

1060-04

Canadian Natural Resources Limited  
Production - Facilities Engineering  
A0491894 Vertical Absorber Certificate of Inspection  
and Manufacturers Data Report

Content Date Range: 4/23/2003 to 4/23/2003

**Vessel Integrity**

Inspection Data

Open: 2/6/2007

Close:

CC+2 0P

P

Vital: Yes  
Original: Yes  
Confidential: No



00763887

# Certificate of Inspection

**ANADARKO CANADA CORPORATION**  
PO BOX 2595 STN M  
425-1 STREET SW  
ATTN TERRY MCCONNELL  
CALGARY, AB  
T2P 4V4

PREFERRED RE-INSP. INTERVAL: 3.00 Yr.

YEAR BUILT: 2003  
CRN: R2338.21  
SERIAL #: 02-3854-1

LOCATION: STOCK, CALGARY  
DESCRIPTION: VERTICAL ABSORBER  
COMPANY CODE: V-200  
MANUFACTURER: OPSCO ENERGY INDUSTRIES LTD

VOLUME: 5.473 M3  
HEATING SURFACE:  
SURFACE AREA:  
Safety Valves

PART	MAX. AUTHORIZED WORKING PRESSURE	MAX. TEMP	MIN. TEMP	VALVE ID	SETTING	CAPACITY	LOCATION
VESSEL	9722 KPA	66 C	-28 C	SV1			TO BE INSTALLED

*1910 psi*

**OWNER INSTRUCTIONS/REMARKS:**

CONTACT THE ABSA SAFETY CODES OFFICER BEFORE PLACING THE VESSEL/BOILER IN SERVICE.

VESSEL/BOILER TO BE INSTALLED IN ACCORDANCE WITH THE SAFETY CODES ACT AND REGULATIONS.

VERIFY THAT VESSEL/BOILER IS PROTECTED BY AN ACCEPTABLE ASME CODE PRESSURE RELIEF VALVE, OF ADEQUATE CAPACITY, SET AT NO MORE THAN MAXIMUM PRESSURE AUTHORIZED AND INSTALLED IN ACCORDANCE WITH THE SAFETY CODES ACT & REGULATIONS.

Safety Codes Officer: RAWLINS, VANESSA

Signature: *Vanessa Rawlins*

**REQUIREMENTS OF THE SAFETY CODES ACT AND THE REGULATIONS ISSUED THEREUNDER:**

The owner or person in charge shall report all accidents involving a boiler, pressure vessel or pressure piping system to the district Safety Codes Officer immediately and shall send a full report in writing to the Administrator as required by the Act. No repairs or alterations may be made unless authorized by a Safety Codes Officer.

**FORM U-1A MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS**  
 (Alternative Form for Single Chamber, Completely Shop or Field Fabricated Vessels Only)  
 As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

①491894

1. Manufactured and certified by Opasco Energy Industries Ltd., 2601 Centre Ave East, Calgary, AB T2A 2L1  
 (Name and address of manufacturer)

2. Manufactured for Anadarko Canada Ltd. 425 - 1st St. S.W., Box 2595 STN. M Calgary, AB T2P 4V4  
 (Name and address of purchaser)

3. Location of installation Stock Unit  
 (Name and address)

Type Vert. Absorber 02-3854-1 R2338.21 V-03-3854-2349 R2 N/A 2003  
 (Horiz or vert. tank) (Mfr's serial No.) (CRN) (Drawing No.) (Nat'l Bd No) (Year built)

5. The chemical and physical properties of all parts meet the requirements of material specification of the ASME BOILER AND PRESSURE VESSEL CODE. The design, construction, and workmanship conform to ASME Rules, Section VIII, Division 1 2001  
 Year

to 2002 N/A N/A  
 Addenda (date) Code Case Nos. Special service per UG-1 20(d)

6. Shell: SA-516-70 N 1.375" .125" 2'-9.25" 26'-0"  
 Mat'l (Spec. No., Grade) Nominal Thk. (in.) Corr. Allow. (in.) Diam. I.D. (ft. & in.) Length (overall) (ft. & in.)

7. Seams: Type 1 Full 100% 1150 1.5 Type 1 \*Full 3  
 Long (VWelded Dbl. Sngl., Lap, Butt) R.T. (Spot or Full) Eff. (%) H.T. Temp. (F) Time (hr) Girth (Welded Dbl. Sngl., Lap, Butt) R.T. (Spot, Partial or Full) No. of Courses

8. Heads: (a) Mat'l SA-516-70 N (b) Mat'l SA-516-70 N  
 (Spec. No. Grade) (Spec. No. Grade)

Location (Top Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pres (Con c/Co nv)
(a) <u>Both Ends</u>	<u>1.4375"</u>	<u>0.125"</u>			<u>2:1</u>				<u>Concave</u>
(b)									

if removable, bolts used (describe other fasteners)

9. MAWP 1410 psi at max. temp 150F °F  
 (Mat'l. Spec. No., Gr., Size, No.)

Min. Design Metal Temp. \*\* -19 °F at 1410 Psi Hydro., pneu., or comb. test 2115 psi

10. Nozzles, Inspection and safety valve openings:

Purpose (Inlet, O outlet, Drain)	No	Diam. or Size	Type	Mat'l.	Nom. Thk.	Reinforcement Mat'l	How Attached	Location
<u>Inlet/Outlet/Insp.</u>	<u>2</u>	<u>6"</u>	<u>CI 600 RFLWN</u>	<u>SA-105 N</u>	<u>1.38"</u>	<u>Integral</u>	<u>Fig. UW-16.1(c)</u>	<u>Head</u>
<u>H2O Dump/LSHH/Insp.</u>	<u>2</u>	<u>3"</u>	<u>CI 600 RFLWN</u>	<u>SA-105 N</u>	<u>.81"</u>	<u>Integral</u>	<u>Fig. UW-16.1(c)</u>	<u>Shell</u>
<u>H2O LC/HCLC</u>	<u>2</u>	<u>2"</u>	<u>CI 600 RFLWN</u>	<u>SA-105 N</u>	<u>.66"</u>	<u>Integral</u>	<u>Fig. UW-16.1(c)</u>	
<u>Drain/PSV</u>	<u>2</u>	<u>2"</u>	<u>CI 600 RFWN</u>	<u>SA-106B/SA-234WPB/SA-105N</u>	<u>.343"</u>	<u>Integral</u>	<u>Fig. UW-16.1(c)</u>	
<u>Level/Equalizer/Insp</u>	<u>12</u>	<u>2"</u>	<u>CI 600 RFWN</u>	<u>SA-105 N</u>	<u>.66"</u>	<u>Integral</u>	<u>Fig. UW-16.1(a)</u>	
<u>Temp. Ind./HC Dump</u>	<u>2</u>	<u>1"</u>	<u>CI 600 RFLWN</u>	<u>SA-105 N</u>	<u>.56"</u>	<u>Integral</u>	<u>Fig. UW-16.1(c)</u>	
<u>Lean Rich. Glycol</u>	<u>2</u>	<u>1"</u>	<u>CI 600 RFWN</u>	<u>SA-333-Gr.6/SA-105N</u>	<u>.358"</u>	<u>Integral</u>	<u>Fig. UW-16.1(c)</u>	
<u>HECI/HECO</u>	<u>2</u>	<u>1"</u>	<u>CI 600 RFWN</u>	<u>SA-333-Gr.6/SA-105N</u>	<u>.358"</u>	<u>Integral</u>	<u>Fig. UW-16.1(c)</u>	
<u>H2O LC/GLYLG/H2OLG</u>	<u>6</u>	<u>0.75"</u>	<u>CI 600 RFLWN</u>	<u>SA-105 N</u>	<u>.57"</u>	<u>Integral</u>	<u>Fig. UW-16.1(c)</u>	
<u>Pressure Ind.</u>	<u>1</u>	<u>0.5"</u>	<u>CI 600 RFLWN</u>	<u>SA-105 N</u>	<u>.5"</u>	<u>Integral</u>	<u>Fig. UW-16.1(c)</u>	

11. Supports: Skirt YES Lugs (No.) Legs (No.) Other (Describe) Attached Btm Head Welded  
 (Yes or no) (No.) (No.) (Where and how)

12. Remarks: Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report:

(Name of part, item number, Mfr's name and identifying stamp)

Impact Testing: \*\*Exempt as per UCS-66(a&b) and UG-20(f)[1-5] Radiography per: \*As per UW-11(a) and UW-51

Tag No.: V-200 Volume: 193.29 Cu.Ft (5.47 Cu.M)

A No: CONSTRUCTION DWG. NO.: V-03-3854-2349 R3

**CERTIFICATE OF SHOP COMPLIANCE**

We certify that the statements made in this report are correct and that all details of design, material, construction and workmanship of this vessel conform to the ASME Code for Pressure Vessels, Section VIII, Division 1. 'U' Certificate of Authorization No. 21,356 expires July 21, 2004

Date: April 23, 2003 Co. Name Opasco Energy Industries Ltd. Signed [Signature]  
 (mm/dd/yyyy) (Manufacturer) (Representative)

**CERTIFICATE OF SHOP INSPECTION**

Vessel constructed by Opasco Energy Industries Ltd. at Calgary, Alberta, Canada

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and / or the State or Province of Alberta and employed by ABSA, Alberta Boilers Safety Association

have inspected the component described in the Manufacturer's Data Report on April 23/03, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME code, Section VIII, Division 1. By signing this certificate neither the Inspector nor his employer makes any warranty, expressed, or implied, concerning the pressure vessel described in the Manufacturer's Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected with this inspection.

Date April 23, 2003 Signed [Signature] Commissions Alberta 175  
 (mm/dd/yyyy) (Authorized Inspector) (Nat'l Bnd (incl. endorsements), State, Prov and No.)

CERTIFIED BY  
**WESCO** ENERGY  
INDUSTRIES LTD.

CALGARY, ALBERTA, CAN.

M.A.W.P.	1410	PS.I. AT	150	°F
M.D.M.T.	191	°F AT	1410	PS.I.
SERIAL #	02-3854-1	YEAR BUILT	2003	
C.R.N.	R2338.21	TAG #	V-200	
VESSEL TYPE:	ABSORBER C.A. 125"			
SH. WT.:	1.375"			
HD. WT.:	1.438" MIN.			

PROV. REG. (A)491894