

#105665

FORM U-2 MANUFACTURERS' PARTIAL DATA REPORT
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

1(a) Manufactured by Shell & Tube Incorporated, 4150 So. 87th E. Ave., Tulsa, Oklahoma 74145
(Name and address of manufacturer of part)
 (b) Manufactured for American Smelting & Refining Co., Tacoma, Washington
(Name and address of manufacturer of vessel)
 S-918-1
 2. Manufacturer's Serial No. of Part CRN Drawing No. Nat'l Bd. No. 365 Year Built 1978
 3. (a) Drawing Prepared by Shell & Tube Incorporated
 (b) Description of Part Inspected TEMA Fixed Tubesheet Type Shell & Bundle
 4. The chemical and physical properties of all parts meet the requirements of material specifications of the ASME Boiler and Pressure Vessel Code. The construction, and workmanship conform to ASME Rules, Section VIII, Division 1 1977
(Year)
 and Addenda through 6-30-77 and Code Case No.
(Date)

5. Special Service per UG-120(d)
 6. Postweld Heat Treatment: Temperature F. Time
 Items 7-12 incl. to be completed for single wall vessels, jackets of jacketed vessels, or shells of heat exchangers
 7. Shell: Material SA-53-B Nominal Thickness 3/8 in. Corrosion allowance 1/16 in.
(Spec. No., Grade)
 Diam. 1 ft 8 in. Length 29 ft 8-1/4 in.
 8. Seams: Longitudinal SMLS. R.T. Efficiency 80 %
(Welded, Dbl., Sngl. Lap. Butt) (Spot or Full)
 H.T. Temp. F Time Girth Welded, Sngl. Butt w/Back-Up (Corner Joint)
(Welded Dbl., Sngl., Lap. Butt)
 R.T. None No. of Courses 1
(Spot, Partial, or Full)

9. Heads (a) Material (b) Material
(Spec. No., Grade)

	Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio
(a)						
(b)						

	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)				
(b)				

If removable, bolts used (describe other fastenings)

(Material, Spec. No., G., Size, No.)

10. Type of Jacket Proof Test
 11. Jacket Closure If bar, give dimensions
(Describe as ogee & weld, bar, etc.)
 If bolted, describe or sketch.
 12. Constructed for max. allowable working pressure 75 psi at max. temp. 300° F Min. temp.
(when less than -20 F) F. Hydrostatic, test pressure 115 psi.

Items 13 and 14 to be completed for tube sections

13. Tubesheets: Stationary — Material SA-240-316 S.S. Diam. 19-3/8 in.
(Spec. No. Gr.) (Subject to pressure)
 Nominal Thickness 1-7/8" Corrosion Allowance 0 - 1/16 in. Attachment Welded
(Welded, Bolted)
 Floating — Material Diam. in.
(Spec. No., Gr.)
 Nominal Thickness in. Corrosion Allowance in.
 Attachment
 14. Tubes: Material SA-249-316ELC O.D. 3/4 in. Nominal Thickness 18 gauge
(Spec. No., Gr.)
 Number 320 Type Straight
(Straight or "U")

Items 15-18 incl. to be completed for inner chambers of jacketed vessels or channels of heat exchangers

15. Shell: Material Nominal Thickness in. Corrosion Allowance in.
(Spec. No., Grade)
 Diam. ft. in. Length ft. in.
 16. Seams: Longitudinal R.T. Efficiency %
(Welded, Dbl. Sngl. Lap. Butt) (Spot or Full)
 H.T. Temp. F Time Girth R.T. No. of courses
(Welded, Dbl. Sngl. Lap. Butt) (Spot, Partial or Full)

FORM U-2 (BACK)

17. Heads: (a) Material _____ (Spec. No., Grade) _____ (b) Material _____ (Spec. No., Grade) _____

	Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio
(a)						
(b)						

	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)				
(b)				

If removable, bolts used (describe other fastenings) _____

(Material, Spec. No., Gr., Size, No.) _____

18. Constructed for max. allowable working pressure _____ psi at max. temp. _____ F. Min. temp. (when less than -20 F) _____

F. Hydrostatic, pneumatic, or combination test pressure _____ psi.

Items below to be completed for all vessels where applicable

19. Safety Valve Outlets: Number _____ Size _____ Location _____

20. Nozzles:

Purpose (Inlet, Outlet, Drain)	Number	Diam. or Size	Type	Material	Nominal Thickness	Reinforcement Material	How Attached
Shell In & Out	1 & 1	10"-150#	RFSO	SA-106-B	.5"	Weld	Welded
Vent	1	1"	CPLG	SA-234-WPB	6000#	Weld	Welded

21. Inspection Openings:

Manholes No. _____ Size _____ Location _____

Handholes No. _____ Size _____ Location _____

Threaded No. 4 Size 3/4"-6000# Location Nozzles

22. Supports: Skirt No Lugs (No.) Legs (No.) Other 2-Saddles (Describe) _____

Attached Shell, Welded (Where and how) _____

23. Remarks: Type: Replacement Shell & Bundle Size: 19-360 Nat'l Bd. No. 62

Item: 44D28513 P.O. No.: 1503-8

CERTIFICATE OF COMPLIANCE

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

Date 6-23-78 Signed Shell & Tube Incorporated by Ray J. Smith
(Manufacturer) (Representative)

"U" Certificate of Authorization No. 7704 expires Feb. 28, 19 79

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 Arkansas and employed by Commercial Union Ins. Co. of Boston, Mass. have inspected the part of a pressure vessel described in this Manufacturer's Partial Data Report on 6/23 1978, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this part in accordance with the ASME Boiler and Pressure Vessel Code, Section VIII, Division 1.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in this Manufacturers' Partial 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 6/23/78
Signed Clayton L. Courtney Commissions N.B. #7375
(Authorized Inspector) (Nat'l Board, State, Province and No.)