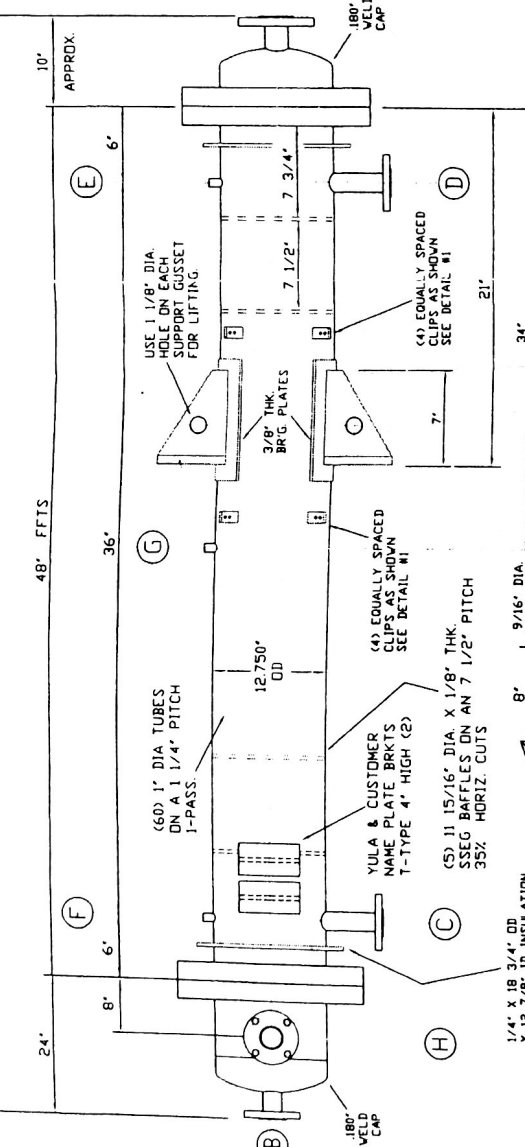
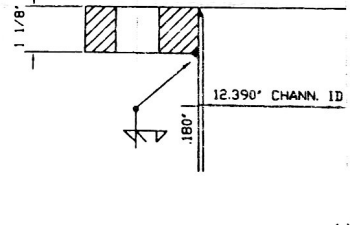
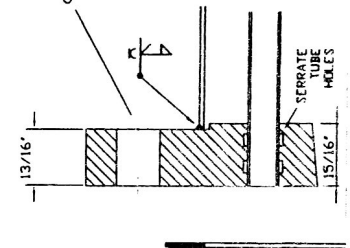
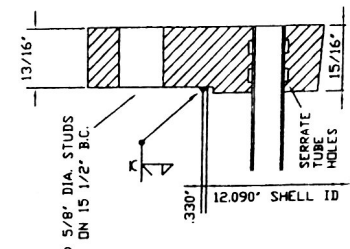
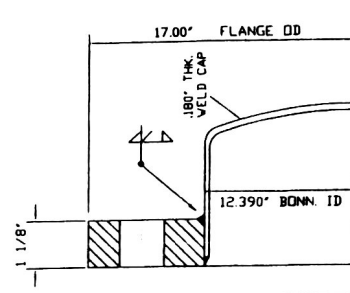
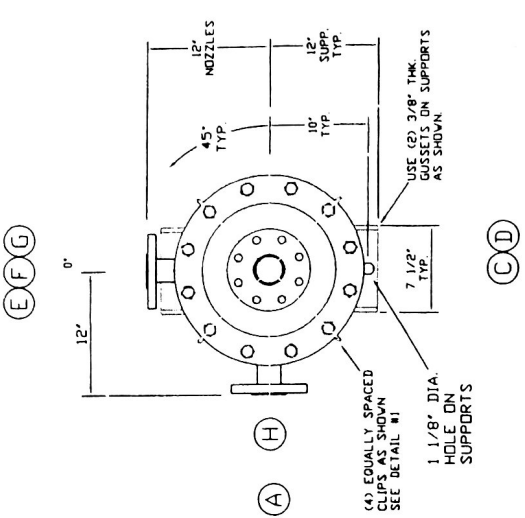


CERTIFIED FOR THERMAL KINETICS  
 CERTIFIED BY JAB DATE 03/13/2007  
 'AS BUILT DRAWING'



NOZZLES w/(pipe,tk.)	
(C)	WATER INLET 2"-150# RFSD (.154")
(D)	WATER OUTLET 2"-150# RFSD (.154")
(E)	VENT 1"-3000# CPLG.
(F)	DRAIN 1"-3000# CPLG.
(G)	P.R.V. 1"-3000# CPLG.
(A)	VAPOR INLET (.145") 1 1/2"-150# LAP JOINT
(B)	DRAIN (.154") 2"-150# LAP JOINT
(H)	VAPOR OUT (.154") 2"-150# LAP JOINT

REVISIONS			
NO	REVISION	DATE	BY
Δ	AS NOTED BY CUSTOMER	03/13/2007	JAB

DESIGN DATA

	SHELL	TUBES
DESIGN PRESS. (PSIG)	100	100/FV
DESIGN TEMP (F)	-20/250	-20/250
TEST PRESS. PSI (PED)	130	130
NO. OF PASSES	1	1
CORROSION ALLOW.	1/16"	0
TEMA C TYPE BEM		
WELD PROCEDURE: WPS-12 & WPS-6		
A.S.M.E SEC VIII DIV 1 2004 A06		
CODE CONSTRUCTED & STAMPED YES		
HEATING SURFACE 63 SQ. FT.		

YULA RESPONSIBLE FOR MECHANICAL DESIGN.  
 WIND DESIGN CRITERIA BOCA 1996.  
 ASCE 7-95  
 SEISMIC DESIGN CRITERIA: BOCA 1996  
 ASCE 7-95 BLD'G CAT. III  
 SEISMIC IMPORTANCE FACTOR 1.15  
 SOIL PROFILE: D  
 SEISMIC PERFORMANCE CATEGORY C

WEIGHTS

SHIPPING WEIGHT	APP 550	LBS
FULL OF WATER	APP 800	LBS

MATERIAL

COMPONENT	A.S.M.E. SPEC. NO.
SHELL CYLINDER	CS SA-53 GR.B
SHELL NOZZ. NK.	CS SA-53 GR.B
SHELL NOZZ. FLG.	CS SA-105
SHELL CPLGS.	CS SA-105

SUPPORTS	CS SA-36
FIRE PREVENT. CLIPS	CS SA-36

BAFFLES	CS SA-36
TIE RODS	CS SA-36

(60) TUBES 1" x 18 (W/GAV)	SS SA-249 TP.304L WLD.
TUBESHEETS	SS SA-240 GR.304L

CHAN. CYLINDER	SS SA-312 TP.304L
CHAN. NOZZ. NK.	SS SA-312 TP.304L
LAP JT. STUB ENDS	SS SA-403 WP.304L
CHAN. NOZZ. FLG.	CS SA-105
CHAN. UNIT FLG.	SS SA-240 GR.304L
CHAN. COVER (2)	SS SA-403 WP.304L

BOLTS	SS SA-193-BB CL.1
NUTS	SS SA-194-B

GASKETS

TUBES: (2) GARLOCK IFG-5500 RINGS
14 3/4" OD X 13 3/4" ID.

PAINT

CS: YULA BLUE SS: BEAD BLASTED.
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GENERAL NOTES

- ALL FLANGE BOLT HOLES STRADDLE CENTERLINES.
- NOZZLES ARE ADEQUATELY COVERED FOR SHIPPING COUPLINGS ARE COVERED
- TUBESHEETS ARE DOUBLE SERRATED PER TEMA.
- ALL WELDS ARE FULL PENETRATION WELDS WITH NOZZ. FLUSH WITH ID. OF SHELL.
- TUBESIDE HAS A STD. MILL FINISH.

(1) UNIT REQUIRED  
 YULA MODEL WC-1E-48CS  
 KNOCKBACK CONDENSER  
 TAG NO. ET-4205  
 THERMAL KINETICS SYSTEMS, LLC  
 CANTON, IL  
 P.O. NO. 73338-11 (REV. 4)

**Yula** CORPORATION  
 330 Bryant Avenue,  
 Bronx, N.Y. 10474

JAB	08/11/2006	20975-1
FGF		

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

1. Manufactured and certified by Yula Corporation, 330 Bryant Avenue, Bronx, NY 10474  
(Name and address of Manufacturer)  
2. Manufactured for Thermal Kinetics Systems, LLC, 66 Tift Street, Buffalo, N.Y. 14220  
(Name and address of Purchaser)  
3. Location of installation IL  
(Name and address)  
4. Type Vertical Heat Exchanger 20083 20975-1 12470 2006  
(Horiz., vert., or sphere) (Tank, separator, jacket vessel, heat exch., etc.) (Mfg's serial No.) (CRN) (Drawing No.) (Mat'l Bd. No.) (Year built)  
5. ASME Code, Section VIII, Div. 1 2004, A2005 2519  
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.): 3'-10 3/8"

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	12.750"	3'-10 3/8"	SA-53 Gr.B ERW		3/8"	1/16"	E	None	100%	--	---	---	---	---

(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)														
(b)														

If removable, bolts used (describe other fastening)

8. 0 of jacket (Mat'l Spec. No., Grade, size, No.) Jacket closure (Describe as open & weld, bar, etc.)

If bar, give dimensions  
9. MAWP 100 0 psi at max. temp. 250 250 °F Min. design metal temp. -20 °F at 100 psi  
(internal) (external)

10. Impact test NO, CHARPY IMPACT TEST EXEMPT PER UCS-66(b)  
(Indicate yes or no and the component(s) impact tested)

11. Hydrostatic test pressure. 130  
Proof test  
Items 12 and 13 to be completed for tube sections.

12. Tubesheet: Top: SA-240Tp.304L 14.250" 15/16" None Welded  
(Mat'l Spec. No.) Dia., in. (subject to press) Norm thk., in. Corr. Allow., in. Attachment (welded or bolted)  
Bottom: SA-240Tp.304 14.250" 15/16" None Welded  
(Mat'l Spec. No.) Dia., in. Norm thk., in. Corr. Allow., in. Attachment

13. Tubes: SA249Tp.304L 1" 18 GA. 60 Straight  
(Mat'l Spec. No., Grade or Type) O.D., in. Norm thk., in. or gauge Number Type (Straight or U)

14. Shell (a) No. of course(s): Bottom (1) (b) Overall length (ft & in.): Bottom: 1'-6 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	12.750"	1'-6 3/4"	SA-312Tp.304L		180"	---	E	None	85%	---	---	---	---	---

(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	180"	---	12"	---	2:1	---	---	---	---	Concave	--	---	---	
(b) Bottom	180"	---	12"	---	2:1	---	---	---	---	Concave	1	None	70%	

If removable, bolts used (describe other fastening) (2) sets of (20) 5/8" dia. SA-193-B8 CL.1 studs & SA-194-8 nuts  
(Mat'l Spec. No., Grade, Size, No.) RR 1026.10

MAWP 100 117 250 150 100  
 NO. CLEARPY IMPACT TEST EXEMPT PER UHA-5160

18. Hydrostatic test pressure: 130  
 19. Details inspection, and safety valve openings

Description (Inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Flange Type	Material		Nozzle Thickness		Reinforcement Material	How Attached		Location
				Nozzle	Flange	Non-Corr.	Corr.		Welded	Loose	
Inlet/Outlet	2	2"	CL150FLG.	SA53Gr.B ERW	SA105	.218"	1/16"	Not Required	Welded	Welded	-----
Vent. Drain PRV	3	1"	THD'DCPLG	SA105	-----	3000#	1/16"	Not Required	Welded	-----	-----
* Inlet	1	1 1/2"	CL150LAPJNT	SA312Tp.304L	SA105	.145"	----	Not Required	Welded	Loose	-----
* Outlet	1	2"	CL150LAPJNT	SA312Tp.316L	SA105	.154"	----	Not Required	Welded	Loose	-----
* Vent	1	2"	CL150LAPJNT	SA312Tp.316L	SA105	.154"	----	Not Required	Welded	Loose	-----

20. Supports: Skirt \_\_\_\_\_ Lugs \_\_\_\_\_ Legs \_\_\_\_\_ Others \_\_\_\_\_ Supports \_\_\_\_\_ Attached \_\_\_\_\_ Side Welded \_\_\_\_\_  
 (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)

22. Remarks: Yula Model #WC-1E-48CS P.O. No. 73338-11 Tag No. ET-4205 Knockback Condenser.  
 \* Tubeside nozzles have a St. Stl. SA-403 WP304L stub end welded to nozzle pipes for a Lap Joint construction.

**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. 2624 Expires 03/30 2007

Date 11/30/06 Name Yula Corporation Signed [Signature]  
 (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 HSB CT. of HARTFORD, CT. have inspected the pressure vessel described in this Manufacturer's Data Report on 11-29, 2007 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 1-10-07 Signed [Signature] Commissions NY 2991 NB 9537A  
 (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 \_\_\_\_\_, 20\_\_\_\_

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.)