

1060-04

Canadian Natural Resources Limited
Production - Facilities Engineering
A2529299 Flood Holding Tank Inspection

Content Date Range: 8/9/2005 to

Vessel Integrity

Inspection Data

Open: 9/20/2005 Close:

Vital: Yes
Original: Yes
Confidential: No

CC-2



00539469

Canadian Natural Resources Limited
GENERAL PRESSURE VESSEL INFORMATION

District: Grande Prairie Skid No.

Facility: Ante Creek Location (LSD): 10-26-65-24 W5

Vessel Name/Equipment Number: Flood holding tank

Orientation: Horizontal

Status: Shut in Regulatory Inspection

PRESSURE VESSEL NAMEPLATE DATA

"A" or "G" or "S" (Sask.) or BC Registration Number.

CRN Number:

A 2529299

F-5182.2

Vessel serial number: V-0010

Size:

Shell thickness: 25.4mm

Shell material: SA 516-70

Head thickness: 25.4mm

Head material: SA 516-70

Tube wall thickness: n/a

Tube material: n/a

Tube diameter: n/a

Tube length: n/a

Channel thickness: n/a

Channel material: n/a

Design pressure

Shell: 500 psi

Operating pressure

Shell:

Tubes:

Tubes:

Design Temp.

Shell: 267 °F

Operating temperature

Shell:

Tubes:

Tubes:

X-ray: RT 1

Heat treatment: no

Code parameters: ASME VIII Div. 1

Coated: yes

Manufacturer: National Oil Well

Year built: 1989

Corrosion allowance: n/s

Manway: yes

PRESSURE SAFETY VALVE NAMEPLATE DATA

PSV Tag #	Manufacture	Model #	Serial #	Set Pressure	Capacity (scfm)	Set Date
P27048	Baird	1727100-2-GS	18533-26	500 psi	2242 scfm	06/03
CRN #	Service By	Block Valve	Location	Size	Code Stamp	
N/S	N/S	no	Top shell	2 x 2	UV	

SERVICE CONDITIONS-INDICATE ALL THAT APPLY

Sweet	Sour X	Oil X	Gas X	Water X
Amine	LPG	Condensate	Air	Glycol

Other (Describe):

Inspection Interval

PSV Service Interval

(Determined by MIC in conjunction with Chief Inspector following guidelines of CNRL's Owner-User Inspection Program)

Reports reviewed and accepted by:

Mechanical Integrity Coordinator

Date

Fill out all forms as completely as possible. All information is important! Use back of sheets to record additional information or sketch if required.
Copy of report to be filed by MIC at site, and copy sent to Chief Inspector

External Inspection Items	G	F	P	N/A	Comments
Insulation Verify sealed around manways, nozzles, no damage present, and there is no egress of moisture.				X	
External Condition Assess paint condition, areas peeling, record any corrosion, damage, etc (record location, size and depth of corrosion or damage)	X				Good condition no peeling or corrosion
Leakage Record any leakage at flanges, threaded joints, weep holes on ropads, etc.	X				No signs of leaks, vessel is out of service for inspection
Saddle Assess condition of paint, fire protection, concrete. Look for corrosion, buckling, dents, etc. Look at vessel surface area near supports. Verify no signs of leakage at attachment to vessel and attachment welds are acceptable. Ground wire attached?	X				In good condition No buckling or dents Paint in good condition Ground wire attached firmly to skid
Anchor Bolts Hammer tap to ensure secure. Look for cracking in treads or signs of deformation.	X				All 16 are in place, no deformation or damage
Concrete foundation Check for cracks, spalling, etc.				X	
Ladder / Platform Describe general condition, ensure support is secure to vessel, describe any hazards.				X	
Nozzle Assess paint, look for leakage, and ensure stud threads are fully engaged. Record any damage, deflection, etc. Are nozzles gusseted?	X				Paint in good condition, no damage deflection or gussets All stud threads are fully engaged No corrosion present
Gauges Ensure gauges are visible, working, no leakage, and suitable for range of MAWP/Temp.		X			No temp. gauge on vessel Pressure gauge is suitable and visible Upper and lower sight glasses are obstructed Well supported
External Piping Ensure pipe is well supported. All clamps, supports, shoes, etc. in place. Look for evidence of structural overload, deflection, etc. Paint condition, external corrosion?	X				Clamps and supports are in place No overload or deflection Paint in fair condition, no corrosion
Valving Ensure no leaks are visible. Valves are properly supported and chained if necessary.	X				Properly supported No signs of leaks
PSV Ensure PSV is set at pressure at or below that of vessel.	X				Set at MAWP
NDE methods Was UT/ MPI done on vessel (MI coordinator to review results)				X	
Other					
Recommendations or corrective actions : Vessel is Fit for Service or describe corrective actions required (MIC to review corrective actions with Operations, discuss with Chief Inspector where necessary, and get remedial action implemented) Fit for service					

Internal Inspection Items	G	F	P	N/A	Comments
Coating Assess coating. Describe area coated, general condition of coating. Look at nozzles, coupling, and areas of most severe corrosion to ensure coating is intact. If coating is in poor condition make decision now if re-coating necessary? If so, when?	X			N/A	Coating in good condition Minor chips max. number 10 with largest diameter 0.250" No corrosion at these areas
Anodes. How many, type, condition. % consumed. Are they being replaced?				X	
Internal Piping Is there any? If so, carbon or stainless steel. Describe condition, dents, corrosion, erosion, etc. Ensure supports are secure and any bolts are suitable for future use.	X				Carbon steel inlet tee nozzle Internal corrosion pitting is present with max. depth of 0.090"
Trays How many? Type of material. Are valves in place. Check for erosion/ corrosion; wear on tray valve legs. Cleanliness?				X	
Baffles, deflector plates, etc. If present, describe condition. Look closely at welds attached to vessel wall				X	
North Head Note all corrosion, erosion or mechanical damage. (If vessel is horizontal identify direction of this head)	X				Good condition No corrosion present Coating still intact
South Head Note all corrosion, erosion or mechanical damage. (If vessel is horizontal identify direction of this head)	X				Good condition No corrosion present Coating still intact
Shell Sections Record number of shell sections. Record location, size and depth of all erosion, corrosion or mechanical damage. Describe general condition. If any corrosion greater than corrosion allowance is observed in either shell or head, discuss with Chief Inspector before closing vessel.	X				One shell section for this vessel No corrosion present
Demister pad Is it in place? Is it clean? If any corrosion is apparent in vessel, lift pad and check top head for corrosion.				X	
Welds Inspect all welds, including attachment welds. Record all service-related damages and if there is any discuss with Chief Inspector before closing.	X				All welds have coating intact
Repairs Required. If yes, ensure procedure and copy of AB is on file, and one sent to local ABSA, and Chief Inspector				X	
NDE Was any NDE done. (MI coordinator to review results)				X	
Other					
Recommendations or corrective actions : Vessel is Fit for Service or describe corrective actions required (MIC to review corrective actions with Operations, discuss with Chief Inspector where necessary, and get remedial action implemented)					Manway cover has corrosion at 6:00 position. Max depth of 0.240" and 4" long by 3/4" wide. Cover is 2" thick
Recommend coating or weld buildup at next outage for corrosion on manway cover					

Inspected By: Ross Hodge

Date: Aug. 9/05



Overview of vessel



Data plate



Inlet tee nozzle



Internal pitting at inlet nozzle



Bottom shell and north bend



Top shell



Chips in coating



Corrosion at manway cover



Corrosion at manway cover



Manway opening