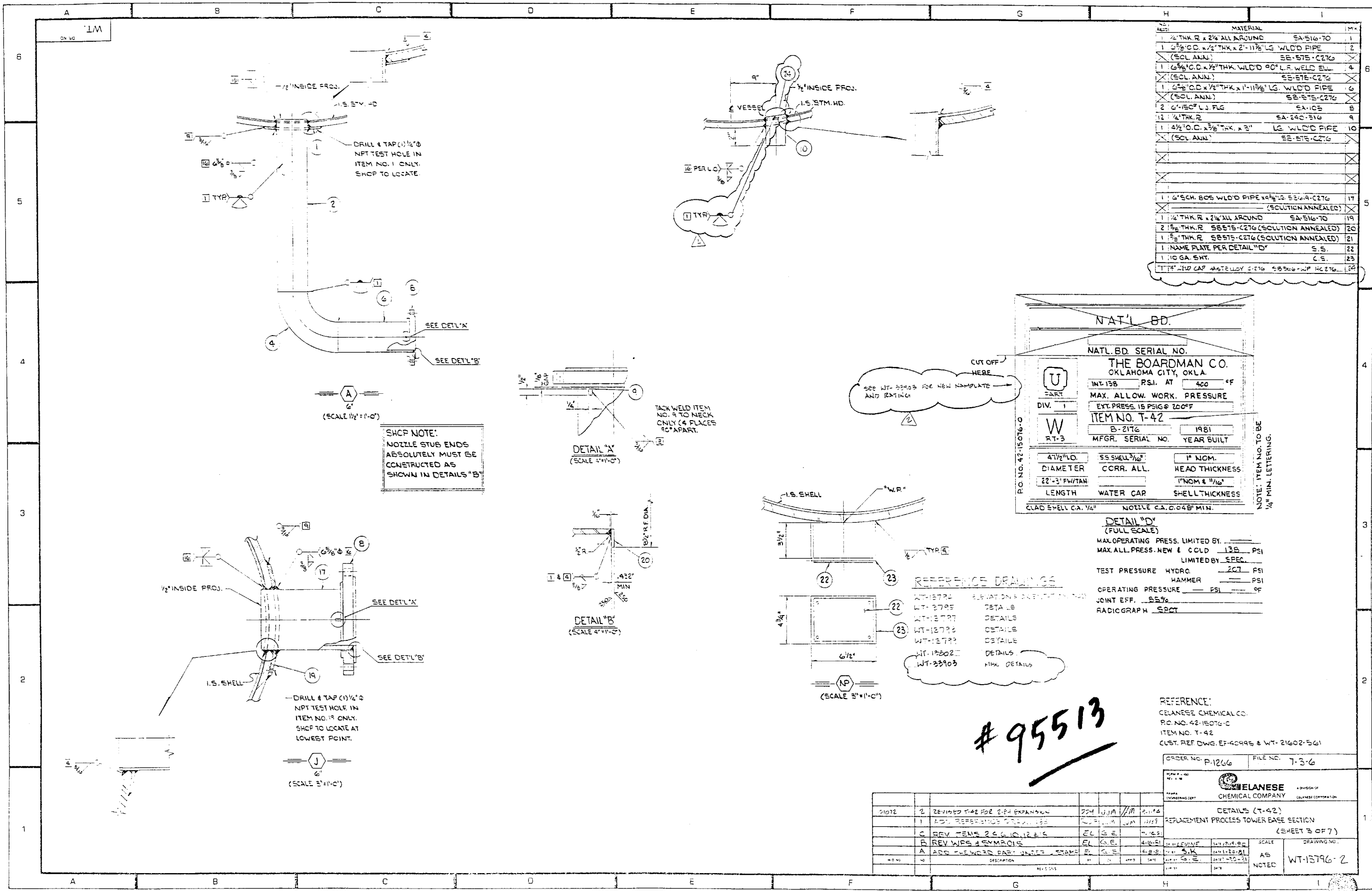




MATERIAL			
1	1/2" THK R x 2 1/2" ALL AROUND	SA-516-70	1
2	2 1/2" O.D. x 1/2" THK x 2'-11 1/2" LG. WLD'D PIPE		2
3	(SOL. ANN.)	SS-575-C276	3
4	1 1/2" O.D. x 1/2" THK. WLD'D 90° L.R. WELD EL.		4
5	(SOL. ANN.)	SS-575-C276	5
6	1 1/2" O.D. x 1/2" THK x 1'-11 1/2" LG. WLD'D PIPE		6
7	(SOL. ANN.)	SS-575-C276	7
8	2 1/2" O.D. x 1/2" THK x 2'-11 1/2" LG. WLD'D PIPE		8
9	(SOL. ANN.)	SS-575-C276	9
10	1 1/2" O.D. x 1/2" THK x 2'-11 1/2" LG. WLD'D PIPE		10
11	(SOL. ANN.)	SS-575-C276	11
12	1 1/2" THK R x 2 1/2" ALL AROUND	SA-516-70	12
13	2 1/2" THK R	SS-575-C276 (SOLUTION ANNEALED)	13
14	1 1/2" THK R	SS-575-C276 (SOLUTION ANNEALED)	14
15	1 1/2" THK R	SS-575-C276 (SOLUTION ANNEALED)	15
16	NAME PLATE PER DETAIL 'D'	S.S.	16
17	1 1/2" GA. SMT.	C.S.	17
18	1 1/2" WLD CAP	ASTM A240 304 SS 1/2" WLD CAP	18

NAT'L. BD.

NAT'L. BD. SERIAL NO.

THE BOARDMAN CO.
OKLAHOMA CITY, OKLA.

INT. 158 PSI AT 400 °F

MAX. ALLOW. WORK. PRESSURE

EXT. PRESS. 15 PSIG @ 200 °F

ITEM NO. T-42

B-2176

1981

MFG. SERIAL NO.

YEAR BUILT

47 1/2" I.D.

SS SHELL 3/16"

1" NOM.

DIAMETER

CORR. ALL.

HEAD THICKNESS

22'-3" FW/TAN

1" NOM & 1/16"

LENGTH

WATER CAP

SHELL THICKNESS

CLAD SHELL C.A. 1/2"

NOZZLE C.A. 0.048" MIN.

NOTE: ITEM NO. TO BE 1/4" MIN. LETTERING.

DETAIL 'D' (FULL SCALE)

MAX. OPERATING PRESS. LIMITED BY

MAX. ALL. PRESS. NEW & COLD 138 PSI

LIMITED BY SPEC.

TEST PRESSURE HYDRO. 207 PSI

HAMMER 207 PSI

OPERATING PRESSURE 15 PSI

JOINT EFF. 85%

RADIOGRAPH SQCT

REFERENCE DRAWINGS

WT-13795	ELEVATION & DETAIL
WT-13796	DETAILS
WT-13797	DETAILS
WT-13798	DETAILS
WT-13799	DETAILS
WT-13800	DETAILS
WT-13801	DETAILS
WT-13802	DETAILS
WT-13803	DETAILS

#95513

REFERENCE:
CELANESE CHEMICAL CO.
P.O. NO. 42-15076-C
ITEM NO. T-42
CUST. REF. DWG. EF-40995 & WT-21602-561

ORDER NO. P-1266 FILE NO. 7-3-6

CELANESE CHEMICAL COMPANY
A DIVISION OF
CELANESE CORPORATION

DETAILS (T-42)
REPLACEMENT PROCESS TOWER BASE SECTION
(SHEET 3 OF 7)

NO.	REV.	DESCRIPTION	DATE	BY	CHKD.	APP'D.
01072	2	REVISED T-42 FOR 2.5" EXPANSION	7/24/81	JJM		
1	ADD. REFERENCE TO SPEC.	7/24/81	JJM			
2	REV. T-42 FOR 2.5" EXPANSION	7/24/81	JJM			
3	REV. T-42 FOR 2.5" EXPANSION	7/24/81	JJM			
4	ADD. T-42 FOR 2.5" EXPANSION	7/24/81	JJM			

Form 2 MANUFACTURERS' PARTIAL DATA SHEET
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

P-1266

1(a) Manufactured by The BOARDMAN Co., 1401 S.W. 11, Oklahoma City, Oklahoma 73108
(Name and address of manufacturer of part)
(b) Manufactured for CELANESE CHEMICAL CO., Dallas, Texas
(Name and address of manufacturer of vessel)

2. Manufacturer's Serial No. of Part B-2176 CRN Drawing No. D-18968 Nat'l Ed. No. _____ Year Built 1981

3. (a) Drawing Prepared by The BOARDMAN Co.

(b) Description of Part Inspected The bottom 22'-3" of a process tower 107'-4" T/T

4. 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 Rules, Section VIII, Division 1 1977
(Year)

and Addenda through Summer '80 and Code Case No. _____
(Date)

5. Special Service per UG-120(d) _____

6. Postweld Heat Treatment: Temperature _____ F. Time _____

Items 7-12 incl. to be completed for single walled vessels, jackets of jacketed vessels, or shells of heat exchangers

7. Shell: Material _____ * Nominal Thickness 11/16" in. Corrosion allowance _____ * in.
(Spec. No., Grade) and 1"

Diam. 3 ft 11-3/4 in. Length 22 ft 1 in.

8. Seams: Longitudinal DBL Butt Weld R.T. _____ Spot _____ Efficiency 85 %
(Welded, Dbl., Engr. Lap, Butt) (Spot or Full)

H.T. Temp. _____ F Time _____ Girth DBL Butt Weld
(Welded, Dbl., Engr. Lap, Butt)

R.T. Spot No. of Courses 3
(Spot, Partial, or Full)

9. Heads (a) Material _____ * (b) Material _____
(Spec. No., Grade)

	Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio
(a)	<u>Bottom</u>	<u>13/16"</u>	<u>1/4"</u>			<u>2:1</u>
(b)						

	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)				<u>Convex & Concave</u>
(b)				

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

10. Type of Jacket _____ Proof Test _____

11. Jacket Closure _____ If bar, give dimensions _____
(Describe as ogee & weld, bar, etc.)

if bolted, describe or sketch.

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

Items 13 and 14 to be completed for tube sections

13. Tubesheets: Stationary — Material _____ Diam. _____ in.
(Spec. No., Gr.) (Subject to pressure)

Nominal Thickness _____ Corrosion Allowance _____ in. Attachment _____
(Welded, Bolted)

Floating — Material _____ Diam. _____ in.
(Spec. No., Gr.)

Nominal Thickness _____ in. Corrosion Allowance _____ in.

Attachment _____

14. Tubes: Material _____ O.D. _____ in. Nominal Thickness _____ in. or gauge
(Spec. No., Gr.)

Number _____ Type _____
(Straight or "U")

Items 15-18 incl. to be completed for inner chambers of jacketed vessels or channels of heat exchangers

15. Shell: Material _____ Nominal Thickness _____ in. Corrosion Allowance _____ in.
(Spec. No., Grade)

Diam. _____ ft. _____ in. Length _____ ft. _____ in.

16. Seams: Longitudinal _____ R.T. _____ Efficiency _____ %
(Welded, Dbl. Engr. Lap, Butt) (Spot or Full)

H.T. Temp. _____ F Time _____ Girth _____ R.T. _____ No. of courses _____
(Welded, Dbl. Engr. Lap, Butt) (Spot, Partial or Full)

FORM U-2 (BACK)

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

	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) _____

18. Constructed for max. allowable working pressure Int. 138, Ext. 15 (Material Spec. No., Gr., Size No.)
Int. 400, Ext. 200 psi at max. temp. _____ F. Min. temp. (when less than -20 F)
 _____ F. Hydrostatic pressure test pressure _____ 207 psi.

Items below to be completed for all vessels where applicable

19. Safety Valve Outlets: Number _____ Size _____ Location in line

20. Nozzles:

Purpose (Inlet, Outlet, Drain)	Number	Diam. or Size	Type	Material	Nominal Thickness	Reinforcement Material	How Attached
Thermowell	3	1/2"	Spec'd	SA574-C276	1/2"	None	Welded
Misc. Nozz.	4	3/4"	Flg.	SA574-C276	7/16"	None	Welded
Inhibitor In.	1	1"	Flg.	SA574-C276	1/2"	None	Welded

21. Inspection Openings:

Manholes No. 1 Size 20" Location Welded to Shell

Handholes No. _____ Size _____ Location _____

Threaded No. _____ Size _____ Location _____

22. Supports: Skirt Yes Lugs _____ (No.) Legs _____ (No.) Other _____ (Describe)
 Attached Welded to Bottom Head (Where and how)

23. Remarks: P.O. No. 42-15076-0 Item No. T-42

* See attached U-4 form.

CERTIFICATE OF COMPLIANCE

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

Date 7-15-81 Signed The BOARDMAN Co. by George Eyer
 (Manufacturer) (Representative)

"U" Certificate of Authorization No. 2847 expires January 31, 1984

CERTIFICATE OF SHOP INSPECTION

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 Calif. and employed by _____
 of Boise, Idaho, have inspected the part of a pressure vessel described in this
 Manufacturer's Partial Data Report on 7-15 19 81 and state that, to the best of my knowledge and
 belief, the Manufacturer has constructed this part in accordance with the ASME Boiler and Pressure Vessel Code, Section
 VIII, Division 1.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the
 part described in this Manufacturer's Partial 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 7-15-81

Signed _____ Commissions Arch 723
 (Authorized Inspector) (Nat'l Board, State, Province and No.)

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

P-1266

1. Manufactured by The BOARDMAN Co., 1401 S.W. 11th, Oklahoma City, Oklahoma 73108
(Name and address of manufacturer)

2. Manufactured for CELANESE CHEMICAL CO., Dallas, Texas
(Name and address of purchaser)

3. Location of Installation CELANESE CHEMICAL CO., Pampa, Texas
(Name and address)

4. Type Vert. nonz. Vert. Tank, etc. Vessel Number E-2176 nonz. serial CRN D-18968 Des. Nat'l. Bd. No. Year Built 1981

#95513

Data Report Item Number

Remarks

7. Shell material & Nom. Thk.: Top Shell Course
SA-240-316 11/16" Thk.: Bottom & Middle Shell Course
SA-516-70 Base Metal - 3/4" Nom. Thk., SB575-C276
Solution annealed dynacalad - 1/4" Nom. Thk.
Corrosion Allowance: 1/8" at 316 Stn. Strl. Shell
1/4" at clad shell sect.
0.048" Min. Nozzle corrosion allowance

9. Heads (a) SA-516-70 Base Metal - 5/8" Min. Thk.,
SB575-C276 solution annealed Dynacalad
3/16" Min. Thk.

Purpose	Diam. No. or Size	Type	Material	Nom. Thk.	Rein. Mat'l	How Attached	
Misc. Nozz.	5	1-1/2"	Flg.	SB619-C276	Sch. 80S	None	Welded
Residue	1	4"	Flg.	SB575-C276	3/8"	None	Welded
Misc. Nozz.	1	6"	Flg.	SB575-C276	1/2"	SA-516-70	Welded
Vapor from Reboiler	1	10"	Flg.	SB575-C276	1/2"	SA-516-70	Welded
Manway	1	20"	Flg.	SB575-C276	3/8"	SA-516-70	Welded

Date 7-15-81The BOARDMAN Co.
Manufacturer

Signed

George Eyer

Date 7-15-81

Authorized Inspector's Signature

Commissions

Nat'l. Board, State, Province and No.

FORM . REPORT OF WELDED ☐ REPAIR OR ☒ ALTERATION
as required by the provisions of the National Board Inspection Code

1. Work performed by O'Neal's Welding & Fabrication, Inc. S/O 1861
(name of repair or alteration organization) (P.O. no., job no., etc.)

FM 624 4-1/2 Miles West of Hwy 77 Robstown, Texas 78380
(address)

2. Owner Hoechst Celanese
(name)

P.O. Box 937 Pampa, Texas 79065
(address)

3. Location of installation Hoechst Celanese
(name)

Pampa, Texas Plant
(address)

4. Unit identification: Vessel Name of original manufacturer The Boardman Co.
(boiler, pressure vessel)

5. Identifying nos.: B-2176 None N/A N/A 1981
(mfr's. serial no.) (original National Board no.) (jurisdiction no.) (other) (year built)

6. Description of work Rotate 6" Nozzle on bottom head. Remove 4" Nozzle on
(use back, separate sheet, or sketch if necessary)

bottom head and install weld cap on pipe. Remove internal
trays, seal pans and downcomers. Install new nozzles in
shell. Install new 316 SS head on top of vessel. Install
8", 1-1/2" and 3/4" nozzles in top head.
Rerate MAWP 163 PSIG at 400°F.

Pressure test, if applied 254 psi

7. Replacement Parts. Attached are Manufacturers' Partial Data Reports properly identified and signed by Inspectors for the following items of this report:

(name of part, item number, mfr's. name and identifying stamp)

8. Remarks: Shop Hydro tested in new and cold condition at 347 P.S.I.G.
NEW NOZZLES:

Nozz. BB	1-1/2"	.145	SA312-TP316
Nozz. K	1-1/2"	.145	SA622-C276
Nozz. M	1"	.179	SB622-C22
Nozz. N	8"	.322	SA312-TP316
Nozz. P	3/4"	.154	SA312-TP316
Nozz. T	4"	.237	SB622-C276

(reverse side of form)

CERTIFICATE OF SHOP/FIELD COMPLIANCE

We verify that the statements made in this report are correct and that this Alteration
conforms to the National Board Inspection Code. (repair or alteration)

"R" Certificate of Authorization no. 2958 expires Sept. 3, 19 95.

Jurisdictional Authorization no. _____ expires _____, 19 _____.

Date 10-14-94, 19 _____ Signed O'Neal's Welding & Fab., Inc. (repair organization)
Frank Sheff (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 certificate of competency issued by the state or province of Texas and employed by Commercial Union Insurance Company of Boston, Mass. have inspected the work described in this report on Oct 14, 19 94 and state that to the best of my knowledge and belief, this work has been done in accordance with the National Board Inspection Code. By signing this certificate, neither the undersigned nor my employer makes any warranty, expressed or implied, concerning the work described in this report. Furthermore, neither the undersigned nor my employer shall be liable in any manner for any personal injury, property damage or loss of any kind arising from or connected with this inspection.

Date Oct 17, 19 94 Signed Joe B. Turner (Inspector) Commissions TX 1021
(National Board (incl. endorsements), state, prov., and no.)

XXXXX ALTERATION

2958

163

400

W

15

163

S/O 1861

1994

254

T-42

47.5X 156

042 2303640

20 000

2-EHACA HEAVY ENDS REMOVAL
FULL VACUUM AT 200 F

895513