@6.7

Mil Testing								
Roof:	3.6	4.6	4.9	3.2	2.7	6.1	5.4	3.3
Shell: 2	5.7	4.6						
Shell: 1	4.5	6.8	3.5	7.3	6.3	8.3	6.7	9.6

UT Testing								
Roof:	0.226	0.212	0.223	0.228	0.217	0.215	0.205	0.213
Shell: 2	0.294	0.279						
Shell: 1	0.325	0.338	0.352	0.348	0.349	0.356	0.347	0.333

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Page #	Work Proposed	Critical Deficiency	NON-Critical Deficiency	OSHA	Structural	Preventive Maintenance
2	Clear any dirt, debris and other loose gravel away from the tank foundation, down to a minimum 6" below top of foundation. This should be done by a local excavation company.					X
3	Seal the foundation with a sealant.					X
5	Clean the area around the anchor bolts, tighten the anchor nuts to specifications, then weld around the circumference of the nut-to-base plate connections and tack weld the bolt-to-nut connections for preventive maintenance.					X
6	Install a locking device to prevent unauthorized draining of the tank and a splash pad to direct water away from the foundation.		X			
8	Replace the existing 18" manway with a 24" manway.		X			
	Install a davit arm.		X			
	Post Confined Space Entry sign.			X		
	Install maintenance free galvanized steel bolts.					X
10	Install a compliant tower access ladder, complete with standoffs every 10' on center, a cable type ladder safety climb, a lockable ladder guard and post a Fall Protection Required sign.			X		
11	Remove the conduit/co-ax from the ladder and secure it with standoffs to the tank shell to eliminate this climbing safety hazard.			X		
12	Adjust the windage rods and riser stay rods as needed, to withstand 100 mph winds blowing from any direction. This should be done on an emergency basis.	X			X	
13	Reinforce the strut ends by welding.				X	
15	Raise the existing handrail system to the required 42", install an intermediate rail, cut out a section of the handrail the width of the tower access ladder-- at the junction of the tower access ladder and structural girder; and install the necessary bracing to keep railing at design strength, complete with a swing gate at the newly-created opening in the handrail at the junction of the tower access ladder and structural girder.			X		

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Page #	Work Proposed	Critical Deficiency	NON-Critical Deficiency	OSHA	Structural	Preventive Maintenance
16	Drill additional weep holes in the balcony floor to prevent ponding of water.					X
17	Weld steel patch plates over the affected areas.					X
19	Install two (2) 30" secondary manways 180º apart.		X			
	Install davit slides on both shell manways.		X			
	Post Confined Space Entry signs.			X		
21	Clean and lubricate all moving parts on the liquid level indicator for preventative maintenance, then adjust and calibrate the unit.					X
22	Install a compliant shell/roof ladder complete with standoffs every 10' on center and a cable type ladder safety device.			X		
23	Perform a structural analysis.					X
24	Install a 42" high handrail system around the circumference of the tank roof, complete with toeboard, intermediate rail and a swing gate at the junction of the shell-to-roof access ladder and tank roof.			X		
25	Install 30" secondary roof manway 180º from primary roof manway.		X			
	Post Confined Space Entry signs.			X		
	Install new lock on existing manway.					X
26	Replace the existing roof vent with a vacuum-pressure vent and screen on an emergency basis.	X			X	
27	Pressure wash the tank exterior with biodegradable detergent injection (minimum 3,500 psi at 3.0 gpm). Remove all loose rust and scale with wire brushes and hand scrapers in accordance with SSPC#2 (hand tool cleaning). Spot prime and apply one (1) finish coat of alkyd enamel, this inclues replacing the existing logo.					X
28	Install a compliant interior access ladder complete with standoffs every 10' on center and a cable type ladder safety device at the suggested secondary roof manway.			X		
	Install a compliant interior bowl ladders complete with standoffs every 10' on center and cable type ladder safety devices at the suggested primary and secondary shell manways.			X		

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29	Seam seal using SikaFlex 1A on all interior roof seams to prevent failure of a new interior liner.					X
30	Seam seal using SikaFlex 1A around the circumference of the roof-to-shell connection to prevent failure of a new interior liner.					X
31	Perform an interior cleanout, up to 3" of sediment. This work should be performed on an emergency basis. Additional accumulation will be priced on site. In the event the tank has to be drained, it should be drained by the owner prior to our arrival.	X				
	Install a passive cathodic protection system.					X
33	Install a compliant safety grating, designed for fall protection, over the riser opening.			X		
34	Install a compliant riser ladder complete with standoffs every 10' on center, a cable type ladder safety device.			X		
35	Sandblast, SSPC-SP10 (near white), all rusted and abraded interior areas and brush blast, SSPC-SP7, all remaining interior areas. All areas sandblasted to a #10 will receive one (1) spot coat of epoxy primer; then stripe coat all weld seams and apply one full coat epoxy to the entire tank to achieve 8 to10 mils of total dry film thickness. Total milage includes a combination of the existing and new coating.					X