

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

**JOB# 10.111880**

District: <b>Grande Prairie, AB</b>	Skid No.
Facility: <b>East Knopcik Gas Gathering</b>	Location (LSD): <b>11-28-74-10-W6M</b>
Vessel Name Equipment Number: <b>Inlet Separator</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>A0433615</b>		CRN Number: <b>N 7408.2</b>	
Vessel serial number: V2699A		Size: 48 in x 24 ft	
Shell thickness: 63.5 mm		Shell material: SA 516 70N	
Head thickness: 61.6 mm		Head material: SA 516 70N	
Tube wall thickness:		Tube material:	
Tube diameter:		Tube length:	
Channel thickness:		Channel material:	
Design pressure	Shell: 1435 PSI	Operating pressure	Shell: 0 to 1400 kPa
	Tubes:		Tubes:
Design Temp.	Shell: 130 deg F	Operating temperature	Shell:
	Tubes:		Tubes:
X-ray: RT 1		Heat treatment: Yes	
Code parameters: ASME VIII Div 1		Coated: No	
Manufacturer: Opsco		Year built: 1997	
Corrosion allowance: 3.2 mm		Manway: Yes	

**PRESSURE SAFETY VALVE NAMEPLATE DATA**

PSV Tag #	Manufacture / Model / Serial	Set Pressure (Kpa / PSI)	Capacity (Scfm / usgpm)	Size	Block Valve	Location	Service by / Date
G25652	Crosby / JOS-45-H / SC 15739-2	1435 PSI	8745 scfm	1.5 in x 2 in	No	Top Shell	Black Gold no date

**SERVICE CONDITIONS-INDICATE ALL THAT APPLY**

Sweet	Sour X	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. 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

<b>External Inspection Items</b>	G	F	P	N/A	<b>Comments</b>
<b>Insulation</b> Verify sealed around manways, nozzles, no damage present, and there is no egress of moisture.	X				<b>Vessel is not insulated.</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 is in good condition – no oxidization or corrosion.</b>
<b>Leakage</b> Record any leakage at flanges, threaded joints, weep holes on repads, etc.	X				<b>No leaks found.</b>
<b>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>Saddles: No distortion or buckles – no corrosion at attachment welds to shell – no leaks.</b> <b>Vessel has ground cable attached to saddle and skid.</b>
<b>Anchor Bolts</b> Hammer tap to ensure secure. Look for cracking in treads or signs of deformation.	X				<b>Firmly bolted to skid deck.</b>
<b>Concrete foundation</b> Check for cracks, spalling, etc.				X	<b>No concrete.</b>
<b>Ladder / Platform</b> Describe general condition, ensure support is secure to vessel, describe any hazards.				X	<b>None</b>
<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>All studs are fully engaged to nuts – no short bolts.</b> <b>Nozzles are not gusseted.</b> <b>Paint in good condition – no exposed metal.</b>
<b>Gauges</b> Ensure gauges are visible, working, no leakage, and suitable for range of MAWP/ Temp.	X				<b>Pressure gauge attached.</b> <b>Pressure gauge: 0 to 1000 PSI.</b> <b>Temp gauge: No temp gauge.</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, all clamps, supports and shoes are in place.</b> <b>No structural overloads or deflections noted.</b> <b>Most of the immediate piping is attached – to and from skid is not tied in yet.</b>
<b>Valving</b> Ensure no leaks are visible. Valves are properly supported and chained if necessary.	X				<b>Valves are well supported – no evidence of leaking.</b>
<b>PSV</b> Ensure PSV is set at pressure at or below that of vessel.	X				<b>Located on top shell – set at MAWP of vessel.</b> <b>Discharge piping is same size as valve outlet.</b> <b>Valve is properly supported and routed. No block valve.</b> <b>PSV seal in place.</b>
<b>NDE methods</b> Was UT/ MPI done on vessel (MI coordinator to review results)	X				<b>Suncor corrosion survey: Ultrasonic thickness inspection carried out, no metal thickness detected below nominal.</b>
<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>See internal inspection for summary and recommendations.</b>					

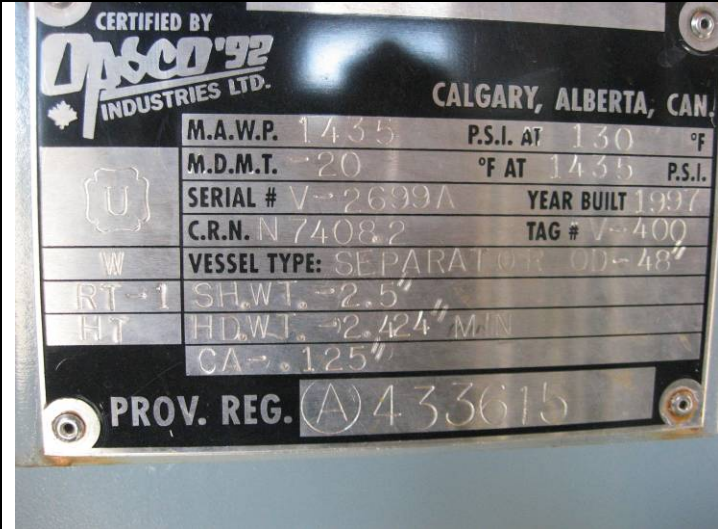
Internal Inspection Items	G	F	P	N/A	Comments
<b>Coating</b> Assess coating. Describe area coated, general condition of coating.				X	<b>Vessel is not coated internally.</b>
<b>Anodes.</b> How many, type, condition. % consumed. Are they being replaced?				X	<b>No anodes.</b>
<b>Internal Piping</b> Is there any?	X				<b>No internal piping.</b>
<b>Trays</b> How many? Type of material. Are valves in place. Check for erosion/ corrosion; wear on tray valve legs. Cleanliness?				X	<b>No trays.</b>
<b>Baffles, deflector plates, etc.</b> If present, describe condition. Look closely at welds attached to vessel wall.	X				<b>Inlet diffuser is in place and intact. Oil weir intact and in place – is 8 inches in height – located just aft of the water boot.</b>
<b>North Head</b> Note all corrosion, erosion or mechanical damage. (If vessel is horizontal identify direction of this head)	X				<b>Good condition – no corrosion or pitting detected. Man way is located on North head – no corrosion or pitting detected.</b>
<b>South Head</b> Note all corrosion, erosion or mechanical damage. (If vessel is horizontal identify direction of this head)	X				<b>Good condition – no corrosion or pitting detected.</b>
<b>Shell Sections</b> Record number of shell sections. Record location, size and depth of all erosion, corrosion or mechanical damage. Describe General condition.	X				<b>3 shell sections. Good overall condition – no corrosion or pitting detected. 2 boots – 1 is for water and 1 is for condensate – both are in good condition – no corrosion or pitting detected.</b>
<b>Demister pad</b> Is it in place? Is it clean? If any corrosion is apparent in vessel, lift pad and check top head for corrosion.	X				<b>Firmly mounted in place – no open sections – not soiled.</b>
<b>Welds</b> Inspect all welds, including attachment welds. Record all service-related damages and if there is any discuss with Chief Inspector before closing.	X				<b>Welds are in good condition – no pitting or corrosion.</b>
<b>Repairs Required.</b> If yes, ensure procedure and copy of AB 40 is on file, and one sent to local ABSA, and Chief Inspector	X				<b>None at this time.</b>
<b>NDE Inspections</b>				X	<b>No internal NDE at this time.</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)</p> <p><b>Recommendations: 1. Determine last Service date of PSV.</b></p> <p><b>Summary: This vessel is in good overall condition, visual internal / external and ultrasonic thickness inspection carried out, no corrosion or pitting detected.</b></p> <p><b>Vessel is fit for service.</b></p>					

*Handwritten signature*

Inspected By: Dellas Wiedman

Date: June 25, 2012

Photo Table



Data Plate

Overview



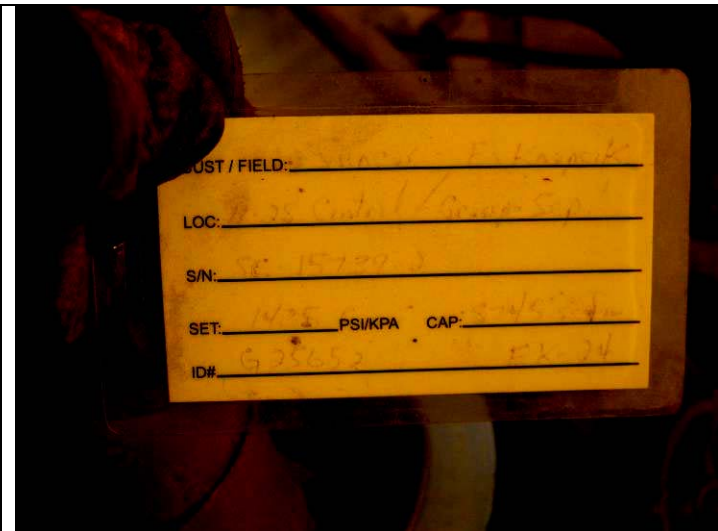
Anchor bolts

Sight glass



Pressure gauge

PSV



**PSV Service Tag**

**PSV Data Plate**



**Man way access**

**Surge Weirs**



**Condensate boot**

**Water boot**



**Man way head**



**High level control**



**Inlet nozzle and diffuser**



**Demister**