

PREVENTIVE SERVICES, LP

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March 28, 2017

Mr. Tommy Arredondo
City of League City
5123 ½ Candlewood Drive
League City, TX 77573

RE: EVALUATION OF CITY OF LEAGUE CITY
WELDED GROUND STORAGE TANK NO. 1
AT THE CALDER WATER PLANT

Dear Mr. Arredondo,

Attached you will find a copy of the evaluation report prepared by Preventive Services, LP for the above reference tank.

If you have any questions, please feel free to contact our office.

Sincerely,



Kevin L. Cullins,
Managing Member

**EVALUATION OF
CITY OF LEAGUE CITY
WELDED GROUND STORAGE TANK NO. 1
AT THE
CALEDON WATER PLANT**

**CITY OPERATOR:
CITY OF LEAGUE CITY**

**INSPECTION PERFORMED BY:
PREVENTIVE SERVICES, LP
SPRING, TEXAS**

MARCH, 2017

WELDED GROUND STORAGE TANK NO. 1

OWNER: City of League City

ADDRESS: c/o City of League City
5123 ½ Candlewood Drive
League City, TX 77573

ATTENTION: Mr. Tommy Arredondo

REPORT OF: Welded Ground Storage Tank No. 1

DATE INSPECTION PERFORMED: March 27, 2017

I. OVERVIEW

Preventive Services, LP was authorized to perform an evaluation to determine the coating integrity of the welded ground storage tank no. 1. The tank is presently in service at the City of League City Calder Water Plant. The inspection was performed on March 27, 2017 and was made by visual inspection of the exterior and interior while the tank was drained and out of service.

II. PRESENT CONDITION OF THE GROUND STORAGE TANK

Tank Exterior:

The exterior protective coating system is in the initial to advanced stages of deterioration. Photo 1 and 2 provides overall views of the exterior coating system. The protective coating has chalked, faded and is no longer self-cleaning. Impact areas on the tank exterior are shown in photo 3 with surface rust. Overall views of the roof are shown in photos 4 and 5 with coating failures noted throughout. Close-up views of the coating failures and surface rust are shown in photos 6 through 9. Photo 6 also shows deterioration of the non-skid surface on the roof of the tank. Photo 9 shows an area of previously ponding water on the roof. This condition will lead to premature failure of the protective costing system. The surface water piping and connections are shown in photos

10 and 11 with surface rust at the roof connection area. A maintenance hatch is shown in photo 12 with coating failures and surface rust. The roof vent is shown in photo 13 with surface rust along the leading edges of the collars. The screens continue to provide adequate protection against insects, rodents, vermin and other intrusions into the tank. The roof overflow and access hatches are shown in photos 14 and 15 with coating failures along the interior leading edges. The sidewall access manway and cleanout are shown in photos 16 and 17 in acceptable condition. The overflow flap and drain valve appear to be operating properly, as shown in photo 18.

Tank Interior:

Structurally, this tank was judged to be in acceptable condition with an epoxy protective coating system that is in the initial to advanced stages of deterioration. Photo 19 through 22 indicates the condition of the center support column, roof plates and roof rafters. The areas experiencing surface oxidation are the lap joints, rafters and the area between the rafters and roof plates as seen in photos 23 through 26. Complete coverage of these areas is difficult since they are not completely exposed. A roof to sidewall area is shown in photo 27 with pinhole coating failures and surface rust. This condition was noted in several areas. Typical rafter attachment areas are shown in photos 28 and 29 with pinholes failures and rust stains bleeding. All the attachment areas appear to be in the same condition. Delamination of a roof rafter can also be seen in photo 29. Overall views of the sidewall areas are shown in photos 30 through 32. The dark areas depict staining and sediment deposits on the wall surface; however, coating failures were noted. Photo 33 shows the weld seams with minor pinhole failures. An additional view of coating failures on the sidewall area are shown in photo 34. Overall views of the floor of the tank can be seen in photos 35 and 36

with blister failures noted throughout. Close-up views of the blister coating failures on the floor are shown in photos 37 through 40. Photo 41 and 42 shows the overflow with coating failures and corrosion. The interior ladder and support brackets are shown in photos 43 through 45 with severe corrosion. The interior ladder is structurally unsound and should not be used.

III. RECOMMENDATIONS

The exterior protective coating system is in the initial to advanced stages of deterioration. The protective coating has chalked, faded and is no longer self-cleaning. Numerous coating failures were noted on the roof of the tank. The interior protective coating system is in the initial to advanced stages of deterioration. The floor of the tank has failed in the form of blisters. It is recommended to replace the exterior and interior protective coating systems as soon as possible to prevent any further deterioration. During rehabilitation, the interior ladder and overflow box will need to be replaced. It would also be recommended that the City continue an annual preventative maintenance program to help prevent any major repairs in the future.

POTABLE WATER STORAGE TANK Inspection Form

Section 290.46(f)(3)(D)(ii) of the Texas Commission on Environmental Quality's Rules and Regulations for Public Water Systems requires documentation of annual ground, elevated and pressure storage tank maintenance inspections." [See also 290.46(m)(1) and 290.46(m)(2)]

Location: CITY OF LEAGUE CITY CALDER WATER PLANT
Description: WELDED GROUND STORAGE TANK NO. 1
Date & Material of Exterior Coating System: UNKNOWN POYURETHANE
Date & Material of Interior Coating System: UNKNOWN EPOXY

EXTERIOR OF TANK

O.K.	Problem	N/A	Description
X			Foundation: settling, cracks, deterioration
	X		Protective Coating: rust, pitting, corrosion, leaks
X			Water Level Indicator: operable, cable access opening protected
X			Overflow Pipe: flap valve cover accessible, operable, sealed
X			Access Ladder: loose bolts or rungs
	X		Roof: low spots for ponding water , holes along seams, rust
X			Air Vents: proper design, screened, sealed edges and seams
		X	Cathodic Protection Anode Plates: secured and sealed
X			Roof Hatch: proper design, locked, hinge bolts secured, gasket
		X	Pressure Tank Operational Status: pressure release device, pressure gauge, air-water volume device

INTERIOR OF TANK

O.K.	Problem	N/A	Description
		X	Water Quality: insects, floating debris, sediment on the bottom
	X		Protective Coating: rust, corrosion, sealing
ULTRASONIC INSPECTION Date: N/A		Last Inspection of Pressure Tank Interior	

COMMENTS

GST NO. 1 - IT IS RECOMMENDED TO REPLACE THE EXTERIOR AND INTERIOR PROTECTIVE COATING SYSTEMS AS SOON AS POSSIBLE.

Name of Inspector: Kevin L. Cullins

Date of Inspection: 3/27/2017



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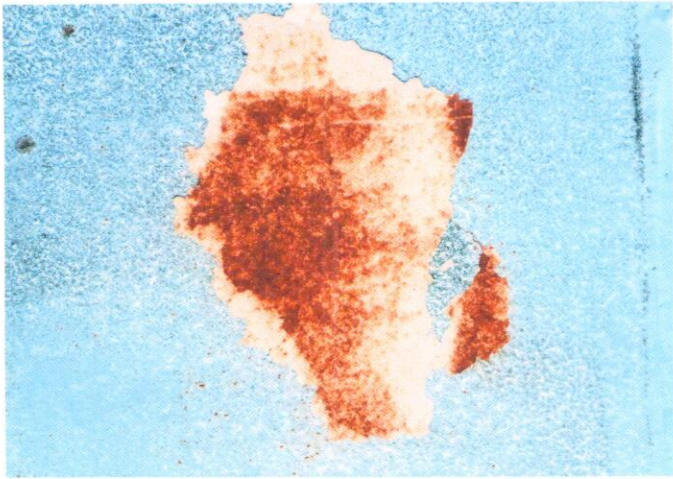
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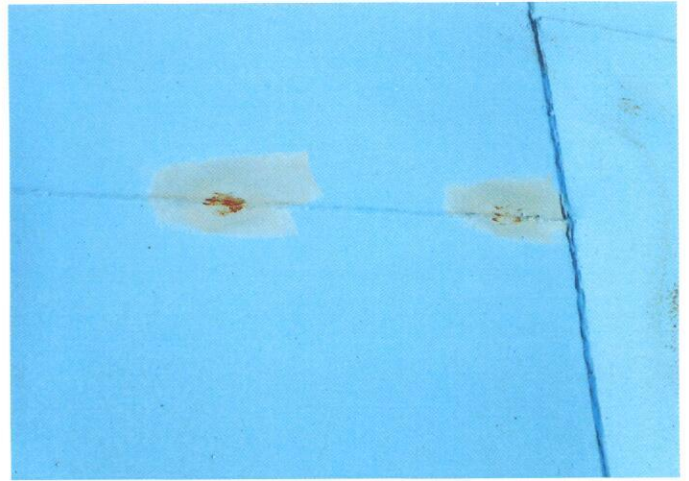
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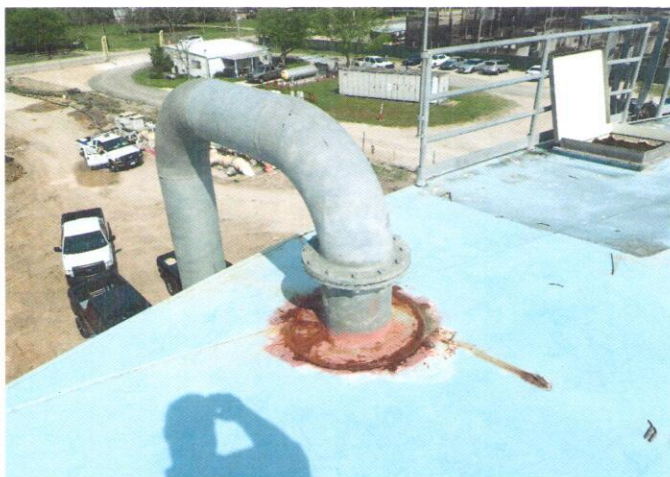
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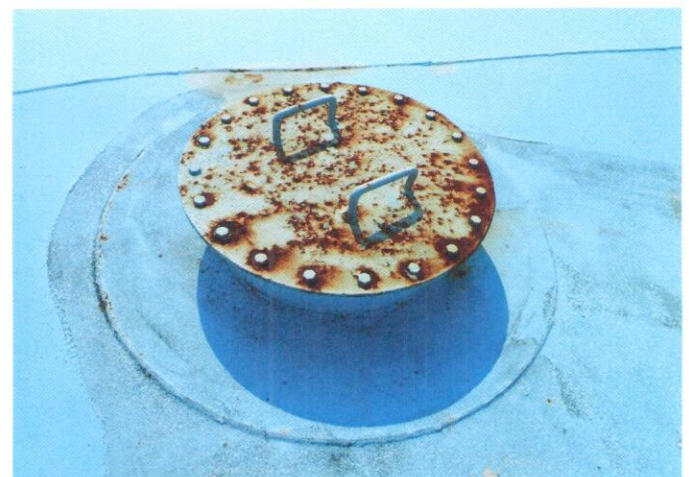
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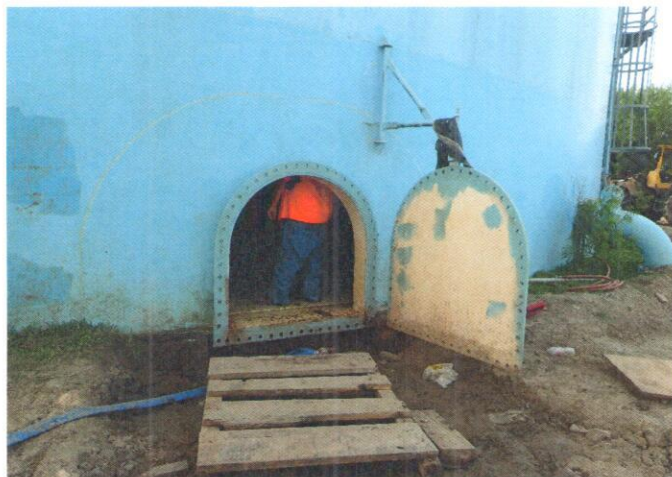
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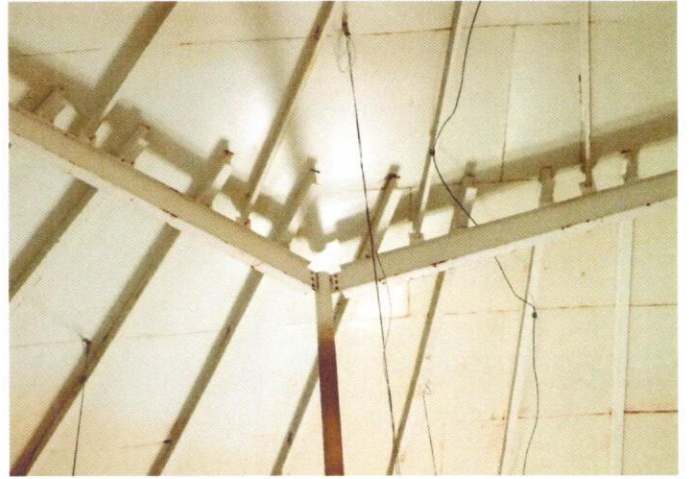
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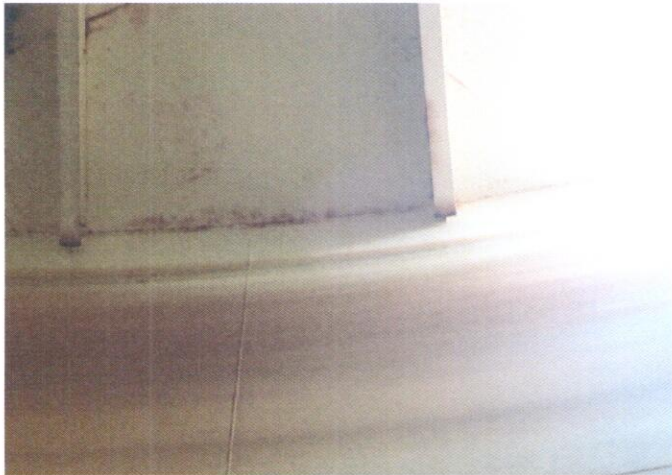
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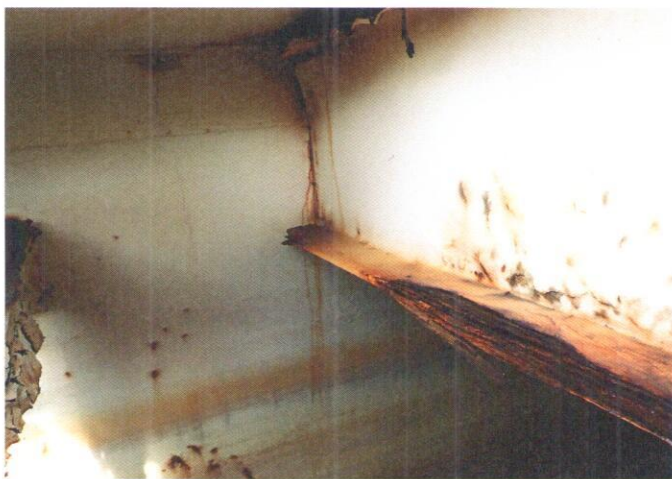
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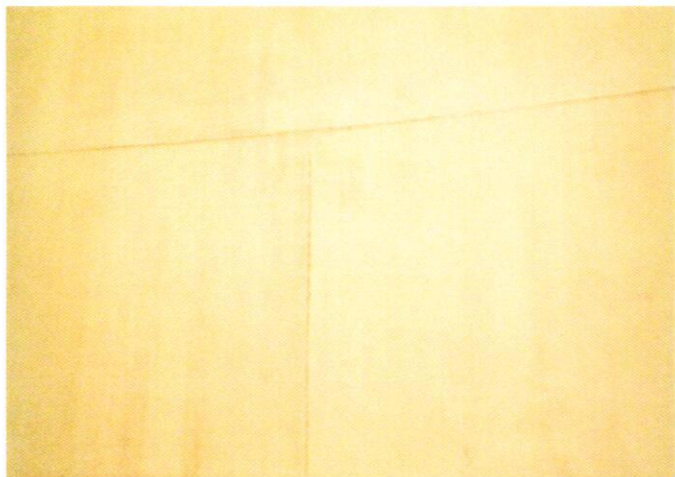
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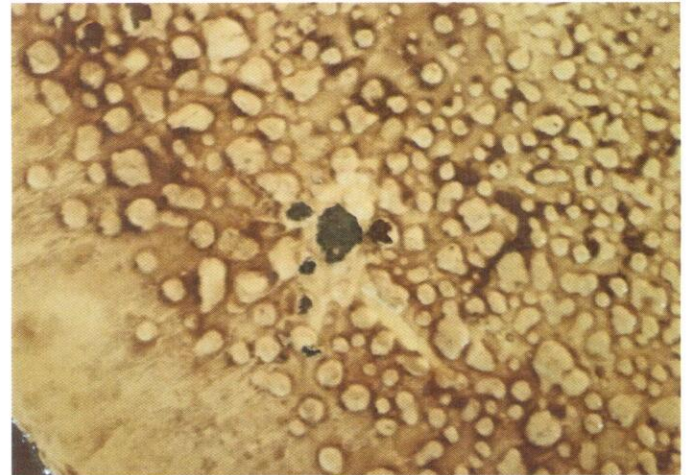
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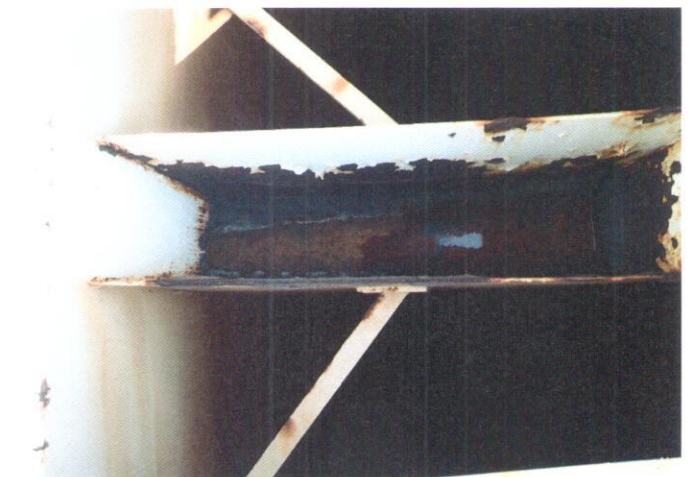
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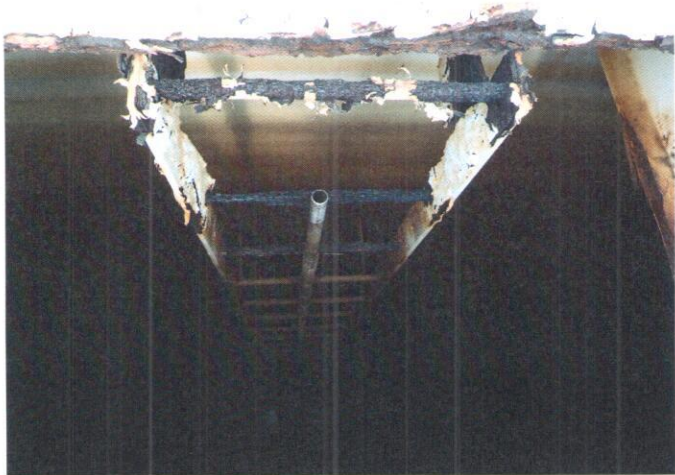
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