Canadian Natural Resources Limited
GENERAL PRESSURE VESSEL INFORMATION **Job # 10.112227**

District: Fort St. John BC.	Skid No.
Facility: Milligan Main Battery	**Location (LSD): b-63-G-94-H-2**
Vessel Name Equipment Number: Free Water Knockout Drum	
Orientation: Horizontal	
Status: In Service	**Regulatory Inspection**

PRESSURE VESSEL NAMEPLATE DATA

"A" or "G" or "S" (Sask.) or BC Registration Number. **A0225408**		CRN Number: F 5480.21	
Vessel serial number: 85C-3422-01		Size: 12 ft.. X 24 ft.	
Shell thickness: 19.1mm		Shell material: SA 516-70	
Head thickness: 17.2mm		Head material: SA 516-70	
Tube wall thickness:		Tube material:	
Tube diameter:		Tube length:	
Channel thickness:		Channel material:	
Design pressure	Shell: 125 PSI	Operating pressure	Shell:
	Tubes:		Tubes:
Design Temp.	Shell: 150 Deg. F.	Operating temperature	Shell: 0 – 250 Deg F.
	Tubes:		Tubes:
X-ray: RT 1		Heat treatment: Nil	
Code parameters: ASME VIII, Div 1		Coated: Yes	
Manufacturer: Alco Gas & Oil		Year built: 1985	
Corrosion allowance: 1.6mm		Manway: Yes	

PRESSURE SAFETY VALVE NAMEPLATE DATA

PSV Tag #	Manufacture	Model #	Serial #	Set Pressure (kPa)	Capacity (scfm)	Service Date
1927V	**Farris**	**26PA10-120-55M**	**CE27748-A10**	**125 PSI**	**16930**	**03/ 09**
CRN #	Service By	Block Valve	Location	Size	Code Stamp	
	unified valve	**No**	**top shell**	**4"x 6"**	**UV/NB**	

SERVICE CONDITIONS-INDICATE ALL THAT APPLY

Sweet	Sour X	Oil	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 Owner-User Inspection Program)

Reports reviewed and accepted by:

Mechanical Integrity Coordinator_____Date_____

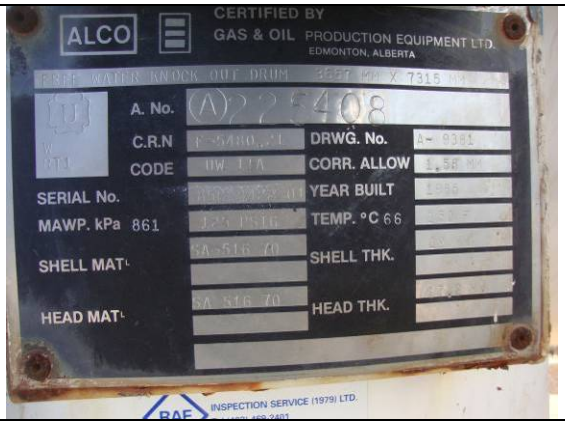
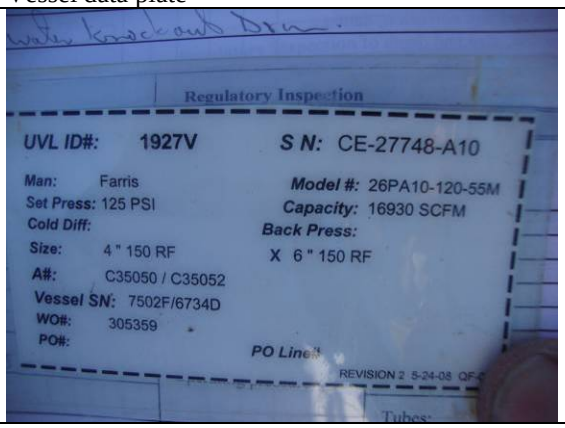
Fill out all forms as completely as possible. <u>All information</u> is important! Use back of sheets to record additional information or sketch if required. Copy of report to be filed by MIC at site, and copy sent to Chief Inspector

External Inspection Items	G	F	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 peeling to 60% of area- primer coat exposed – 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**				**Saddles: Bolted directly to support frame.** **No buckling or dents.** **No corrosion at attachment welds to vessel.** **Ground wire attached to vessel.**
Anchor Bolts Hammer tap to ensure secure. Look for cracking in treads or signs of deformation.	**X**				**Vessel saddles bolted securely to skid.** **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**				**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**				**Clean and no leaks.** **Within operational range for service.** **Temperature gauge 0 – 250 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 in place and secure.** **Paint peeling to 70 % of area - corrosion on exposed metal.**
Valve: Ensure no leaks are visible. Valves are properly supported and chained if necessary.	**X**				**No leaks – valve supported.**
PSV Ensure PSV is set at pressure at or below that of vessel.	**X**				**Top shell – set at MAWP of vessel.** **PSV seal in place- no block valve between vessel and PSV.**
NDE methods Was UT/ MPI done on vessel (MI coordinator to review results)	**X**				**Ultrasonic thickness survey 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: Paint piping and vessel.
Summary: Vessel is in overall good condition, visual external inspection and ultrasonic corrosion survey performed – no metal thickness detected below nominal minus corrosion allowance.
Vessel is fit for service.

Inspected By: Gerry Avery / D. Wiedman **Date:** September 25, 2012

Photo Table

	
LSD	Vessel data plate
	
Temperature gauge	PSV data tag
	
PSV	Vessel overview