



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

Tank: RAET28490

Client	Tervita Corporation			Client Tank No.	GF-700 Prod. Tank #910		
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-04-087-2			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.	
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Component	Shell course 2	Material	A36 or Eq.	Mat. Thick.	0.188 in	Corr. Allow.	
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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 #910".

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. Two of the bellows were removed at the time of inspection, possibly for isolation purposes.

Figure: 3



Nozzles - note lack of repads

Figure: 4



Piping and tank labeling - note disconnected bellows

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.

Figure: 5



Thief hatch and PVRV

Figure: 6



Thief hatch open



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. Some of the outer lip of the tank floor was covered by gravel. Leak detection tubes were in place beneath the tank floor.

The level gauge was in good condition.

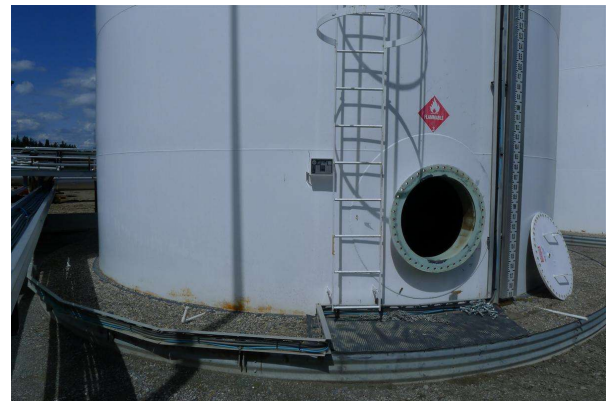
The ladder was in good condition.

Figure: 7



Overall view

Figure: 8



Manway and door - note ladder and level gauge

Figure: 9



Bottom of tank - note foundation and leak detection

Figure: 10



External roof



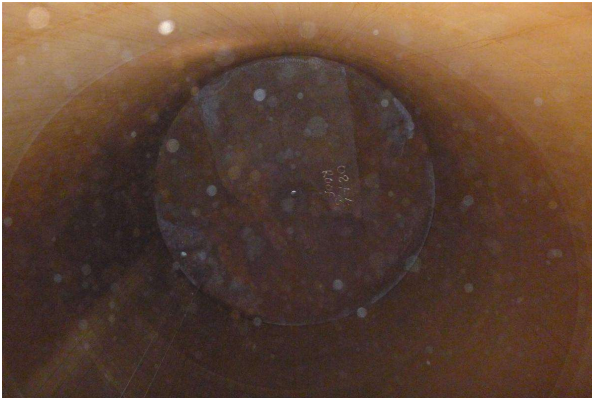
Internal Observations

The floor and the bottom ~4' 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: 11



Internal roof/shell

Figure: 12



Internal shell/floor - note nozzles

Figure: 13



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

Figure: 14



Internal floor - note coating patches



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NDE

Ultrasonic Testing:
(all measurements in inches)

Floor

Plate A: 0.250, 0.249, 0.249, 0.250, 0.250

Plate B: 0.249, 0.249, 0.245, 0.246, 0.246

Plate C: 0.255, 0.254, 0.251, 0.251, 0.253

Plate D: 0.253, 0.252, 0.254, 0.254, 0.253

Plate E: 0.252, 0.251, 0.250, 0.247, 0.247

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

Shell

First course: 0.250, 0.249, 0.248, 0.248, 0.249

Second course: 0.186, 0.187, 0.185, 0.185, 0.184

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

Inspector: Brent Drader

Reviewed By: Brent Drader