

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

Job # 105.00642

District: Grand Prairie	Skid No. Nil
Facility: Clear Hills Gas Plant	Location (LSD): 16-11-88-13 W6M
Vessel Name Equipment Number: High Pressure Inlet Separator	
Orientation: Horizontal	
Status: In service	Regulatory Inspection

PRESSURE VESSEL NAMEPLATE DATA

"A" or "G" or "S" (Sask.) or BC Registration Number. A3141304		CRN Number: N-0303.2	
Vessel serial number: 1903		Size: 60" x 15'	
Shell thickness: 63.5 mm		Shell material: SA 516 70 N	
Head thickness: 65.2 mm		Head material: SA 516 70 N	
Tube wall thickness:		Tube material:	
Tube diameter:		Tube length:	
Channel thickness:		Channel material:	
Design pressure	Shell: 8964 kPa	Operating pressure	Shell: 4300 kPa
	Tubes:		Tubes:
Design Temp.	Shell: 93°C	Operating temperature	Shell: 10°C
	Tubes:		Tubes:
X-ray: RT -1		Heat treatment: HT	
Code parameters: ASME VIII, Div 1		Coated: Nil	
Manufacturer: Moss Fabrication		Year built: 1995	
Corrosion allowance: 3.2mm		Manway: Yes	

PRESSURE SAFETY VALVE NAMEPLATE DATA

PSV Tag #	Manufacture	Model #	Serial #	Set Pressure (kPa)	Capacity (scfm)	Service Date
1253F	Consolidated	1912JC	95C0953	8964	33759	03/05
CRN #	Service By	Block Valve	Location	Size	Code Stamp	
OG0449.2	Unified Valve	No	Upper Shell	2.5" 600lb x 4" 150lb	UV NB	

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 Owner-User Inspection Program)

Reports reviewed and accepted by:

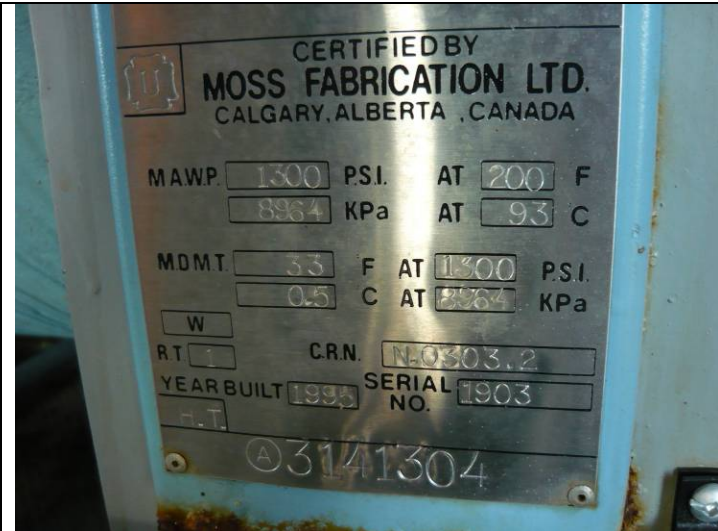
Mechanical Integrity Coordinator _____ **Date** _____

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

A3141304

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 insulation present.
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 condition but scattered corrosion from paint failure present, No damage or deflection present.
Leakage Record any leakage at flanges, threaded joints, weep holes on repads, etc.	X				No leaks present.
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 is firmly bolted to skid corrosion and paint failure present around saddle to 5% , no buckling or dents present. No leakage present at attachment welds to vessel. Attachment welds are acceptable. Skid is grounded.
Anchor Bolts Hammer tap to ensure secure. Look for cracking in treads or signs of deformation.	X				Saddle is bolted to skid floor, No deformation or cracking present.
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				Nozzle paint is in good condition no leaks present. No Stud threads present, no damage or deflection present. No gussets present.
Gauges Ensure gauges are visible, working, no leakage, and suitable for range of MAWP/ Temp.	X				Pressure gauge (0-10300 kPa) Suitable for MAWP Gauge is clear and visible.
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 and in place. Three loose pipe clamps on outlet line noted. No evidence of structural overload or deflection. Paint is in good condition but with areas of scattered failure, staining from these areas of corrosion present.
Valving Ensure no leaks are visible. Valves are properly supported and chained if necessary.	X				Valves are properly supported, no leaks present.
PSV Ensure PSV is set at pressure at or below that of vessel. Discharge piping is same size as inlet to valve and is properly supported and routed. Ensure no block valves between PSV and vessel or if there are they are locked open.	X				PSV is set at MAWP of vessel. PSV Discharge piping is larger than inlet piping and is properly supported and routed. No block valves present PSV Seal is intact Location: Upper shell
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. Critical thickness calculations carried out to ensure sufficient metal exists for safe operation.
<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) Service PSV. 2) Tighten loose piping clamps on outlet line. 3) Paint dump lines. Summary: Vessel is in overall good condition, visual external inspection and ultrasonic corrosion survey performed - pipe metal thickness detected below nominal minus corrosion allowance. Critical thickness calculations carried out to ensure sufficient metal exists for safe operation. Long term corrosion rate based on greatest thickness loss (head) 0.167mm per year. Retirement Date to “T”min is year 2072. Vessel is fit for service.</p>					

Photo Table for A3141304



Data Plate



Pressure Gauge



Overview



Overview



Piping Overview



Saddle



Loose Pipe Clamp (3x)



PSV service tag



Service Tag

PSV Data Plate