Canadian Natural Resources Ltd.
GENERAL PRESSURE VESSEL INFORMATION **Job# 105.00390**

District: **Fort St John, BC**	Skid No.
Facility: Ladyfern Compressor	**Location (LSD): b-17-I/94-H-01**
Vessel Name Equipment Number: Inlet Separator	
Orientation: Horizontal	
Status: In Service	**Regulatory Inspection**

PRESSURE VESSEL NAMEPLATE DATA

"A" or "G" or "S" (Sask.) or BC Registration Number. **RAE# 5234**		CRN Number: **P-2191.21**	
Vessel serial number: **01150-101**		Size: **66" X 314"**	
Shell thickness: **88.9mm**		Shell material: **SA-516-70N**	
Head thickness: **82.6mm**		Head material: **SA-516-70N**	
Tube wall thickness:		Tube material:	
Tube diameter:		Tube length:	
Channel thickness:		Channel material:	
Design pressure	Shell: **13790 Kpa**	Operating pressure	Shell: **7000 Kpa**
	Tubes:		Tubes:
Design Temp.	Shell: **118 deg C**	Operating temperature	Shell: **20 deg C**
	Tubes:		Tubes:
X-ray: **RT-1**		Heat treatment: **Yes**	
Code parameters: **ASME Sec VIII**		Coated: **No**	
Manufacturer: **Propak Systems Ltd.**		Year built: **2001**	
Corrosion allowance: **N/S**		Manway: **Yes**	

PRESSURE SAFETY VALVE NAMEPLATE DATA

PSV Tag #	Manufacture	Model #	Serial #	Set Pressure (PSI)	Capacity (scfm)	Service Date
None	**Mercer**	**95-73.1M1107NSS**	**96366**	**13790**	**144284**	**2004**
CRN #	Service By	Block Valve	Location	Size	Code Stamp	
0G2606.5C	**N/S**	**Yes – Both Locked open**	**Inlet piping**	**4" X 6"**	**UV/NB**	

SERVICE CONDITIONS-INDICATE ALL THAT APPLY

Sweet **X**	Sour	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. <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 is 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 is in good overall condition – No chipped or exposed metal - no previous corrosion.**
Leakage Record any leakage at flanges, threaded joints, weep holes on repads, etc.	X				**No leaking detected.**
Saddle 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				**No distortion to saddles – no leaks at saddle to shell welds.** **No exposed metal – no corrosion.** **Ground cable attached to skid unit & pilings.**
Anchor Bolts Hammer tap to ensure secure. Look for cracking in treads or signs of deformation.	X				**Separator is firmly bolted to skid floor.** **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 connections fully engaged.** **No deflection – no leaks.** **No gussets.**
Gauges Ensure gauges are visible, working, no leakage, and suitable for range of MAWP/ Temp.	X				**Gauges are visible, appears to be functional, no leaks and suitable for range of MAWP/Temp.** **Pressure gauge: 0-20000 Kpa @ 7000 Kpa.** **Temperature gauge: 0-150 deg C @ 20 deg C.**
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 in good condition – no exposed metal or surface corrosion found.**
Valving Ensure no leaks are visible. Valves are properly supported and chained if necessary.	X				**Well supported – no leaks.**
PSV Ensure PSV is set at pressure at or below that of vessel.	X				**Located on inlet piping - set at the Inlet Separator's MAWP.** **Discharge piping is larger than the inlet to PSV.** **Block valve locked open.** **Seal is intact. PSV vents to flare.**
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: 1. This PSV has not been serviced since 2004 – Servicing is recommended ASAP.
Summary: This vessel is in good over all condition, visual external and ultrasonic thickness survey carried out-no metal thickness detected below nominal minus corrosion allowance.
Vessel is fit for service.

Inspected By: Joseph Holdstock **Date: June-02-2010.**

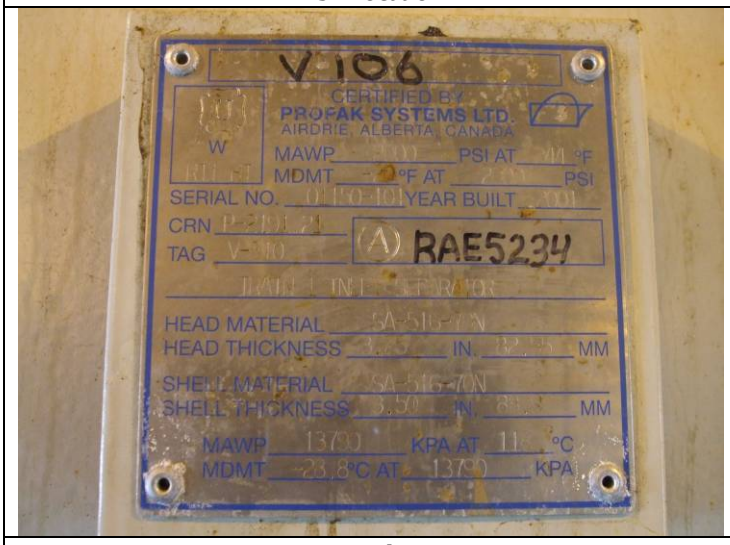
Internal Inspection Items	G	F	P	N/A	Comments
Coating Assess coating. Describe area coated, general condition of coating.				X	**Inlet Separator is not internally coated.**
Anodes. How many, type, condition. % consumed. Are they being replaced?				X	**No anode was found inside this vessel.**
Internal Piping Is there any? If so, carbon or stainless steel. Describe condition, dents, corrosion, erosion, etc. Ensure supports are secure and any bolts are suitable for future use.				X	**None.**
Baffles, deflector plates, etc. If present, describe condition. Look closely at welds attached to vessel wall.				X	**None.**
Inlet Head Note all corrosion, erosion or mechanical damage. (If vessel is horizontal identify direction of this head)	X				**As best effort inspection performed; Good overall condition. No visible corrosion or erosion was found - No service related damages noted.**
Outlet Head Note all corrosion, erosion or mechanical damage. (If vessel is horizontal identify direction of this head)	X				**As best effort inspection performed; Good overall condition. No visible corrosion or erosion was found - No service related damages noted.**
Shell Sections Record number of shell sections. Record location, size and depth of all erosion, corrosion or mechanical damage. Describe general condition. If any corrosion greater than corrosion allowance is observed in either shell or head, discuss with Chief Inspector before closing vessel.	X				**As best effort inspection performed, Vessel was not completely clean.** **Three shell sections were found to form this vessel & it is in good overall condition. No corrosion or erosion was found. No service related damages noted.**
Demister Pad If present, describe condition and location.	X				**Old demister pad was heavily fouled; it was replaced with a new one.**
Heat Medium Coil Note all corrosion, erosion or mechanical damage.				X	**None.**
Fire Tube Note all corrosion, erosion or mechanical damage. Take thickness readings on selected areas of tube and carry out Magnetic Particle Inspection on flange to tube welds.				X	**No fire tube was noted inside this Separator.**
Welds Inspect all welds, including attachment welds. Record all service-related damages and if there is any discuss with Chief Inspector before closing.	X				**As best effort inspection performed; All visible welds appear to be in good overall condition. No mechanical damage, corrosion or erosion was detected.**
Repairs Required. If yes, ensure procedure and copy of AB 40 is on file, and one sent to local ABSA, and Chief Inspector				X	**None.**
NDE Was any NDE done. (MI coordinator to review results) Include tubular inspections in document and results.	X				**No internal NDT inspection was performed.**

Recommendations or corrective actions: Vessel is Fit for Service or describes corrective actions required).
(MIC to review corrective actions with Operations, discuss with Chief Inspector where necessary, and get remedial action implemented)
Other Observations:
Recommendations: 1. No recommendations at this time.
Summary: This Inlet Separator is in good over all condition, visual internal / external carried out – no metal thickness was detected below nominal in the shell.
Vessel is fit for service.

Inspected By: Joseph Holdstock **Date: June-09-2010.**

LSD location

Site overview

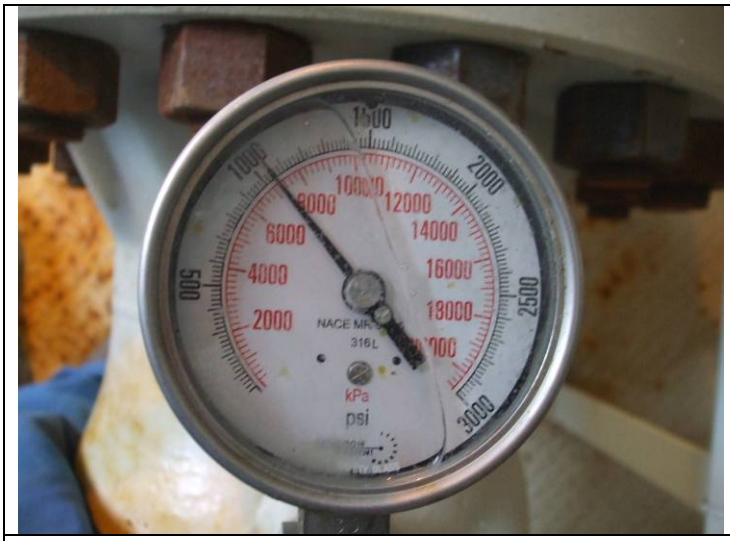


Data plate

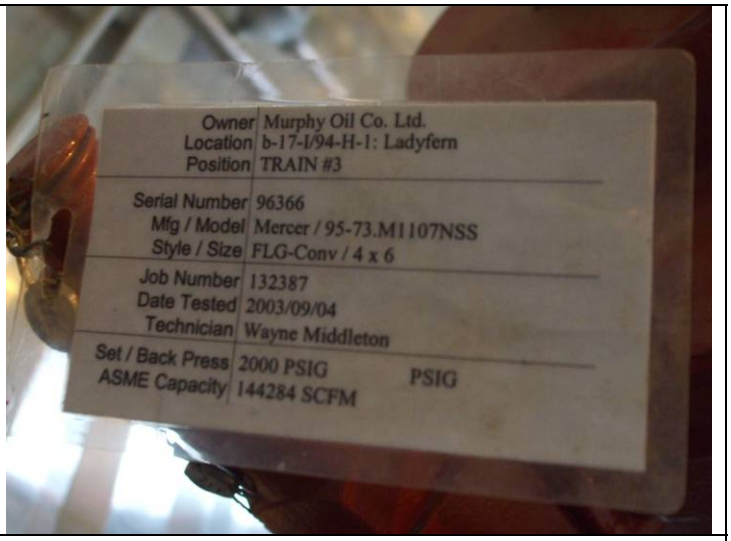
Overview

Overview

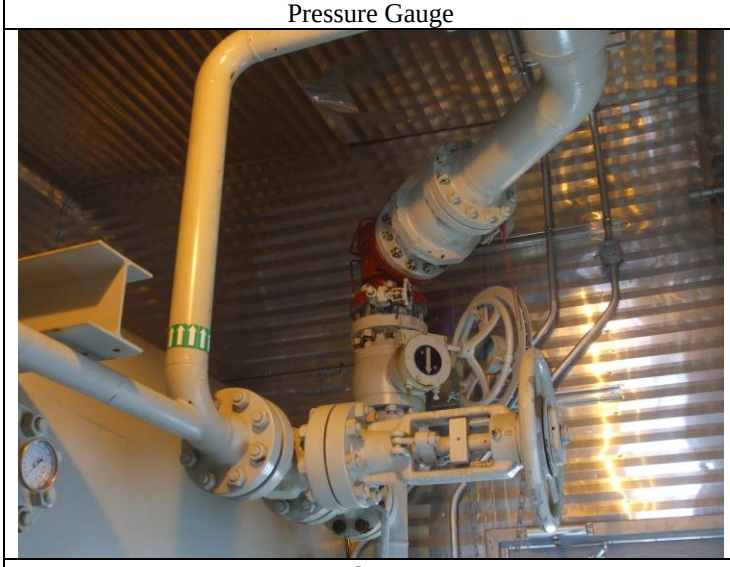
Temperature gauge



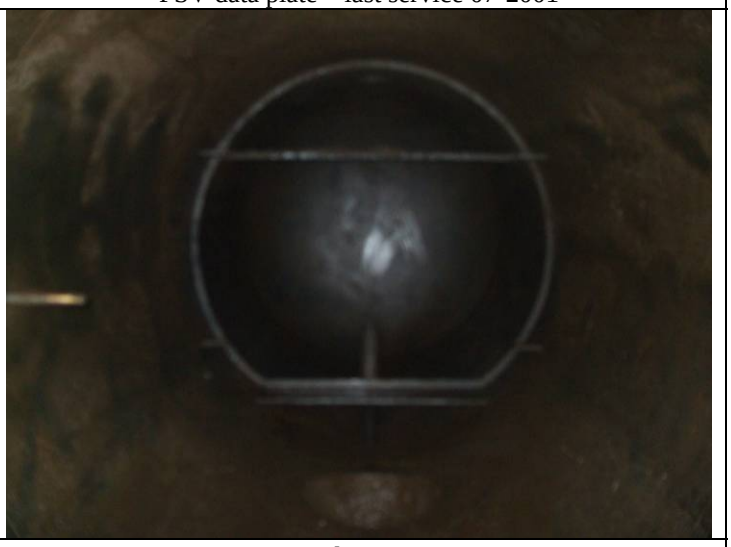
Pressure Gauge



PSV data plate – last service 07-2001



PSV location



Vessel overview

Side shell overview

Lower Shell overview

	
Water boot overview	Inlet overview