



3144242

Field Inspection Report
Vessel # 3144242

Client	Canadian Natural Resources Ltd.			Inspection Date	March 5, 2001		
Prov. Reg.#	3144242			Location	Greencourt		
Equipment	Line Heater- Shell			LSD	5-13-59-9W5		
Tag/Equip. #				Comp./Unit #			
Vessel Status	In Operation			Job #	01-123		
Manufacturer	BWS	Serial #		MAWP/Temp	psi	199 ° F	
CRN#	M1551.2	Shell Material		Shell Thickness	in		
Corrosion All.	in	Head Material		Head Thickness	in		
		Head Material 2		Head Thickness 2	in		
		Channel Material		Channel Thickness	in		
Diameter	40 in	Length	125 in	RT	HT		
Year Built	1996	Next Inspection	2003	Inspection Type	VE/UT		
Service	Sour	Manway		Coating	No		
PSV #.							
Mfg.		Serial #		Set Pressure	psi		
Type/Model		Capacity		Size	in		
Date of Service		Next Service		Service Co.			
PSV #.							
Mfg.		Serial #		Set Pressure	psi		
Type/Model		Capacity		Size	in		
Date of Service		Next Service		Service Co.			

RAE Inspection Service (1979) Ltd.

#111,4808 - 87 Street, Edmonton, Alberta T6E 5W3

Phone: (780) 469-2401 Fax (780) 468-2422

Date Printed 2001/04/03

Permanent Pressure Vessel Record

Vessel #: 3144242

Client	Canadian Natural Resources Ltd.		Inspection Date	March 05, 2001	
Prov. Reg.#	3144242		Location	Greencourt	
Vessel Name	Line Heater - Tube		LSD	5-13-59-9W5	
Tag/Equip. #			Comp./Unit #		
Vessel Status	In Operation		Manufacturer	BWS	
		Serial #	BW139007	MAWP/TEMP	1297.0000 psi/ 200.0000 °F
CRN#	M1551.2	Shell Material		Shell Thickness	0.2650 in
Corrosion All.	in	Head Material		Head Thickness	in
		Head Material 2		Head 2 Thickness	in
		Channel Material		Channel Thickness	in
Diameter	3 in	Length	in	Height	in
				HT	RT
				yes	100%
Year Built	1996	Next Inspection	2003	Inspection Type	VE/UT
Service	sour	Manway	No	Coating	No
Comments	See shell side for report.				

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Field Inspection Report

Vessel # 3144242

Observations:

External

Heater fully insulated except for shell ends and heads. Insulation in good condition. Head plate in good condition. Burner, stack, fuel gas lines and gauges are in good condition. Line temperature gauge in good condition, reads 42C. Line pressure gauge in good condition, reads 1250 kPa. Heater gauge in good condition - reads 68C.

Internal

None at this time.

UT Inspection

Measured in inches. See drawing for details.

Shell

South Head

Top - 0.250, 0.258, 0.268, 0.251

Mid - 0.273, 0.269, 0.294, 0.298

Bottom- 0.251, 0.256, 0.275, 0.277

South Shell

Top - 0.234, 0.225, 0.230, 0.233

Mid - 0.270, 0.260, 0.252, 0.256

Bottom - 0.258, 0.246, 0.241, 0.246

North Head

Top - 0.238, 0.246, 0.263, 0.250

Mid - 0.265, 0.265, 0.271, 0.266

Bottom - not accessible

North Shell

Top - 0.257, 0.248, 0.257, 0.251

Mid - 0.247, 0.250, 0.246, 0.251

Bottom - 0.239, 0.239, 0.242, 0.253

Inlet Nozzle - 5 readings taken

Readings from left to right taken in the 12, 3, 6 and 9 o'clock positions respectively.

1- 0.308, 0.398, 0.294, 0.302

2- 0.316, 0.287, 0.328, 0.343

3- 0.321, 0.285, 0.331, 0.336

4- 0.314, 0.288, 0.318, 0.316

5- 0.331, 0.330, 0.335, 0.340

AB-40 to be attached

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#111,4808 - 87 Street, Edmonton, Alberta T6E 5W3

Phone: (780) 469-2401 Fax (780) 468-2422

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Field Inspection Report

Vessel # 3144242

UT Inspection continued

Outlet Nozzle - 7 readings taken

Readings from left to right taken in the 12, 3, 6 and 9 o'clock positions respectively.

1- 0.308, 0.306, 0.306, 0.318

2- 0.311, 0.341, 0.320, 0.283

3- 0.311, 0.340, 0.339, N/A

4- 0.306, 0.318, 0.360, 0.295

5- 0.339, 0.322, 0.325, 0.335

6- 0.318, 0.298, 0.318, 0.331

7- 0.315, 0.290, 0.309, 0.328

Notes

No PSV - this is currently being dealt with. Last inspected 98/05/13 - next inspection in May 2001.

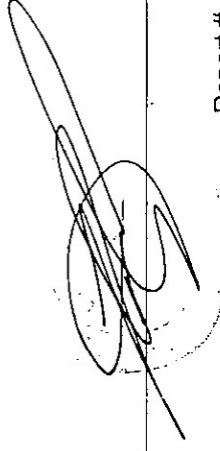
Recommendations:

The high pressure coil is not protected by a safety valve. The owner is responsible for ensuring that the installation meets regulatory requirements.



Inspector: Trevor Paananen

Reviewed by:

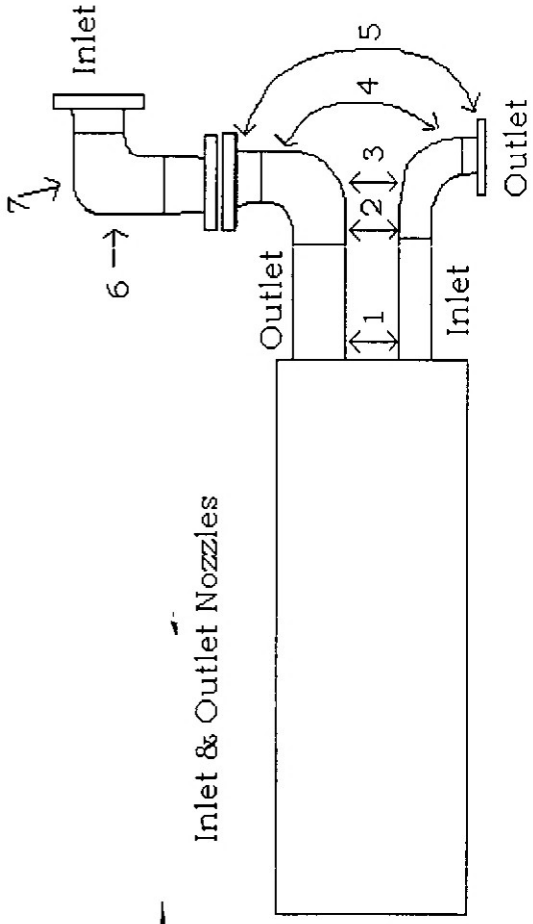


AB-40 to be attached

RAE Inspection Service (1979) Ltd.
#111, 4808 – 87 Street, Edmonton, Alberta T6E 5W3
Phone: (780) 469-2401 Fax: (780) 468-2422

Vessel Drawing
(not to scale)

Client	Canadian Natural Resources Ltd.	Location	Greencourt
Prov. Reg.#	3144242	LSD	5-13-59-9WS
Equipment	Line Heater	RAE Job#	01-123



RAE Inspection Service (1979) Ltd.
 #301, 8925 - 51st Avenue, Edmonton, Alberta T6E 5J3
 Phone: (403) 469-2401 Fax: (403) 468-2422

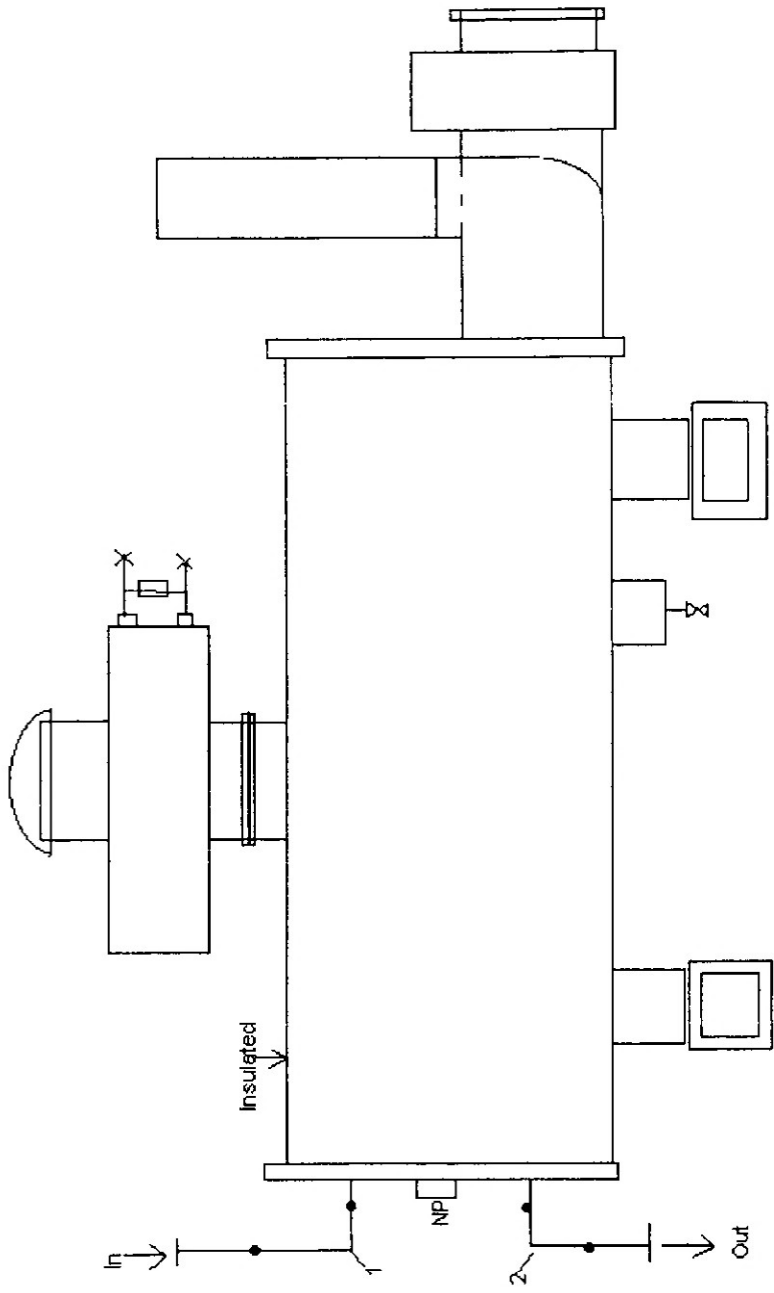
Field Inspection Report

Client	Canadian Natural Resources Ltd.		Date of Insp.	May 13, 1998	
Prov. Reg.#	3144242		Location	Greencourt	
Equipment	Indirect Line Heater		LSD	5-13-59-9W5	
Tag/Equip. #	-		Comp./Unit #	-	
			Job #	98-127	
Fabricator	Brooks Welding	Serial #	W139.00	MAWP/Temp	8942kPa/93C
CRN#	M1551.2	Shell Mat'l	-	Shell Thick.	-
Corr. All.	-	Head Mat'l	-	Head Thick.	-
Diameter	40"	Length	125"	RT	100% HT Yes
Year Built	1996	Next Insp	2001	Insp. Type	VE/UT
Service	Sour	Manway	Y	Coating	Y N
PSV #	None - NCR#0637 issued				
Mfg		Serial #		Set Pressure	
Type/Model		Capacity		Size	
Date of Service		Next Service		Service Co.	

Observations:

External - Fully insulated, solid and tight including exposed attachments. No evidence of any rust or corrosion. Generally in good condition. No access at this time for internal inspection. No PSV protecting this line heater. UT inspection was done, see readings below.

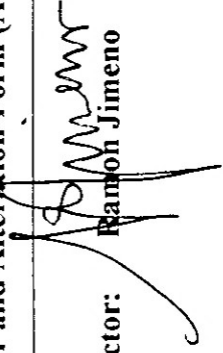
Test Point	A	B	C	D	mm
1	7.6	7.7	7.7	7.6	mm
2	8.3	8.6	8.4	8.7	mm

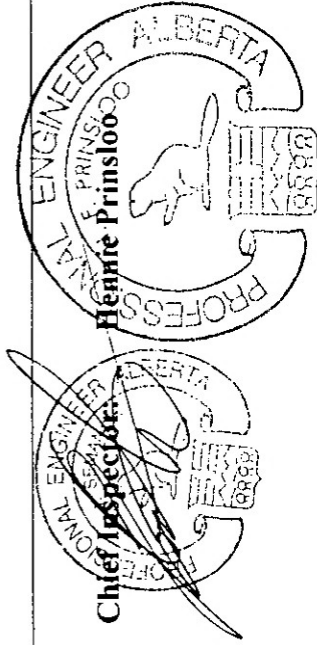


Recommendations:

1. Install PSV as soon as possible.
2. Next inspection May 2001.

Suitable to Return to Service: Y
Repair and Alteration Form (AB40): NA

Inspector: 
Ramon Jimeno



Certificate of Inspection

CANADIAN NATURAL RESOURCES LTD
SUITE 2000, ESSO PLAZA
425-1 STREET SW
CALGARY AB
T2P 3L8

LOCATION: STOCK
COMPANY CODE:
DESCRIPTION: LINE HEATER COIL

PREFERRED RE-INSPECTION INTERVAL: 1.00 YRS
CRN: M1551.2

MANUFACTURER: BROOKS WELDING SERVICES LTD.

SERIAL # : BW 139.007

YEAR BUILT: 1996

HEATING SURFACE:

m2

CUBICAL CAPACITY: 0.156 m3

PART	MAX. AUTHORIZED PRESSURE	MAX. TEMP / MIN. TEMP	ID / LOCATION	SAFETY VALVES SET / CAPACITY	AT TEMP
COIL	9307 kPa	93 C SV1 -28 C TO BE INSTALLED		0 kPa 0	

*** BOILER OR PRESSURE VESSEL NOT SUBJECT TO ANNUAL REGISTRATION FEES

OWNER INSTRUCTIONS/REMARKS:

NO FURTHER INSPECTION REQUIRED BY ALBERTA BOILERS SAFETY ASSOCIATION.

VERIFY THAT VESSEL IS PROTECTED BY A 'UV' SAFETY RELIEF VALVE, OF ADEQUATE CAPACITY, SET AT NO MORE THAN MAXIMUM PRESSURE AUTHORIZED, HAS BEEN INSTALLED IN ACCORDANCE WITH THE REGULATIONS.

INSPECTOR: KOCYBA JAMES J

SIGNATURE: *James J. Kocyba*

NOTE: 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 INSPECTOR IMMEDIATELY AND SHALL SEND A FULL REPORT IN WRITING TO THE CHIEF INSPECTOR AS REQUIRED BY THE ACT. NO REPAIRS OR ALTERATIONS MAY BE MADE UNLESS AUTHORIZED BY AN INSPECTOR.

MAY 27 1996