# FORM U-1A MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS

CORRECTED COPY
09/04/2013

**(Alternative Form for Single Chamber, Completely Shop or Field Fabricated Vessels Only)**
**As Required by the Provisions of the ASME Boiler and Pressure Vessel Code Rules, Section VIII, Division 1**

1. Manufactured and certified by R & R Engineering Co., Inc., 12585 East 61st Street, Broken Arrow, OK 74012 (Name and address of Manufacturer)

2. Manufactured for ANADARKO E&P ONSHORE LLC THE WOODLANDS, TX 77387-4995 (Name and address of Purchaser)

3. Location of installation Unknown (Name and address)

4. Type VERT. (Horizontal or vertical, tank) | T-487.1 (Manufacturer's serial number) | N/A (CRN) | T-487 (Drawing number) | 3716 (National Board Number) | 2013 (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, Div. 1 2010 (Year)

to 2011A (Addenda (date)) | None (Code Case numbers) | None (Special service per UG-120(d))

6. Shell N/A (Material spec. number, grade) | N/A (Nominal thickness) | N/A (Corr. allow.) | N/A (Inner diameter) | N/A (Length (overall))

7. Seams Corner Joint (Long. (welded, dbl., sngl., lap, butt)) | N/A (R.T. (spot or full)) | 100 (Eff., %) | N/A (H.T. temp. (°F)) | N/A (Time, hr) | N/A (Girth (welded, dbl., sngl., lap, butt)) | N/A (R.T.(spot or full)) | -- (Eff., %) | -- (No. of courses)

8. Heads: (a) Material SA516-70 (Spec. no., grade) (b) Material SA516-70 (Spec. no., grade)

| | Location (Top, Bottom, Ends) | Minimum Thickness | Corrosion Allowance | Crown Radius | Knuckle Radius | Elliptical Ratio | Conical Apex Angle | Hemi-spherical Radius | Flat Diameter | Side to Pressure (Convex or Concave) |
|---|---|---|---|---|---|---|---|---|---|---|
| (a) | T & P Sheet | 3/4" | 1/8" | Max | Span | 5 3/8" | -- | -- | 6 5/8" | 53 7/8" |
| (b) | Wrap & Ends | 5/8" | 1/8" | Max | Span | 2 7/8" | -- | -- | 3 1/8" | 59 1/4" |

If removable, bolts used (describe other fastenings) 276 PCS 3/4"X16 SHOULDER STEEL PLUGS SA105 (Material spec. number, grade, size, number)

9. MAWP 400 (Internal) N/A (External) psi at max temp. 300 (Internal) N/A (External) °F.
Min. design metal temp. -20 °F at 400 psi. Hydro., pneu., or comb. test pressure 520 psi.
Proof Test N/A .

10. Nozzles, inspection, and safety valve openings:

| Purpose (Inlet, Outlet, Drain) | No. | Diameter or Size | Type | Material | | Nozzle Thickness | | Reinforcement Material | Attachment Details | | Location (Insp. Open.) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Nozzle | Flange | Nom. | Corr. | | Nozzle | Flange | |
| Inlet | 1 | 3" 300 | RFWN | SA106-B | SA105 | Sch-160 | 1/8" | Weld | UW-16.1(a) | Welded | Head |
| Outlet | 1 | 3" 300 | RFWN | SA106-B | SA105 | Sch-160 | 1/8" | Weld | UW-16.1(a) | Welded | Head |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

11. Supports: Skirt NO (Yes or no) Lugs N/A (Number) Legs N/A (Number) Other Channels (Describe) Attached Welded to 1 Header (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: (Name of part, item number, Manufacturer's name and identifying stamp)

138 Pcs 5/8"X16 Ga SA214 Steel Tubes 6'0" Long

Exempt from Impact Testing Per UG-20(f) and UCS-66. Constructed in conformance with Appendix 28

## 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 BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. "U" Certificate of Authorization Number 10139 expires FEB. 28 , 2015 .

Date 09/04/2013 Co. Name R & R ENGINEERING CO., INC. (Manufacturer) Signed (Representative)

## CERTIFICATE OF SHOP/FIELD INSPECTION

Vessel constructed by R & R ENGINEERING CO., INC. at Broken Arrow, Oklahoma

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 Oklahoma and employed by HSB CT

have inspected the component described in this Manufacturer's Data Report on 7/19/13 , 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 10/8/13 Signed (Authorized Inspector) Commissions VB1473488 / OK1196 (National Board (incl. endorsements), State, Province, and number)