Canadian Natural Resources Limited
GENERAL PRESSURE VESSEL INFORMATION **Job # 105.00774 / 10.110446**

District: **Fort St. John BC.**	Skid No.
Facility: **West Blueberry Battery**	Location (LSD): **12-29-88-25-W6M**
Vessel Name Equipment Number: **LP Flare Knock out Drum**	
Orientation: **Horizontal**	
Status: **In Service**	**Regulatory Inspection**

PRESSURE VESSEL NAMEPLATE DATA

"A" or "G" or "S" (Sask.) or BC Registration Number. **C 23407**		CRN Number: Non Code	
Vessel serial number: 98120-001		Size: 36 in. x 10 ft.	
Shell thickness: 6.4 mm		Shell material: SA 36	
Head thickness: 6.4 mm		Head material: SA 36	
Tube wall thickness:		Tube material:	
Tube diameter:		Tube length:	
Channel thickness:		Channel material:	
Design pressure	Shell: 14.9 PSI	Operating pressure	Shell:
	Tubes:		Tubes:
Design Temp.	Shell:	Operating temperature	Shell:
	Tubes:		Tubes:
X-ray: none		Heat treatment: no	
Code parameters: Non Code		Coated: no	
Manufacturer: Black, Sivalls & Bryson		Year built: 1998	
Corrosion allowance: Not stated		Manway: yes	

PRESSURE SAFETY VALVE NAMEPLATE DATA

PSV Tag #	Manufacture	Model #	Serial #	Set Pressure (kPa)	Capacity (scfm)	Service Date
CRN #	Service By	Block Valve	Location	Size	Code Stamp	

SERVICE CONDITIONS-INDICATE ALL THAT APPLY

Sweet	Sour X	Oil X	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**				**No damage present- no egress of moisture** **Sealed at man way and nozzles**
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 overall 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**				**Saddle: Welded directly to skid frame – no buckling or dents.** **No corrosion at attachment welds to vessel – no leaks.** **Ground wire attached to skid**
Anchor Bolts Hammer tap to ensure secure. Look for cracking in treads or signs of deformation.				**X**	**Saddle welded to skid frame.**
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**	**No gauges**
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**				**Piping is well supported – all clamps, supports and shoes are in place.** **No structural overloads or deflections.** **Piping is insulated no damage present.**
Valving Ensure no leaks are visible. Valves are properly supported and chained if necessary.				**X**	**No valves**
PSV Ensure PSV is set at pressure at or below that of vessel.				**X**	**No PSV – vent 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.**
Other Coating	**X**				**Internal surface is coated with epoxy.**

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—no metal thickness detected below nominal.
Vessel is fit for service.

Inspected By: Joseph Holdstock **Date: Aug 05, 2010.**

Internal Inspection Items	G	F	P	N/A	Comments
Coating Assess coating. Describe area coated, general condition of coating.	X				**Vessel is 100% epoxy coated. No areas of failed coating.**
Anodes. How many, type, condition. % consumed. Are they being replaced?				X	**No anodes.**
Internal Piping Is there any?	X				**2 inch carbon steel piping, coated.** **No corrosion. No mechanical damage.**
Trays How many? Type of material. Are valves in place. Check for erosion/ corrosion; wear on tray valve legs. Cleanliness?				X	**No trays.**
Baffles, deflector plates, etc. If present, describe condition. Look closely at welds attached to vessel wall.	X				**Inlet deflector plate in good condition.** **No corrosion. No damage.**
North Head Note all corrosion, erosion or mechanical damage. (If vessel is horizontal identify direction of this head)	X				**100% coated no areas of failed coating. No damage. No corrosion.**
Sourth Head Note all corrosion, erosion or mechanical damage. (If vessel is horizontal identify direction of this head)	X				**100% coated no areas of failed coating. No damage. No corrosion.**
Shell Sections Record number of shell sections. Record location, size and depth of all erosion, corrosion or mechanical damage. Describe General condition.	X				**1 shell sections. 100% coated.** **No areas of failed coating. No damage. No corrosion.**
Demister pad Is it in place? Is it clean? If any corrosion is apparent in vessel, lift pad and check top head for corrosion.				X	**None**
Welds Inspect all welds, including attachment welds. Record all service-related damages and if there is any discuss with Chief Inspector before closing.	X				**Welds are in good condition. No pitting. No corrosion.**
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.**
Other				X	
NDE Inspections				X	**No internal NDE at this time.**
Recommendations or corrective actions (indicate if fit for service) **Recommendations:** None at this time **Summary:** This vessel is in good overall condition, visual internal carried out. **Vessel is fit for service.**					

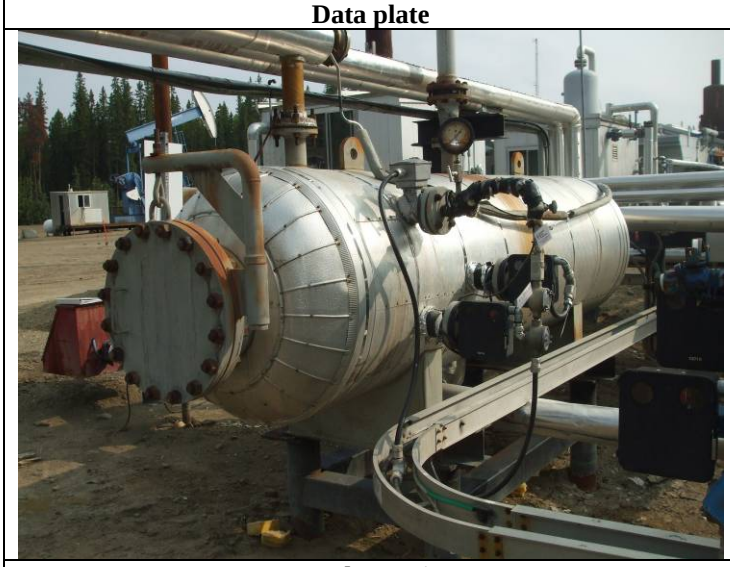
Inspected By: Chris Maxsom **Date:** June 23, 2011

LSD Location

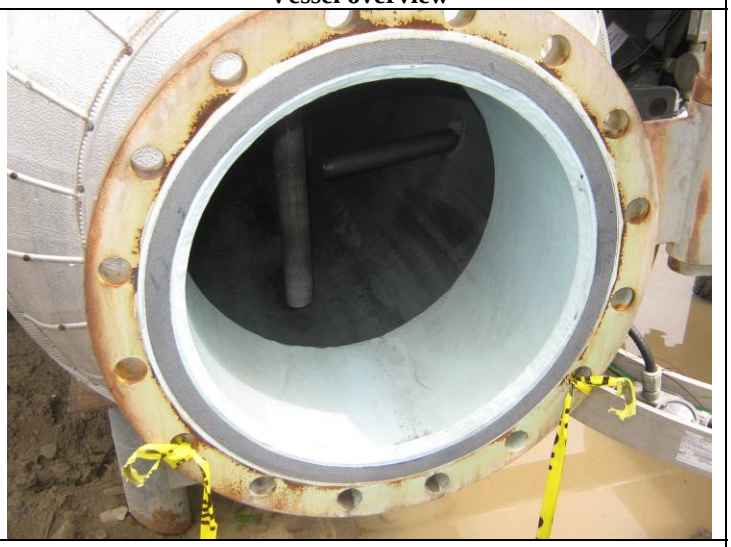
Site overview

Data plate

Vessel overview



Vessel overview



Manway

	
Manway cover	**Overview - Internal**