

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

Job # 05.01610

District: Fort St John, B.C.	Skid No.
Facility: Flat Rock Compressor Station	Location (LSD): 5-2-85-17 W6M
Vessel Name Equipment Number: Inlet Contactor	
Orientation: Vertical	
Status: In Service	Regulatory Inspection

PRESSURE VESSEL NAMEPLATE DATA

“A” or “G” or “S” (Sask.) or BC Registration Number. A 414137		CRN Number: H-9427.12	
Vessel serial number: VS-7845		Size: 30 in x 25 ft	
Shell thickness: 19.1mm		Shell material: SA 516 70MT	
Head thickness: 18.3mm		Head material: SA 516 70MT	
Tube wall thickness:		Tube material:	
Tube diameter:		Tube length:	
Channel thickness:		Channel material:	
Design pressure	Shell: 720 PSI	Operating pressure	Shell: 45PSI
	Tubes:		Tubes:
Design Temp.	Shell: 100°F	Operating Temp.	Shell: 40 F
	Tubes:		Tubes:
X-ray: RT-1		Heat treatment: HT	
Code parameters: ASME VIII, Div 1		Coated: No	
Manufacturer: Argo Sales		Year built: 1996	
Corrosion allowance: 1.6mm		Manway: No	

PRESSURE SAFETY VALVE NAMEPLATE DATA

PSV Tag #	Manufacture	Model #	Serial #	Set Pressure (PSI)	Capacity (scfm)	Service Date
No Access						

SERVICE CONDITIONS-INDICATE ALL THAT APPLY

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

A414137

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				No Insulation present. Roof seal is broken
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 overall condition – no exposed metal
Leakage Record any leakage at flanges, threaded joints, weep holes on repads, etc.	X				No leaking detected.
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 is in good condition – no buckles or distortion. Internally skirt is corroding Paint intact – with little to no corrosion. Vessel grounded through the skid package. No signs of leakage.
Anchor Bolts Hammer tap to ensure secure. Look for cracking in treads or signs of deformation.	X				Firmly secured. Welded to Skid No signs of deformation.
Concrete foundation Check for cracks, spalling, etc.				X	None.
Ladder / Platform Describe general condition, ensure support is secure to vessel, and describe any hazards.				X	None.
Nozzle Assess paint, look for leakage, and ensure stud threads are fully engaged. Record any damage, deflection, etc. Are nozzles gusseted?	X				All threads engaged. No deflection – no leaks. No stud threads, no gussets. Paint is in good overall condition.
Gauges Ensure gauges are visible, working, no leakage, and suitable for range of MAWP/ Temp.	X				Temperature Gauge (-40-150°F) Suitable for overall range. Pressure Gauge 0-600 PSI Not Suitable for MAWP
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 – no deflection – all clamps and shoes in place. Piping is painted and is in good overall condition.
Valving Ensure no leaks are visible. Valves are properly supported and chained if necessary.	X				Inlet controller is seeping – see photos.
PSV Ensure PSV is set at pressure at or below that of vessel. Discharge piping is same size as inlet to valve and is properly supported and routed. Ensure no block valves between PSV and vessel or if there are they are locked open.				X	No Access

<p>NDE methods Was UT/ MPI done on vessel (MI coordinator to review results)</p>	<p>X</p>			<p>Ultrasonic corrosion survey carried out, pipe metal thickness detected below nominal minus corrosion allowance. Thickness calculations carried out: UT point 135 (2" Nozzle) – nominal thickness is 8.7mm / min thickness is 6.5mm / T min thickness is 1.6mm. UT point 140 (2" Circ Band) – nominal thickness is 5.5mm / min thickness is 4.8mm / T min thickness is 1.6mm.</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: 1) Sandblast and paint under skirt.2) Repair roof seal

Summary: This vessel is in good condition, visual external and ultrasonic thickness inspection carried out – nozzle 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 (Nozzle) 0.147mm per year. Retirement Date to "T"min is year 2044.

Vessel is fit for service.

Inspected By: **Dellas Weidman**

Date: **Feb 04, 2011**



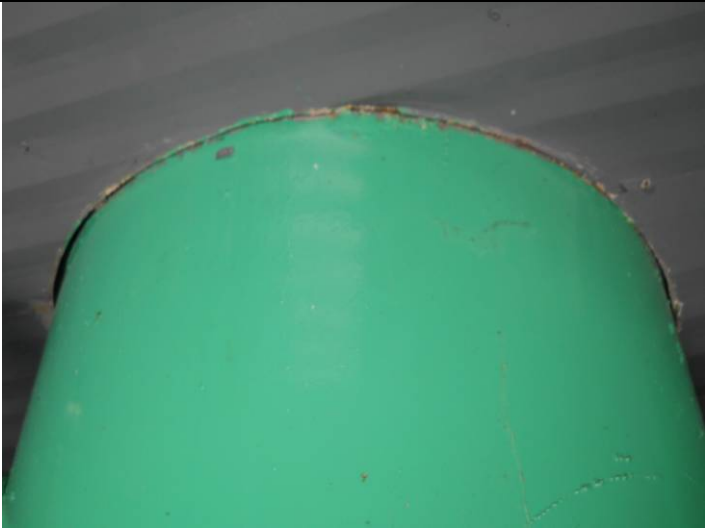
Data Plate Overview



Pressure gauge



Temperature gauge



Roof seal



Overview



Overview



Heavy External scaling under skirt