

## **SHELL & TUBE INSPECTION REPORT**

LSD: 07-27-051-19W5M Date: JUNE 07, 2014 SAP Equipment ID: 66038580

SHELL & TUBE STATIC DATA										
Plant	Ansell Gas	Plant	Op Un		JUL SI	AIIO DAIA	Syste	m		
Prov. Insp. #	A0402803		CRN		6180.2			Tag#	F-1	110
Equipment D		C5 Exc						Serial # 993371		
Manufacturer	•				Cuatama			el Clas		33 <i>1</i> I
					Systems					
Internal Acce	ss: YES	Descr	iption:		annel fla		Year	Built	1999	
					L SIDE					
MAWP 48	5	PSI		@	350	°F	MDM.		-20	°F
CODE: U						Sweet	PWH	Γ:	N	0
Diameter 8.	625" Le	ength (	(T/T)	in	0	<b>AL</b> 90 in				orizontal
								Allowan	•	0.063 in
Nozzle Mat	'I		Thickr	ness		mm / ir	Corr A	Allowan	ce	mm / in
Internal Coat	ing: <del>YES N</del> O	)	Interna	al Clac	l: ¥E	S NO	Capa	city		m <sup>3</sup>
Manway:	yes – 8	" flange	Inspec	tion P	ort : NC	)	Saddl	е		
Nozzle Rating	9	lb ANSI	Painte	d :	YE	S	Insula	ated		NO
Operating Pro	essure		kP	a / PS	ı	Operating Tem	perature			°C / °F
			TUB	E/CH/	ANNELS	SIDE DATA	•			
MAWP 48	5	PSI		@	350	°F	MDM.	Т	-20	°F
CODE : U						Sweet	PWH	Т:	N	0
Diameter 8.	625" Le	ength (	(T/T)	mn	n/in <b>O</b>	<b>AL</b> 8.5 in			Н	orizontal
	nannel	,g \	( . , . )			hannel.			• • •	onzonia.
Shell Mat										
Nozzle Mat	'1		Thickr	ness		mm / ir	Corr A	Allowan	се	mm / in
Internal Coat	ing: YES NO	)	Interna	al Clac	l: YE	S NO	Capa	city		m <sup>3</sup>
Manway:	YES – 8" (	hannel	Inspec	tion P	ort :	NO	Skirt	Legs	S	addle
flange										
Nozzle Rating	9	lb ANSI	Painted: YES			Insula	Insulated			
Operating Pro	essure			a / PS		Operating Tem	perature			°C / °F
						TATIC DATA	T	-		. 5 . /
Serial No.	Location		et	Ca <sub>l</sub>	pacity Lbs/Hr /	Manufacturer	Model /	Туре		ervice Date /
	Off stabilizer		sure	GPM		Голгіо	001/440	,		Company
CE-27698- A10	feed drum	486psi		1760	6scfm	Farris	26KA12 120/S5			ep-11. Wizard. PSV-1011
Alu	leed didili		SH	FII S	IDF PSV	DETAILS	120/331	VI	Tay	F 3 V - 10 1 1
	Type (T	hread/FI		LLL O	DETOV	ANSI Rating			Size	e (mm)
PRD Inlet	Flanged		<u> </u>			<u> </u>		3"		
PRD Outlet	Flanged							4"		
						ATIC DATA			,	
	Location		et		pacity Lbs/Hr /	Manufacturer	Model /	Type		ervice Date /
Serial No.			sure	GPM						Company
C27216A10	Off stabilizer	485psi		3199	scfm	Farris	286FA1			-2011, Wizard.
	tower 120/55M Tag PSV-1003  Tube side PSV DETAILS									
	Type /T	hread/FI		ibe Si	JE POV L	ANSI Rating			Çi-	ze (in)
PRD Inlet	Flanged	in cau/i I	unge <i>j</i>	ange) ANSI Kating			1.5"			
PRD Outlet	Flanged							2"		
	NDE Equipment records									
Procedure#	Description	Manuf	acturer		Model		Serial#			Due Date
	-									



#### SHELL & TUBE INSPECTION REPORT

LSD: 07-27-051-19W5M Date: JUNE 07, 2014 SAP Equipment ID: 66038580

#### INSPECTION SUMMARY

Exchanger in plant 1 inlet building. A visual external and internal inspection was conducted on exchanger during plant turnaround.

#### External:

Shell, channel and piping are in good condition. No paint deterioration, corrosion or damage noted. Piping well supported. Vessel is securely bolted to steel beams, anchor bolts in good condition. Building skid is grounded but no direct ground connection found. Saddle supports are seal welded. Dataplate is securely attached to vessel and legible. Shell side PSV was found to be off the stabilizer tower. Tube side PSV was found to be off Stabilizer feed drum. There are numerous valves between exchanger shell side / tube side and corresponding PSV's. These must be locked open during plant operation. Both PSVs set at MAWP. UT corrosion survey performed by Streamline Inspection June 2014.

Exchanger bonnet was removed and tube bundle pulled and cleaned for internal inspection. Shell side was found to be in good condition. No corrosion or significant mechanical damage noted. Slight wearing of the shell was noted where bundle baffle plates contact shell, but no significant wall loss was noted. Shell flange face was found to be in acceptable condition, no damage or corrosion noted. Channel bonnet was found to be in good condition. No corrosion or erosion noted on head, shell or nozzles. The partition plate was found to be securely attached with no deformation noted. There were some grinder marks noted on leading edge of partition plate fillet welds. Channel flange face was found to be in acceptable condition with no corrosion or damage noted. Tube bundle was found to be in fair condition. No erosion or corrosion was noted on bundle tubes or tube sheet. Tube ends appear to be in good condition, no corrosion or internal fouling or obstructions noted. No fretting damage to tubes was found at or near where they pass through baffle plates. One tube was found to be plugged off. Plugs securely in place.

Exchanger was found to be in good condition and fit for continued service.

#### RECOMMENDATIONS

Ensure all valves between exchanger shell side and tube side and the protecting PSVs are carsealed open when plant is in operation.

Review UT survey report.

#### **NONCONFORMANCES / INSPECTION DEFICIENCIES**

Numerous valves between tube side / shell side and protecting PSV's. AS plant was in outage could not determine if these are locked open while vessel is in operation. These valves need to be carsealed open when in operation.

INSPECTION PLANNING

#### Inspection Strategy Availability Inspection Interval Inspection Date June 07, 2014 Date of Last Inspect **Date of Next Inspect** REPORT CERTIFICATION The signatures below certify that inspections/tests have been completed in accordance with the identified inspection strategy and that the specified equipment is considered fit for service until the date of next inspection. Inspected by **Ed Tymensen** Date June 07, 2014 API# Company Streamline Inspection PESL# 000711 27479 Reviewed and Approved by Date PESL# API# **Criticality Assessment Rerun** Inspection Planning Rerun Assessed Next Inspection Date



## SHELL & TUBE INSPECTION REPORT

LSD: 07-27-051-19W5M Date: JUNE 07, 2014 SAP Equipment ID: 66038580

### **DETAILED INSPECTION VISUAL EXTERNAL**

ID	Description	Condition	Location VISUAL	NCR /	Comments
V1	General Other (Please Explain)	Good			Overall
V2	General Corrosion	n/a			None noted
V3	General Leaks	n/a			None noted
V4	Vibration	n/a			Inspection done during shutdown
V5	Dissimilar Flange Rating	n/a			Similar flange ratings
V6	Ladder/Stairway	n/a			
V7	Heads	Good			No corrosion or damage noted
V9	Electrical Ground	Good	Building skid		Skid ground cable present and secure. No direct ground connection to vessel found
V10	Painted Inactive Corrosion	n/a			
V11	Coating/Painting	Good			No significant paint deterioration noted
V12	Expansion Joint or Bellows	n/a			
V13	Gauge/Site Glass	Good	Temp		Gauge clear and legible
V14	Shell	Good			No corrosion or damage noted
V15	Jacket	n/a			
V21	Support Other (Please explain)	Good	Piping		Well supported
V22	Foundation	Good	Steel skid		Skid on steel piles
V23	Anchor Bolts	Good			Tight and secure
V24	Saddle/Skirt	Good	Saddle		Seal welded
V25	Davit	n/a			
V26	Fireproofing	n/a			
V31	Connections Other (Please explain)	Good			All connections appear secure
V32	Small Branches	n/a			
V33	Nozzles	Good			No corrosion or damage noted
V34	Manways	n/a			Internal access through channel flange
V35	Reinforcing Pads	n/a			
V36	Inadequate Thread Engagement	Good			Adequate thread engagement
V37	Bolting	Good			All bolting tight and secure, no corrosion of threads
V38	Flanges	Good			No leaks or surface corrosion noted
V39	Leak Clamps	n/a			
V41	Insulation Other (Please explain)	n/a			
V42	Damage	n/a			
V43	Penetrations	n/a			
V44	Insulation Jacket	n/a			
V45	Banding	n/a			
V46	Seals/Joints	n/a			
V51	Relief Devices Other (Please explain)	Good			No access to tube side PSV off stab. tower at time of inspection. Ribboned off
V52	Corrosion	n/a			None noted
V53	Leaks	n/a			None noted
V54	Restricted Inlet/Outlet	n/a			No restrictions
V55	Manual Operation Lever				Ensure all valves between exchanger shell side and tube side are locked open when plant is in operation



## **SHELL & TUBE INSPECTION REPORT**

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DETAILED INSPECTION VISUAL INTERNAL

ID	Description	Condition	Location	NCR /	Comments
				IDR	
V1	General Other (Please Explain)	Good			Overall
V2	Corrosion (depth, length, width)	n/a			No corrosion noted
V3	Erosion	Fair	Shell		Minor shell wall loss, wear marks, where tube bundle baffles contact shell, no concern at this time
V4	Distortion	n/a			No distortion noted
V5	Blisters	n/a			No blisters noted
V6	Deposits	n/a			No deposits noted
V7	Heads	Good			No corrosion or damage noted
V8	Welds	Good			No corrosion or welding defects noted
V9	Nozzles	Good			No corrosion or damage noted
V10	Shell	Good	Shell		Minor shell wall loss, wear marks, where tube bundle baffles contact shell, no concern at this time
V11	Gasket Surfaces	Good	Shell and channel flange faces and channel nozzle flange faces		No corrosion or damage noted
V21	Internals Other (Please explain)	Good	Channel partition plate		Securely attached, no distortion
V22	Demister	n/a			
V23	Baffle/Weir	n/a			
V24	Sparger	n/a			
V25	Thermowells	n/a			
V26	Metallic Linings	n/a			
V27	Nonmetallic Linings	n/a			
V30	Other Welded Attachments	n/a			
V31	Tubes	Good	Tube bundle		No corrosion or damage noted externally or internally (as visible). Bundle baffles in good condition.
V32	Tube sheet	Good			

**DETAILED INSPECTION OTHER TECHNIQUES** 

ID	Location	Observation/Measurement	Acceptance Criteria	NCR / IDR	Comments
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					



## **SHELL & TUBE INSPECTION REPORT**

LSD: 07-27-051-19W5M Date: JUNE 07, 2014 SAP Equipment ID: 66038580

**DETAILED INSPECTION TUBE INSPECTION** 

Tube #	Flaw Type	Flaw Length	Location on	Wall	NCR /	Comments
			Tube	Loss	IDR	

#### **DETAILED INSPECTION UT THICKNESS**

CML	Nom.		Short Term	Long Term		Comments
	Thk	Reading	Corr Rate	Corr Rate	Life	



## **SHELL & TUBE INSPECTION REPORT**

LSD: 07-27-051-19W5M Date: JUNE 07, 2014 SAP Equipment ID: 66038580

## **PHOTOS**





Dataplate

Exchanger overview



Saddle supports, seal welded, bolted to Beam



Channel bonnet



Channel flange face and partition plate



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Date: JUNE 07, 2014 SAP Equipment ID: 66038580





### SHELL & TUBE INSPECTION REPORT

LSD: 07-27-051-19W5M

Date: JUNE 07, 2014

SAP Equipment ID: 66038580

#### **PHOTOS**



Tube bundle close up



Tube to tubesheet



Shell side internal



Tube side PSV off stabilizer tower



Shell side PSV service tag



Shell side PSV off stabilizer feed drum

# Husky Energy

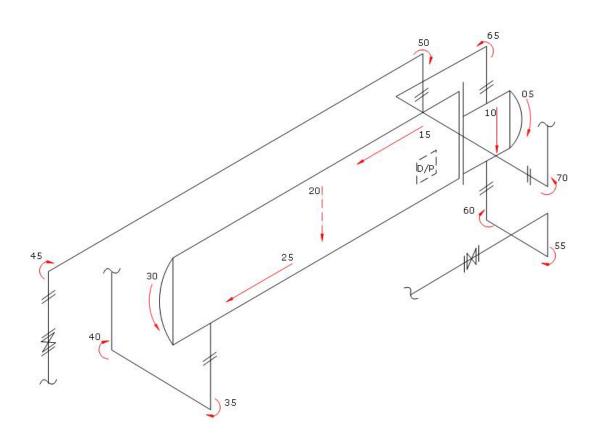
Location Name:	ANSELL GAS PLANT	LSD:	7-27-51-19W5
A#:	A0402803	Equipment/Tag No.	E-110
<b>Equipment Description:</b>	EXCHANGER	Serial Number:	993371
		CRN: (or other ID#)	L6180.2
MAWP:	485 PSI	Design Temp:	350°F
Shell Material:	SA-106-B	Head Material:	SA-234-WPB
Shell Thickness:	0.322"	Head Thickness:	0.256"
Corrosion Allowance:	0.063"	Date Built:	1999
Size:	8.625"	Manufacturer:	THERMOTECH ENERGY
RT:		Pipe / Rolled Plate:	PIPE

#### Notes:



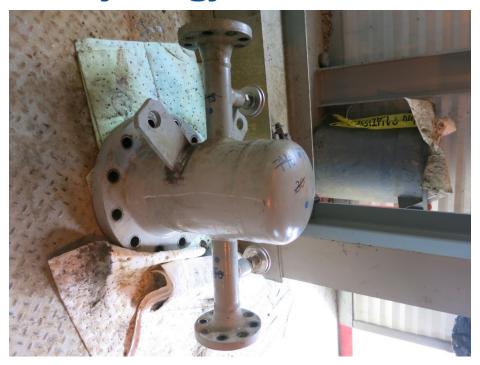


# Husky Energy





# Husky Energy









# **Ultrasonic Corrosion Survey**

Survey Name: Husky Energy Date: Jun 11, 2014

Inspector: W. Gill

									'
LSD:	07-27-051-19W5	Area:	Ansell			Location:	Gas Plant		
A #:	A0402803	Tag Number:	E-110			Vessel Name:	Exchanger		
CRN:	L6180.2	Year Built:	1999			Serial Number:	_		
Citiv	20100.2	Vessel CA:	1.6	mm		Manufacturer:		ch Energy	
		Shell MAWP:		MAWTF:	350°F	Tube MAWP:	memore	MAWTF:	
		SHEII WAVVI .	403p3i	WIAW III.	330 1	Tube WAVI		IVIAVVIII.	
TML De	escription		Baseline					Material:	A-234-WPB
05	Head		2014		Flag	CA	Nominal	T Min	Corr. Rate
Shape:	Gas Boot	Min	7.240		7.156	1.022	8.179		
OD:	8.625"	Avg	8.460				Assumed		Remaining Life:
Spec:	ASME VIII Div.1	Comments:							Retirement Date:
TML De	escription		Baseline					Material:	A-234-WPB
10	Head		2014		Flag	CA	Nominal	T Min	Corr. Rate
Shape:	Gas Boot	Min	8.460		7.157	1.022	8.179		
OD:	8.625"	Avg	8.810						Remaining Life:
Spec:	ASME B31.3	Comments:							Retirement Date:
TML De	escription		Baseline					Material:	SA-106-B
15	Shell		2014		Flag	CA	Nominal	T Min	Corr. Rate
Shape:	Cylindrical	Min	8.890		6.579	1.600	8.179		
OD:	8.625"	Avg	9.270						Remaining Life:
Spec:	ASME VIII Div.1	Comments:							Retirement Date:
TML De	escription		Baseline					Material:	SA-106-B
20	Shell		2014		Flag	CA	Nominal	T Min	Corr. Rate
_	Cylindrical	Min	8.640		6.579	1.600	8.179		
OD:	8.625"	Avg	8.920		0.575	1.000	0.173		Remaining Life:
Spec:	ASME VIII Div.1	Comments:	0.520						Retirement Date:
<u> </u>									



# **Ultrasonic Corrosion Survey**

**Survey Name: Husky Energy** Date: Jun 11, 2014

									Inspector: W. G	ill
LSD:	07-27-051-19W5	Area:	Ansell			Location:	Gas Plant			
A #:	A0402803	Tag Number:	E-110			Vessel Name:	Exchanger			
CRN:	L6180.2	Year Built:	1999			Serial Number:	•			
		Vessel CA:	1.6	mm		Manufacturer:	Thermote	ch Energy		
		Shell MAWP:	485psi	MAWTF:	350°F	Tube MAWP:		MAWTF:		
TML De	escription		Baseline					Material:	SA-106-B	
25	Shell		2014		Flag	CA	Nominal	T Min	Corr. Rate	
Shape:	Cylindrical	Min	8.230		6.579	1.600	8.179			
OD:	8.625"	Avg	8.660						Remaining Life:	
Spec:	ASME VIII Div.1	Comments:							Retirement Date:	
TML De	escription		Baseline					Material:	SA-234-WPB	
30	Head		2014		Flag	CA	Nominal	T Min	Corr. Rate	
Shape:	Ellipsoidal	Min	7.160		4.902	1.600	6.502			
OD:	8.625"	Avg	8.660						Remaining Life:	
Spec:	ASME VIII Div.1	Comments:							Retirement Date:	
TML De	escription		Baseline					Material:	A-234-WPB	
35	Piping		2014		Flag	CA	Nominal	T Min	Corr. Rate	
Shape:	90° Elbow	Min	3.230		3.423	0.489	3.912	2.540	0.045	
OD:	2.375"	Avg	3.710						Remaining Life:	15.44 Years
Spec:	ASME B31.3	Comments:	No corro	sion found					Retirement Date:	11/1/2029
TML De	escription		Baseline					Material:	A-234-WPB	
40	Piping		2014		Flag	CA	Nominal	T Min	Corr. Rate	
Shape:	90° Elbow	Min	3.510		3.423	0.489	3.912			
OD:	2.375"	Avg	3.760						Remaining Life:	
Spec:	ASME B31.3	Comments:							Retirement Date:	



2.375"

Spec: ASME B31.3

OD:

# **Ultrasonic Corrosion Survey**

Survey Name: Husky Energy Date: Jun 11, 2014

Inspector: W. Gill

**Remaining Life:** 

**Retirement Date:** 

LSD:	07-27-051-19W5	Area:	Ansell	Location:	Gas Plant
A #:	A0402803	Tag Number:	E-110	Vessel Name:	Exchanger
CRN:	L6180.2	Year Built:	1999	Serial Number:	993371

5.660

Avg

**Comments:** 

Vessel CA:1.6mmManufacturer:Thermotech EnergyShell MAWP:485psiMAWTF:350°FTube MAWP:MAWTF:

TMI De	escription		Baseline				Material:	A-234-WPB	
45	Piping		2014	Flag	CA	Nominal	T Min	Corr. Rate	
	90° Elbow	Min	3.330	3.423	0.489	3.912	2.540	0.039	
OD:	2.375"	Avg	3.680					Remaining Life:	20.81 Years
Spec:	ASME B31.3	Comments:	No corrosion found					Retirement Date:	
TML De	escription		Baseline				Material:	A-234-WPB	
50	Piping		2014	Flag	CA	Nominal	T Min	Corr. Rate	
Shape:	90° Elbow	Min	3.860	3.423	0.489	3.912			
OD:	2.375"	Avg	3.940					Remaining Life:	
Spec:	ASME B31.3	Comments:						Retirement Date:	
TML De	escription		Baseline				Material:	A-234-WPB	
55	Piping		2014	Flag	CA	Nominal	T Min	Corr. Rate	
Shape:	90° Elbow	Min	4.850	4.845	0.692	5.537			
OD:	2.375"	Avg	5.410					Remaining Life:	
Spec:	ASME B31.3	Comments:						Retirement Date:	
TML De	escription		Baseline				Material:	A-234-WPB	
60	Piping		2014	Flag	CA	Nominal	T Min	Corr. Rate	
Shape:	90° Elbow	Min	5.410	4.845	0.692	5.537			



# **Ultrasonic Corrosion Survey**

Survey Name: Husky Energy Date: Jun 11, 2014

Inspector: W. Gill

LSD:	07-27-051-19W5	Area:	Ansell	Location:	Gas Plant
A #:	A0402803	Tag Number:	E-110	<b>Vessel Name:</b>	Exchanger
CRN:	L6180.2	Year Built:	1999	<b>Serial Number:</b>	993371

Vessel CA:1.6mmManufacturer:Thermotech EnergyShell MAWP:485psiMAWTF:350°FTube MAWP:MAWTF:

TML D	escription		Baseline				Material:	A-234-WPB
65	Piping		2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	90° Elbow	Min	32.299	28.243	4.035	32.277		
OD:	2.375"	Avg	32.311					Remaining Life:
Spec:	ASME B31.3	Comments:						Retirement Date:
TML D	escription		Baseline				Material:	A-234-WPB
TML Do	<b>escription</b> Piping		Baseline <b>2014</b>	Flag	CA	Nominal	Material: T Min	A-234-WPB Corr. Rate
70	•	Min		<b>Flag</b> 28.242	<b>CA</b> 4.035	<b>Nominal</b> 32.277		
70	Piping	Min Avg	2014	_	_			



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

. Ma	nufactured and ce	irtified by		THERMO	TECH EN	NERG'	Y SYS			PREMETALCO			- 76 A	VE S.E.,	CAL	, AB. T2	E 2X	<u> </u>
. Ma	nufactured for		R	ENAISSA	ANCE C	Ю В.Г	D.R. 3	300, 1501	WES	nd address of Manu STMOUNT RE	. N.V	V. CA	LGA	RY, AB. T	2N	3M2		
Lox	cation of installatio	n		_				(Name	-27-	ress of Purchaser) 51-19-W5M	ANS	EL						
. Tyj	oe.	HORE	ZONTA	L				AT EXC	HAN							37 1	:	
	L 618		ert., or sphere		993371			erator, jckt. V	'essel, h	eat exch ; etc.)	ı	N/A		{M	itgis si		999	
AS	(CRN ME Code, Section				(Draw)	ing No.)	)			N/A	(Nat	I. 8d N	(O.)		N	/A	ar bu	H)
<b>.</b>	44 4- 6-, asserbat			Edition	and Addend:	a (date)	hall	e of heat ev	hanner	Code Case No s, or chamber of m	ulti-ch	amber			ervice	per UG-1	20(d)	
	na to be complei eli (a)No ofcoul		die Mais Aco:	ans, jacke:s	or Jackster	. 463361	, site	(b) Overa					"-6"					
	Course	e(s)			Material	$\equiv$	Thi	ckness j		ony. Joint (Cat.A)		Circ	um. Join	t (Cat. A.B. &	C)	Heat	Treatr	nent
No.	Diameter, in	Leng	gth (ft & an.)	Spec /Grade or Type			Nom Corr		Type Full, Spot None		Eff. Typ			Spot,None	Err	Temp		ime
1	8.625		7'-6"	S	A106B		.322	.063	S	NONE	1	1_		SPOT	85	NA		
		+-			<del></del> ,													
He	eds (a)									(b)				WPB NO				
				Spec No G						Hemispherical		Spec		e or Type) H. a Pressure	(.• (in		ory A	
	Location (Top Bottom, Ends)	Man	Corr	Crown	Knuckle	Ellipt Rat	ł	Conical Apex Angie		Radius		neter	Convex		Туре	Full Spol		EM.
(a)														CONCAVE				
(b)	END ible, bolts used (d	.256	.063		8	2:	1	SE	<u> </u>	HEAD NA	<u> </u>	ئـــــــــــــــــــــــــــــــــــــ		CONCAVE	<u> </u>	<u> </u>		L
	ir, give dimension W.P.;	** 485	NA	psi at m	ax temp	35	0	NA NA	· ·	F Min des	gn mel	al lemp		·20 °F	a1	ted descr 485		251
). Imp	(in	ternal)	(external	)	-	(inte	mai) NC	(externa	PER	UG 20 F & UC!	66A							
, Hy	ero pneu ortesti	press		·····	728 F	-sı • •	(Indic	ale yes or no	and the	component(s) impa Proof test	t teste	Ø)		NA				
ms 12 Tubes	-13 to be comple					.1875			1.437		.12	25			E	OLTES	,	
1,000			ANTI Spec N	0)	Dia, m (su		press )	N:	om tisk	·	or Alic			Attac		(Weided o		d)
. Tu	Floating (Mat'l S		A179		Da, in	.750	_	Corr	Allow .	in. BWG		10	Atlachme	-		 L	,	
	M;	ati Spec N	lo. Grade or		0	D.n	• •		om thk.,	au or gange		Num				Type (Stra	ght or	U)
	I-17 incl. to be co ell (a) No of cou		KIT HUISE CA	4	CR0180 483		-17611110			(ft & in )		C	) <b>-</b> -8.5				:	
	Cours	e(s)		1	Material		- Th	ickness		Long Joint (Cat A)		Circ	um Jer	t (Cat. A.S. &	C)	Hear	Treat	ment
No	Diameter, in	Len	gth (ft & m )	Speci	Grade or Ty	ή <del>ρ</del>	Nom	Corr	Type	Full Spot None	Eff.	Туре		Sp. (None	EH.	Temp		Time
1	8.625		0'-8.5	5	A106B		322	.063	5	NONE	1	1		SPOT	85	NA	_	
							<u> </u>					1						
i, He	ads (a)		/Atai	SA2 1 Spec No C	34 WPB			Temo		(b)	(Mat	i Spec	No Gra	de or Type) il	Ť • Ť · ſ	ne & Tema	,	
	Location (Top	[ This	ckness	Pad Pad		Elip		Conical	T	Hernishperical		lat		o Pressure	Ţ		gory A	
	Bottom, Ends)	Min	Corr	Crown	Knuckie	Ra	(IO	Apex Angle	<u> </u>	Radius	Dia	meter	Conver	l	<u>ì —</u>	Full Spc	I,Nore	F.W
(a)	END	.256	.063		8	2:	1	SE	-	HEAD	1	-		CONCAVE	┼	┼	:	_
(b)	removable bolts u	<u> </u>				<u>i                                      </u>			<u>ــــــــــــــــــــــــــــــــــــ</u>	A193 B7 875	<del> </del>	42 DC		L	١	<u> </u>		ـــــــــــــــــــــــــــــــــ

(Mari Spec No Grade, size No.)

fastening)

### FORM U-1 (Back)

16	. M.A.W.P.:	48		NA palatin	nax temp 3:	50 N/	A °F	Min design meta	al temp	°Fat	485	ÇS:
17.	. Impact test	interna	al) (e	external)	(inter			3 20 F & UCS 6	6 A			:
18.	. Hydro prieu or	comb	lest press		728 PS		no and the co	mponent(s) impact to Proof test	ested)	NA		
19.	Nozzies, inspeci	lion, ar	id safety valve	openings	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	<u> </u>		•	<del></del> .		·	
Г	Purpose(Inlet,	T	Diameter	Flarge	Mat	torial	Nozz	le Thickness	Foodorcement	How At	ached	Location
۲	Outlet Drain, etc.)	No 1	or Size	Type RFWN	Nozzle SA106B	Flange SA105N	Nom .344	.063	Material	Nozzie UW16.1C	Flange	(Insp Open i
-	OUTLET	1	-	RFWN	SA106B	SA105N	.344	.063		UW16.1C	11	SS SHELL
H	INLET	1	2	RFWN	SA106B	SA105N	.344	.062		UW16.1C		TS SHELL
	OUTLET	1	2	RFWN	SA1038	SA105N	.344	.063		UW16.1C	WEI,D	TS SHELL
	T!	4	.750	CPLG	SA105N		6000	.063		UW16.1A		NOZZLES
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<u>_</u>	Suppc 1	Skirit	NO LU									
20.	auppe 3		NO Lu	gs NA	Legs	No Olne	irs	NA (Barana)	Attached		HELL WI	
<u>) 1,</u>	Manif satureds P.				nd staned by Comn		s have been fo	(Describe)	wing items of the repor		Where an	d how)
	(Nat the name of	part, il	em number, m	nfg's name and ide	ntifying number)				wing name of the repor	••		
			·		<del></del>							
22.	Re arks								· · · · · · · · · · · · · · · · · · ·			
	SERVICE:	i	LTS HEAT	ER		SAFETY VAL	VES:	ON PIPING AS	PER UG 125-G	CUBIC CA	PACITY	: 2.27 FT 3
					`			HEATIN	G SURFACE: 44.	7 F) <sup>2</sup>		
	**HYDRO	CTA	TIC TEET	TUD	E 1 21 10 211 44	7 AU TA	0# E 400					
	HIDRO	SIA	IIC TEST	108	ELENGYH 18	5-U" IA	G# E-100	*				<del></del>
						IFICATE OF S	HOP COM	PLIANCE				:
W	Ve certify that the ri	ateme	ele made le in									:
					ct and that all detail	s of design, materia	il, construction		of this vessel conform t	o the		
A	SME Code for Pres	i taro 1	/essels, Sectio	on VIII, Division 1								
A		i taro 1	/essels, Sectio	on VIII, Division 1	et and that all detail	s of design, materia Expires						
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U	SME Code for Pvet Certificate of Autr	i taro 1	/essels, Sectio	on VIII, Division 1 2	19383 RMOTECH EN	Expires  IERGY SYSTE facturer)	MS	n and workmanship o		7 2(4.5) V 1 (934	enj septative)	
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