

verified copy of original
Doug McArthur

FORM U-1 MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

1. Manufactured and certified by PATTERSON INDUSTRIES (CANADA) LIMITED, 250 DANFORTH ROAD., SCARBOROUGH, ONTARIO M1L 3X4
(Name and address of Manufacturer)

2. Manufactured for SABLE OFFSHORE ENERGY PROJECT, 1100, 801-6TH AVENUE S.W., CALGARY, ALBERTA T2P 3W3
(Name and address of Purchaser)

3. Location of installation SABLE OFFSHORE ENERGY PROJECT, POINT TUPPER LIQUIDS PLANT, POINT TUPPER, NOVA SCOTIA
(Name and address)

4. Type: HORIZ. BUTANE STORAGE VESSEL 98CA9735C1
(Horiz., vert., or sphere) (Tank, separator, jkt. vessel, heat exch., etc.) (Mfg's serial No.)

9095.8 D98-CA-399735-1C REV 4 NA 1998
(CRN) (Drawing No.) (Nat'l. Bd. No.) (Year built)

5. ASME Code, Section VIII, Div. 1 1995 & A96 NA NA
Edition and Addenda (date) Code Case No. Special Service per UG-120(d)

Items 6-11 incl. To be completed for single wall vessels, jackets of jacketed vessels, shell of heat exchangers, or chamber of multi-chamber vessels.
6. Shell (a) No. of course(s): 12 (b) Overall length (ft & in.): 119' 8"

Course(s)			Material		Thickness		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.	Time
1 to 12	132" I.D.	9' 11.67"	SA516-70		13/16"	1/16"	1	FULL	100%	1	FULL	100%	NA	NA

7. Heads: (a) SA516-70 (b) SA516-70
(Mat'l Spec. No., Grade or Type) H.T. - Time & Temp. (Mat'l Spec. No., Grade or Type) H.T. - Time & Temp.

	Location (Top, Bottom, Ends)	Thickness		Radius		Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure		Category A		
		Min.	Corr.	Crown	Knuckle					Convex	Concave	Type	Full, Spot, None	Eff.
(a)	FRONT	0.778"	1/16"	NA	NA	2:1	NA	NA	NA	YES	YES	NA	NA	NA
(b)	REAR	0.778"	1/16"	NA	NA	2:1	NA	NA	NA	YES	YES	NA	NA	NA

If removable, bolts used (describe other fastening)

8. Type of jacket NA Jacket closure NA
(Mat'l Spec. No., Grade, size, No.) (Describe as ogee & weld, bar, etc.)

If bar, give dimensions
9. MAWP 185 9 psi at max. temp. 149 149 °F Min. design metal temp. -16.6 °F at 185 & -9 psi.
(internal) (external) (internal) (external)

10. Impact test EXEMPTED PER UG-20(f) & UCS-66
(Indicate yes or no and the component(s) impact tested)

11. Hydro., pneu., or comb. Test press. HYDRO 278 PSIG Proof test NA

Items 12 and 13 to be completed for tube sections.

12. Tubesheet: NA
Stationary (Mat'l Spec. No.) Dia., in. (subject to press.) Nom. Thk., in. Corr. Allow., in. Attachment (welded or bolted)

NA
Floating (Mat'l Spec. No.) Dia., in. Nom. thk., in. Corr. Allow., in. Attachment

13. Tubes: NA
Mat'l Spec. No., Grade or Type O.D., in. Nom. thk., in. or gauge Number Type (Straight or U)

Items 14-18 incl. To be completed for inner chambers of jacketed vessels or channels of heat exchangers.

14. Shell (a) No. of course(s): NA (b) Overall length (ft & in.): NA

Course(s)			Material		Thickness		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.	Time

15. Heads: (a) NA (b) NA
(Mat'l Spec. No., Grade or Type) H.T. - Time & Temp. (Mat'l Spec. No., Grade or Type) H.T. - Time & Temp.

	Location (Top, Bottom, Ends)	Thickness		Radius		Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure		Category A		
		Min.	Corr.	Crown	Knuckle					Convex	Concave	Type	Full, Spot, None	Eff.
(a)														
(b)														

If removable, bolts used (describe other fastening)

(Mat'l Spec. No., Grade, size, No.)

FORM U-1 (Back)

16. MAWP _____ psi at max. temp. _____ °F Min. design metal temp. _____ °F at _____ psi.
(internal) (external) (internal) (external)

17. Impact test _____
(Indicate yes or no and the component(s) impact tested)

18. Hydro., pneu., or comb. Test press. _____ Proof test _____

19. Nozzles, inspection, and safety valve openings:

Purpose (inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Flange Type	Material		Nozzle Thickness		Reinforcement Material	How Attached Nozzle	Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.			
INLET	1	4"	integral 150#	SA105N	SA105N	1.305"	1/16"	NA	FIG. UW16.1(e)	
LIQUID OUTLET	1	8"	LWNF 150#	SA105N	SA105N	0.875"	1/16"	NA	FIG. UW16.1(e)	
MISC.	4	3"	integral 300#	SA105N	SA105N	1.2375"	1/16"	NA	FIG. UW16.1(e)	
MISC.	3	2"	LWNF 300#	SA105N	SA105N	0.6563"	1/16"	NA	FIG. UW16.1(e)	
THERMOWELL	1	2"	integral 300#	SA105N	SA105N	1"	1/16"	NA	FIG. UW16.1(e)	
RELIEF	1	4"	integral 150#	SA105N	SA105N	1.305"	1/16"	NA	FIG. UW16.1(e)	
VENT	1	6"	integral 150#	SA105N	SA105N	1.2445"	1/16"	NA	FIG. UW16.1(e)	
MANWAY	1	24"	integral 150#	SA105N	SA105N	5"	1/16"	NA	FIG. UW16.1(e)	SHELL

20. Supports: Skirt NO Lugs NO Legs NO Others 2 SADDLES Attached WELDED TO SHELL
(Yes or no) (No.) (No.) (Describe) (Where and how)

21. Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report:
(List the name of part, item number, mfg's. name and identifying number)

22. Remarks: _____

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. 23423 Expires MAY 6, 20 00

Date FEB 25, 1999 Name PATTERSON INDUSTRIES (CANADA) LIMITED Signed Stefan J...
(Manufacturer) (Representative)

CERTIFICATE OF SHOP 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 ONTARIO and employed by TSSA of ONTARIO have inspected the pressure vessel described in this Manufacturer's Data Report on FEB 25, 19 99, 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 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 FEB 25/99 Signed [Signature] Commissions 66 ONTARIO
(Authorized Inspector) (Nat'l board incl. Endorsement, State, Province and No.)

CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the statements on this report are correct and that the field assembly construction of all parts of this vessel conforms with the requirements of ASME Code, Section VIII, Division 1.

U Certificate of authorization No. _____ Expires _____, 20 _____

Date _____ Name _____ Signed _____
(Assembler) (Representative)

CERTIFICATE OF FIELD ASSEMBLY 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 _____ and employed by _____ of _____ have compared the statements in this Manufacturer's Data Report with the described pressure vessel and state that parts referred to as data items _____, not included in the certificate of shop inspection, have been inspected by me and to the best of my knowledge and belief, the Manufacturer has constructed and assembled this pressure vessel in accordance with ASME Code, Section VIII, Division 1. The described vessel was inspected and subjected to a hydrostatic test of _____ psi. By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the pressure vessel 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 _____ Signed _____ Commissions _____
(Authorized Inspector) (Nat'l board incl. Endorsement, State, Province and No.)