

	EQUIPMENT DATASHEET - S			HANGE	RS								and the same	Page 1	of 4	
1	CUSTOMER	ChevronTexaco Refineria Panar					PROJECT			rying Unit		PID Numb	er	50-PID-003		
3	SERVICE			PROJ NO.			613144		Date			4/5/2004				
4	CASE	Regeneration C Design	OOIEI				ITEM NO.		50-X-103							_
5	Each Unit:		AHS		Horizontal/\	/ertical	REVISION 1		FOR PURC			Engineer	gpm/mcd	Approved		+
6	Surf/Unit (Effective) -	1,75-	ft²		Shells/Unit		1	-	Surf/Shell (I		nes 💟	Parallel	ft²			+
7				Р			ONE UNIT		Out if Otto if (i	_nconve) -						+
8				Shellside			Shellside (	OUT		Tubosido I						+
9	Fluid Name			Ononoid		Eth	anol	501		Tubeside I	N	Caslin	Tubesio	ie OUT		+
10	Fluid Quantity, Total		lb/hr				5 * 1.1			0.7.11.11.11.11.11.11.11			ng Water 90 * 1.1		Water Lines	-
11	Vapor		lb/hr		10491			0			0	04378	1.1	0	on the same of the	+
12	Liquid		lb/hr		0			10491			0		-	0		+
13	Steam		lb/hr		0	CELONIS ANY SERVICE		0			0		-	0		+
14	Sea Water		lb/hr		0			0			710369			710369		+
15	Noncondensable		lb/hr		53			53			0	-	-	0		+
	Temperature		°F	- In-color and their	270			95			85			95		+
17	Density, Liq/Vapor		lb/ft3	NA	1	0.0087	55.126	1	NA	62.681	1	NA	62.416	1	NA	+
18	Viscosity, Liq/Vapor		сР	NA	1	0.0097	0.86	1	NA	0.81	1	NA				+
19	Molecular Weight, Vapor		MW		30.318	0.000	0.00	NA	11/1	0.01	NA	INA	0.72		NA	+
	Molecular Weight, Noncondens	able	MW		29			29		-	NA			NA	-	+
	Specific Heat, Liq/Vapor		Btu/lb°F	NA	1	0.4345	0.8685	1	NA	1.009	/	NA	1.0096	NA /	NA	+
22	Thermal Conductivity, Liq/Vapo	r	Btu/hr ft°F	NA	1	0.01384	0.2112	1	NA	0.3568	1	0.000				+
	Bubble Pt./Dew Pt.		deg F		102	2.21004	9.2.112	111.6	INA	0.0000		NA	0.3612		NA	
24	Latent Heat		Btu/lb			2.51 @ 9	5 F	111.0	THE PARTY		NA		T	NIA		E
25	Inlet Pressure		psig			-12.45					INA		NA	NA		E
26	Velocity		ft/s							The state of the s			0.0			E
27	Pressure Drop, Allow/Calc		psi		0.25	1		-			10	3	0.0		-	E
28	Fouling Resistance, Min.	hr	ft²°F/Btu				002				10	0.003			-	E
29	Heat Exchanged -							ATD. (C	orrected)(V	/eighted)		0.003	- Tell-Wes			E
30	Transfer Rate, Service -	5344	000*1.1		Btu/hr ft2°	F		Clean -	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	voiginou)						E
31		CONST	RUCTION O	F ONE SHE	LL											+
32				Shellside			Tubeside						- Xarras III			-
33	Design/Minimum Test Press	psig	150 & FV	1	code	150 & FV		ode		See attac	hed ske	tch for	flow orie	ntation		
34	Design Temp. (Max/Min)	°F	500	1	-20	500	1 -	20					non one	manon		-
35	No. Passes per Shell															-
36	Corrosion Allowance	in		.125"			0.125									
37	Connections	In														-
38	Size &	Out														-
- 1	Rating	Misc Connections		1" flg'd ve	nts/drains		1" flg'd ven	ts/drains								10000
1	Tube No	oD - 3/4	Thk(Min)			Length	Note 5 i	n	Pitch -	square or re	otated sc	in.	Pattern -			-
t	Tube Type -	plain										10 - V.				1
- 1	Impingement Protection Required -	<b>V</b>	Attachmer	nt of Impin	gement PI	ate	TVAST CALLDOANT CO									
13			-													
14	· · · · · · · · · · · · · · · · · · ·															
15	Baffles-Cross -			Vicinity of												
	Baffles-Long -		-							Spacing: c/e	С		Inlet		in	
- 1	Supports-Tube - Transverse baffle			I.Band			Seal Type -			T						1
- 1	Bypass Seals: Pass Lane - Yes/N	lo Perinhera	ıl - Yes/No	U-Bend -			No Pain			Type -	haat to					-
- 1	Expansion Joint - Per fabricator		Type -	-	-		No. Pairs - Metal Temp:		-	Tube-Tubes	sneet Join	1-				
- 1	Rho-V-sq: Shell Entrance -			Bundle Entra	ance -		metal remp:		°F	Shell - Bundle Exit			Tube -			+
2	Gaskets: See Page 3									Dunidie EXIL						+
- 6	Code Requirements: ASME Sect. VIII	l, Div I		Stamp:	V		National Board	No:	7	W			TEMA CI	ass	R	
- 1	Weights: See Page 2							1000000				was the same		230		
- 1	Test Ring Reqd:		Spare Gas		V		No. Sets-	1		Design for E	Bundle Ex	tractors:		Туре:		1
-	Stacking: NO		Shell Insula	ation thk		1.5	in			Tubeside In			NR	in		1
-	Applicable Specifications:	See Page 2	Materia		-			_								
_ F	Vibration Analysis Required: (Yes)(No	) 7	Note 4	Design for fu	ill tubesheet o	differential?	[Y/N]			TEMA REGIST	RATION RE	EQUIRED?	[Y/N]			
-	NOTES -			"												
-	<ol> <li>Vendor to complete and retu</li> <li>Vendor shall notify purchase</li> </ol>	r of any	sneets wi	in propo	sal.			10								
- 1		ctandarda a	cts betwe	en data	sneet, st	andards,	and spec	ificatio	ns.		- Inches					
-	<ol> <li>All exceptions to datasheet,</li> <li>Should velocities fall outside</li> </ol>	range given	in E 1D2	Soction	st be stat	ted in wri	ting as pa	rt of pr	oposal.							
-	5) Preferred tube length is 20 for	or straight tube	iii E-1DZ	or to adv	ise if ma	re econo	mines! to	be req	ulred.	an 10 ft :	de a d	41-				
-	G:\Chev_Tex\613144 Ethanol Drying Project\7_	Engineering Machani	cal/Equipmen	TIPOUR CO	C SHEETON	ED V 1000	ininical to	build ir	18,10,12	or 16 ft tu	ibe leng	th.				1
- 1		Linginieering wiechani	carcquipmen	INCEVO_SPE	C SHEETS	100-X-103Spe	econt-Rev1.xls	JX-103	1		the state of the state of		2/14/20	006 9:00		

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				PREP. BY	gpm/mcd			Page 2 of	
CRI	Matrix	ADDIT	TONAL DATA	CHKD. BY					
	And the second		Control of the Contro	APPROVED					
Process	& Technology	HEAT	EXCHANGER	DATE	4/5/2004				
				ISSUE	1				
CLIENT:	ChevronTexaco LAI	PC	PROJECT NO.:	613144	1777	ITEM NO.	50-X-103		
LOCATION:	Refineria Panama					PID NO:	50-PID-003		
PLANT:			PROCESS AREA:			In the second			
SERVICE:	Regeneration Coole	er	EQUIPMENT NAME:						
		SHELLSIDE	TUBESIDE			WEIGHTS	S		
perating Sta	atic Head, in	Full of Water	Full of Water	Bundle				lb	
est Static He	ead, in	Full of Water	Full of Water	Empty/Shell				lb	
adiography		Spot, minimum		Operating/Shell				Ib	
ongitudinal J	Joint Eff.			Full of Water/S					
ircumferenti				Emergency	ricii			Ib	
ategory				Linergency				lb	
	at Treatment	Yes	Yes						
Chemical Clea		Yes							
azard Consid		L res	Yes						
			T						
urface Treat	ment	SSPC SP 10	SSPC SP 10			able Specif	fications		
ainting		Inorganic Zinc	Inorganic Zinc/Note	3 Shell & Tube E	xchangers:				
nsulation		✓ Yes	Yes		API 660 Lates	t Edition	GEMS G-1P0 (	Dated Sept.9	
	ickness, inches	1.5	NR		TEMA "R", Lat				
ocation		Indoors	✓ Outdoors		GEMS E-1M18	(Dated Dec 98	8)		
Vind Design (	Code	Note :			GEMS V-1P (D		- L		
Vind Velocity	/ Pressure					(Dated Dec 9	6)		
arthquake Zo	one			Mechanical De	sign materials 8				
arthquake Fa	actor				ASME Section		ition		
	estructive Testing				ASME B 31.3, I		ition		
					ASME B16.5, L		ACME DIG 11	stoot Edition	
			CUELLOT			atest Edition	ASME B16.11,	Latest Edition	
				DE NOZZLES					
teference		S	ervice		Flg Type	Size, in	Rating. psi	Facing	
					and the second s				
	Shellside Inlet		Dry Ethanol/Water		note 1,2			RF	
	Shellside Outlet		Dry Ethanol/Water		note 1,2			RF	
	Vent (Flanged w/bl	lind)	Dry Ethanol/Water		note 1,2			RF	
	Drain (Flanged w/b	olind)	Dry Ethanol/Water						
						RF			
			THREST	DE MOZZI EC					
eference		c		DE NOZZLES	Ele Tres	Cina in	Dett :		
eference	Channel Inlet	S	ervice	DE NOZZLES	Flg Type	Size, in	Rating. psi	Facing	
eference	Channel Inlet	S	ervice Cooling Water	DE NOZZLES	note 1,2	Size, in	Rating. psi	RF	
eference	Channel Inlet Channel Outlet	S	ervice	DE NOZZLES		Size, in	Rating. psi		
eference		S	ervice Cooling Water	DE NOZZLES	note 1,2	Size, in	Rating. psi	RF	
eference	Channel Outlet		Cooling Water Cooling Water	DE NOZZLES	note 1,2 note 1,2	Size, in	Rating. psi	RF	
eference	Channel Outlet  Vent (Flanged w/bli	lind)	Cooling Water Cooling Water Cooling Water	DE NOZZLES	note 1,2 note 1,2 note 1,2	Size, in	Rating. psi	RF	
eference	Channel Outlet	lind)	Cooling Water Cooling Water	DE NOZZLES	note 1,2 note 1,2	Size, in	Rating, psi	RF RF	
eference	Channel Outlet  Vent (Flanged w/bli	lind)	Cooling Water Cooling Water Cooling Water	DE NOZZLES	note 1,2 note 1,2 note 1,2	Size, in	Rating, psi	RF RF	
eference	Channel Outlet  Vent (Flanged w/bli	lind)	Cooling Water Cooling Water Cooling Water	DE NOZZLES	note 1,2 note 1,2 note 1,2	Size, in	Rating, psi	RF RF	
eference	Channel Outlet  Vent (Flanged w/bli	lind)	Cooling Water Cooling Water Cooling Water	DE NOZZLES	note 1,2 note 1,2 note 1,2	Size, in	Rating, psi	RF RF	
eference	Channel Outlet  Vent (Flanged w/bli	lind)	Cooling Water Cooling Water Cooling Water	DE NOZZLES	note 1,2 note 1,2 note 1,2	Size, in	Rating, psi	RF RF	
eference	Channel Outlet  Vent (Flanged w/bli	lind)	Cooling Water Cooling Water Cooling Water	DE NOZZLES	note 1,2 note 1,2 note 1,2	Size, in	Rating, psi	RF RF	
eference	Channel Outlet  Vent (Flanged w/bli	lind)	Cooling Water Cooling Water Cooling Water Cooling Water Cooling Water	MARKS	note 1,2 note 1,2 note 1,2	Size, in	Rating, psi	RF RF	
	Channel Outlet  Vent (Flanged w/bli  Drain (Flanged w/b	lind) blind)	Cooling Water Cooling Water Cooling Water Cooling Water Cooling Water Cooling Water	MARKS	note 1,2 note 1,2 note 1,2 note 1,2	Size, in	Rating, psi	RF RF	
) Reference	Channel Outlet  Vent (Flanged w/bli Drain (Flanged w/b	lind) blind) estrictions on use	Cooling Water	MARKS wed flanges shall	note 1,2 note 1,2 note 1,2 note 1,2 note 1,2		Rating, psi	RF RF	
) Bottom no	Vent (Flanged w/bli Drain (Flanged w/b  GEMS E-1M18 for rezzle shall have 90 de	lind)  blind)  estrictions on use leg elbow for single	Cooling Water	MARKS wed flanges shall	note 1,2 note 1,2 note 1,2 note 1,2 note 1,2		Rating, psi	RF RF	
) Reference ) Bottom no: ) Inorganic zi	Vent (Flanged w/bli Drain (Flanged w/b  GEMS E-1M18 for rezzle shall have 90 de inc primer and silico	estrictions on use	Cooling Water	MARKS wed flanges shall	note 1,2 note 1,2 note 1,2 note 1,2 note 1,2		Rating, psi	RF RF	
) Reference ) Bottom no: ) Inorganic zi ) Stacked un	Channel Outlet  Vent (Flanged w/bli Drain (Flanged w/b  GEMS E-1M18 for rezzle shall have 90 de inc primer and siliconits shall be tested a	estrictions on use leg elbow for singione, acyrlic topcoas assembled units	Cooling Water est = 5 dft S.	MARKS  wed flanges shale exchanger in stack	note 1,2 note 1,2 note 1,2 note 1,2 note 1,2		Rating, psi	RF RF	
) Reference ) Bottom no: ) Inorganic zi ) Stacked un	Channel Outlet  Vent (Flanged w/bli Drain (Flanged w/b  GEMS E-1M18 for rezzle shall have 90 de inc primer and siliconits shall be tested a	estrictions on use leg elbow for singione, acyrlic topcoas assembled units	Cooling Water	MARKS  wed flanges shale exchanger in stack	note 1,2 note 1,2 note 1,2 note 1,2 note 1,2		Rating, psi	RF RF	
Reference Bottom no: Inorganic zi	Channel Outlet  Vent (Flanged w/bli Drain (Flanged w/b  GEMS E-1M18 for rezzle shall have 90 de inc primer and siliconits shall be tested a	estrictions on use leg elbow for singione, acyrlic topcoas assembled units	Cooling Water est = 5 dft S.	MARKS  wed flanges shale exchanger in stack	note 1,2 note 1,2 note 1,2 note 1,2 note 1,2		Rating, psi	RF RF	
Reference Bottom no: Inorganic zi	Channel Outlet  Vent (Flanged w/bli Drain (Flanged w/b  GEMS E-1M18 for rezzle shall have 90 de inc primer and siliconits shall be tested a	estrictions on use leg elbow for singione, acyrlic topcoas assembled units	Cooling Water est = 5 dft S.	MARKS  wed flanges shale exchanger in stack	note 1,2 note 1,2 note 1,2 note 1,2 note 1,2		Rating, psi	RF RF	

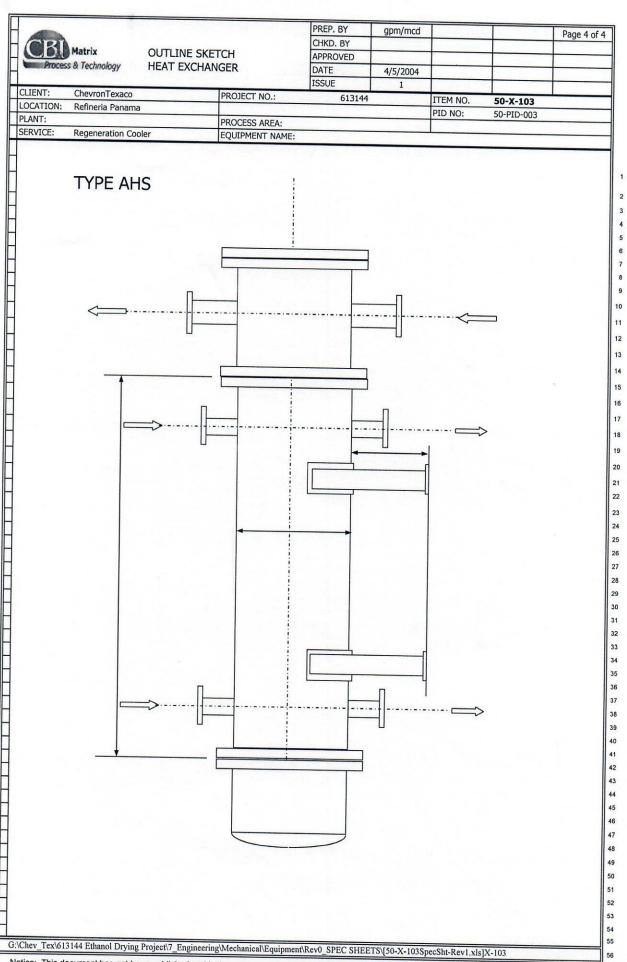
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			PREP. BY	gpm/mcd			Page 3 of					
CRI			CHKD. BY									
Matrix	ADDITIONAL		APPROVED									
Process & Technology	HEAT EXCHAN	IGER	DATE	4/5/2004								
		-	ISSUE	1								
CLIENT: ChevronTexaco		PROJECT NO.:	613144		ITEM NO.	50-X-103						
LOCATION: Refineria Panar	na		CONT. NO.		PID NO:	50-PID-003						
PLANT:		PROCESS AREA:										
SERVICE: Regeneration C		EQUIPMENT NAM	IE:									
	Materials				Girth Flan	де Туре						
				Componen	t	Flang	е Туре					
Shell Cylinder	SA-285, SA-515 c	or SA-516		tationary Head	End							
Shell Cover Cylinder			Shell Flange-R									
Shell Cover Dishing			Shell Cover Fla									
Shell Flange-Stationary Head End Shell Flange-Rear Head Flang			Manway Flang									
Shell Cover Flange	е		Floating Head									
Shell Nozzle Flange			Packing Follow	Backing Device		-						
Shell Nozzle Neck			Packing Box F									
			Slip-on Backir									
Stat. Hd. Channel Cylinder	CS W/CUNI /70 2/	)) clad or mone!	Ship-off backii		Antonial C	o olfi o ti						
Stat. Hd. Bonnet Dishing	CS w/CuNi (70-30	) clad of monei	-		- 1000 Table 1	ecifications						
				escription of	JOING	Bolts	Nuts					
Stationary Head Flange			Manway/Man	way Cover								
Manway Cover			Stationary He	ad/Tubesheet/S	Shell	A193 B7	A194 2H					
Stat. Hd. Nozzle Flange			Shell/Shell Co	ver		A193 B7	A194 2h					
Stat. Hd. Nozzle Neck			Floating Tube	sheet/Floating	Head Cover	A193 B7	A194 2H					
			Floating Head	Cover/Floating	Head	A193 B7	A194 2H					
Floating Head Cover Cylinder	CS		Packing Box F									
Floating Head Cover Dishing	cs		Shellside Blind		A102 P7	A104 2L						
Floating Head Cover Flange	CS				A193 B7	A194 2F						
Floating Head Backing Device	CS		Tubeside Blind	rianges	A193 B7	A194 2H						
Split Shear Ring				Goolean	Material C	oolfi t'						
		Company of the Compan				ecification						
Slip-On Backing Flange				scription of	Joint	Gasket Ma	terial/ Typ					
Floating Head Cover-External Floating Tubesheet Skirt			Manway/Man									
Packing Box Flange				ad/Tubesheet		Note 4						
Packing Follower Ring			Stationary Tu Shell/Shell Co			Note 1,2						
Lantern Ring				sheet/Floating	Hood Cover	Note 1,2	-					
Packing				sheet Skirt Pac		Note 4						
			Shellside Blind		'9	Note 1,2	-					
Stationary Tubesheet	CS w/CuNi (70-30	) clad or monel	Tubeside Blind			Note 4						
Floating Tubesheet	CS w/CuNi (70-30	) clad or monel										
Tubes	Cu-Ni (70-30) C7:	1500 or monel										
Tie Rods & Nuts												
Spacer Tubes												
Transverse Baffles/Support Plates												
Impingement Plate												
Longitudinal Baffle												
Page Partition Plate	7 24 2 200		0.6.0000		NOTES							
Pass Partition Plate Support Saddle Wrapper Plate			Ref: GEMS E-1									
Support Saddles Wrapper Plate						ent surface finish						
Lifting Lugs				Gaskets may be metal jacketed or spiral wound (flexible graphite filled     Foreigns shall much may be foreigned as a first state of the property of the								
Shellside Cou;lings				<ul><li>3) Forgings shall meet requirements of SA-788.</li><li>4) Gasket may be compressed, non-asbestos for all seawater service.</li></ul>								
Tubeside Couplings			T) Gasket May	be compresse	u, non-aspesto	s for all seawater	service.					
Expansion Joint												
Weir Plate			METALLURGY	NOTES:								
Nozzle Flan	ge Face Surfac	e Finish			side) contains	s some metallic su	Ifates and					
Shellside		ubeside		alts in the 100			accs and					
						e channel side for	cathodic					
						e on exchanger.						
				Auto-		Manager and the second						

 $G: \label{lem:condition} G: \label{lem:condi$ 

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

**HEAT EXCHANGER** 

1. Ma	anufactured and	certified by	OHMST	EDE LTD.	BEAUMO	ONT PLA	ANT, 895		TH MAIN S				IT, TEXAS	77701				
2. Ma	anufactured for	Matrix En	gineering,	Ltd. 1725 V	V. Cardina	al Drive		Tex	as 77705-6	415								
									d address of F	urchas	er)							
3. Lo	cation of installa	chev Chev	ronTexaco	Latin Ame	rica Prod	ucts-Co	lon, Pana		Name and ad	dress)	-							
4 Tv	pe: H	OPIZ		HEAT	EXCHAN	GER			78288	41000)	_		478288		2707	2004		
4. IY	17.	ert., or spher	e) (Tank	k, separator, j			. etc.)		serial No.)		(CRN)		(Drawing No.)	_	1. Bd. No.)	(Year built)		
5 49	SME Code, Sect	CONTRACTOR OF THE STATE OF THE					,,			2429	57.				-			
J. 110	JIVIE 0000, 000	1011 VIII, DIV.			n and Add		e)		Ci	ode Cas			Spe	ecial Servi	ice per UG-1:	20(d)		
Items	6 - 11 incl. to be	completed f				cketed ve	ssels, shell	of hea	at exchangers	, or cha	amber	of multi-cl	hamber vessel	ls.				
6. Sh	nell (a) No. of	f course(s):			2		(b) Ove	rall ler	ngth (ft & in.):					18'-6 1	13/16"			
	Course	e(s)		Material		Thickne	ss		Long. Joint (	Cat. A)		Circu	m. Joint (Cat. /	A. B & C)	Heat T	reatment		
No.	Diameter, in.	Length (ft &		./Grade or Ty	pe No	om.	Corr.	Type			Eff.		Full, Spot, No	Source of the Party of the Part	THE RESERVE OF THE PARTY OF THE	Time		
1	42" I.D.	9'-11"		SA-516-70		00	.125	1_	SPOT		.85	11	SPOT	.85		<u> </u>		
2	42" I.D.	8'-7 13/1	5"   8	SA-516-70		00	.125	1_	SPOT		.85	1 1	SPOT	.85		<del>  -</del> -		
<u>_</u>		<u> </u>					•	-				ا - ا						
7. He	eads: (a)				\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	0 T		_	(b)		Antil C	Page No.	Grade or Type	NUT 7	Time & Tomp			
		(Mat'l	Spec. No., (	Grade or Type	e) H.1 III	me & Ten	np			(1	IVIAT I	spec. No.,	Grade or Type	e) H. I I	ime & remp	MANAGEMENT OF THE PARTY OF THE		
	Location (Top		kness	Rad		Elliptica			lemispherical	Fla Diame			o Pressure	Tuno	Full, Spot, N			
(a)	Bottom, Ends	Min.	Corr.	Crown -	Knuckle -	Ratio -	Apex An	gie	Radius -	Diame -		- Convex	Concave -	-		one En.		
(b)							-	十				-	-	-	-	-		
II TOTAL	ovable, bolts us	000001100		5/				24HC24	(Mat'l Sp	ec. No.,	, Grad	e, size, No	0.)					
8 Tv	pe of jacket								Jacket clos	ure				_				
o,	pe or jacket									A CONTRACTOR OF THE PARTY OF TH		(D	escribe as oge	e & weld	bar etc.)			
If h	as aius dimanai	ions													oolted, descri	he or sketch		
II D	ar, give dimensi	UIS -																
9. MA	AWP15	1	FV	psi at max. t	emp.	500		-		Min. de	esign i	metal tem	p. <u>-20</u>	°F	at151	/FV psi.		
	(inter	nal) (e	external)			(internal	) (ext	emal)										
10. lm	pact test <u>UC</u>	S 66 (a)	(d)										at test	t temperat	ture of	°F		
				(Indicate	yes or no	and the c	omponent(s	s) impa	act tested)									
11. H	ydro., <del>ptysu</del> , <del>st</del>	test p	ress.	226	3	Pro	of test											
Items	12 and 13 to be	completed for	or tube sect	ions														
	ubesheet sa	a contract of the contract of the			41	7/8"			2 3/8	11		2	250		BOLTE	D		
		stationary (Ma					press.) Nom. thk., in.						llow., in.	Attach	Attachment (welded or bolted)			
-	-516-70n/sb1			17 10 E000000		_		3/8"				.250			BOLTED			
	Floating (Mat'l S		-	Dia., in.			Nom		in.		Соп	. Allow., ir	1.		Attachmen			
13. Tu			71500	27-100001 · 100120		/4"				LA/A.			1156		STRAIG			
13. 10		SB-395C7 Spec. No., G				)., in.			0.0650" Nom. thk., in.		ge an		Number		Type (Straigh			
						18				or gaos	90		Hamber		Type (Ollaigh	1010)		
Items '	14 - 18 incl. to b		for inner ch	nambers of jac	cketed ves	sels or ch												
14. Sh	ell (a) No. of	course(s):		(a	a) 1 (b)1		(b) Over	all leng	gth (ft & in.):				(a) 1'11"	(b)	0'-8"			
	Course			Material		Thickne			Long Joint (	Cat. A)			m. Joint (Cat. A		Heat T	reatment		
No.	Diameter, in.			/Grade or Ty				Type	Full, Spot, I	9.	Eff.		Full, Spot, No		Temp.	Time		
a	42" I.D.	1'-11"		A-516-70	.50		.125	1	SPOT		.85	1	SPOT	.85		<u> </u>		
Ь	45" I.D.	0'-8"	S	SA-516-70		00	.125	1_	SPOT	-	.85	1	SPOT	.85	+	-		
					=			-	<u> </u>		-					- 1		
15. He	ads: (a)			A-516-70N I				_	(b)		A		516-70 1150					
		(Mat'l S	pec. No., G	Grade or Type	) H.T Tin	ne & Tem	P			(1)	viat'l S	Dec. No.	Grade or Type	T - T.H (	me & Temn	R		
														7				
	Location (Top,		ness	Radi		Elliptica			emispherical	Flat	t	Side to	Pressure		Category A			
(2)	Bottom, Ends)	Min.	cness Corr.	Radi Crown	Knuckle	Ratio	Apex An		Radius	Flat Diame	t	Side to Convex	Pressure Concave	Type	Category A	one Eff.		
(a) (b)			ness	Radi						Flat	t	Side to	Pressure		Category A	one Eff.		

If removable, bolts used (describe other fastening) 52-3/4"studs 7 3/4"Lg. & 52-3/4"studs 9 3/4"Lg. SA-193B7 / 208-Heavy Hex Nuts SA-194-2H (Mat'l Spec. No., Grade, Size, No.)

15. MAWP	151		FV ps	i at max. temp.	500		°F	Min.	design metal temp.	-20	°Fat	151/ FV ps
	(internal	) (ex	ternal)		(internal)	) (exte	ernal)					
17. Impact test	NO P	ER UCS	66 (a) (d)							at test ten	perature of	
				(Indicate yes or	no and the c	omponent(s)	impact teste	ed)				
18. Hydro., ####	E, Official	test pre	ess.	226	Proof	test						
3. Nozzles, insp	ection,	and safety v	valve opening	s:								
Purpose (Inlet		Diameter		Name	Material	Flores	Nozzle T		Reinforcement	How A Nozzle	ttached Flange	Location (Insp. Open.)
Outlet, Drain, et	200	or Size	RFWN	Nozzle SA-106-B		Flange SA-105	.500	.125	Material INTREGAL		WELDED	(IIISD. Open)
Shell inlet Shell outlet	2	10"150# 4"150#	RFWN	SA-106-B		SA-105	.3370	.125	INTREGAL	WELDED	WELDED	-
Tube In/Outle	_	10"150#		SA-106-B		SA-105	.500	.125	INTREGAL	WELDED	WELDED	_
Tube Vent	1	1"150#	RFLWN	SA-105	-	-	0.50	.125	INTREGAL	WELDED	-	-
Shell CVR Ve		1"150#	RFLWN	SA-105		-	0.50	.125	INTREGAL	WELDED		-
Shell CVR Dra		1"150#	RFLWN	SA-105		-	0.50	.125	INTREGAL	WELDED	-	-
Tube Drain	1	1"150#	RFLWN	SA-105		-	0.50	.125	INTREGAL	WELDED	-	_
		0/20202607	N. S.	NONE	Legs	NONE	Others	2-0	SADDLES	Attached	TO SHELL	/WELDED
20. Supports: Sk		NO Yes or No)	Lugs	(No.)	Legs	(No.)	— Olliers		Describe)	Allabrica		and How)
	,	ALTERNATION CONTRACTOR		7.0000000000000000000000000000000000000						a itama of the re	3.72	4.1011/
21. Manufacturer	's Partia	I Data Repo	orts properly i	dentified and sigr ne and identifying	ned by Comm	nissioned ins	spectors nave	been turni	shed for the following	ng items of the re	eport:	
(List the name	or part,	item numb	er, my s. nan	ne and identifying	Humber							
22 Remarks: C	IID IC	B NO:478	288 VOLIB	P.O. NO: 1335	51 ITEM NO	D: 50-X-10	3					
								" Flat Dia	m. X 3 1/8"THK.	SA-516-70N	C A 125"	
				r Flg. SA-266-4					III. X 3 1/0 11 IX.	3A-310-7014	U.A 125	
				Lg. SA-193-B7								
46-3/4 310	15 5 L	y. & 40-31	4 31005 0	Lg. 5A-193-D1	170-1164	y HEX Huts	O/1-134-21					
U Certi Date	08/2	Authorizati 4/2004	on No Name _OH	IMSTEDE LTD	,155 BEAUMO (Manufactur CERTIFIC	er) ATE OF S	HOP INSP	ECTION	Milel	(Representative)	of T	EXAS
and employ		noiding a v	and commission		SB CT			of		FORD, CT		e inspected
		l described	in this Manuf	acturer's Data Re		08/	24/2004		and state that, to th			2
									y signing this certific		tier t	
									cturer's Data Repor		- 55	
									f any kind arising fro			ection.
						-			to the second			
Date	8/24/2	004 Si	igned &	- t-17			Comr	nissions _		04/315	1/2	100
				(Authori	zed Inspecto	or)	->-		(Nat'l Board incl.	endorsement, Sta	te, Province	and No.)
				CERTI	FICATE O	F FIELD AS	SSEMBLY	COMPLI	ANCE			
We certify	that the	statements	on this report	are correct and t	that the field	assembly co	nstruction of	all parts of	this vessel conform	s with the require	ements of AS	ME
Company of the control of the contro		Division 1,										
U Certifica	e of Au	thorization N	No				E	cpires				-
Date		N	ame ·					Signed				
				***************************************	(Assembler)			oigiles _		(Representative	2)	-
				CARLOW MAKE AND	and the state of t	Control of Programmer and Control	0051101			(representative	1	
N.							SSEMBLY					
I, the under	signed,	holding a va	alid commissi	on issued by The	National Boa	ard of Boiler	and Pressure	Vessel Ins	spectors and the Sta	ate or Province of	f <u>·</u>	
and employ	CONTRACTOR ST.							of	-			
have compa	ared the	statements	in this Manuf		SELECTION OF THE PROPERTY OF THE PARTY OF	Street Section 19 Control			e that parts referred			
2 2 2 2 2 2 2							and the same		been inspected by		Parature modes ordered	Participation of the state of t
belief, the N	lanufact	urer has co	nstructed and	assembled this p	pressure ves	sel in accord	lance with AS	SME Code,	Section VIII, Division	n 1. The describ	ed vessel wa	IS
inspected a	nd subje	ected to a h	ydrostatic test	of	psi.	By signing t	this certificate	neither the	e Inspector nor his e	employer makes	any warranty	, expressed
or implied, o	oncemi	ng the pres	sure vessel d	escribed in this M	lanufacturer's	s Data Repor	rt. Furthermo	re, neither	the Inspector nor his	s employer shall	be liable in a	ny
manner for	any pers	sonal injury	or property da	amage or a loss o	f any kind ar	ising from or	connected w	rith this insp	pection.		14	
Date		Ci	igned				Com	missions				
2010			31104									

(Authorized Inspector)

(Nat'l Board incl. endorsement, State, Province and No.)



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