

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

Job # 05.001952

District: Fort St. John BC.	Skid No.
Facility: West Blueberry Battery	Location (LSD): 12-29-88-25-W6M
Vessel Name Equipment Number: 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 23408	CRN Number: Non Code
Vessel serial number: 98120-002	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	Operating pressure
Shell:	Shell:
Tubes:	Tubes:
Design Temp.	Operating temperature
Shell:	Shell:
Tubes:	Tubes:
X-ray: none	Heat treatment: no
Code parameters: ASME VIII, Div 1	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. 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				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, 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				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, and 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 short bolts. 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					
<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: 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.</p>					

Inspected By: Joe Holdstock

Date: June 21, 2008

Internal Inspection Items	G	F	P	N/A	Comments
Coating Assess coating. Describe area coated, general condition of coating.	X				Good overall condition, no visible coating holidays.
Anodes. How many, type, condition. % consumed. Are they being replaced?				X	None
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				Good overall condition, clean no visible pitting or corrosion noted that time of inspection. Piping is stainless steel. Heater coil is not in service, blinded.
Trays How many? Type of material. Are valves in place? Check for erosion/ corrosion; wear on tray valve legs. Cleanliness?				X	None.
Baffles, deflector plates, etc. If present, describe condition. Look closely at welds attached to vessel wall.	X				None.
West Head Note all corrosion, erosion or mechanical damage. (If vessel is horizontal identify direction of this head)	X				No mechanical damage, corrosion or erosion was found. Good overall condition.
East Head Note all corrosion, erosion or mechanical damage. (If vessel is horizontal identify direction of this head)	X				No mechanical damage, corrosion or erosion was found. Good overall condition.
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				One shell section was found to form the vessel - Good overall condition no mechanical damage corrosion or erosion was noted shell is fully coated.
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				All visible welds appear to be in good overall condition.
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)	X				None at this time.
<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. None at this time. Summary: This vessel is in good over all condition, visual internal / external carried out. Vessel is fit for service.</p>					



Data plate



Overview



The manway throat



East head overview



West head and shell overview