

FORM U-1A MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS

(Alternative Form for Single Chamber, Completely Shop - Fabricated Vessels Only)

As Required by the Provisions of the ASME Code Rules, Section VIII, Division I

A465645

1. Manufactured and certified by: NATCO CANADA LTD., 5710 17TH STREET, EDMONTON, ALBERTA, T6P 1S4
(Name and address of manufacturer)

2. Manufactured for: HUSKY OIL OPERATIONS LIMITED, 707-8TH AVE. SW., CALGARY, AB., T2P 1H5
(Name and address of purchaser)

3. Location of installation: HUSKY OIL LIMITED, LLOYDMINSTER
(Name and address)

4. Type: VERTICAL 42586-56 P6748.2 42586-56 REV 1 N/A 2001
(Horiz. Or vert. tank) (Mfg. Serial No.) (RSG) (Drawing No.) (Nat'l Bld. No.) (Year built)

5. The chemical and physical properties of all parts meet the requirements of material specifications of the ASME BOILER AND PRESSURE VESSEL CODE. The design, construction, and workmanship conform to ASME Rules, Section VIII, Division I 1998
(Year)

to 2000 N/A N/A
(Addenda (Date)) (Code Case Nos.) (Special Service per UG-120 (d))

6. Shell: SA-106-B 0.375" 0.0625" 12.750" 6'-0" S/S
(Mat'l (Spec. No./Grade)) (Nom. Thick. (in)) (Corr. Allow. (in)) (Diam. O.D. (ft. & in.)) (Length (overall) (ft. & in.))

7. Seams: SMLS N/A 100% N/A N/A TYPE 1 *SPOT 1
(Long (Welded, Dbl. Singl. Lap Butt)) (R.T. (Spot or Full)) (H.T. (%) (Temp. (°F)) (Time (hr)) (Grth (Welded, Dbl. Singl. Lap Butt)) (R.T. (Spot, Partial, Full)) (No. of Courses)

8. Heads: (a) Mat'l. SA-350-LF2 TOP (b) Mat'l. SA-516-70N BOTTOM
(Spec. No./Grade) (Spec. No./Grade)

	Location (Top Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispheric Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)	TOP	0.750"	0.0625"							CONCAVE
(b)	BOTTOM	0.205"	0.0625"			2:1				CONCAVE

If removable, bolts used (describe other fastenings):

9. MAWP 285 psi at max. Temp., 100 °F
Min. design metal temperature -20 °F at 285 psi (Hydro, pneu., or comb. test pressure 371 psi)

10. Nozzles inspection and safety valve openings:

Purpose (Inlet, Outlet, Drain)	No.	Diam. or Size	Type	Material	Nom. Thick.	Reinforcement Mat'l.	How Attached	Location
See Attached U-4								

11. Supports: Skirt YES Lugs --- Legs --- Other --- Attached BTM HEAD/WELDED
(Yes or no) (No) (No) (Describe) (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: CLOSURE, #15 R & M ENERGY SYSTEM, MV 193
(Name of part, item number, Mfg.'s name and identifying stamp)

IMPACT TEST EXEMPT PER UG-20(f) & UCS-66. TOTAL VOLUME 0.15 CU. M. 5.18 CU.FT

CONSTRUCTION DRAWING 42586-56 REV 1. PSV LOCATION IS AT C1

RT-2 AS PER UW-11(a)5(b)

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 I. "U" Certificate of Authorization No 2476 expires July 17, 2004.

Date: NOVEMBER 5, 2001 Co. Name NATCO CANADA LTD. Signed [Signature]
(Manufacturer) (Representative)

CERTIFICATE OF SHOP INSPECTION

Vessel constructed by NATCO CANADA LTD. at EDMONTON, ALBERTA. I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of ALBERTA and employed by ALBERTA BOILERS SAFETY ASSOCIATION have inspected the component described in this Manufacturer's Data Report on NOVEMBER 5, 2001 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 I. By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the pressure vessel described in these 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 a loss of any kind arising from or connected with this inspection.

Date: NOVEMBER 5, 2001 Signed [Signature] Commissions: ALBERTA #87
(Authorized Inspector) (Not Valid (incl. endorsements) State, Prov. and No.)

SHOP ORDER #

12586

A465645

2001
(Year built)

Certificate of Authorization		Type	A	No.	24,376	Expires	JULY 17, 2004
Date	NOVEMBER 5, 2001	Name	NAICO CANADA LTD.		Signed	<i>J. Kankar</i> (Representative)	
			(Manufacturer)				
Date	NOVEMBER 5, 2001	Name	<i>Harold Leike</i>		Commission	ALBERTA #87	
			(Authorized Inspector)			(Nat'l. Board (incl. endorsement), State, Province and No.)	

Shop Order #: 42586

SO No **8503407**

PO No.

FORM U-2A MANUFACTURER'S PARTIAL DATA REPORT (ALTERNATE FORM)

**A Part of a Pressure Vessel Fabricated by One Manufacturer for Another Manufacturer
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1**

A465695

1. Manufactured and certified by **R&M ENERGY SYSTEMS 10906 FM 2920 TOMBALL, TEXAS 77375**
(Name and address of Manufacturer)
2. Manufactured for **R & M ENERGY SYSTEMS CANADA 8750-58TH AVE, EDMONTON, ALBERTA, CANADA T6E 6G6**
(Name and address of Purchaser)
3. Location of Installation **UNKNOWN**
(Name and address)
4. Type: **(2) 12" VERTICAL CLOSURE** **MV192, MV193** **OH2363.2134568Y**
(Description of vessel part (shell, two-piece head, tube bundle)) (Mfg's Serial No.) (CRN)
N/A **50D12V-R0** **R&M ENERGY SYSTEMS** **2001**
(Nat'l Bd. No.) (Drawing No.) (Drawing prepared by) (Year Built)
5. ASME Code, Section VIII, Div. 1 **1998 ADDENDA 00** **N/A** **N/A**
(Edition and Addenda (Date)) (Code Case No.) (Special service per UG-120(d))
6. Shell (a) No. of course(s) **1** (b) Overall length (ft. and in.): **0-05.5**

Course(s)			Material	Thickness, in		Long Joint (Cat. A)			Circum. Joint (Cat. A, B. & C)			Heat Treatment	
No.	Diameter, in	Length, ft/in	Spec./Grade or Type	Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp., F	Time
1	12.000	0-05.5	SA 350 LF2	0.438	0.063	S	NONE	1	S	NONE	1	N/A	N/A

7. Heads: (a)		(b)	
SA 350 LF2		N/A	
(Mat'l Spec. no., Grade or Type)(H.T. - Time and Temp.)		(Mat'l Spec. no., Grade or Type)(H.T. - Time and Temp.)	
Location (Top, Bottom)	Thickness, in	Radius, in	Elliptical
Ends	Min.	Corr.	Crown
(a) END	0.750	0.063	
(b)			

If removable, bolts used (describe other fastening)

8. MAWP **285** **PSI @ max temp = 100** **°F** Min Design Metal Temp **-20** **°F** at **285** **PSI**
Internal external internal external

9. Impact test **Yes - CJP & HUB** At a test temp of **-50 & -50** **°F**
Indicate yes or no and the component(s) impact tested

10. Hydro., pneu., or comb. Test pressure **SEE REMARKS** Proof Test: **UG-101(c) TESTED & ACCEPTED 01-17-00**

11. Nozzles, inspection, and safety valve openings: **UG-125(a)** At **360C PSIG**

Purpose	No.	Type, or Size, in.	Flange	Material	Nozzle Thickness, in	Reinforcement	How Attached	Location
(Inlet, Outlet, Drain, etc.)			Type	Nozzle	Flange	Nom.	Corr.	Material
								Nozzle
								Flange
								(Insp. Open.)
SEE REMARKS								
PAV	1	1/2" NPT	TH'D	SA 350 LF2	N/A	N/A	INHERENT	INT TH'D
								SHELL

12. Supports: Skirt **Lugs** **Legs** **Others** **Attached**
(Yes or No) (No) (No) (Describe) (Where and How)

13. Remarks: **THIS TEMPERATURE APPLICABLE TO CLOSURE METAL COMPONENTS ONLY. ACTUAL SERVICE TEMPERATURE IS DETERMINED BY TEMPERATURE LIMITATIONS OF O-RING MATERIAL. UG-120, c.2 DESIGN & CALCULATION BY R&M ENERGY SYSTEMS. CLOSURE ASSEMBLY IS NOT HYDROSTATICALLY TESTED. PRESSURE ALERT VALVE FURNISHED.**

CERTIFICATE OF SHOP/FIELD COMPLIANCE

We certify that the statements made in this report are correct and that all details of material, construction, and workmanship of this pressure vessel part conform to the ASME Code for Pressure Vessels, Section VIII, Division 1.

U Certificate of Authorization No. **10052** Expires: **July 16, 2002**

Date: **09/21/01** Name: **R&M ENERGY SYSTEMS** Signed: **James R. Duerr**
(Manufacturer) (Representative)

CERTIFICATE OF SHOP/FIELD INSPECTION

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 **TEXAS** and employed by **HARTFORD STEAM BOILER INSPECTION & INSURANCE CO. of CONNECTICUT** have inspected the pressure vessel part described in this Manufacturer's Data Report on **09-21-2001**, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel part 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 part described in this 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 a loss of any kind arising from or connected with this inspection.

Date **09-21-01** Signed **[Signature]** Commissions **TEXAS 755**
(Authorized Inspector) (National Board Incl. Endorsement, State, Province and No.)

NATCO CANADA
P.O. No: 070436
DATE: 09/21/01
W.O. No: 42500-56
INITIAL: [Signature]

DWG 42586-56 REVI