

**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: R.C. Technical Welding & Fabrication Inc., 12814 Mula Lane, Stafford, Texas 77477  
 (Name and address of Manufacturer)

2 Manufactured for: PROSEP TECHNOLOGIES, Inc. 5353 West Sam Parkway North, Houston TX 77041 P.O. 10741230-0019  
 (Name and address of Purchaser)

3 Location of Installation: Prudhoe Bay, Alaska; BP Exploration  
 (Name and address)

4 Type: Horizontal Vessel Separator 11380  
 (Horizontal, vertical, or sphere) (Tank, separator, jkt. Vessel, heat exch., etc.) (Manufacturer's serial number)

n/a RCT08-11380 483 2010  
 (CRN) (Drawing number) (National Board number) (Year Built)

5 ASME Code, Section VIII, Div 1 Edition 2007, Addenda 2008 n/a  
 Edition and Addenda (date) (Code Case number) Special Service per UG-120(d)

**Items 6-11 inclusive 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. course(s): 6 (b) Overall length (ft. & in.): 50 FT SEAM TO SEAM

No.	Course		Material Spec./Grade or Type	Thickness		Long. Joint (Cat. A)			Circum. Joint (Cat. A, B & D)			Heat Treatment	
	Diameter, in.	Length (ft. & in.)		Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp.	Time
1	162.25"	13.25"	SA-516 70N	2.17"	0"	1	Full	1.00	1	Full	1.00	1,100 °F	4 Hr.
1	162.25"	120.625"	SA-516 70N	2.17"	0"	1	Full	1.00	1	Full	1.00	1,100 °F	4 Hr.
1	162.25"	120.625"	SA-516 70N	2.17"	0"	1	Full	1.00	1	Full	1.00	1,100 °F	4 Hr.
1	162.25"	120.625"	SA-516 70N	2.17"	0"	1	Full	1.00	1	Full	1.00	1,100 °F	4 Hr.
1	162.25"	120.625"	SA-516 70N	2.17"	0"	1	Full	1.00	1	Full	1.00	1,100 °F	4 Hr.
1	162.25"	104.25"	SA-516 70N	2.17"	0"	1	Full	1.00	1	Full	1.00	1,100 °F	4 Hr.

7 Heads: (a) SA-516 70N 2 Hrs. at 1,175 ° F (b) SA-516 70N 2 Hrs. at 1,175 ° F  
 (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	2.1070"	0.0"	n/a	n/a	2:1	n/a	n/a	n/a		X	n/a	none	n/a
(b) Bottom	2.1070"	0.0"	n/a	n/a	2:1	n/a	n/a	n/a		X	n/a	none	n/a

If removable bolts used (describe fastening) n/a  
 (Mat'l Spec No., Grade, Size, No.)

8. Type of jacket N/A Jacket closure N/A  
 (Describe as ogee & weld, bar etc.)

If bar, give dimensions N/A If bolted, describe or sktech.

9. MAWP 514 psi 85.89 psi at max. temp. 300 300 °F Min. design metal temp. -50 °F at 514.63 psi.  
 (internal) (external) (internal) (external)

10. Impact test All vessel components at test temperature of -50 °F  
 (indicate yes or no and the component(s) impact tested)

11. Hydro., pneu., or comb. test press. 674 psi Proof test \_\_\_\_\_

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

12. Tubesheet: n/a n/a n/a n/a n/a  
 Stationary (Mat'l Spec. No.) Dia., in (subject to press.) Nom. Thk., in. Corr. Allow., in. Attachment (welded or bolted)

13. Tubes: n/a n/a n/a n/a n/a  
 Floating (Mat'l Spec. No.) Dia., in. Nom. Thk., in. Corr. Allow., in. Attachment

Mat'l Spec No., Grade or Type O.D., in. Nom. Thk., in. or gauge Number Type (Straight or U)

**Items 14-18 inclusive to be completed for inner chambers of jacketed vessels or channels of heat exchangers**

14. Shell (a) No. of course(s): n/a (b) Overall length (ft & in.): n/a

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

15. Heads: (a) n/a (b) n/a  
 (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 Dia.	Side to Pressure		Category A		
	Min	Corr.	Crown	Knuckle					Convex	Concave	Type	Full, Spot, None	Eff.
(a) n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
(b) n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

If removable, bolts used (describe other fastenings) n/a  
 (Mat'l Spec No., Grade, Size, No.)

FORM U-1 (Back)

16. MAWP n/a (internal) n/a (external) psi at max. temp. n/a (internal) n/a (external) °F Min. design metal temp. n/a °F at n/a psi.
17. Impact test N/A at temperature of n/a °F
18. Hydro., pneu., or comb. test press n/a Proof test N/A
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 (Inspect. Opens.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
INLET	1	35.75" ID	CL. 300# RF CUSTOM	SA-350 LF2	SA-350 LF2	5.625"	0.00"	N/A	UW-16.1(e)	N/A	Shell
LIQUID OUTLET	1	23.375" ID	CL. 300# RF CUSTOM	SA-350 LF2	SA-350 LF2	4.8125"	0.00"	N/A	UW-16.1(e)	N/A	Shell
VAPOR OUTLET	1	29" ID	CL. 300# RF CUSTOM	SA-350 LF2	SA-350 LF2	4.250"	0.00"	N/A	UW-16.1(e)	N/A	Shell
VENT	1	3.83" ID	CL. 300# RFHB	SA-350 LF2	SA-350 LF2	1.395"	0.00"	N/A	UW-16.1(e)	N/A	Shell
PSV	1	20"	CL. 300# RF V3/13	SA-350 LF2	SA-350 LF2	4.625"	0.00"	N/A	UW-16.1(e)	N/A	Shell
SANDJET INLETS	8	2"	CL. 300# RFLWN	SA-350 LF2	SA-350 LF2	0.655"	0.00"	N/A	UW-16.1(e)	N/A	Shell
SANDJET OUTLETS	8	3"	CL. 300# RFHB	SA-350 LF2	SA-350 LF2	1.240"	0.00"	N/A	UW-16.1(e)	N/A	Shell
NUCLEONIC POINT LT	4	4"	CL. 300# RFHB	SA-350 LF2	SA-350 LF2	1.395"	0.00"	N/A	UW-16.1(e)	N/A	Shell
NUCLEONIC POINT LT	3	6"	CL. 300# RFHB	SA-350 LF2	SA-350 LF2	1.8125"	0.00"	N/A	UW-16.1(e)	N/A	Shell
LT/LG BRIDLE	2	3"	CL. 300# RFHB	SA-350 LF2	SA-350 LF2	1.24"	0.00"	N/A	UW-16.1(e)	N/A	North Head
LT/LG BRIDLE	1	4"	CL. 300# RFHB	SA-350 LF2	SA-350 LF2	1.395"	0.00"	N/A	UW-16.1(e)	N/A	Shell
PRESSURE DIFFERENTIAL	2	3"	CL. 300# RFHB	SA-350 LF2	SA-350 LF2	1.24"	0.00"	N/A	UW-16.1(e)	N/A	Shell
TEMP. TRANSMITTER	1	2"	CL. 300# RFLWN	SA-350 LF2	SA-350 LF2	0.655"	0.00"	N/A	UW-16.1(e)	N/A	Shell
PRES. TRANSMITTER	4	2"	CL. 300# RFLWN	SA-350 LF2	SA-350 LF2	0.655"	0.00"	N/A	UW-16.1(e)	N/A	North Head
DRAIN	4	6"	CL. 300# RFHB	SA-350 LF2	SA-350 LF2	1.81"	0.00"	N/A	UW-16.1(e)	N/A	Shell
LEVEL TRANSMITTER	1	4"	CL. 300# RFHB	SA-350 LF2	SA-350 LF2	1.395"	0.00"	N/A	UW-16.1(e)	N/A	Shell
FLUSHING CONN.	1	2"	CL. 300# RFLWN	SA-350 LF2	SA-350 LF2	0.655"	0.00"	N/A	UW-16.1(e)	N/A	Shell
DP. XM TRANS.	1	2"	CL. 300# RFLWN	SA-350 LF2	SA-350 LF2	0.655"	0.00"	N/A	UW-16.1(e)	N/A	Shell

20. Supports: Skirt n/a (Yes or No) Lugs n/a (No) Legs No (No) Others TWO SADDLES (Describe) Attached Shell and Welded (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: 1) Pressure vessel was hydro tested in the horizontal position  
2) Tag: VSP-Z6011  
3) Safety Valve per UG-125(a)

**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 pressure vessel conform to the ASME Code for Pressure Vessels, Section VIII, Division 1

U Certificate of Authorization No 26130 Expires 4-Feb 2010

Date 2/11/10 Name R.C. Technical Welding & Fabrication Inc. Signed Fermin Sandoval  
(Manufacturer) (Representative)

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**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 TEXAS and employed by ONE BEACON AMERICA INSURANCE COMPANY of Lynn, MA have inspected the pressure vessel described in this Manufacturer's Data Report on 02.11.10 and state that, to the best of 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 loss of any kind arising from or connected with this inspection

Date 02.11.10 Signed [Signature] Commissions B3604AB TX925  
(Authorized Inspector) (Nat'l Board incl. Endorsements, State, Province and No.)

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**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 \_\_\_\_\_

Date \_\_\_\_\_ Name \_\_\_\_\_ Signed \_\_\_\_\_  
(Assembler) (Representative)

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**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 item: \_\_\_\_\_, 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 concerned with this inspection

Date \_\_\_\_\_ Signed \_\_\_\_\_ Commissions \_\_\_\_\_  
(Authorized Inspector) (Nat's Board incl. Endorsements, State, Province and No.)

**FORM U-4 MANUFACTURER'S DATA REPORT SUPPLEMENTARY SHEET**

As required by the Provisions of the ASME Boiler and Pressure Vessel Code Rules, Section VIII, Division 1

1 Manufactured and certified by: R.C. Technical Welding & Fabrication, Inc., 12814 Mula Lane, Stafford, Texas 77477  
(Name and address of Manufacturer)

2 Manufactured for: ProSep Technologies, Inc. 5353 W. Sam Houston Pkwy N., Suite 150 Houston, Texas 77041  
(Name and address of Purchaser)

3 Location of Installation: Prudhoe Bay, Alaska; BP Exploration  
(Name and address)

4 Type: HORIZONTAL VESSEL SEPARATOR 11380 RCT08-11380 Rev.6 482 2009  
Honz., vert., sphere (Tank, separator, etc. Vessel, heat exc, etc.) (Mfg's serial No.) (CRN) (Drawing No.) (RT Bd No.) (Year built)

5 ASME Code, Section VIII, Div 1: Edition 2007, Addenda 08 Code Case No. Special Service per UG-120(d)  
Edition and Addenda (date)

Purpose (Inlet, Outlet, Drain, etc.)	No	Diameter or Size	Flange Type	Material		Nozzle Thickness		Reinforcement Material	How Attached		Location (Inspect. Opens.)
				Nozzle	Flange	Nom	Corr.		Nozzle	Flange	
HEAD SAND JET INLET	1	2"	CL 300# RFHB	SA-350 LF2	SA-350 LF2	1.00"	0.00"	N/A	UW-16.1(e)	N/A	South Head
HEAD SAND JET INLET	1	2"	CL 300# RFHB	SA-350 LF2	SA-350 LF2	1.00"	0.00"	N/A	UW-16.1(e)	N/A	Shell
AUX SAND JET INLET	1	3"	CL 300# RFHB	SA-350	SA-350 LF2	1.24"	0.00"	N/A	UW-16.1(e)	N/A	Shell
MANWAY W/BLD. & DVT	1	24"	CL 300# RF V1/11	SA-350 LF2	SA-350 LF2	3.375"	0.00"	N/A	UW-16.1(e)	N/A	Shell
MANWAY W/BLD. & DVT	1	30"	CL 300# RF CUSTOM	SA-350 LF2	SA-350 LF2	4.75"	0.00"	N/A	UW-16.1(e)	N/A	North Head
MANWAY W/BLD. & DVT	1	30"	CL 300# RF CUSTOM	SA-350 LF2	SA-350 LF2	4.50"	0.00"	N/A	UW-16.1(e)	N/A	Shell
MANWAY W/BLD. & DVT	1	24"	CL 300# RFHB	SA-350 LF2	SA-350 LF2	2.81"	0.00"	N/A	UW-16.1(e)	N/A	South Head

Certificate of Authorization: Type: U No. 26130 Expires 4-Feb-10

Date: 02-11-10 Name: R.C. Technical Welding & Fabrication, Inc. Signed: [Signature]  
(Manufacturer) Representative

Date: 02.11.10 Name: [Signature] Commission: NB8604AB, TX905  
(Authorized Inspector) (National Board (incl. endorsements), State, Province, and number)

NAT'L BD. 453



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RT-  
II

CERTIFIED BY:

R.C. TECHNICAL WELDING & FAB., INC.

STAFFORD, TEXAS

TEL. #: (281) 933-6004 FAX #: (281) 933-1548

MAWP: 514 PSIG: 300 °F

MDMT: 30 °F AT 514 PSIG

DES. PRES. 300 PSIG AT 300 °F

EXT. PRES. 15 PSIG AT 300 °F

SERIAL NO.: 11360 WEIGHT: 330106 LBS

YEAR BUILT: 2010 PROJ.: 0901

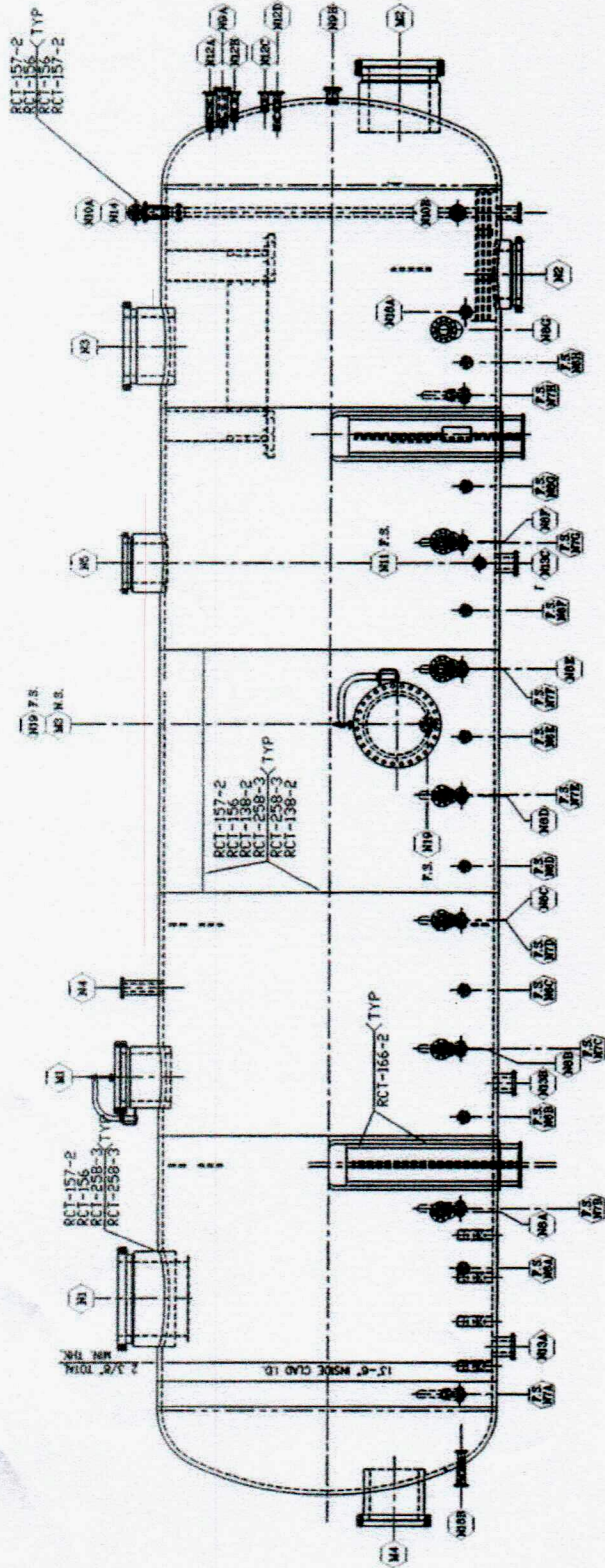
P.O. NO.: 2597

EQUIPT.: ASP-2601

PLANT: BPXA GPP

Reviewed  
Initials R.H.  
Date 3-11-10





**WELDMAP**

**FOR INTERNALS USE RCT-103-2 AND RCT-110-1**

- RCT-103-2 (GT+SM) ER316L + E316L QUALIFIED
- RCT-110-1 (FC) E316LT-1 QUALIFIED
- RCT-138-2 (GMAW+SMAW+SAW) ER70S-6+E7018+EM12K QUALIFIED
- RCT-156 (FC+SA) E309LT-1+ER309L QUALIFIED
- RCT-157-2 (FC) E316LT-1 (OVERLAY) QUALIFIED
- RCT-166-2 (FC+SA) E71T-1+EM12K QUALIFIED
- RCT-258-3 (FCAW+SMAW) E71T-1+E7018 QUALIFIED

**NOTE: USE RCT-156+RCT-157-2 TO OVERLAY INSIDE AND OUT SIDE OF NOZZLE WERE REQUIRED (NECK OF C.S. NOZZLES).**

Reviewed  
 Initials **RAJ**  
 Date **3-11-10**

REV.	DESCRIPTION	DATE	BY	APPROVED
0	ISSUED AS BUILT	07/19/10	MS	FS
1	RE-DESIGNED FOR APPROVAL	07/22/10	MS	FS
2	DESIGNED FOR APPROVAL	07/22/10	MS	FS
3	DESIGNED FOR APPROVAL	07/22/10	MS	FS
4	DESIGNED FOR APPROVAL	07/22/10	MS	FS
5	DESIGNED FOR APPROVAL	07/22/10	MS	FS
6	DESIGNED FOR APPROVAL	07/22/10	MS	FS
7	DESIGNED FOR APPROVAL	07/22/10	MS	FS
8	DESIGNED FOR APPROVAL	07/22/10	MS	FS
9	DESIGNED FOR APPROVAL	07/22/10	MS	FS
10	DESIGNED FOR APPROVAL	07/22/10	MS	FS

R.C. TECHNICAL WELDING & FABRICATION, INC. 12814 ANAVALON BLVD., SUITE 100, DALLAS, TEXAS 75247 CUSTOMER: PROSEP TECH. INC. CLIENT: ARCO ALASKA INC. TITLE: INLET SEPARATOR VSP-26011 PROJ. NO. 0801	R.C. TECHNICAL WELDING & FABRICATION, INC. 12814 ANAVALON BLVD., SUITE 100, DALLAS, TEXAS 75247 CUSTOMER: PROSEP TECH. INC. CLIENT: ARCO ALASKA INC. TITLE: INLET SEPARATOR VSP-26011 PROJ. NO. 0801
CUSTOMER P.O. NO.: ORDER NO.: DRAWN BY: A. J. [unclear] DATE: 11/30/09 CHECKED BY: FERMIN SANCHEZ DATE: 11/30/09 APPROVED BY: FERMIN SANCHEZ DATE: 11/30/09	CUSTOMER P.O. NO.: ORDER NO.: DRAWN BY: A. J. [unclear] DATE: 11/30/09 CHECKED BY: FERMIN SANCHEZ DATE: 11/30/09 APPROVED BY: FERMIN SANCHEZ DATE: 11/30/09
SET FILE NAME: D:\11300-WM SCALE: N/A SHEET NO.: RCT08-11390-WM REV.: 0 DWG. IN AUTOCAD 2008 SHEET 1 OF 1	SET FILE NAME: D:\11300-WM SCALE: N/A SHEET NO.: RCT08-11390-WM REV.: 0 DWG. IN AUTOCAD 2008 SHEET 1 OF 1