

**Canadian Natural Resources Limited
GENERAL PRESSURE VESSEL INFORMATION**

Job # 10.112596

District: Fort St. John BC.	Skid No.
Facility: Cypress Gas Plant	Location (LSD): b-99-C/94-B-16
Vessel Name Equipment Number: Acid Gas Scrubber	
Orientation: Vertical	
Status: In Service	Regulatory Inspection

PRESSURE VESSEL NAMEPLATE DATA

“A” or “G” or “S” (Sask.) or BC Registration Number. A2564041		CRN Number: H 7275.21	
Vessel serial number: TW 89JO25		Size: 24 in. x 8 ft.	
Shell thickness: 9.5 mm		Shell material: SA 516-70N	
Head thickness: 9.0mm		Head material: SA 516-70N	
Tube wall thickness:		Tube material:	
Tube diameter:		Tube length:	
Channel thickness:		Channel material:	
Design pressure	Shell: 100 PSI	Operating pressure	Shell:
	Tubes:		Tubes:
Design Temp.	Shell: 300 Deg F.	Operating temperature	Shell: 0 – 210 Deg F
	Tubes:		Tubes:
X-ray: RT 1		Heat treatment: HT	
Code parameters: ASME VIII, Div 1		Coated: no	
Manufacturer: Tyson’s Welding		Year built: 1989	
Corrosion allowance: 3.2mm		Manway: no	

PRESSURE SAFETY VALVE NAMEPLATE DATA

PSV Tag #	Manufacture	Model #	Serial #	Set Pressure (kPa)	Capacity (scfm)	Service Date
14827F	Consolidated	1905-30DC-2	TH70208	100 PSI	249	07/09
CRN #	Service By	Block Valve	Location	Size	Code Stamp	
O1832.52	Unified	yes	outlet piping	1”x2”	UV	

SERVICE CONDITIONS-INDICATE ALL THAT APPLY

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

Other (Describe):

Inspection Interval _____ **PSV Service Interval** _____

(Determined by MIC in conjunction with Chief Inspector following guidelines of CNRL 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

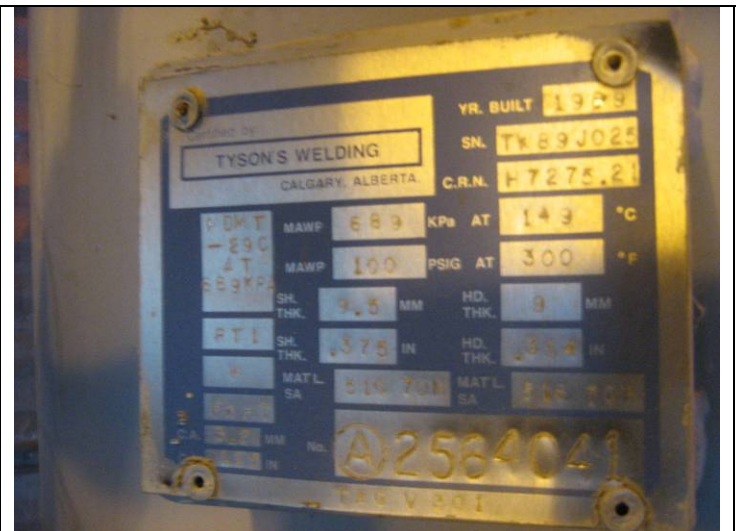
External Inspection Items	G	F	P	N/A	Comments
Insulation Verify sealed around manways, nozzles, no damage present, and there is no egress of moisture.				X	Vessel not insulated.
External Condition Assess paint condition, areas peeling, record any corrosion, damage, etc (record location, size and depth of corrosion or damage)	X				Paint in good condition – no exposed metal.
Leakage Record any leakage at flanges, threaded joints, weep holes on repads, etc.	X				No leaks observed.
Saddle/Skirt 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				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				Securely fastened- no deformation.
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				Stud threads are fully engaged to nuts. No leaks observed. No damage or deflections. 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. Not suitable for range of MAWP/Temperature. Temperature gauge 0 – 210 Deg F.
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				Well supported – all clamps and supports are in place. No structural overloads or deflections. Paint in good condition- no exposed metal.
Valving Ensure no leaks are visible. Valves are properly supported and chained if necessary.	X				No leaks are visible- valves are supported properly.
PSV Ensure PSV is set at pressure at or below that of vessel.	X				Location: Outlet piping - set at MAWP of vessel. Block valve between vessel and PSV- valve locked in open position. PSV seal in place. Discharge piping is same size as valve outlet.

<p>NDE methods Was UT/ MPI done on vessel (MI coordinator to review results)</p>	<p>X</p>			<p>Ultrasonic thickness survey carried out – pipe metal thickness detected below nominal minus corrosion allowance. Thickness calculations carried out: UT point 2840 (6" float column) – nominal thickness is 7.1mm / min thickness is 6.0mm / T min thickness is 1.6mm. UT point 2850 (2" elbow) – nominal thickness is 5.5mm / min thickness is 4.8mm / T min thickness is 1.6mm.</p>
<p>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 at this time. Summary: Vessel is in overall good condition, visual inspection and ultrasonic corrosion survey performed— pipe metal thickness detected below nominal minus corrosion allowance. Thickness calculations carried out to ensure sufficient metal exists for safe operation. Long term corrosion rate based on greatest thickness loss (pipe) 0.075mm per year. Retirement Date to "T"min is year 2056. Vessel is fit for service.</p>				

Inspected By: Matt Wood (API#42758

Date: Jan 8th, 2013

Photo Table



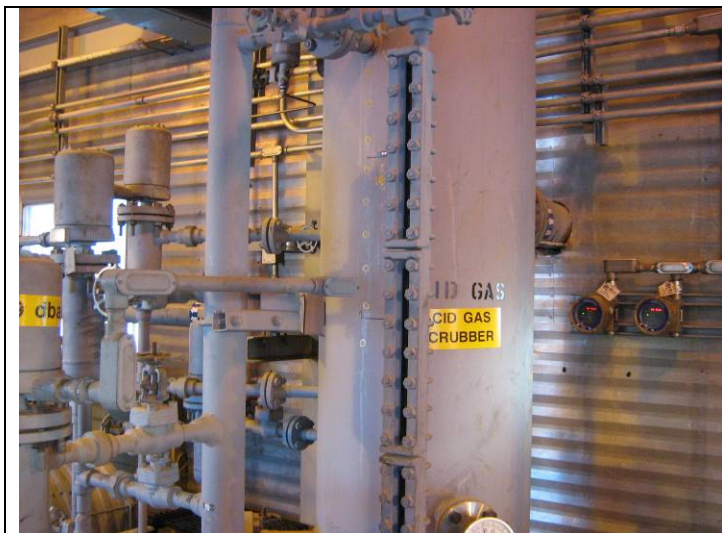
LSD

vessel data plate



vessel PSV

vessel overview



Vessel sight glass



vessel temperature gauge