Canadian Natural Resources Limited GENERAL PRESSURE VESSEL INFORMATION Job 10.113193														
District: Grande	Skid No.													
Facility: Botha	Location (LSD): <b>07-16-98-05 W6M</b>													
Vessel Name Equipment Number: Glycol Contactor														
Orientation: Ver	Orientation: Vertical													
Status: In Service Regulatory Inspection														
PRESSURE VESSEL NAMEPLATE DATA														
"A" or "G	CRN Number:													
	M 4445.2													
Vessel serial num	Size: 30" x 30'													
Shell thickness: 34.9mm Head thickness: 34.7mm					Shell material: SA 516-70N									
Head thickness:	Head material: SA 516-70N													
Tube wall thickno	Tube material:													
Tube diameter:	Tube length:													
Channel thickness:					Channel material:									
Design pressure	Shell: 1415 psi	Operating pressure			Shell									
	Tubes:						Tubes:							
Design Temp.	Shell: 150°F						Shell:							
	Tubes:				Tubes:									
X-ray: RT 1	Heat treatment: no													
Code parameters:	Coated: No													
Manufacturer: P	Year built: 1994													
Corrosion allowance: 3.2mm					Manway: No – hand hole									
	PRE	SSURE SAFETY	VALV	E NA	MEPLATE DA	ATA								
PSV Tag #	Manufacture / Model / Serial	Set Pressure (PSI / kPa)	Capacity (scfm)		Size	Block Valve		Location		Service by Date				
CHN-001-506	Consol / 1912HC	1415 psi	2247		2x3	No		Shell		7-2013				
	/ TH90307		scfr	n										
	SERVIC	E CONDITION	S-INDI	CAT	E ALL THAT	APPL	Y							
Sweet X	Sour	Sour					Gas X		Water					
Amine	LPG Con				densate		Air		Glycol	X				
Other (Describe):														
Inspection Interval														

Fill out all forms as completely as possible. <u>All information</u> 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	Р	N/A	Comments
	G	Г	P	IN/A	
<b>Insulation</b> Verify sealed around manways, nozzles, no damage present, and there is no egress of moisture.				X	No insulation.
External Condition Assess paint condition, areas peeling, record any corrosion, damage, etc (record location, size and depth of corrosion or damage)	X				Paint is in good condition with no paint damage or external corrosion.  Paint is thinning due to exposure on the upper shell.
<b>Leakage</b> Record any leakage at flanges, threaded joints, weep holes on repads, etc.	X				No leaks observed.
Saddle/skirt Assess condition of paint, fire protection, and 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				Skirt: bolted directly to skid floor.  No buckling or dents.  No corrosion at attachment welds to vessel.  Ground wire attached to skid.
Anchor Bolts Hammer tap to ensure secure.  Look for cracking in treads or signs of deformation.	X				Present and tightly secured.
Concrete foundation Check for cracks, spalling, etc.				X	Skid is in good condition
<b>Ladder / Platform</b> Describe general condition, ensure support is secure to vessel, and describe any hazards.				X	None
<b>Nozzle</b> Assess paint, look for leakage, and ensure stud threads are fully engaged. Record any damage, deflection, etc. Are nozzles gusseted?	X				Flanged and threaded nozzle joints are fully engaged. No damage or deflections – no leaks. Nozzles are not gusseted.
Gauges Ensure gauges are visible, working, no leakage, and suitable for range of MAWP/Temp.	X				Clear and clean – no leakage. Pressure 0-1500psi
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				Piping is well supported; no deflection, all clamps and supports are in place. Piping paint is in overall good condition with no external corrosion.
Valving Ensure no leaks are visible. Valves are properly supported and chained if necessary.	X				Valves are supported properly – no leaks.
<b>PSV</b> Ensure PSV is set at pressure at or below that of vessel.	X				Location: Shell - Set below MAWP of vessel. Block valve between vessel and PSV. Valve locked open. Discharge piping is same size as valve outlet. Seal in place.
NDE methods Was UT/ MPI done on vessel (MI coordinator to review results)	X				Ultrasonic corrosion survey to be carried out, no metal thickness detected below nominal minus corrosion allowance.
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)

**Recommendations:** No recommendations.

**Summary:** This vessel is in good condition, visual external and ultrasonic thickness inspection carried out – no metal thickness detected below nominal minus corrosion allowance.

Corrosion rate based on greatest thickness loss (head) 0.026mm per year. Retirement Date to "T"min is year 2230.

Vessel is fit for service.

Inspected By: Keith Kowal Date: July 23, 2013



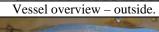
















Temperature gauge.

PSV location.

