

FORM U-1A MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS  
(Alternative Form for Single Chamber, Completely Shop or Field Fabricated Vessels Only)  
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

page 1 of 1

1. Manufactured and certified by Industrial Alloy Fabricators, LLC, 1501 Valley Road, Richmond, VA 23222  
(Name and address of Manufacturer)
2. Manufactured for Giant Yorktown Refinery, 2201 Goodwin Neck Road, Grafton, VA 23692  
(Name and address of Purchaser)
3. Location of installation (same as above)  
(Name and address)
4. Type: Horizontal S924 --- D-9860A, D-9861A 135 2006  
(Horiz., vert., tank) (Mfr's serial No.) (CRN) (Drawing No.) (Natl. Bd. 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 1 2004 Ed.  
to 2005 --- --- ---  
Addenda (date) Code Case No.s Special Service per UG-120(d)
6. Shell: SA-516 Gr 70 1/2" None 2'-9" ID 18'-8"  
Matl. (Spec. No., Grade) Nom. Thk (in.) Corr. Allow. (in.) Diam. I.D. (ft. & in.) Length (overall) (ft. & in.)
7. Seams: Wld Dbl Butt Spot 85% --- --- Wld Dbl Butt Spot 3  
Long. (Welded, Dbl, Sngl., Lap, Butt) R.T. (Spot or Full) Eff. (%) H.T. Temp. (F) Time (hr) Girth, (Welded Dbl., Sngl., Lap, Butt) R.T. (Spot, Partial, No. of courses or Full)
8. Heads: (a) Matl. SA-105 (b) Matl. SA-105  
(Spec. No., Grade) (Spec. No., Grade)

	Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)	End	3 1/2"	---	---	---	---	---	---	43 7/8"	---
(b)	End	2 7/16"	---	---	---	---	---	---	39 1/8"	---

- If removable, bolts used (describe other fastening) ---  
(Mat'l Spec. No., Grade, size, No.)
9. MAWP 75 psi at max. temp. 650 °F.  
Min. design metal temp. -20 °F at 75 psi. Hydro., pneu., or comb. test pressure 104 psi.
10. Nozzles, inspection and safety valve openings:

Purpose (Inlet, Outlet, Drain)	No.	Diam. or Size	Flange Type	Material		Nom. Thk.	Reinforcement Matl.	How Attached	Location
				Noz. Neck	Flange				
Vapor	1	18"	150# RFWN	SA-516 Gr 70	SA-105	1/2"	---	welded	Dome
Unknown	2	12"	150# LWN	---	SA-105	1 3/16"	---	welded	Shell
Gate Valve	3	3/4"	3M# Sockolet	---	SA-105	---	---	welded	Noz Nk
Relief	1	3"	150# LWN	---	SA-105	5/8"	---	welded	Shell

11. Supports: Skirt No Lugs --- Legs --- Other Saddles Attached welded to shell  
(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: none  
(Name of part, item number, Mfr's. name and identifying stamp)
- Over-pressure protection supplied by others.
- Impact test exempt per UG-20(f)
- P.O. No. 18192 Item No. C-308-1B

CERTIFICATE OF SHOP/FIELD 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. 33,149

Expires March 20, 2008

Date 10/12/06 Co. Name Industrial Alloy Fabricators, LLC Signed Michael S. Davis  
(Manufacturer) (Representative)

CERTIFICATE OF SHOP/FIELD INSPECTION

Vessel constructed by Industrial Alloy Fabricators, LLC at 1501 Valley Rd., Richmond, VA 23222  
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 Virginia and employed by One Beacon Insurance Company, Boston, MA

have inspected the component described in this Manufacturer's Data Report on 10-12-2006, 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 10-12-06 Signed Robert W. Hays Commissions NB10803A VA951R  
(Authorized Inspector) (Natl Board (incl. endorsements), State, Prov., and No.)





**FORM U-2 MANUFACTURER'S 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**

**BUNDLE AND  
CHANNEL**

1. Manufactured and certified by OHMSTEDE LTD., LA PORTE PLANT, 12415 HIGHWAY 225, LA PORTE, TEXAS 77571  
(Name and address of Manufacturer)
- Manufactured for GIANT YORKTOWN REFINERY, 2201 GOODWIN NECK ROAD, GRAFTON VA 23692  
(Name and address of Purchaser)
3. Location of installation GIANT YORKTOWN REFINERY, 2201 GOODWIN NECK ROAD, GRAFTON VA 23692  
(Name and address)
4. Type: BUNDLE AND CHANNEL 526204 -  
(Description of vessel part (shell, two-piece head, tube bundle)) (Mfg's serial No.) (CRN)
- 1146 526204 OHMSTEDE LTD 2006  
(Mat'l. Bd. No.) (Drawing No.) (Drawing prepared by) (Year built)
5. ASME Code, Section VIII, Div. 1 2004 - -  
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): - (b) Overall length ft & in.: -

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
-	-	-	-		-	-	-	-	-	-	-	-	-	-
-	-	-	-		-	-	-	-	-	-	-	-	-	-
-	-	-	-		-	-	-	-	-	-	-	-	-	-

7. Heads: (a) - (b) -

	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.)

8. Type of jacket - Jacket closure -  
(Describe as ogee & weld, bar, etc.)
- If bar, give dimensions - If bolted, describe or sketch.
- MAWP - - psi at max. temp. - - °F Min. design metal temp. - °F at - psi.  
(internal) (external) (internal) (external)

10. Impact test - at test temperature of - °F  
(Indicate yes or no and the component(s) impact tested)

11. Hydro., ~~proof~~, ~~hydro~~ test press. - Proof test -

Items 12 and 13 to be completed for tube sections.

12. Tubesheet: SA-516-70 /SB-127 440 32 3/4 " 1 7/8 " 1/8 " BOLTED  
Stationary (Mat'l Spec. No.) Dia., in. (subject to press.) Nom. thk., in. Corr. Allow., in. Attachment (welded or bolted)
- SA-516-70 /SB-127 440 31 1/2 " 1 7/8 " 1/8 " BOLTED  
Floating (Mat'l Spec. No.) Dia., in. Nom. thk., in. Corr. Allow., in. Attachment
13. Tubes: SB-338 Gr 2 Wld 3/4 " 0.049 659 STRAIGHT  
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): 1 (b) Overall length (ft & in.): 1' 2 1/4 "

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	33" I.D.	1' 2 1/4 "	SA-240 TP316/L		.250"	0.00"	1	FULL	1	1	FULL	1	-	-
-	-	-	-		-	-	-	-	-	-	-	-	-	-
-	-	-	-		-	-	-	-	-	-	-	-	-	-

**FORM U-2 (BACK)**

15. Heads: (a) \_\_\_\_\_ (b) \_\_\_\_\_

(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
(a)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(b)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Removable, bolts used (describe other fastening) \_\_\_\_\_

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

16. MAWP 75 \_\_\_\_\_ psi at max. temp. 150 \_\_\_\_\_ °F Min. design metal temp. 20 °F at 75 psi.  
 (internal) (external) (internal) (external)

17. Impact test \_\_\_\_\_ EXEMPT PER UHA 51 \_\_\_\_\_ at test temperature of \_\_\_\_\_ °F  
 (Indicate yes or no and the component(s) impact tested)

18. Hydro. ~~pressure~~ test press. 150 \_\_\_\_\_ 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		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
Inlet / Outlet	2	8 " 150#	FFSO	SA-312 TP 316/L	SA-182 F316/L	0.322	0.00	-	WELD	WELD	-
Misc.	2	3/4 " 6M	CPLG	-	SA-182 Ty F316/L	-	0.00"	-	-	WELD	-
Misc.	2	1/2 "	CPLG	-	SA-182 F316/L	-	0.00 "	-	-	WELD	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-

20. Supports: Skirt NO \_\_\_\_\_ Lugs - \_\_\_\_\_ Legs - \_\_\_\_\_ Others - \_\_\_\_\_ Attached - \_\_\_\_\_  
 (Yes or No) (No.) (No.) (Describe) (Where and How)

21. Remarks: MDMT PER UHA 51  
 CUSTOMER ITEM NO. C-308 2A  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**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. 18,673 Expires 06/27/2007

Date 03/17/2006 Name OHMSTEDE LTD., LA PORTE PLANT Signed Rondel  
 (Manufacturer) (Representative)

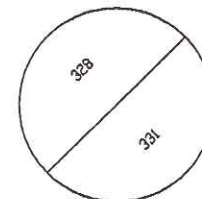
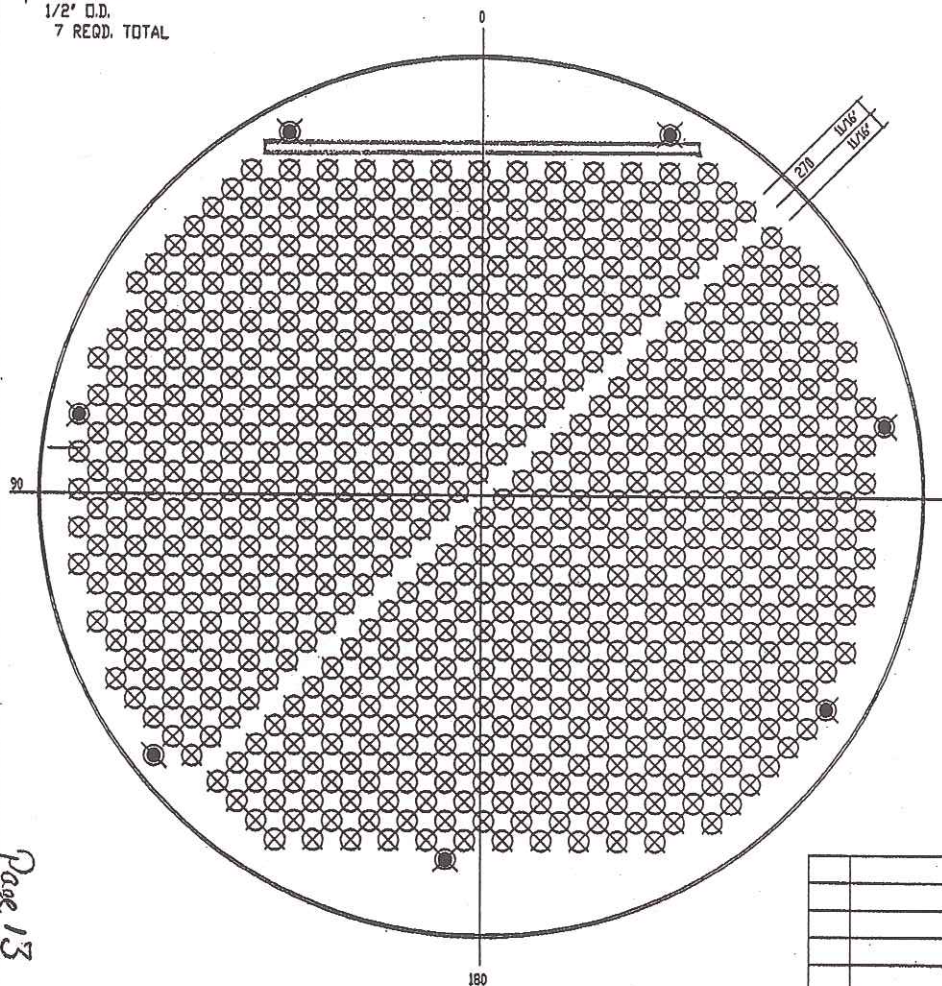
**CERTIFICATE OF SHOP/FIELD INSPECTION**

I, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and the State or Province of TEXAS and employed by HSB CT of HARTFORD, CT have inspected the pressure vessel part described in this Manufacturer's Data Report on 03/17/2006, 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 03/17/2006 Signed [Signature] Commissions N.B. 12906 A, TX 1766  
 (Authorized Inspector) (Nat'l Board incl. endorsement, State, Province and No.)



TIE RODS.  
1/2" O.D.  
7 REQD. TOTAL



TUBE DISTRIBUTION

NOTES:

- 1) DRILL AND REAM TUBE HOLES IN  
TUBESHEETS TO 0.7580"  $\pm$  0.0020" DIA.  
FOR 659 - 3/4" O.D. TUBES.
- 2) TUBE PITCH = 1" SQUARE.
- 3) NUMBER OF PASSES = 2
- 4) BAFFLE O.D. = 32 13/16"
- 5) O.T.L. = 31 1/4"

CUSTOMER: GIANT REFINERY YORKTOWN  
OHMSTEDE JOB NO: 526204  
P. O. NO. : 13416  
ITEM NO. : C-308-"  
SERVICE : FRACTIONATOR OVERHEAD CONDENSER

TUBE LAYOUT

OHMSTEDE Ltd. DRAWING NO. 526204-6

VIEW LOOKING AT SHELL SIDE OF NO. 19 TUBESHEET

0		CRF	SK	11-18- 5
NO.	REVISIONS	BY	CHK.	DATE CHK.

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				CUSTOMER: GIANT REFINERY YORKTOWN
				OHMSTEDE JOB NO.: 526204
				P. O. NO. : 13416
				ITEM NO. : C-308 .1
				SERVICE : FRACTIONATOR OVERHEAD CONDENSER
				BUNDLE DETAILS
0		CRF	SK	11-18- 5
NO.	REVISIONS	BY	CHK.	DATE CHK.
				OHMSTEDE Ltd.
				DRAWING NO. 526204-8



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RT-3



CERTIFIED BY  
INDUSTRIAL ALLOY FABRICATORS, LLC  
RICHMOND, VIRGINIA

SERIAL NO. S924

YR BUILT 2006

MAWP 75 PSIG @ 650 °F

MDMT -20 °F @ 75 PSIG

JKT MAWP PSIG @ °F

JKT MDMT °F @ PSIG

P.O. NO. 18192

EQUIP NO. C-308 1B

PROJ NO.