Canadian Natural Resources Limited
GENERAL PRESSURE VESSEL INFORMATION **Job # 10.118371**

District: **Grande Prairie, AB.**	Skid No.
Facility: **Puskwa Field**	Location (LSD): **16-32-71-26 W5M**
Vessel Name Equipment Number: **Group Separator**	
Orientation: **Vertical**	
Status: **In Service**	**Regulatory Inspection**

PRESSURE VESSEL NAMEPLATE DATA

"A" or "G" or "S" (Sask.) or BC Registration Number. **A0572699**		CRN Number: **U 0243.2**	
Vessel serial number: 15736-01		Size: 36 in x 120 in	
Shell thickness: 38.1 mm		Shell material: SA 516 70N	
Head thickness: 38.1 mm		Head material: SA 516 70N	
Tube wall thickness:		Tube material:	
Tube diameter:		Tube length:	
Channel thickness:		Channel material:	
Design pressure	Shell: 9928 kPa	Operating pressure	Shell:
	Tubes:		Tubes:
Design Temp.	Shell: 54°C	Operating temperature	Shell:
	Tubes:		Tubes:
X-ray: RT1		Heat treatment: HT	
Code parameters: ASME VIII, Div 1		Coated: No	
Manufacturer: Platinum Energy		Year built: 2007	
Corrosion allowance: 1.6 mm		Man way: No	

PRESSURE SAFETY VALVE NAMEPLATE DATA

PSV Tag #	Manufacturer /Model / Serial#	Set Pressure (PSI)	Capacity (Scfm/ usgpm)	Size	Block Valve	Location	Serv by / Date
P80764	Farris / 26HA13-120 / 516108-3-A10	1440 PSI	21951 scfm	2 x 3	No	Upper Shell	Kings 05/12/2012

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 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. <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 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**				**Skirt: no distortion to skirt – no buckles or dents.** **No corrosion at head to skirt welds – no leaks.** **Ground wire attached to skid.**
Anchor Bolts Hammer tap to ensure secure. Look for cracking in treads or signs of deformation.	**X**				**Firmly bolted to skid deck.**
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**				**Threaded and flanged joints are fully engaged – no leaks.** **No damage or deflections.** **Nozzles are not gusseted.**
Gauges Ensure gauges are visible, working, no leakage, and suitable for range of MAWP/ Temp.	**X**				**Temperature gauge: -40 to 160°F** **Pressure gauge: 0 to 800 PSI and 0 to 2000 PSI.**
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, no deflection, all clamps and supports are in place.** **Paint in good condition – some small areas missing at flanges – no pitting.**
Valving Ensure no leaks are visible. Valves are properly supported and chained if necessary.	**X**				**Valves are well supported – no leaks.**
PSV Ensure PSV is set at pressure at or below that of vessel.	**X**				**Location: Upper shell – set at MAWP of vessel.** **Discharge piping is same size as valve outlet.** **PSV seal in place – no block valve between vessel and PSV.**
NDE methods Was UT/ MPI done on vessel (MI coordinator to review results)	**X**				**Ultrasonic corrosion survey carried out – pipe metal thickness detected below nominal minus corrosion allowance. Thickness calculations carried out:** **UT point 11-35 (2" elbow) – nominal thickness is 5.5mm / min thickness is 4.5mm / T min thickness is 2.5mm**

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. No recommendations.
Summary: This vessel is in good condition, visual external and ultrasonic thickness inspection carried out – pipe metal thickness detected below nominal minus corrosion allowance. Thickness calculations carried out to ensure sufficient metal exists for safe operation.
Corrosion rate based on greatest thickness loss (head) 0.100mm per year. Retirement Date to "T"min is year 2083.
Vessel is fit for service.

API 20981 / IBPV 275

Inspected By: Dellas Wiedman **Date:** March 28th, 2017

Photo Table

LSD

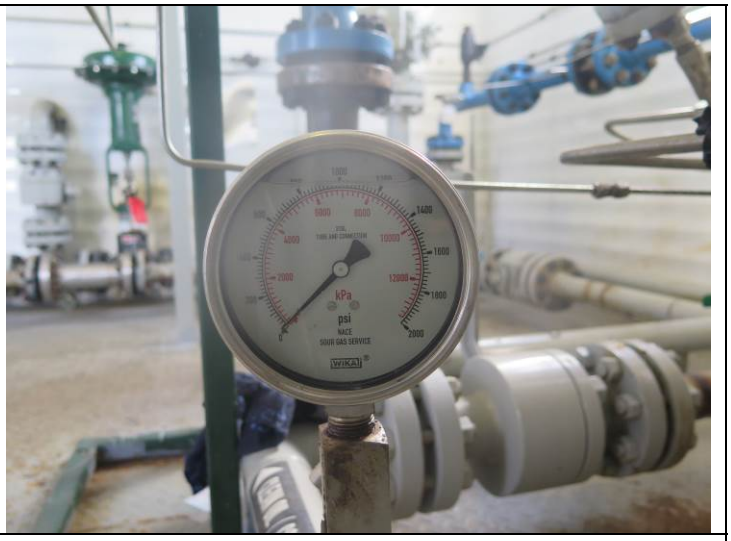
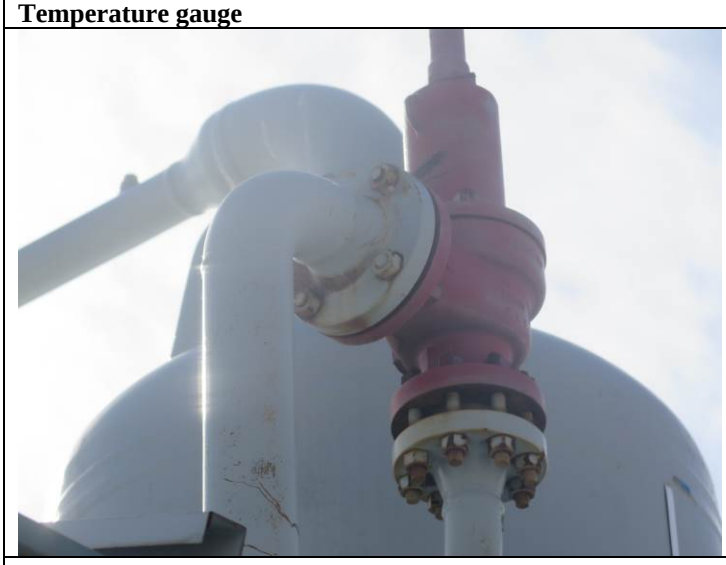
Data plate

Vessel overview

Base

Liquid leverl

Pressure gauge

	
Temperature gauge	**Pressure gauge**
	
PSV	