

8 - SEP (V-326)

8-a: U1A.

FORM U-1A MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS ① 643886
 (Alternative Form for Single Chamber, Completely Shop or Field Fabricated Vessels Only)
 As Required by the Provisions of the ASME Boiler and Pressure Vessel Code Rules, Section VIII, Division 1

1. Manufactured and certified by Spectrum Process Systems Inc. 285175 Kleysen Way, Rocky View, Alberta. T1X 0K1 Canada
 (Name and address of manufacturer)
 2. Manufactured for Husky Energy. 707-8th Avenue SW. Box 6525, Station "D" Calgary, Alberta T2P 3G7
 (Name and address of manufacturer)
 3. Location of installation LSD: 02-20-050-18 W5M
 (Name and address)
 4. Type Vertical Separator 14-05110-32 W6435.2 V-14-05110-32 R.1 - 2014
 (Horizontal or vertical, tank) (Manufacturer's serial number) (CRN) (Drawing numbers) (National Board number) (Year built)
 5. ASME Code, Section VIII, Division 1 2013 Ed. N/A N/A
 (Edition and Addenda, if applicable (date)) (Code Case numbers) (Special service per UG 120(d))
 6. Shell SA-333-6 3/8" .0625" 1'-3 1/4" 6'-0"
 (Material spec. number, grade) (Nominal thickness) (Corr. allow) (Inner diameter) (Length overall)

Body Flange on Shell										Bolting			
No.	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Location		Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material
-	-	-	-	-	-	-	-	-	-	-	-	-	-

7. Seams Seamless N/A 100% N/A N/A Type1 Spot 70% 1
 (Long (welded dbl, sngl, lap, butt)) (R.T. (spot or full)) (Eff., %) (H.T. temp.) (Time, hr) (Girth (welded, dbl, sngl, lap, butt)) R.T. (spot or full)) (Eff., %) (No. of courses)
 8. Heads: (a) Material SA-516-70N (b) Material SA-516-70N
 (Spec. no., grade) (Spec. no., grade)

	Location (Top, Bottom, End)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side Pressure (Convex or Concave)
(a)	Top Head	.3125"	.0625"	-	-	2:1	-	-	-	Concave
(b)	Bot Head	.3125"	.0625"	-	-	2:1	-	-	-	Concave

Body Flange on Head										Bolting			
No.	Location	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached		Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material
(a)	-	-	-	-	-	-	-	-	-	-	-	-	-
(b)													

9. MAWP 265 PSIG 15 PSIG at max. temp. 150 F 150 F
 (Internal) (External) (Internal) (External)
 Min. design metal temp. -49 F at 265 PSIG Hydro., pneu., or comb. test pressure 398 PSIG
 Proof test N/A

10. Nozzles, inspection, and safety valve opening:

Purpose (Inlet, Outlet, Drain etc.)	No.	Diameter or Size	Type	Material		Nozzle thickness		Reinforcement Material	Attachment Details		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
LSHH/LC	2	4"	RFWN/CL150	SA-333-6	*	.337"	.0625"	Integral	UW16.1(c)	Type1	Shell
Gas inlet/outlet/Insp.	2	3"	RFWN/CL150	SA-333-6	*	.300"	.0625"	Integral	UW16.1(c)	Type1	Shell/Head
PSV/PI/TIT/LG	5	2"	RFWN/CL150	SA-333-6	*	.344"	.0625"	Integral	UW16.1(c)	Type1	Shell
Liq out/Drain/Insp.	3	2"	RFWN/CL150	SA-333-6	*	.344"	.0625"	Integral	UW16.1(c)	Type1	Shell

11. Supports: Skirt Yes Lugs N/A Legs N/A Other N/A Attached Welded to Bot. Head
 (Yes or No) (Number) (Number) (Describe) (where and how)
 12. Remarks: Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report: N/A
 (Name of part, item number Manufacturer's name and identifying stamp)
Production impact testing exempt per UCS-66(a), material impact test required on heads per UG-84. All low tem. material exempt per UCS-66(g). Volume: 8.56 Cu.ft (.24 Cu.M) PSV Installed by other as per UG-125 Construction DWG. NO: V-14-05110-32 R.2
Tag # V-326 * SA-350 LF2 CL1

FORM U-1A (Back)

CERTIFICATE OF SHOP/FIELD COMPLIANCE

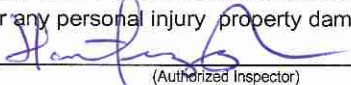
We certify that the statements made in this report are correct and that all details of design, construction, and workmanship of this vessel conform to the ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. "U" Certificate of Authorization Number 21,356 expires July 21, 2016

Date November 6, 2014 Co. name Spectrum Process Systems Inc. Signed 
(Manufacturer) (Representative)

CERTIFICATE OF SHOP/FIELD INSPECTION

Vessel constructed by Spectrum Process Systems Inc. 285175 Kleysen Way, Rocky View, Alberta. T1X 0K1 Canada
I, the undersigned holding valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and employed by ABSA, Calgary, Alberta, Canada

have inspected the component described in this Manufacturer's Data Report on NOV 06 2014, 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, property damage or a loss of any kind arising from or connected with this inspection,

Date NOV 06 2014 Signed  Commissions AB 249 NB 12900 A
(Authorized Inspector) (National Board (incl. endorsements))

8-b: NIP + CRN

SEP.

CERTIFIED BY: SPECTRUM PROCESS SYSTEMS

www.spectrumprocess.ca

CALGARY, ALBERTA, CAN.

M.A.W.P. 265 P.S.I. AT 150 °F

M.A.E.W.P. 15 P.S.I. AT 150 °F

M.D.M.T. -49 °F AT 265 P.S.I.

SERIAL # 14-05110-32 YEAR BUILT 2014

CRN V6435.2 TAG # V-326

SH./HD. MATERIAL: SA-333-6 SA-516-70N

SH. W.T. 3/8" HD. W.T. MIN. .3125"

TEST: 398 PSI

C.A. .0625"

PROV. REG.

0643886

September 11, 2014

Attention: Joe Laing
SPECTRUM PROCESS SYSTEMS INC
285175 KLEYSEN WAY SE
ROCKYVIEW COUNTY, AB

The design submission, tracking number 2014-06837, originally received on August 25, 2014 was surveyed and accepted for registration as follows:

CRN : W6435.2

Accepted on: September 11, 2014

Reg Type: New Design

Drawing No. : V-14-05110-32 Rev 1

Description	MAWP	Design Temperature	MDMT
Internal Pressure	1827kPa	66 °C	-45 °C
External Pressure	103kPa	66 °C	-45 °C

An invoice covering survey and registration fees will be forwarded from our Revenue Accounts.

If you have any question don't hesitate to contact me by phone at (780) 433-0281 or fax (780) 437-7787 or e-mail Chomin@absa.ca.

Sincerely,



CHOMIN, DWIGHT, P. Eng.

8-C: Travel sheet.

TRAVEL SHEET

A.I. REVIEW <i>Thompson</i>		REVIEW DATE: <i>12 August 2014</i>	
VES. TYPE: SEP.	SERIAL # 14-05110-32	JOB #:	Final Dstn.
DESCRIPTION	FAB DWG#V-14-05110-32 R.0	CRN	TASK COMPLETION DATES AND INSPECTORS INITIALS
16" OD64" S/S X3/8" WT	CRN# V-14-05110-32 R.0		
ITEM	TAG#:V-326	Q.C.I.	DATE
1) Calculations in file		<i>W</i>	Aug 11, 14
2) Release of approved Constuction Dwgs		<i>W</i>	Aug 11, 14
3) Weld /Mat'l Impact Test	EXEMPT to -49 F	<i>W</i>	9/10/14
4) Heat Numbers recorded on Travel Sheet (backside)		<i>W</i>	9/10/14
5) M.T.R.'s checked		<i>W</i>	9/10/14
6) Weld Procedures Checked		<i>W</i>	9/10/14
7) Shell and Head Thicknesses Measured		<i>W</i>	9/10/14
8) Nozzles and Fittings Fitted		<i>W</i>	9/10/14
9) Nozzle orientation Checked		<i>W</i>	9/10/14
10) Noz/Flg/TOL/CPLG rating checked		<i>W</i>	9/10/14
11) Noz/Flg/TOL/CPLG Mat'l Spec./Grade checked		<i>W</i>	9/10/14
Material Inspection		<i>W</i>	9/10/14
13.1) Internals-Final or Progress	13) Final Internal Inspection	<i>W</i>	9/10/14
Top Head	14) Shell and Head Fitted	<i>W</i>	9/10/14
Top Sec	15) Weld size checked	<i>W</i>	9/10/14
Mid-Top Sec	16) Welder I.D. & Welder Qualification checked	<i>W</i>	9/10/14
Mid-Mid Sec	17) ATTACHMENTS	Nplate Brkt	<i>W</i>
Mid-Btm Sec	18) Attachments I.D.		<i>W</i>
Btm Sec	19) Radiography	RT-2	<i>W</i>
Btm Head	20) Other NDT	MPI LIFTING LUGS	<i>W</i>
	21) Serial # Hard Stamped by NP Brkt.	<i>W</i>	9/10/14
	22) Full Dia. Break Flgs. Stamped as per UG-116(L)		
	23) Btm Head H1# trans. to Straight Flg.	<i>W</i>	9/10/14
	24) Final External Insp. Prior to PWHT	PWHT - NO	
	25) Stress Chart checked		
	26) Final External with Hydro		
	27) HYDROTESTING/ VESSEL Water temp. min. 40°F	398 psi Ga#	554/152
	HECI/HECO(Non-B & PV Code)	kPa	psi Ga#
	28) Nameplate Stamped		
	29) Accepted CRN drawing		
	30) Manuf. Data Report		
	31) Partial Data Reports		
	32) Nameplate Installed		
	33) NCR Cleared	MPI SKIT WBA #59	

* DENOTES AN A.I. INSPECTION POINT

** DENOTES AN A.I. HOLD POINT

AUTHORIZED INSPECTOR SHALL BE GIVEN TRAVEL SHEET PRIOR TO CONSTRUCTION SO THAT HE CAN DESIGNATE INSP. AND HOLD POINTS

Vessel Travel Sheet

[illegible]

8-d: Hydro.

MIDNIGHT

10

9

8

7

6 PM

5

Graphic Controls

CHART NO. MC M-1000-H-150F

METER

CHART PUT ON

398 PSI

TAKEN OFF

LOCATION

14-05110-32

REMARKS

Handwritten signature

OCT 28/14

PRESSURE LBS.

600
500
400
300
200
100

PRESSURE LBS.

400
500
600
700
800
900

TEMPERATURE

105
90
75
60
45
30
15

DIFF. IN WATER

105
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5

PRESSURE LBS.

900
800
700
600
500
400
300
200
100

TEMPERATURE

105
90
75
60
45
30
15