

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

**10.117133**

District: <b>Grande Prairie, AB.</b>	Skid No.
Facility: <b>Wapiti Gas Gathering</b>	Location (LSD): <b>04-20-68-07 W6M</b>
Vessel Name Equipment Number: <b>Line Heater</b>	Location (DH): <b>10-19-68-07 W6M</b>
Orientation: <b>Horizontal</b>	
Status: <b>In Service</b>	<b>Regulatory Inspection</b>

**PRESSURE VESSEL NAMEPLATE DATA**

"A" or "G" or "S" (Sask.) or BC Registration Number. <b>A0502941</b>		CRN Number: <b>F 3325.231</b> <b>F 3319.231</b>	
Vessel serial number: 5970-8		Size: 60 in. x 180 in.	
Shell thickness: 9.5 mm		Shell material: SA 36	
Head thickness: 9.5 mm		Head material: SA 36	
Tube wall thickness: 11.1 mm 1 <sup>st</sup> Pass / 7.6 mm 2 <sup>nd</sup> Pass		Tube material: SA 106B	
Tube diameter: 3 in		Tube length:	
Channel thickness:		Channel material:	
Design pressure	Shell: Atmospheric	Operating pressure	Shell:
	Coil 1: 3375 PSI Coil 2: 1315 PSI		Tubes:
Design Temp.	Shell: Atmospheric	Operating temperature	Shell:
	Coil 1: 200°F Coil 2: 200°F		Tubes:
X-ray: RT 1		Heat treatment: Nil	
Code parameters: ASME VIII, Div 1		Coated: No	
Manufacturer: Priority Projects		Year built: 2005	
Corrosion allowance: 1.6 mm		Man way: No	

**PRESSURE SAFETY VALVE NAMEPLATE DATA**

Tag Number(s)	Manufacturer /Model / Serial# and Code Stamp	Set Pressure (PSI)	Capacity (Scfm/ usgpm)	Size	Block Valve	Location	Serv by / Date
<b>Atmospheric</b>							

**SERVICE CONDITIONS-INDICATE ALL THAT APPLY**

Sweet <input checked="" type="checkbox"/> X	Sour	Oil	Gas <input checked="" type="checkbox"/> X	Water <input checked="" type="checkbox"/> X
Amine	LPG	Condensate <input checked="" type="checkbox"/> X	Air	Glycol <input checked="" type="checkbox"/> X

Other (Describe):

**Inspection Interval** \_\_\_\_\_ **PSV Service Interval** \_\_\_\_\_

(Determined by MIC in conjunction with Chief Inspector following guidelines of Canadian Natural Resources Limited 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
<b>Insulation</b> Verify sealed around manways, nozzles, no damage present, and there is no egress of moisture.	X				<b>Insulation is in good condition – no open or torn section – no evidence of wet insulation.</b>
<b>External Condition</b> Assess paint condition, areas peeling, record any corrosion, damage, etc (record location, size and depth of corrosion or damage)	X				<b>Paint in good overall condition – no exposed metal.</b>
<b>Leakage</b> Record any leakage at flanges, threaded joints, weep holes on repads, etc.	X				<b>No leaks observed.</b>
<b>Saddle/Skirt</b> 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				<b>Saddle: No buckles or dents – bolted directly to skid deck and skid. No evidence of corrosion at attachment welds to vessel – no leaks. Ground wire attached to skid.</b>
<b>Anchor Bolts</b> Hammer tap to ensure secure. Look for cracking in treads or signs of deformation.	X				<b>Welded to skid deck.</b>
<b>Concrete foundation</b> Check for cracks, spalling, etc.				X	
<b>Ladder / Platform</b> Describe general condition, ensure support is secure to vessel, describe any hazards.				X	
<b>Nozzle</b> Assess paint, look for leakage, and ensure stud threads are fully engaged. Record any damage, deflection, etc. Are nozzles gusseted?	X				<b>Threaded and flanged joints are fully engaged – no leaks. No damage or deflections. Nozzles are not gusseted.</b>
<b>Gauges</b> Ensure gauges are visible, working, no leakage, and suitable for range of MAWP/ Temp.	X				<b>Pressure gauge: #1: 0 to 10000 kPa. #2: 0 to 40000 kPa.</b>
<b>External Piping</b> 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				<b>Piping is well supported, no deflection, all clamps and supports are in place. Paint in good condition – no exposed metal.</b>
<b>Valving</b> Ensure no leaks are visible. Valves are properly supported and chained if necessary.	X				<b>Valves are well supported – no leaks.</b>
<b>PSV</b> Ensure PSV is set at pressure at or below that of vessel.				X	<b>No PSV</b>
<b>NDE methods</b> Was UT/ MPI done on vessel (MI coordinator to review results)	X				<b>Ultrasonic thickness survey carried out – shell metal thickness detected below nominal – general corrosion in vapor space – nominal thickness is 9.5 mm / min thickness is 9.1 mm.</b>
<b>Other</b>					
<p><b>Recommendations or corrective actions: (Vessel is Fit for Service or describe corrective actions required)</b>  (MIC to review corrective actions with Operations, discuss with Chief Inspector where necessary, and get remedial action implemented)  <b>Recommendations: 1. Replace # 2 pressure gauge – bent needle.</b>  <b>Summary:</b> Vessel is in overall good condition, visual external inspection and ultrasonic corrosion survey performed—no metal thickness detected below nominal minus corrosion allowance on gas coil.  <b>Vessel is fit for service.</b></p>					



*[Signature]* API 20981 / IBPV 275

Inspected By: Dellas Wiedman

Date: March 7, 2016

Photo Table



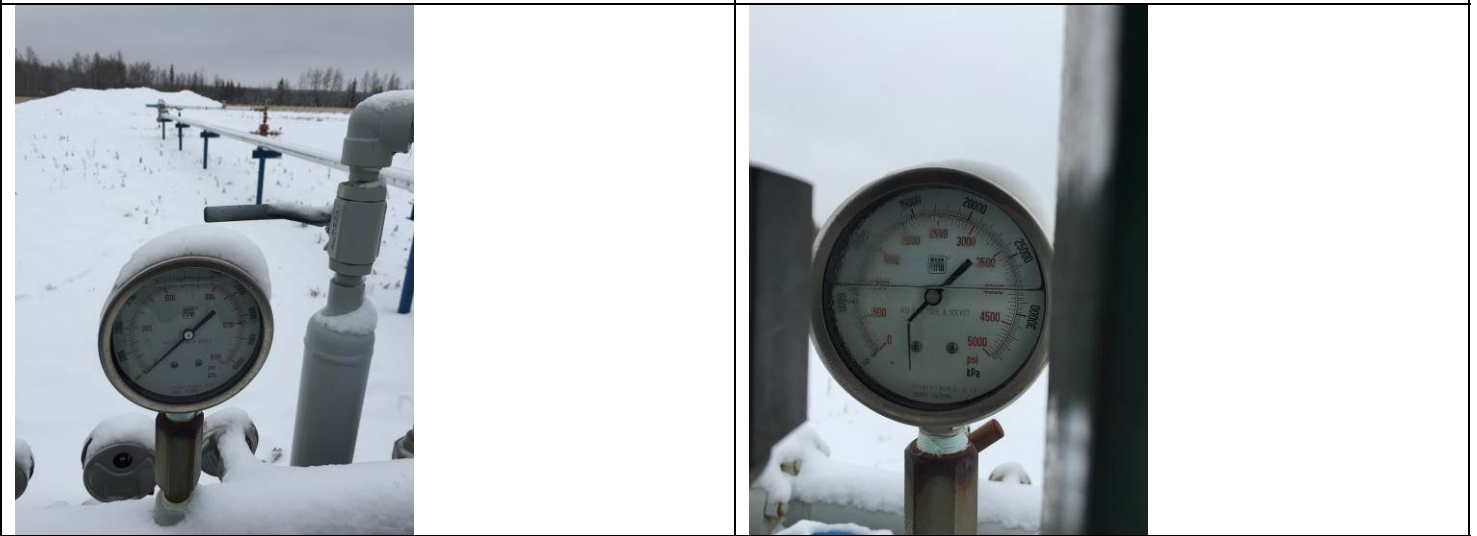
LSD

Data Plate



Overview

Ground Cable



Pressure gauge No.1

Pressure gauge No.2