

#103349

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## FORM U-1 MANUFACTURERS' DATA REPORT FOR PRESSURE VESSELS

as required by the provisions of the ASME Code rules, Section VIII, Division 1

1. Manufactured and certified by OHMSTEDE, INC. - LAPORTE PLANT 12415 LAPORTE RD. LAPORTE, TX 77571  
(name and address of manufacturer)
2. Manufactured for KELLOGG / TENNECO OIL CO., INC. - P.O. BOX 1307 LAPORTE, TX 77571  
(name and address of purchaser)
3. Location of installation TENNECO OIL CO., INC. 1200 N. BROADWAY LAPORTE, TX 77571  
(name and address)
4. Type: HORIZ. HT. EXCH. 28389 N/A 28389 153 1991  
(horiz. or vert. tank) (mfr's serial no.) (CRN) (drawing no.) (Nat'l 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 Code, Section VIII, Division 1: 1989  
(year)
- 1989 A N/A N/A  
(addenda (Date)) (Code Case no.) (special service per UG-120(d))

Items 6-11 inclusive to be completed for single wall vessels, jackets of jacketed vessels, or shells of heat exchangers.

6. Shell: SA516-70 1/2" 1/8" 2' - 8" 24' - 11 13/16"  
(mat'l (spec no. grade)) (nom. thickness (in.)) (corr. allow. (in.)) (dia. ID (ft. & in.)) (length (overall) (ft. & in.))
7. Seams: DBL-BUTT SPOT 85% N/A N/A DBL-BUTT SPOT 3  
(long (dbl. singl.)) (RT (spot or full)) (eff. (%)) (HT temp. (°F)) (time) (grth (dbl. singl.)) (RT (spot, partial, or full)) (no. of courses)
8. Heads: (a) SA-516-70 (ELLIPTICAL HEAD) (b) N/A  
(mat'l (spec no. grade)) (mat'l (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                          | 1/2"              | 1/8"                |              |                | 2:1              |                    |                      |               | CONCAVE                              |
| (b) |                              |                   |                     |              |                |                  |                    |                      |               |                                      |

If removable, bolts used (describe other fastenings): N/A  
(mat'l spec no., gr., size, no.)

9. Type of jacket: N/A Proof test: \_\_\_\_\_
10. Jacket closure: N/A If bar, give dimensions: \_\_\_\_\_ If bolted, describe or sketch: \_\_\_\_\_  
(describe as ogee & weld bar, etc.)
11. MAWP: 103 at max. temp. 650° Min design metal temp.: 10° at 103 Hydro. XXXXXXX test pressure 155  
(psi) (°F) (°F) (psi)

Items 12 and 13 to be completed for tube sections.

12. Tubesheets: SA350-LF2 31 7/8" 2" 1/8" BOLTED  
(stationary mat'l (spec no. gr.)) (dia. (in.) (subject to pressure)) (nom. thickness (in.)) (corr. allow. (in.)) (attachment (welded, bolted))
- N/A  
(floating mat'l (spec no. gr.)) (dia. (in.)) (nom. thickness (in.)) (corr. allow. (in.)) (attachment)
13. Tubes: SA214 3/4" .083" (MW) 330 U  
(mat'l (spec no. gr.)) (OD (in.)) (nom. thickness (in. or gauge)) (no.) (type (straight or U))

Items 14-17 inclusive to be completed for inner chambers of jacketed vessels or channels of heat exchangers.

14. Shell: SA516-70 1/2" 1/8" 2' - 8" 1' - 7 7/16"  
(mat'l (spec no. gr.)) (nom. thickness (in.)) (corr. allow. (in.)) (dia. ID (ft. & in.)) (length (overall) (ft. & in.))
15. Seams: DBL-BUTT SPOT 85% N/A N/A DBL-BUTT SPOT 1  
(long (dbl. singl.)) (RT (spot or full)) (eff. (%)) (HT temp. (°F)) (time) (grth (dbl. singl.)) (RT (spot, partial, or full)) (no. of courses)
16. Heads: (a) ELLIPTICAL HEAD: SA516-70 (b) N/A  
(mat'l (spec no. grade)) (mat'l (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                          | 1/2"              | 1/8"                |              |                | 2:1              |                    |                      |               | CONCAVE                              |
| (b) |                              |                   |                     |              |                |                  |                    |                      |               |                                      |

If removable, bolts used (describe other fastenings): (32) 3/4" SA193-B7 STUDS WITH (2) SA194 2H NUTS EACH.  
(mat'l spec no., gr., size, no.)

17. MAWP: 103 at max. temp. 650° Min design metal temp.: 10° at 103 Hydro. XXXXXXX test pressure 155  
(psi) (°F) (°F) (psi)



# FORM U-1 (back)

18. Nozzles, inspection and safety valve openings: PER UG 125 NOTE 39

| Purpose (inlet, outlet, drain, etc.) | Number | Dia. or Size | Type  | Mat'l     | Nom Thickness | Reinforcement Material | How Attached | Location |
|--------------------------------------|--------|--------------|-------|-----------|---------------|------------------------|--------------|----------|
| INLET                                | 1      | 2" 150LB     | RFLWN | SA350-LF2 | 1.125"        | INTEGRAL               | WELDED       | SHELL    |
| INLET                                | 1      | 2" 150LB     | RFLWN | SA350-LF2 | 1.125"        | INTEGRAL               | WELDED       | SHELL    |
| OUTLET                               | 1      | 8" 150LB     | RFLWN | SA350-LF2 | 1.375"        | INTEGRAL               | WELDED       | SHELL    |
| OUTLET                               | 1      | 8" 150LB     | RFLWN | SA350-LF2 | 1.375"        | INTEGRAL               | WELDED       | CHANNEL  |
| OUTLET                               | 1      | 3" 150LB     | RFLWN | SA106B    | .438"         | INTEGRAL               | WELDED       | CHANNEL  |
| INLET                                | 1      | 8" 150LB     | RFLWN | SA106B    | .500"         | INTEGRAL               | WELDED       | CHANNEL  |
| VENT, DRAIN                          | 1 EA.  | 3/4" 6000LB  | CPLG  | SA105     | ---           | INTEGRAL               | WELDED       | CHANNEL  |

19. Supports: Skirt NO Lugs 2 Legs NO Other (2) HORIZ. SUPPORTS Attached WELDED TO SHELL  
(yes or no) (no) (no) (describe) (where and how)

20. Remarks: Manufacturers' Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report: MINIMUM DESIGN METAL TEMPERATURE PER UG-20.  
(name of part item number, mfr's name and identifying stamp)

ROLLED AND WELDED CYLINDERS MANUFACTURED BY OHMSTEDE, INC. - LAKE CHARLES PLANT  
UNDER AUTHORIZATION NUMBER 17397 AND SERIAL NUMBERS 28389-1 AND 28389-2.

CUSTOMER ITEM NUMBER 06E-111.

## 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. 18673 expires JUNE 27, 1992

Date 9-11-91 Name OHMSTEDE, INC. - LAPORTE PLANT  
(manufacturer)

Signed [Signature]  
(representative)

## CERTIFICATE OF SHOP INSPECTION

Vessel constructed by OHMSTEDE, INC. at LAPORTE, TX

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 H.S.B.I. & I. CO.

of HARTFORD, CT have inspected the pressure vessel described in this Manufacturers' Data Report on 9-11-91 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 the Manufacturers' 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 9-11-91 Signed [Signature] Commissions N13 9263  
(Authorized Inspector) (Natl Bd (incl endorsements) state prov and ext)

## CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the field assembly construction of all parts of this vessel conforms with the requirements of Section VIII, Division 1 of the ASME BOILER AND PRESSURE VESSEL CODE.

"U" Certificate of Authorization no. \_\_\_\_\_ expires \_\_\_\_\_, 19\_\_\_\_

Date \_\_\_\_\_ Name \_\_\_\_\_  
(assembler that certified and constructed field assembly)

Signed \_\_\_\_\_  
(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 Manufacturers' 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 that 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 the Manufacturers' 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) (Natl Bd (incl endorsements) state prov and ext)



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**FORM U-2A MANUFACTURERS' PARTIAL DATA REPORT (ALTERNATIVE FORM)**  
**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. Manufactured and certified by Ohmstede, Inc., Lake Charles Plant, Sulphur, LA 70669  
(name and address of manufacturer)
2. Manufactured for Ohmstede, Inc., LaPorte Plant, 12415 LaPorte Rd., LaPorte, TX 77572  
(name and address of purchaser)
3. Location of installation Unknown  
(name and address)
4. Type: Unknown 28389-1 --- 28389-SH R-O --- 1991  
(horiz. or vert. tank) (mfr's. serial no. of part) (CRN) (drawing no.) (Nat'l. 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 construction, and workmanship conform to ASME Code, Section VIII, Division 1: 1989  
(year)
- A 90  
(addenda (date)) (Code Case no.) (special service per UG-120(d))
6. (a) Drawing prepared by Ohmstede, Inc. (b) Description of part inspected Cylinder
7. Postweld heat treatment: temperature --- °F. Time ---
8. Shell: SA516-70 1/2" Unknown 2' - 8" 24 1/11 13/16" 3  
(mat'l. spec. no., grade) (nom. thickness (in.)) (corr. allow. (in.)) (dia. ID (ft. & in.)) (length (overall) (ft. & in.)) (no. of courses)
9. Seams: Dbl Butt spot 85 Dbl Butt spot  
(long.) (RT) (eff. (%)) (girth) (RT)
10. Heads: (a) --- (mat'l. spec. no., grade) (b) --- (mat'l. 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) |                              |                   |                     |              |                |                  |                    |                      |               |                                      |
| (b) |                              |                   |                     |              |                |                  |                    |                      |               |                                      |

If removable, bolts used (describe other fastenings):

(mat'l. spec. no., gr., size, no.)

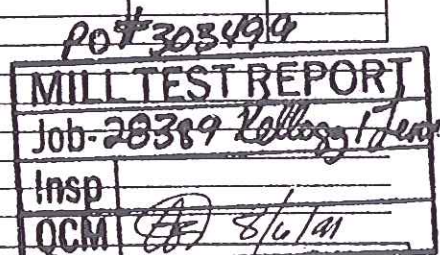
11. MAWP --- at max. temp. --- Min. design metal temp.: --- at --- Test press.: --- in the ---  
(psa) (°F) (°F) (psa) (hydro, pneu., or comb Xpsa) (position)

12. Nozzles and inspection openings:

| Purpose (inlet, outlet, drain, etc.) | Number | Dia. or Size | Type | Material | Nominal Thickness | Reinforcement Material | How Attached | Location |
|--------------------------------------|--------|--------------|------|----------|-------------------|------------------------|--------------|----------|
|                                      |        |              |      |          |                   |                        |              |          |
|                                      |        |              |      |          |                   |                        |              |          |

13. Supports: Skirt --- Lugs --- Legs --- Other --- Attached ---

14. Remarks: Design data by others  
Item #10 through #13 are non-applicable  
Formed in accordance with UCS 79(d)



**CERTIFICATE OF SHOP COMPLIANCE**

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

"U" Certificate of Authorization no. 17,397 expires June 4, 1994  
Date 8-5-91 Name Ohmstede, Inc. (manufacturer) Signed [Signature] (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 Louisiana and employed by H.S.B.I. & I. CO. of Hartford, CT have inspected the pressure vessel part described in this Manufacturers' Data Report on 8-2, 1991 and state that to the best of my knowledge and belief, the manufacturer has constructed this part of a pressure vessel in accordance with the 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 the Manufacturers' Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected with this inspection.

Date 8-5, 1991 Signed [Signature] (Authorized Inspector) Commissions LA 1148 (Nat'l. Bd. (incl. endorsements) state, prov. and no.)



**FORM U-2A MANUFACTURERS' PARTIAL DATA REPORT (ALTERNATIVE FORM)**  
**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

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1. Manufactured and certified by Ohmstede, Inc., Lake Charles Plant, Sulphur, LA 70669  
(name and address of manufacturer)
2. Manufactured for Ohmstede, Inc., LaPorte Plant, 12415 LaPorte Rd., LaPorte, TX 77572  
(name and address of purchaser)
3. Location of installation Unknown  
(name and address)
4. Type: Unknown 28389-2 --- 28389 R-O --- 1991  
(horiz. or vert., tank) (mfr's. serial no. of part) (CRM) (drawing no.) (Nat'l. 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 construction, and workmanship conform to ASME Code, Section VIII, Division 1: 1989  
A 90  
(addenda (date)) (Code Case no.) (special service per UG-120(d))
6. (a) Drawing prepared by Ohmstede, Inc. (b) Description of part inspected Cylinder
7. Postweld heat treatment: temperature --- °F. Time ---
8. Shell: SA516-70 1/2" Unknown 2' - 8" 1' - 7 7/16" 1  
(mat'l. spec. no., grade) (nom. thickness (in.)) (corr. allow. (in.)) (dia. ID (ft. & in.)) (length (overall) (ft. & in.)) (no. of courses)
9. Seams: Dbl Butt spot 85  
(long.) (RT) (eff. (%)) (girth) (RT)

10. Heads: (a) --- (b) ---  
(mat'l. spec. no., grade) (mat'l. 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) |                              |                   |                     |              |                |                  |                    |                      |               |                                      |
| (b) |                              |                   |                     |              |                |                  |                    |                      |               |                                      |

If removable, bolts used (describe other fastenings): ---  
(mat'l. spec. no., gr., size, no.)

11. MAWP --- at max. temp. --- Min. design metal temp.: --- at --- Test press.: --- In the ---  
(psi) (°F) (°F) (psi) (hydro, pneu., or comb. (psi)) (position)

12. Nozzles and inspection openings:

| Purpose (inlet, outlet, drain, etc.) | Number | Dia. or Size | Type | Material | Nominal Thickness | Reinforcement Material | How Attached | Location |
|--------------------------------------|--------|--------------|------|----------|-------------------|------------------------|--------------|----------|
|                                      |        |              |      |          |                   |                        |              |          |
|                                      |        |              |      |          |                   |                        |              |          |

13. Supports: Skirt --- Lugs --- Legs --- Other --- Attached ---

14. Remarks: Design data by others  
Item #10 through #13 are non-applicable  
Formed in accordance with UCS 79(d)

**CERTIFICATE OF SHOP COMPLIANCE**

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

"U" Certificate of Authorization no. 17,397 expires June 4, 1994  
 Date 8-5-91 Name Ohmstede, Inc. (manufacturer) Signed [Signature] (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 Louisiana and employed by H.S.B.I. & I. CO.

of Hartford, CT have inspected the pressure vessel part described in this Manufacturers' Data Report on 8-5, 1991

and state that to the best of my knowledge and belief, the manufacturer has constructed this part of a pressure vessel in accordance with the 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 the Manufacturers' Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected with this inspection.

Date 8-5, 1991 Signed [Signature] (Authorized Inspector) Commissions LA 1148 (Nat'l. Bd. (incl. endorsements) state, prov. and no.)