



4810-93 Street, Edmonton, Alberta T6E 5M4
Phone: (780) 469-2401 Fax: (780) 468-2422

Tank: RAET28492

Client	Tervita Corporation					Client Tank No.			GF-700 Prod. Tank #920		
Province/LSD	AB 02-18-052-11W5					Inspection Date			Jun 4, 2012		
Location	Granada					Inspection Type			VI / VE / UT / MFL		
Service	Frac Oil					Interim Insp'n					
Manufacturer	GLM					Interim Type					
Serial Number	J-04-087-4					Next Inspection			2017		
Type	API 650 Modified					Next Type			VI / VE / UT / MFL		
Foundation	Raised gravel pad					Ext.Cathodic			No		
Ext. Coating	White coating					Anodes			No		
Int. Lining	Light blue epoxy					Status					
Insulation	None					Volume			3000 bbl		
Manway	30" Circular manway					Diameter			23.5 ft		
Vapour Rec.	None					Height			39 ft		
MAWP	ATM					Year Built			2004		
MAWV						RAE Job #			2878		
Max. Temp						D55			No		
Min. Temp											
Fill Height											
Secondary Containment		Rectangular - Concrete	Height	1.5 ft		Width	55 ft		Length	250 ft	
History Log											

Component	Shell course 1	Material	A36 or Eq.	Mat. Thick.	0.25 in	Corr. Allow.	
Component	Shell course 2	Material	A36 or Eq.	Mat. Thick.	0.188 in	Corr. Allow.	
Component	Shell course 3	Material	A36 or Eq.	Mat. Thick.	0.188 in	Corr. Allow.	



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Component	Shell course 4	Material	A36 or Eq.	Mat. Thick.	0.188 in	Corr. Allow.	
Component	Shell course 5	Material	A36 or Eq.	Mat. Thick.	0.188 in	Corr. Allow.	
Component	Shell course 6	Material	A36 or Eq.	Mat. Thick.	0.188 in	Corr. Allow.	
Component	Shell course 7	Material	A36 or Eq.	Mat. Thick.	0.188 in	Corr. Allow.	
Component	Floor	Material		Mat. Thick.	0.25 in	Corr. Allow.	
Component	Deck	Material		Mat. Thick.	0.25 in	Corr. Allow.	

Comments

The inspection was performed using the RAE Tank Inspection procedure 604B rev. 8

This was one of nine tanks on the Granada site. All tanks were sharing the same secondary containment. This tank was labeled as "GF-700 Prod. Tank #920".

Figure: 1



Plant Lease Sign

Figure: 2



Nameplate

Containment

The secondary containment was composed of concrete walls. The containment was shared between nine tanks of various sizes.



Piping Observations

The piping appeared to be in good condition.

The nozzles in this tank were not reinforced. According to API 650/653, all nozzles greater than NPS 2 in size must be equipped with repads.

Some of the piping connections to the tank were equipped with bellows. A couple of the bellows were removed at the time of inspection, possibly for isolation purposes.

Figure: 3



Piping - note removed bellows

Figure: 4



Nozzles and tank labeling - note lack of repads

Pressure Protection Observations

The thief hatch was in good condition and was designed to provide pressure and vacuum relief.

A separate pressure and vacuum relief valve was installed on the roof beside the thief hatch.

There was a gooseneck nozzle in the centre of the roof, making the tank open to atmospheric pressure.

External Observations

The tank was un-insulated and was coated white. The external coating had a few small failures but was mostly in good condition.

The tank was sitting on a raised gravel pad. The gravel pad was contained by a metal ring. Most of the outer lip of the tank floor was covered by gravel. Remnants of a tar coating were visible on top of the gravel pad. Leak detection tubes were in place beneath the tank floor.

The level gauge was in good condition.

The ladder was in good condition.



Figure: 5



Overall view - note ladder and level gauge

Figure: 6



Lower tank - note foundation, leak detection, and layer of tar

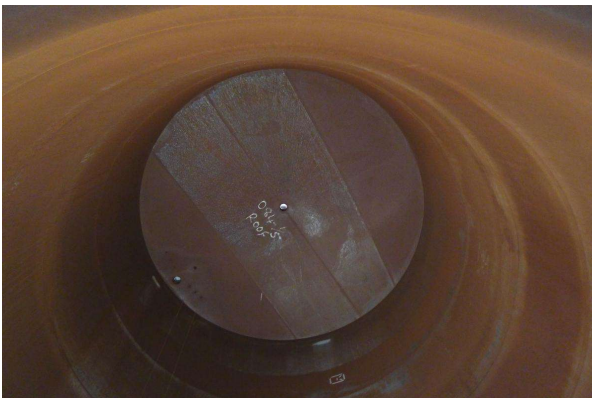
Internal Observations

The floor and the bottom ~5' of the shell was coated with light blue epoxy. The coating was mostly in good condition. The coating had been patched with black coating in a few places. The coating patches were in good condition.

The uncoated surfaces of the tank were in good condition.

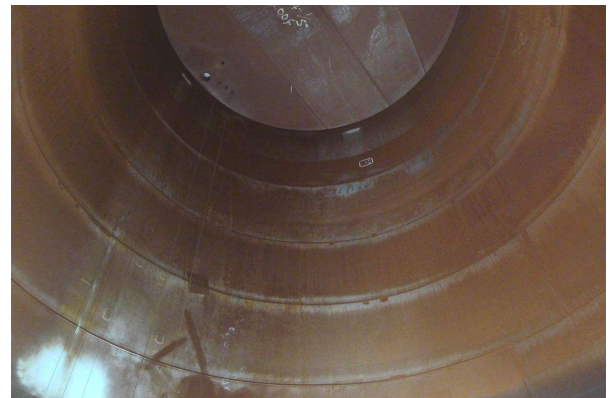
There were two level floats installed in the tank. One float was black and the other was bare metal. The black float appeared to be the active level float as it was the only one attached to a level gauge board on the outside of the tank. The metal level float was installed in a location where it partially blocked the manway.

Figure: 7



Internal roof/shell

Figure: 8



Internal shell



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Figure: 9



Internal shell/floor - note nozzles

Figure: 10



Internal shell/floor - note two level gauges, one in front of manway

NDE

Ultrasonic Testing:
(all measurements in inches)

Floor

Plate A: 0.250, 0.249, 0.251, 0.250, 0.252

Plate B: 0.250, 0.248, 0.250, 0.250, 0.248

Plate C: 0.251, 0.250, 0.252, 0.253, 0.252

Plate D: 0.253, 0.251, 0.250, 0.252, 0.253

Plate E: 0.251, 0.251, 0.249, 0.251, 0.251

(the plates were named starting with A in the back right corner and going to the left, relative to the manway)

Shell

First course: 0.249, 0.249, 0.249, 0.248, 0.249

Second course: 0.188, 0.188, 0.186, 0.186, 0.186

Floor Scan

As the tank was sitting directly on gravel, a magnetic flux leakage (MFL) floor scan was performed to check for bottom-side corrosion. No indications were found.

Recommendations

1. Clear gravel off of the outer floor lip (chime area)
2. Remove inactive level float



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Inspector: Brent Drader

Reviewed By: Brent Drader