

| Canadian Natural Resources Limited GENERAL PRESSURE VESSEL INFORMATION RTD Job # 10.110181 | | | | | | |
|--|---------------------------|--------------------------|--|-----------------|-------------------|--------------------------|
| District: Fort Saint John B.C. | | | Skid No. Dehy #2 | | | |
| Facility: Ladyfern (a-84-G) | | | Location (LSD): a-84-G/ 94-H-1 | | | |
| Vessel Name & Equipment Number: Glycol Contactor | | | | | | |
| Orientation: Vertical | | | | | | |
| Status: In service | | | Regulatory Inspection | | | |
| PRESSURE VESSEL NAMEPLATE DATA | | | | | | |
| "A" or "G" or "S" (Sask.) or BC Registration Number A0133291 | | | CRN Number E-8494.1 | | | |
| Vessel serial number: PE772 | | | Size: 43 in x 26 ft | | | |
| Shell thickness: 50.8 mm | | | Shell material: SA 516-70N | | | |
| Head thickness: 50.8 mm | | | Head material: SA 516-70N | | | |
| Coil 1 thickness: | | | Coil 1 material: | | | |
| Coil 2 thickness: | | | Coil 2 material: | | | |
| Channel thickness: | | | Channel material: | | | |
| Design pressure | Shell: 1420 psi | | Operating pressure | Shell: | | |
| | Tubes: | | | Tubes: | | |
| Design Temp. | Shell: 150 deg F | | Operating temperature | Shell: | | |
| | Tubes: | | | Tubes: | | |
| X-ray: Nil | | | Heat treatment: Nil | | | |
| Code parameters: Asme VIII Div I | | Code Stamp: U | Joint efficiency (if on nameplate): 100% | | | |
| Manufacturer: Cessco | | | Year built: 1977 | | | |
| Corrosion allowance: 3.2 mm | | | Manway: Yes | | | |
| PRESSURE SAFETY VALVE NAMEPLATE DATA | | | | | | |
| PSV Tag # | Manufacturer | Model | Serial # | Set Pressure | Capacity | Size |
| 2288F | Anderson Greenwood | 44314F152/S1/Nace | 01/40828 | 1740 PSI | 11075 scfm | 1.5" 900 x 2" 300 |
| Serviced By | Date | Block Valves | CRN | Code Stamp | Location | |
| Unified | 02/12/2004 | No | OG4369.5C | UV | Piping | |
| SERVICE CONDITIONS-INDICATE ALL THAT APPLY | | | | | | |
| Sweet X | Sour | | Oil | | Gas X | Water X |
| Amine | LPG | | Condensate | | Air | Glycol X |
| 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 | | | Roof seal has begun to pull away (no signs of seepage). |
| External Condition Assess paint condition, areas peeling, record any corrosion, damage, etc (record location, size and depth of corrosion or damage) | | X | | | Minor chips and scratches to approximately 5% of vessel. 1 area 1 ½' x 2 ½' paint is peeling, light brown oxidization is occurring. Staining present and paint faded. |
| Leakage Record any leakage at flanges, threaded joints, weep holes on repads, etc. | X | | | | No leaks. |
| Skirt/ Saddle 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 | | | | No distortion to skirt – no corrosion at shell to skirt – no leaks. Grounded direct to lower skirt. |
| Anchor Bolts Hammer tap to ensure secure. Look for cracking in treads or signs of deformation. | | | | X | Anchor bolts secure to base. |
| Concrete foundation Check for cracks, spalling, etc. | | | | X | |
| Ladder / Platform Describe general condition, ensure support is secure to vessel, describe any hazards. | X | | | | Welded and bolted securely. |
| Nozzle Assess paint, look for leakage, and ensure stud threads are fully engaged. Record any damage, deflection, etc. Are nozzles gusseted? | X | | | | No distortion – no leaks. No short bolting. No gussets. |
| Gauges Ensure gauges are visible, working, no leakage, and suitable for range of MAWP/ Temp. 1420 PSI @ 150°F | X | | | | Suitable for operating range of vessel. |
| 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 | | | | Well supported, no deflection, all clamps in place. No paint failure – no corrosion. |
| Valving Ensure no leaks are visible. Valves are properly supported and chained if necessary. | X | | | | Well supported – no leaks. No short bolting. |
| 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 | | | | Located on outlet piping. PSV is set higher than MAWP of vessel. Seal is intact. No block valve. |
| 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 minus corrosion allowance. |
| <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)</p> <p>Recommendations: 1. Service PSV as last service date is 2004. 2. Reset PSV to or below MAWP of vessel.</p> <p>Summary: This vessel is in good overall condition, visual external and ultrasonic thickness survey carried out – no metal thickness detected below nominal minus corrosion allowance.</p> <p>Short term corrosion rate based on greatest thickness loss – no corrosion rate to assess.</p> <p>Vessel is fit for service.</p> | | | | | |

Inspected By: Jerald Zaderey
API 510- 26087

Date: April 19, 2011



Overview Photo above roof

Overview photo below roof



Data Plate Photo

South Side of Shell Above Roof