

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

District: Fort St John, B.C.	Skid No.
Facility: Osprey Field	Location (LSD): d-08-I / 94-A-15
Vessel Name Equipment Number: 2 Phase Separator	
Note: Currently vessel is located in lay down yard.	
Orientation: Vertical	
Status: Out of Service	Regulatory Inspection

PRESSURE VESSEL NAMEPLATE DATA

"A" or "G" or "S" (Sask.) or BC Registration Number. A 2834458		CRN Number: H 8724.2	
Vessel serial number: 11447-V01		Size: 24 in. x 5ft.	
Shell thickness: 25.4 mm		Shell material: SA 516 70N	
Head thickness: 25.4 mm		Head material: SA 516 70N	
Tube wall thickness:		Tube material:	
Tube diameter:		Tube length:	
Channel thickness:		Channel material:	
Design pressure	Shell: 1440 psi	Operating pressure	Shell: 150 psi
	Tube:		Tubes:
Design Temp.	Shell: 100 F	Operating temperature	Shell: 60 F.
	Tubes:		Tubes:
X-ray: RT-2		Heat treatment: Nil	
Code parameters: ASME VIII/Div 1		Coated: Nil	
Manufacturer: NUSCO		Year built: 1993	
Corrosion allowance: Not Stated		Manway: Nil	

PRESSURE SAFETY VALVE NAMEPLATE DATA

PSV Tag #	Manufacture	Model #	Serial #	Set Pressure (psi)	Capacity (scfm)	Service Date
No access to PSV						
CRN #	Service By	Block Valve	Location	Size	Code Stamp	

SERVICE CONDITIONS-INDICATE ALL THAT APPLY

Sweet X	Sour	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	<ul style="list-style-type: none"> Non insulated vessel.
External Condition Assess paint condition, areas peeling, record any corrosion, damage, etc (record location, size and depth of corrosion or damage)	X				<ul style="list-style-type: none"> Paint in good condition – no corrosion or damage noted. No exposed metal.
Leakage Record any leakage at flanges, threaded joints, weep holes on repads, etc.	X				<ul style="list-style-type: none"> No evidence of leaking.
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				<ul style="list-style-type: none"> Skirt: Paint is in good condition – no corrosion at skirt to deck area – no pitting. No corrosion at head to shell welds or head to skirt welds. Ground cable not attached at this time – located in PJ Unit 2 Lay down yard.
Anchor Bolts Hammer tap to ensure secure. Look for cracking in treads or signs of deformation.	X				<ul style="list-style-type: none"> Welded to skid deck.
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				<ul style="list-style-type: none"> All studs are fully engaged to nuts – no short bolts. No damage or deflection noted – no evidence of leaks. No gussets.
Gauges Ensure gauges are visible, working, no leakage, and suitable for range of MAWP/ Temp.	X				<ul style="list-style-type: none"> Gauges in place and within range for service. Liquid dump control has been removed for internal inspection with bore scope.
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				<ul style="list-style-type: none"> Well supported, no deflection, all clamps in place. Paint is in good condition on – paint is intact and there is no corrosion or pitting.
Valving Ensure no leaks are visible. Valves are properly supported and chained if necessary.	X				<ul style="list-style-type: none"> Well supported – no leaks noted.
PSV Ensure PSV is set at pressure at or below that of vessel.	X				<ul style="list-style-type: none"> Located on top head - set at MAWP. Seal is intact. No block valve. Discharges to a safe location. Requires servicing.
NDE methods Was UT/ MPI done on vessel (MI coordinator to review results)	X				<ul style="list-style-type: none"> Ultrasonic thickness survey carried out – head metal thickness detected below nominal. Critical thickness calculations carried out to ensure sufficient metal exists for safe operation.

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. Flush out vessel prior to use – there is still some product in the bottom. 2. Service PSV prior to putting into service. 3. Clean up skirt, and dump piping and paint.

Summary: This vessel is in good condition, visual external and ultrasonic thickness inspection carried out – head metal thickness detected below nominal. Critical thickness calculations carried out to ensure sufficient metal exists for safe operation.

Long term corrosion rate based on greatest thickness loss (head). 0.024mm per year – Retirement date to “T”min is year 2087

Vessel is fit for service.

Photo Table



Skid

Data Plate



Over view

Sight glass.



Pressure gauge.

PSV – no access at this time.



Water dump control opening – general oxidization and surface corrosion – no pitting.

Water dump control nozzle – surface corrosion – no pitting.