BULL MOOSE TUBE COMPANY
Box 214 • Gerald, Missouri 63037 • (314) 764-3315
443 N. New Ballas Road • St. Louis, Missouri 63141 • (3[illegible]2-8013

SMITHCO ENGINEERING INC.
QUALITY CONTROL
81825/2
APPROVED BY [signature]
DATE 2/19/82

MATERIAL CERTIFICATION

DATE Feb 16, 1982

Customer Name: Smith Co P. O. No. wrong PO I7648 J7047 Job # 813 2512

Size 1" Gauge .065 min. wall Length 26' M. O. No. 012022A

Bill of Lading No. 53930 Pcs. 610 Footage 15,860

Specification:

ASTM A-214 and/or ASME SA-214 ERW CONDENSER TUBES TO A-450

Chemical Analysis:

Heat No. 25416	C. .10	Mn. .42	P. .010	S. .003	Al. .069	Rockwell (RB)	48-53
Heat No. 25420	C. .08	Mn. .44	P. .015	S. .004	Al. .049	Rockwell (RB)	48-56
Heat No.	C.	Mn.	P.	S.	Al.	Rockwell (RB)	
Heat No.	C.	Mn.	P.	S.	Al.	Rockwell (RB)	
Heat No.	C.	Mn.	P.	S.	Al.	Rockwell (RB)	
Heat No.	C.	Mn.	P.	S.	Al.	Rockwell (RB)	

Test Results:

Yield	Tensile	%Elong.	Hydro Test	Non-Dest. Elec. Test	Flange
				x	x

Flatten	Reverse Flatten	Full Periphery
x	x	x

Dave Lichtfuss QF
Authorized Signature

Bull Moose Tube Company
Subsidiary of
National Steel Corporation

CUSTOMER

BULL MOOSE TUBE COMPANY

Box 214 • Gerald, Missouri 63037 • (314) 764-3315
443 N. New Ballas Road • St. Louis, Missouri 63141 • (314) 997-8013

SMITHCO ENGINEERING INC.
QUALITY CONTROL
81825 11
APPROVED BY Gayle
DATE 2/19/82

MATERIAL CERTIFICATION

DATE Feb 16, 1982

Customer Name: Smith Co P. O. No. J7047 Job # 81825 11

Size 1" Gauge .065 min. wall Length 25' M. O. No. 012021A

Bill of Lading No. 53930 Pcs. 530 Footage 13,780

Specification:

ASTM A-214 and/or ASME SA-214 ERW CONDENSER TUBES TO A-450

Chemical Analysis:

Heat No. 25416	C. .10	Mn. .42	P. .010	S. .003	Al. .069	Rockwell (RB)	48-52
Heat No.	C.	Mn.	P.	S.	Al.	Rockwell (RB)	
Heat No.	C.	Mn.	P.	S.	Al.	Rockwell (RB)	
Heat No.	C.	Mn.	P.	S.	Al.	Rockwell (RB)	
Heat No.	C.	Mn.	P.	S.	Al.	Rockwell (RB)	
Heat No.	C.	Mn.	P.	S.	Al.	Rockwell (RB)	

Test Results:

Yield	Tensile	%Elong.	Hydro Test	Non-Dest. Elec. Test	Flange
				x	x

Flatten	Reverse Flatten	Full Periphery
x	x	x

Dave Lichtfuss QE
Authorized Signature

Bull Moose Tube Company
Subsidiary of
National Steel Corporation

CUSTOMER

As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

1. Manufactured by Smithco Engineering, Inc. 640 W. 41st Street, Tulsa, Okla.
(Name and address of manufacturer)

2. Manufacturer for THE ORTLOFF CORPORATION MIDLAND, TX.
(Name and address of purchaser)

3. Location of installation MARATHON CENTERVILLE, LA.
(Name and address)

4. Type Horiz.(Non Cir.) (Horiz., or vert. tank) Vessel No. 81B2512 B (Mfgr's Serial No.) --- (CRN) --- (Drawing) --- (Nat'l Brd No.) Year Built 1982

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 1980 (Year) and Addenda to Winter 81' (Date) and Code Case no. _____ Special service per UG-120(d) _____

Manufacturers' 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, mfgr's name and identifying stamp)

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

6. Side Material SA516-70 (Spec. No., Grade) Nom. Thk. Ft.-.375 Bk.-.375 C.A. .0625 .0625 in. Diam. 4.4375 3.0000 in. Length 71.50 71.50 in.

7. Seams: Longitudinal Corner Joint (Welded, Dbl., Sngl., Lap, Butt) R.T. ---- (Spot or Full) Efficiency --- % H.T. Temp NONE F

Time -- Girth ---------- (Welded Dbl., Dngl., Lap, Butt) R.T. --- (Spot, Partial or Full) No. of Courses --

8. End Plates: (a) Material SA 516 - 70 (Spec. No., Grade) (b) Material SA 516 - 70 (Spec. No., Grade)

	Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio
(a)	Front Header	.375	.0625	N/A		
(b)	Back Header	.375	.0625	N/A		

	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)			4.4375 x 7.4375	Flat
(b)			3.0000 x 7.4375	Flat

If removable, bolts used (describe other fastenings) _____
(Material, Spec. No., Gr., Size, No.)

9. Type of Jacket None Proof Test _____

10. Jacket Closure None (Describe as ogee & weld, bar, etc.) If bar, give dimensions _____ If bolted, describe or sketch.

11. Constructed for max. allowable working pressure 150 psi at max. temp. 300 F Min. temp. (when less than -20 F) _____ F.
Hydrostatic, ~~pneumatic, combination~~ test pressure 225 psi

Items 12 and 13 to be completed for tube sections

12. Tubesheets: Stationary—Material SA 516 - 70 (Spec. No. Gr.) Diam. 7.750 (Subject to pressure) in. Nominal Thickness .875 in. Corrosion Allowance .0625 in. Attachment Welded Plug Sheet (Welded, Bolted) -Material SA 516 - 70 (Spec. No., Grade) Diam. 7.750 in.
Nominal Thickness .750 in. Corrosion Allowance .0625 in. Attachment Welded

13. Tubes: Material SA - 214 (Spec. No., Gr.) O.D. 1.0 in. Nominal Thickness .065 in. or gauge Number 122 Type Straight (Straight or "U")

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

14. Shell: Material _____ (Spec. No., Gr.) Nominal Thickness ____ in. Corrosion Allowance ____ in. Diam. ____ ft ____ in. Length ____ ft ____ in.

15. Seams: Longitudinal _____ (Welded, Dbl., Sngl. Lap. Butt) R.T. _____ (Spot or Full) Efficiency _____ % H.T. Temp _____ F Time _____
Girth _____ (Welded, Dbl., Sngl., Lap, Butt) R.T. _____ (Spot, Partial, or Full) No. of courses _____

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

	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.)

1. Manufactured by Smithco Engineering, Inc. 640 W. 41st Street, Tulsa, Okla.
(Name and address of manufacturer)

2. Manufactured for THE ORTLOFF CORPORATION MIDLAND, TX.
(Name and address of purchaser)

3. Location of installation MARATHON CENTERVILLE, LA.
(Name and address)

4. Type Horiz. (Non Cir.) Vessel No. 81B2511 B --- --- --- Year Built 1982
(Horiz., or vert. tank) (Mfgr's Serial No.) (CRN) (Drawing) (Nat'l Brd No.)

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 1980 (Year) and Addenda to Winter 81' (Date) and Code Case no. _____ Special service per UG-120(d) _____

Manufacturers' 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, mfgr's name and identifying stamp)

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

6. Side Material SA516-70 (Spec. No., Grade) Nom. Thk. Ft.-.500 Bk.-.375 C.A. .0625 .0625 in. Diam. 6.375 3.000 in. Length 62.500 62.500 in.

7. Seams: Longitudinal Corner Joint (Welded, Dbl., Sngl., Lap, Butt) R.T. ---- (Spot or Full) Efficiency --- % H.T. Temp NONE F

Time -- Girth ---------- (Welded Dbl., Dngl., Lap, Butt) R.T. ---- (Spot, Partial or Full) No. of Courses --

8. End Plates: (a) Material SA 516 - 70 (Spec. No., Grade) (b) Material SA 516 - 70 (Spec. No., Grade)

	Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio
(a)	Front Header	.500	.0625	N/A		
(b)	Back Header	.375	.0625	N/A		

	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)			6.375 x 7.4375	Flat
(b)			3.000 x 7.4375	Flat

If removable, bolts used (describe other fastenings) _____
(Material, Spec. No., Gr., Size, No.)

9. Type of Jacket None Proof Test _____

10. Jacket Closure None (Describe as ogee & weld, bar, etc.) If bar, give dimensions _____ If bolted, describe or sketch.

11. Constructed for max. allowable working pressure 150 psi at max. temp. 300 F Min. temp. (when less than -20 F) _____ F.
Hydrostatic, ~~pneumatic, or combination~~ test pressure 225 psi

Items 12 and 13 to be completed for tube sections

12. Tubesheets: Stationary—Material SA 516 - 70 (Spec. No. Gr.) Diam. 7.750 (Subject to pressure) in. Nominal Thickness .875 in. Corrosion Allowance .0625 in. Attachment Welded (Welded, Bolted) Plug Sheet -Material SA 516 - 70 (Spec. No., Grade) Diam. 7.750 in.
Nominal Thickness Ft.-.625 Bk.-.750 in. Corrosion Allowance .0625 in. Attachment Welded

13. Tubes: Material SA - 214 (Spec. No., Gr.) O.D. 1.0 in. Nominal Thickness .065 in. or gauge Number 106 Type Straight (Straight or "U")

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

14. Shell: Material _____ (Spec. No., Gr.) Nominal Thickness ____ in. Corrosion Allowance ____ in. Diam. ____ ft ____ in. Length ____ ft ____ in.

15. Seams: Longitudinal _____ (Welded, Dbl., Sngl. Lap. Butt) R.T. _____ (Spot or Full) Efficiency _____ % H.T. Temp _____ F Time _____

Girth _____ (Welded, Dbl., Sngl., Lap, Butt) R.T. _____ (Spot, Partial, or Full) No. of courses _____

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

	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.)