

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

1. Manufactured and certified by: SBS Corporation - 2700 Auburn Ct. - Auburn Hills, MI 48326  
(Name and address of Manufacturer)
2. Manufactured for: TAS, Inc. - 4300 Dixie Drive - Houston, TX 77021  
(Name and address of Purchaser)
3. Location of installation: Shell Frontier Oil & Gas, Inc. - 13188 RBC Road 24 - Rifle, CO 81650  
(Name and address)
4. Type: Horizontal Air cooled heat exchanger 5198  
(Horizontal, vertical, or sphere) (Tank, separator, jkt., vessel, heat exch., etc.) (Manufacturer's serial number)  
5197-HP5064-1 208 2008  
(CRN) (Drawing number) National Board number (Year built)
5. ASME Code Section VIII Div 1 2007 - None  
[Edition and Addenda (date)] (Code Case number) (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) Number of course (s): \_\_\_\_\_ (b) Overall Length : \_\_\_\_\_

No.	Course(s)		Material Spec./Grade or Type	Thickness		Long. Joint (Cat. A) Type	Circum. Joint (Cat. A, B, & C)			Heat Treatment		
	Diameter	Length		Nom.	Corr.		Full	Spot	None	Eff.	Temp.	Time

7. Heads: (a) \_\_\_\_\_ (b) \_\_\_\_\_  
(Material spec. number grade or type) (H.T. - time & temp) (Material spec. number 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
(a)															
(b)															

If removable, bolts used (describe other fastenings) \_\_\_\_\_  
(Material spec. number grade, size, number)

8. Type of jacket \_\_\_\_\_ Jacket closure \_\_\_\_\_  
(Describe as ogee & weld, bar, etc.)  
 If bar, give dimensions \_\_\_\_\_ If bolted, describe or sketch \_\_\_\_\_

9. MAWP \_\_\_\_\_ at max temp. \_\_\_\_\_ Min. design metal temp. \_\_\_\_\_ at \_\_\_\_\_  
(Internal) (External) (Internal) (External)

10. Impact Test \_\_\_\_\_ at test temperature of \_\_\_\_\_  
[Indicate yes or no and the component(s) impact tested]

11. Hydro., Pneu., or comb. test press. \_\_\_\_\_ Proof Test \_\_\_\_\_

*Items 12 and 13 to be completed for tube sections.*

12. Tubesheet SA-516 Gr. 70 12" x 64" 1.00" 0.031" Tubesheet, bolted  
[Stationary (Material spec. number)] [Diameter (subject to press.)] (Nominal thickness) (Corr. Allow.) [Attachment (welded or bolted)]  
SA-516 Gr. 70 12" x 64" 1.00" 0.031" Tubesheet, bolted  
Floating (Material spec. number) (Diameter) (Nominal thickness) (Corr. Allow.) (Attachment)
13. Tubes SA-214 1.00" 16 gage 100 Straight  
(Material spec. number, grade or type) (O.D.) (Nominal thickness) (Number) [Type (Straight or U)]

*Items 14-18 incl. To be completed for inner chambers of jacketed vessels or channels of heat exchangers.*

14. Shell (a) Number of course (s): \_\_\_\_\_ (b) Overall Length : \_\_\_\_\_

No.	Courses		Material Spec./Grade or Type	Thickness		Long. Joint (Cat A) Type	Circum. Joint (Cat. A, B, & C)			Heat Treatment		
	Diameter	Length		Nom.	Corr.		Full	Spot	None	Eff.	Temp.	Time

15. Heads: (a) SA-516 Gr. 70 (b) SA-516 Gr. 70  
(Material spec. number grade or type) (H.T. - time & temp) (Material spec. number 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
(a)	Top	.619"	.588"	-	-	-	-	-	6.5x64	-	-	1	None	70%
(b)	End	.465"	.434"	-	-	-	-	-	6.5x10.75	-	-	1	None	70%

If removable, bolts used (describe other fastenings) \_\_\_\_\_  
(Material spec. number grade, size, number)

**Form U-1 (Back)**

16. MAWP 550 PSI (Internal) - (External) at max temp. 450°F (Internal) - (External) Min. design metal temp. -20°F at 550 PSI

17. Impact Test No per UCS-66 (a)(1)(c) at test temperature of \_\_\_\_\_  
Indicate yes or no and the component(s) impact tested

18. Hydro., pneu., or comb. test press. Hydro: 715 PSIG Proof Test \_\_\_\_\_

19. Nozzles, inspection, and safety valve openings:

Purpose (Inlet, Outlet, Drain, etc)	No.	Diameter or Size	Flange Type	Material		Nozzle Thickness		Reinforcement Material	How Attached		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
Inlet	1	3" IPS	RFSOF	SA-106-B	SA-105	.300"	.269"	None	16.1a2	16.1i	
Outlet	1	3" IPS	RFWNF	SA-106-B	SA-105	.300"	.269"	None	16.1a2	16.1e	
Vent/Drain	3	3/4" IPS	-	SA-105	-	3000#	-	None	16.1i	-	
Tube Plugs	200	1-1/8"	-	SA-105	-	-	-	-	Thread	-	

20. Supports: Skirt \_\_\_\_\_ Lugs \_\_\_\_\_ Legs 4 Others \_\_\_\_\_ Attached \_\_\_\_\_ Tubesheet, bolted \_\_\_\_\_  
(Yes or No) (Number) (Number) (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, Manufacturer's name and identifying number)

22. Remarks Tubes are 6 feet long and have turbulator inserts

Pressure relief device by owner. Not for lethal service.

TAS PO# POSVC000148

**CERTIFICATE OF SHOP COMPLIANCE**

We certify that the statements in this report are correct and that all details of design, material, construction and workmanship of this vessel conform to the ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1.

U Certificate of Authorization 28246 Expires March 20, 2010  
 Date 6/12/08 Name SBS 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/or the State or Province of Michigan and employed by HSB CT of Hartford, CT have inspected the pressure vessel described in this Manufacturer's Data Report on 6/12/08, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. By signing this certificate neither the Inspector nor his/her employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his/her 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 6/12/08 Signed [Signature] Commissions NB9486ABINNS MI 610  
(Authorized Inspector) (National Board (incl endorsements) State, Province and number)

**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 BOILER AND PRESSURE VESSEL CODE Section VIII, Division 1. U Certificate of Authorization No. \_\_\_\_\_ Expires \_\_\_\_\_

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/or the State or Province of \_\_\_\_\_ and employed by \_\_\_\_\_ 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 the ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. The described vessel was inspected and subjected to a hydrostatic test of \_\_\_\_\_. By signing this certificate neither the Inspector nor his/her employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his/her 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) (National Board (incl endorsements) State, Province and number)