

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

1. Manufactured and certified by Bilton Welding and Manufacturing Ltd.
 5815 - 37th Street, Innisfail Alberta, T4G 1S8, Canada
 (Name and address of Manufacturer)
2. Manufactured for CNRL, Suite 1600 - 324 8th Avenue, Calgary AB, T2P 2Z2, Canada
 (Name and address of Purchaser)
3. Location of installation CNRL, LSD: 01-20-072-08 W6M
 (Name and address)
4. Type Horizontal Reboiler Tube Bundle 18123
 (Horizontal, vertical, or sphere) (Tank, separator, jkt. vessel, heat exch., etc.) (Manufacturer's serial number)
- Z2592.23 BWM-797-20A/B/C Rev 0 N/A 2020
 (CRN) (Drawing Number) (National Board number) (Year built)
5. ASME Code, Section VIII, Div. 1 2019 Ed N/A N/A
 ((Edition and Addenda, if applicable (date)) (Code Case number) (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 multichamber vessels.

6. Shell: (a) Number of course(s) _____ (b) Overall length _____

Course(s)			Material		Thickness		Long. Joint (Cat. A)			Circum. Joint (Cat. A, B & C)			Heat Treatment	
No.	Diameter	Length	Spec./Grade or Type		Nom.	Corr.	Type	Full, Spot, None	Eff. %	Type	Full, Spot, None	Eff. %	Temp.	Time

Body Flanges on Shells

No.	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Location	Bolting			
									Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material

7. Heads: (a) _____ (b) _____
 (Material spec. number, grade or type) (H.T. — time and temp.) (Material spec. number, grade or type) (H.T. — time and temp.)

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

Body Flanges on Heads

	Location	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Bolting			
									Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material
(a)												
(b)												

8. Type of jacket _____ Jacket closure _____
 (Describe as ogee and weld, bar, etc.)

If bar, give dimensions _____ If bolted, describe or sketch.

9. MAWP _____ at max. temp. _____ Min. design metal temp _____ at _____
 (Internal) (External) (Internal) (External)

10. Impact Test _____ at test temperature of _____
 (Indicate yes or no and the component(s) impact tested)

11. ☒ Hydro, pneu., or comb. test pressure _____ Proof test _____

Items 12 & 13 to be completed for tube sections.

12. Tubesheet SA-516-70N 25.250" 2.625" 0.125" Welded
 [(Stationary (material spec. no.))] [Diameter (subject to press.)] (Nominal thickness) (Corr. allow.) [Attachment (welded or bolted)]
 [Floating (material spec. no.)] (Diameter) (Nominal thickness) (Corr. allow.) (Attachment)

13. Tubes SA-179 1.00" 14 ga 153 U
 (Material spec. no., grade or type) (O.D.) (Nominal thickness) (Number) [Type (straight or U)]

A 695332

FORM U-1

Manufactured By Bilton Welding and Manufacturing Ltd.Manufacturer's Serial No. 18123 CRN Z2592.23 National Board No. N/A

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) 1 (b) Overall length 28 3/16 inch

Course(s)			Material	Thickness		Long. Joint (Cat. A)			Circum. Joint (Cat. B & C)			Heat Treatment	
No.	Diameter	Length	Spec./Grade or Type	Nom.	Corr.	Type	Full Spot.	Eff. %	Type	Full Spot, None	Eff. %	Temp.	Time
1	26" OD	28 3/16"	SA-516-70N	0.375"	0.125"	Type 1	Full	100	1	Full	100	1150°F	1 hr

Body Flanges on Shells

No.	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Location	Bolting			
									Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material

15. Heads: (a) SA-350-LF2 CL1 (H.T. - 1 hour at 1150°F) (b)
 (Material spec. number, grade, or type) (H.T. — time and temp.) (Material spec. number, grade, or type) (H.T. — time and temp.)

	Location (Top, Bottom, Ends)	Thickness		Radius		Elliptical Ratio	Conical Apex Angle	Hemis. Radius	Flat Diameter	Side to Pressure		Category B		
		Min.	Corr.	Crown	Knuckle					Convex	Concave	Type	Full Spot, None	Eff. %
(a)	End (Cover)	2.5625"	0.125"						34.125" OD			Bolted		

Body Flanges on Heads

	Location	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Bolting			
									Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material
(a)												
(b)												

16. MAWP 200 PSI FV at max. temp 392°F 392°F Min. design metal temp -49°F at 200 PSI
 (Internal) (External) (Internal) (External)

17. Impact test See remarks at test temperature of N/A
 (Indicate yes or no and the component(s) impact tested)

18. Hydro. pneu., or comb. test pressure 260 PSI Proof test N/A

19. Nozzles, inspection, and safety valve opening:

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Type	Material		Nozzle Thickness		Reinforcement Material	Attachment Details		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
N1 - Inlet	1	NPS 6	RFLWN CL150	SA-350-LF2 CL1	N/A	0.880"	0.125"	N/A	UW-16.1(c)	N/A	Channel
N2 - Outlet	1	NPS 8	RFHB CL150	SA-350-LF2 CL1	N/A	1.440"	0.125"	N/A	UW-16.1(c)	N/A	Channel

①695332

FORM U-1

Manufactured By Bilton Welding and Manufacturing Ltd.
 Manufacturer's Serial No. 18123 CRN Z2592.23 National Board No. N/A

20. Supports: Skirts No Lugs 0 Legs 0 Others N/A Attached N/A
(Yes or no) (Number) (Number) (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, Manufacturer's name, and identifying number):

22. Remarks:

Construction Drawings D5376-245 R0

Tube bundle for use in atmospheric bath heater tank

Radiography: RT-1 as per UW-11(a)

Volume: Tube side 14.1 ft³ (0.4 m³)

PSV on piping and installed by owner as per UG-125

Shell material SA-516-70N impacts exempt as per UCS-66

Flange material SA-350-LF2 CL1 impacts exempt as per UCS-66(g)

Bolting material SA-193-B7M / SA-194-2HM impacts exempt as per Fig UCS-66 note c

Production weld impacts exempt as per UCS-67(a)(3)

①695332

FORM U-1

Manufactured By Bilton Welding and Manufacturing Ltd.
 Manufacturer's Serial No. 18123 CRN Z2592.23 National Board No. N/A

CERTIFICATE OF SHOP COMPLIANCE

We certify that the statements in this report are correct and that all details of design, material, construction, and workmanship of this vessel conform to the ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1.

U Certificate of Authorization Number 33470 Expires August 11, 2022

Date FEB 11 2021 Name Bilton Welding & Manufacturing Ltd Signed [Signature]
 (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 employed by Alberta Boilers Safety Association (ABSA) of Alberta have inspected the pressure vessel described in this Manufacturer's Data Report on FEB 11 2021, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. By signing this certificate neither the Inspector nor his/her employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his/her 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 11 2021 Signed [Signature] Commissions NB 16333 D00009342
 (Authorized Inspector) (National Board Authorized Inspector Commission Number)

CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the statements in this report are correct and that the field assembly construction of all parts of this vessel conforms with the requirements of ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. U Certificate of Authorization Number _____ Expires _____

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 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 the ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. The described vessel was inspected and subjected to a hydrostatic test of _____. By signing this certificate neither the Inspector nor his/her employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his/her 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) (National Board Authorized Inspector Commission Number)

(07/17)