

805 TA 920

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

R001410 1/2

1. Manufactured and certified by PFAUDLER, INC., 1000 WEST AVENUE, ROCHESTER, NEW YORK 14611  
(Name and address of Manufacturer)

2. Manufactured for Merck & Company, Inc., P.O. Box 3500, Rahway, NJ 07065-0903  
(Name and address of Purchaser) 86335

3. Location of Installation Merck & Co., Inc., Linden Avenue Gate, Linden, NJ 07036  
(Name and address)

4. Type: Vertical Jacketed Vessel, RS96-3000 J019658 NA R981073 Sht.1 Rev.B 49284 1998  
(Horiz., vert., or sphere) (Tank separator, jkt. vessel, heat exh., etc.) (Mfg's serial No.) (CRN) (Drawing No.) (Nat'l. Bd. No.) (Year built)

5. ASME Code, Section VIII, Div. 1 Edition 1995, Addenda 1996 2043-2 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): 1 (b) Overall length (ft & in.): 6' 10-3/4"

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	102" ID	6' 10-3/4"	SA-516 Gr 70	3/4"	1/16"	2	None	65%	2	None	65%	NA	NA

7. Heads: (a) NA (b) SA-516 Gr 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) NA														
(b) Bottom	1.0"	1/16"	96"	6-1/4"	NA	NA	NA	NA	Yes	Yes	S	None	85%	

If removable, bolts used (describe other fastening) NA  
(Mat'l Spec. No., Grade, Size, No.)

8. Type of jacket FIG. 9-2, Type 5 Jacket closure FIG. 9-5, (b-2)  
(Describe as ogee & weld, bar, etc.)

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

9. MAWP Multi rated See form psi at max. temp. U-4 NA ° F Min. design metal temp. NA ° F at NA psi.  
(internal) (external)

10. Impact test No, exempt from impact testing per UG-20(f).  
(indicate yes or no and the component(s) impact tested)

11. Hydro., ~~hydro~~, or ~~other~~ test press 165 psi Proof test NA

Items 12 and 13 to be completed for tube sections.

12. Tubesheet: Items 12-13 NA  
Stationary (Mat'l Spec. No.) Dia., in. (subject to press.) Nom. thk., in. Corr. Allow., in. Attachment (welded or bolted)

NA NA NA NA NA

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): 1 (b) Overall length (ft & in.): 6' 1"

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	96" ID	6' 1"	SA-285 Gr C	1.25"	1/16"	1	None	70%	1	None	70%	27-6	27-6

15. Heads: (a) SA-285 Gr C Per 27-6 (b) SA-285 Gr C Per 27-6  
(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) Top	1.25"	0"	NA	NA	2:1	NA	NA	NA	Yes	Yes	S	None	85%
(b) Bottom	1.313"	1/16"	NA	NA	2:1	NA	NA	NA	Yes	Yes	S	None	85%

If removable, bolts used (describe other fastening) NA  
(Mat'l Spec. No., Grade, Size, No.)

**FORM U-4 MANUFACTURER'S DATA REPORT SUPPLEMENTARY SHEET**  
**As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1**

R001410 2/2

1. Manufactured and certified by PFAUDLER, INC., 1000 WEST AVENUE, ROCHESTER, NEW YORK 14611  
(Name and address of Manufacturer)

2. Manufactured for Merck & Company, Inc., P.O. Box 3500, Rahway, NJ 07065-0903  
(Name and address of Purchaser)

3. Location of Installation Merck & Company, Inc., Rahway Facility, Bldg 53, Linden Avenue Gate, Linden, NJ 07036  
(Name and address)

4. Type: Vertical Jacketed Vessel, RS96-3000 J019658  
(Horiz., vert., or sphere) (Tank separator, heat exch., etc) (Mfg's serial No.)

NA R981073 Sht.1 Rev.B 49284 1998  
(CRN) (Drawing No.) (Nat'l. Bd. No.) (Year built)

Data Report Item Number	Remarks
Item 9. Multi-Rated	MAWP: (Int.) 150/150 w/FV PSI (Ext.) 15 MDMT + 7 Deg. F at 150 PSI. (A)
	MAWP: (Int.) 150/150 w/FV PSI (Ext.) 15 MDMT 0 Deg. F at 150 PSI. (B)
	MAWP: (Int.) 150/150 w/FV PSI (Ext.) 15 MDMT - 5 Deg. F at 150 PSI. (C)
	MAWP: (Int.) 150/150 w/FV PSI (Ext.) 15 MDMT - 10 Deg. F at 150 PSI. (D)
	MAWP: (Int.) 150/150 w/FV PSI (Ext.) 15 MDMT - 15 Deg. F at 150 PSI. (E)
	MAWP: (Int.) 150/150 w/FV PSI (Ext.) 15 MDMT - 20 Deg. F at 150 PSI. (F)
	MAWP: (Int.) 90/ 90 w/FV PSI (Ext.) 15 MDMT - 25 Deg. F at 90 PSI. (G)
	MAWP: (Int.) 86/ 86 w/FV PSI (Ext.) 15 MDMT - 30 Deg. F at 86 PSI. (H)
	MAWP: (Int.) 82/ 82 w/FV PSI (Ext.) 15 MDMT - 35 Deg. F at 82 PSI. (I)
	MAWP: (Int.) 78/ 78 w/FV PSI (Ext.) 15 MDMT - 40 Deg. F at 78 PSI. (J)
	MAWP: (Int.) 75/ 75 w/FV PSI (Ext.) 15 MDMT - 45 Deg. F at 75 PSI. (K)
	MAWP: (Int.) 72/ 72 w/FV PSI (Ext.) 15 MDMT - 50 Deg. F at 72 PSI. (L)
	Jacket also rated for full vacuum.

Item 16. Multi-Rated	MAWP: (Int.) 150/FV PSI (Ext.) 165 PSI MDMT + 13 Deg. F at 150 PSI. (A)
	MAWP: (Int.) 145/FV PSI (Ext.) 165 PSI MDMT + 10 Deg. F at 145 PSI. (B)
	MAWP: (Int.) 130/FV PSI (Ext.) 165 PSI MDMT 0 Deg. F at 138 PSI. (C)
	MAWP: (Int.) 123/FV PSI (Ext.) 165 PSI MDMT - 5 Deg. F at 123 PSI. (D)
	MAWP: (Int.) 115/FV PSI (Ext.) 165 PSI MDMT - 10 Deg. F at 115 PSI. (E)
	MAWP: (Int.) 108/FV PSI (Ext.) 165 PSI MDMT - 15 Deg. F at 108 PSI. (F)
	MAWP: (Int.) 100/FV PSI (Ext.) 165 PSI MDMT - 20 Deg. F at 100 PSI. (G)
	MAWP: (Int.) 93/FV PSI (Ext.) 105 PSI MDMT - 25 Deg. F at 93 PSI. (H)
	MAWP: (Int.) 87/FV PSI (Ext.) 101 PSI MDMT - 30 Deg. F at 87 PSI. (I)
	MAWP: (Int.) 84/FV PSI (Ext.) 97 PSI MDMT - 35 Deg. F at 84 PSI. (J)
	MAWP: (Int.) 79/FV PSI (Ext.) 93 PSI MDMT - 40 Deg. F at 79 PSI. (K)
	MAWP: (Int.) 76/FV PSI (Ext.) 90 PSI MDMT - 45 Deg. F at 76 PSI. (L)
	MAWP: (Int.) 73/FV PSI (Ext.) 87 PSI MDMT - 50 Deg. F at 73 PSI. (P)

Item 19. Nozzles	Diam	Flange	Nozzle	Flange	Reinf.	How Attached					
Purpose	No	Size	Type	Mat'l	Mat'l	Nom. Thk	Corr	Mat'l	Nozzle	Flange	Location
JktConn	10	2"	LapJT	SA-216WCA	SA-105	CL-300	0"	NA	UW-16.1c	NA	NA
JktConn	3	1/2"	SCDCPLG	SA-105	NA	3000#	0"	NA	UW-16.1c	NA	NA
JktConn	1	1-1/2"	SCDCPLG	SA-105	NA	3000#	0"	NA	UW-16.1c	NA	NA
JktConn	2	2"	SCDCPLG	SA-105	NA	3000#	0"	NA	UW-16.1c	NA	Note 2

Note 2: Inspection openings in jacket shell and head per UG-45.

Certificate of Authorization: Type U No. 408 Expires December 31, 2000

Date 5/26/98 Name PFAUDLER, INC. Signed Thomas B. Marin  
(Manufacturer) (Representative)

Date 5/26/98 Name [Signature] Commission N.B.# 10496 A  
(Authorized Inspector) (Nat'l Board (incl. endorsements) State, Province and No.)

16. MAWP Multi rated See form psi at max. temp. U-4 ° F Min. design metal temp. ° F at psi.  
(internal) (external) (internal) (external)

17. Impact test No, exempt from impact testing per UG-20(f).  
(Indicate yes or no and the component(s) impact tested)

18. Hydro., ~~press.~~, or ~~comb.~~ test pressure 150 psi Proof test NA

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	
Manway/Cvr	1	24"	CLAMP	SA-836	SA-836	7/8"	0"	NA	Note 1	Integral	NA
Inlet	1	12"	LAPJT	SA-836	SA-181 Cl 60	3/4"	0"	NA	Note 1	Loose	NA
Inlet	2	10"	LAPJT	SA-836	SA-181 Cl 60	3/4"	0"	NA	Note 1	Loose	NA
Inlet	2	6"	LAPJT	SA-836	SA-181 Cl 60	23/32"	0"	NA	Note 1	Loose	NA
Inlet	8	4"	LAPJT	SA-836	SA-181 Cl 60	21/32"	0"	NA	Note 1	Loose	NA
Outlet	1	3"	LAPJT	SA-836	SA-516 Gr 70	19/32"	0"	NA	Note 1	Loose	NA
Jkt Conn	2	3"	LAPJT	SA-216 Gr WCA	SA-105	CL 300	0"	NA	UW-16.1c	NA	NA

20. Supports: Skirt No Lugs 0 Legs 8 Others NA Attached Welded to jacket head  
(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)  
NA

22. Remarks: Constructed in Conformance With Appendix 27, Alternative Requirements For Glass-Lined Vessels.  
Note 1: Category B weld to swaged opening, E = 70%. Inner vessel hydrotested in the vertical position.  
Pressure relief per UG-125 to be provided and installed by customer.  
See Form U-4. Cust. PO: PM877043. Pfaudler S/N: J019658.

**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. 408 Expires December 31, 2000  
 Date 5/26/98 Name PFAUDLER, INC. Signed Thomas B. Main  
(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 the State or Province of NY and employed by Hartford Steam Boiler Inspection and Insurance Company of Hartford, Connecticut have inspected the pressure vessel described in this Manufacturer's Data Report on May 26 98 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 5/26/98 Signed Benjamin S. [Signature] Commissions N.B.# 10496 A  
(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 \_\_\_\_\_  
 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 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.)

Remaining Life--Jacket

**Pressure Vessel Inspection Report**

National Board Inspection Code Requirement

Section RB-3235

Merck Designation  
805TA920

I-Number  
69756

Equip No.  
86335

**Remaining Life and Inspection Interval Calculations**

**Remaining Life Calculation - Jacket**

$$\text{Remaining Life (years)} = \frac{\text{Actual Thickness} - \text{Required Thickness}}{\text{Corrosion Rate}}$$

$$\text{Corrosion Rate} = \frac{\text{Original thickness} - \text{Actual thickness}}{\text{Years in Service}}$$

$$\text{Corrosion Rate} = \frac{0.750 - 0.719}{4}$$

$$\text{Remaining Life (years)} = \frac{0.719 - 0.5521}{0.007750}$$

**Remaining Life (years) = 21.536**

**Summary and Conclusion**

As indicated by the remaining life of this vessel, the inspection cycle will remain at the three years until the next inspection for a better evaluation of the corrosion rate. The inspection frequency will be re-evaluated as permitted by the National Board Inspection Code and the Administrative Code 12:90 of the State of New Jersey following the next inspection.

Signed



Lyle Phelps,  
Chief Mechanical Inspector

National Board Commission  
N. J. Certification of Competency

OU798  
# 1030

Date

28 Jun 2004



Jacket Thickness Calc's

**Calculations for Pressure Vessel--  
Shell Calculations**

Location	I No	Equip No
805TA920	69756	86335

**UG-27(c)(1)(2), UW11(a)(b)(c), UW-12, Table UW-12**

UG-27(c) The minimum thickness or maximum allowable working pressure of cylindrical shells shall be the greater thickness or lesser pressure as given below based on inside radius:

Circumferential Stress - (Longitudinal Seam)      Category A, Type 2, Table UW-12

$t = \frac{PR}{SE - 0.6P}$	R = 51 S = 20000 E = 0.65 P = 150	or	$P = \frac{SEt}{R + 0.6t}$	R = 51 S = 20000 E = 0.65 t = 0.719
<b>t = 0.593</b>			<b>P = 182</b>	

Longitudinal Stress - (Circumferential Seam)      Category B, Type 1, Table UW-12

$t = \frac{PR}{2SE + 0.4P}$	R = 51 S = 20000 E = 0.65 P = 150	or	$P = \frac{SEt}{R - 0.4t}$	R = 51 S = 20000 E = 0.65 t = 0.719
<b>t = 0.294</b>			<b>P = 184</b>	

**Minimum Required Thickness = 0.5926**

**Allowable Working Pressure = 182**

**Calculations for Pressure Vessel--  
Torispherical Head Calculations**

Location            I No            Equip No  
805TA810           71275           205540

Code ASME-1995 ED. Section VIII Div. I, Section II Part D

Original Thickness (includes CA)	inches		1.0000	(Data Report)
Corrosion Allowance (CA)	inches		0.0625	(Data Report)
Actual Thickness (PDM Results)	inches	t	1.006	<b>SATISFACTORY</b>
Allowable Working Pressure	psi	P	356	(Based on Actual Thickness)
Internal Design Pressure	psi	P	150	(MAWP ~ Data Report)
Minimum Required Thickness	inches	t	0.7387	(Based on Internal Design Pressure)
Stress Value - Mat'l of Construction	psi	S	20,000	Carbon Steel - SA-516 Gr70
Radiography - Head Seam(s)		E	0.85	Joint Efficiency (Data Report)
Inside Crown Radius	inches	L	96	(Data Report )
Outside Crown Radius	inches	L <sub>o</sub>	98	(Data Report)
Corresponding factor ~ L/r ratio		M	1.72	(Table 1-4.2 ~ Appx 1)
Knuckle radius	inches	r	6.250	(Data Report)
Stress Relieve				(Data Report)

**Appendix 1, 1-4 (d), UW11(b), UW-12(b), Table UW-12**

The following formulas, based on inside diameter, may be used instead of those given in UG-32 (see Note 20 UG-32)

Category A, Type 1, Table UW-12

$t = \frac{PLM}{2SE - .2P}$	D = 96.000	P = $\frac{2SEt}{LM + 0.2t}$	D = 98.000
	S = 20000		S = 20000
	E = 0.85		E = 0.85
	P = 150		t = 1.006
	K = 1		K = 1

t = 0.7291	P = 103
------------	---------

or or

$t = \frac{PL_oM}{2SE + P(M - .2)}$	D <sub>o</sub> = 98	P = $\frac{2SEt}{ML_o - t(M - .2)}$
	S = 20000	
	E = 0.85	
	P = 150	
	K = 1.72	

t = 0.7387	P = 205
------------	---------

**Minimum Required Thickness (after forming) = 0.7387**

**Maximum Allowable Working Pressure = 103**

**UG-32(a)(d), UW11(a)(b)(c), UW-12, Table UW-12**

UG-32(a) The required thickness at the thinnest point after forming shall be computed by the appropriate formulas. (Note 20)

Category A, Type 2, Table UW-12

$$t = \frac{PD}{2SE - 0.2P} \quad \begin{array}{l} D = 96 \\ S = 20000 \\ E = 0.85 \\ P = 150 \end{array} \quad \text{or} \quad P = \frac{2SEt}{D + 0.2t} \quad \begin{array}{l} R = 96 \\ S = 20000 \\ E = 0.85 \\ t = 1.006 \end{array}$$

$$t = 0.4239$$

$$P = 356 \quad \text{psi}$$

**Minimum Required Thickness = 0.4239 inches**

**Maximum Allowable Working Pressure = 356 psi**

**Calculations for Pressure Vessel--**  
**Elliptical Head Calculations**

Location I No Equip No  
**805TA920 69756 86335**

**Code ASME-1998 ED. Section VIII Div. I, Section II Part D**

Original Thickness (includes CA)	<b>inches</b>		<b>1.2500</b>	(Data Report)
Corrosion Allowance (CA)	<b>inches</b>		<b>0.0000</b>	(Data Report)
Actual Thickness (PDM Results)	<b>inches</b>	t	<b>1.490</b>	<b>Satisfactory</b>
Allowable Working Pressure	<b>psi</b>	P	<b>408</b>	(Based on Actual Thickness)
Internal Design Pressure	<b>psi</b>	P	<b>150</b>	(MAWP - Data Report)
Minimum Required Thickness	<b>inches</b>	t	<b>0.5480</b>	(Based on Internal Design Pressure)
Stress Value - Mat'l of Construction	<b>psi</b>	S	<b>15,700</b>	Carbon Steel ~ SA285 Gr.C
Radiography - Head Seam(s)		E	<b>0.85</b>	Joint Efficiency (Data Report)
Inside Diameter	<b>inches</b>	D	<b>96</b>	(Data Report)
Outside Diameter	<b>inches</b>	D <sub>o</sub>	<b>98.5</b>	(Data Report)
Corresponding factor ~ D/2h ratio		K	<b>1</b>	(Table 1-4.1 ~ Appx 1 )
Stress Relieve				(Data Report)

**Appendix 1, 1-4 (c), UW11(b), UW-12(b), Table UW-12**

The following formulas, based on inside diameter, may be used instead of those given in UG-32 (see Note 20 UG-32)

Category A, Type 1, Table UW-12

$t = \frac{PDK}{2SE - .2P}$	D = 96.000	$P = \frac{2SEt}{KD + 0.2t}$	D = 98.500
	S = 15700		S = 15700
	E = 0.85		E = 0.85
	P = 150		t = 1.49
	K = 1		K = 1

**t = 0.54014**

**P = 413**

or

or

$t = \frac{PD_oK}{2SE + 2P(K - .1)}$	D <sub>o</sub> = 98.5
	S = 15700
	E = 0.85
	P = 150
	K = 1

$P = \frac{2SEt}{Kdo - 2t(K - .1)}$
-------------------------------------

**t = 0.5480**

**P = 408**

**Minimum Required Thickness (after forming) = 0.5480**

**Maximum Allowable Working Pressure = 408**

**UG-32(a)(d), UW11(a)(b)(c), UW-12, Table UW-12**

UG-32(a) The required thickness at the thinnest point after forming shall be computed by the appropriate formulas. (Note 20)

Category A, Type 2, Table UW-12

$$t = \frac{PD}{2SE - 0.2P} \quad \begin{array}{l} D = 96 \\ S = 15700 \\ E = 0.85 \\ P = 150 \end{array} \quad \text{or} \quad P = \frac{SEt}{D + 0.2t} \quad \begin{array}{l} R = 96 \\ S = 15700 \\ E = 0.85 \\ t = 1.49 \end{array}$$

**t = 0.5401**

**P = 206 psi**

**Minimum Required Thickness = 0.5401 inches**

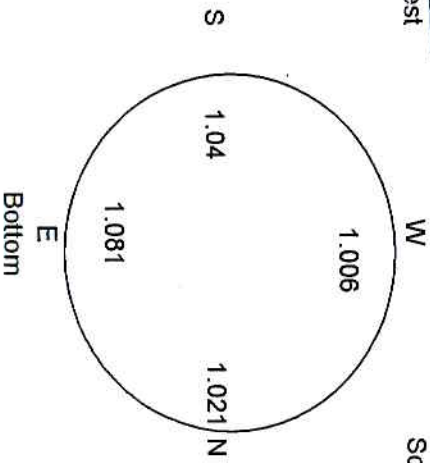
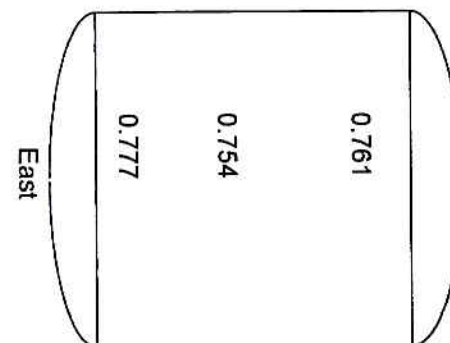
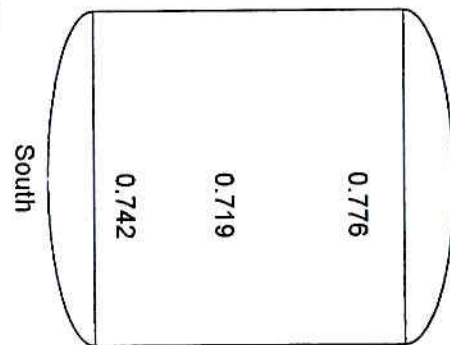
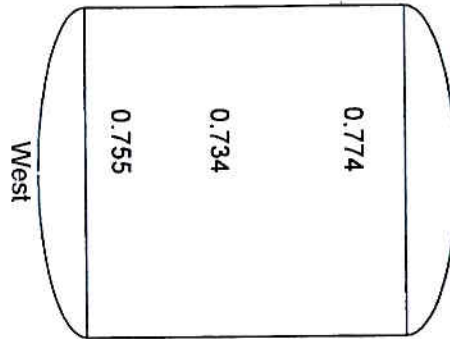
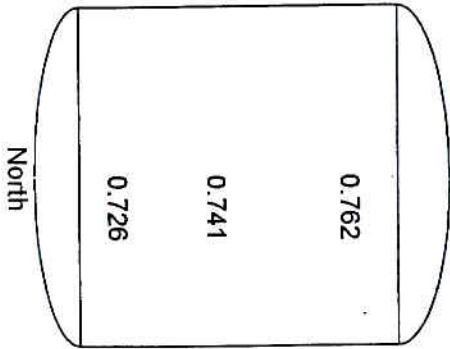
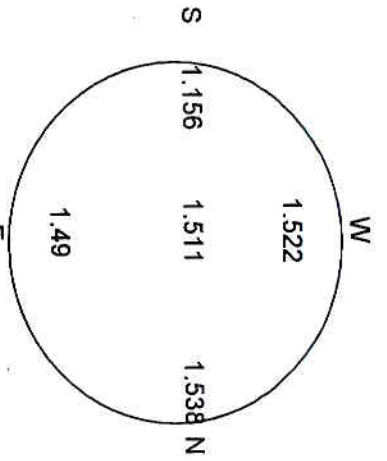
**Allowable Working Pressure = 206 psi**



MMD/M&I  
Rahway Predictive Maintenance

Date- 06/04/02  
Ultrasonic Thickness Test  
Work Order # 334895  
# 69756 / MAXEQNUM - 86335  
Building# -805  
/No Glass  
Shell  
Nominal Wall Thickness -

Vessel# -TA 920  
Outside Measurement



Inspectors- *K. L. ...*

Approved by- *[Signature]*