

600025

FORM U-1A MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS
(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 Enerflex Ltd., 10121 Barlow Trail NE, Calgary, Alberta, T3J 3C6
(Name and address of manufacturer)
2. Manufactured for Husky Oil Operations Ltd., Box 4490, Stn. D Calgary Alberta, T2P 3G7
(Name and address of purchaser)
3. Location of installation McMullen TCP, LSD: 03-35-078--25 W4
(Name and address)
4. Type Vertical 12517236 V2200.213 12517-V402 Rev.5 --- 2010
(Horizontal or vertical, tank) (Manufacturer's serial Number) (CRN) (Drawing Number) (National Board number) (Year built)
5. The chemical and physical properties of all parts meet the requirements of material specifications of the ASME BOILER AND PRESSURE VESSEL CODE. The design, construction, and workmanship conform to ASME Rules, Section VIII, Division 1 2007
Year
- to 2009
[Addenda (date)]
6. Shell: SA-516-70N 0.625" 0.0625" 4' - 0" 8' - 6" S/S
(Material spec. number, grade) (Nominal thickness) (Corr. allow.) (Inner diameter) [Special service per UG-120(d)] (Length (overall))
7. Seams: Type 1 Full 1.0 --- --- Type 1 Spot 0.70 1
[Long (welded, dbl., snlg., lap, butt)] [R.T. (spot or full)] (Eff., %) (H.T. temp.) (Time, hr) [Girth (welded, dbl., snlg., 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, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)	Top	0.5625"	0.0625"	---	---	SE 2:1	---	---	---	Concave
(b)	Bottom	0.5625"	0.0625"	---	---	SE 2:1	---	---	---	Concave

If removable, bolts used (describe other fastenings) ---

9. MAWP 350 PSIG --- at max. temp. 250°F
(Internal) (External) (Material spec. number, grade, size, number) (Internal) (External)
- Min. design metal temp. -20°F at 350 PSIG Hydro., pneu., or comb. test pressure 455 PSIG
Proof Test
10. Nozzles, inspection, and safety valve openings:

Purpose (Inlet, Outlet, Drain)	Number	Diameter or Size	Type	Material	Nominal Thickness	Reinforcement Material	How Attached	Location
			SEE	ATTACHED	U4	FORM		

11. Supports: Skirt No Lugs 2 Legs --- Other Support Lugs Attached Head/Shell & Welded
(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: ---

(Name of part, item number, Manufacturer's name and identifying stamp)
Vessel Type: Primary Oil Separator Construction Drawing: 12517-V402 Sht. 1, 2 Rev.6

Impact testing: exempt, per UG-20(f)(1-5), UCS-66(c) Volume: 128 Cu. Ft.

Relief Valve installed on piping in accordance with UG-125

18" CL300 RFBL Flange SA-105N Studs: 1 1/4"Ø 8" Lg. SA-193-B7 Qty. 24, Nuts: 1 1/4"Ø SA-194-2H Qty. 48

2 - 4" CL300 Hub Flange RF SA-105N Studs: 3/4"Ø 4 1/2" Lg. SA-193-B7 Qty. 16, Nuts: 3/4"Ø SA-194-2H Qty. 32

8 - 2" CL300 RFBL SA-105N Studs: 5/8"Ø 3 1/2" Lg. SA-193-B7 Qty. 56, Nuts: 5/8"Ø SA-194-2H Qty. 112

2" CL300 RF Hub Flange SA-105N Studs: 5/8"Ø 3 1/2" Lg. SA-193-B7 Qty. 8, Nuts: 5/8"Ø SA-194-2H Qty. 16

CERTIFICATE OF SHOP/FIELD COMPLIANCE

We certify that the statements made 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 Number 33.658 expires November 26, 2011.

Date 1 Oct 2010 Co. name Enerflex Ltd. Signed [Signature]
(Manufacturer) (Representative)

CERTIFICATE OF SHOP/FIELD INSPECTION

Vessel constructed by Enerflex Ltd. at Calgary, Alberta, Canada

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 Alberta and employed by ABSA

have inspected the component described in this Manufacturer's Data Report on OCT 04 2010 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 OCT 04 2010 Signed [Signature] Commissions ALTA #58
(Authorized Inspector) (National Board (incl. endorsements), State, Province and Number)

1. Manufactured and certified by	Enerflex Ltd., 10121 Barlow Trail NE, Calgary, Alberta, T3J 3C6 (Name and address of Manufacturer)		
2. Manufactured for	Husky Oil Operations Ltd., Box 4990, Stn. D Calgary Alberta, T2P 3G7 (Name and address of Purchaser)		
3. Location of Installation	McMullen TCP, LSD: 03-35-078--25 W4 (Name and address)		
4. Type:	Vertical (Horizontal, vertical, or sphere)	Primary Oil Separator (Tank, separator, heat exch., etc.)	12517236 (Manufacturers serial Number)
	V2200.213 (CRN)	12517-V402 Rev.5 (Drawing Number)	2010 (Year built)

Certificate of Authorization: Type “U” No. 33,658 Expires November 26, 2011

Date 1 Oct 2010 Name Enerflex Ltd. Signed *[Signature]*
(Manufacturer) (Representative)

Date OCT 04 2010 Name *[Signature]* Commissions ALTA #58
(Authorized Inspector) (National Board (incl. endorsements), State, Province and Number)

FORM U-1A MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS
(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 Harsco Industrial Air-X-Changers, 5215 Arkansas Road, Catoosa, Oklahoma, 74015, USA
(Name and address of manufacturer)
2. Manufactured for ENERFLEX LTD., C&P- BARLOW, 10121 BARLOW TRAIL NE, CALGARY, T3J 3C6, CANADA
(Name and address of purchaser)
3. Location of Installation UNKNOWN 03-35-78-25-24 (A) 598894
(Name and address)
4. Type Heat Exchanger 104078.3 V1683.213 HDR-3, REV0 68466 2010
(Horizontal or vertical, tank) (Manufacturer's serial number) (CRN) (Drawing No.) (National Board number) (Year built)
5. The chemical and physical properties of all parts meet the requirements of material specifications of the ASME BOILER AND PRESSURE VESSEL CODE. The design, construction, and workmanship conform to ASME Rules, Section VIII, Division 1 2007 to A09
(Code Case numbers) (Low Temperature (Special Service per UG-120(d))) (year) [Addenda (Date)]
6. Shell: SA516 70(N) .75 in 0.0625 in N/A N/A
(Material spec. number, grade) (Nominal thickness) (Corr. allow.) (Inner diameter) (Length (overall))
7. Seams: Corner Joint N/A C=20 1150 °F 0.75 N/A N/A N/A N/A
(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 SA516 70(N) (b) Material SA516 70(N)
(Spec. no., grade) (Spec. no., grade)

	Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)	TOP, BTM	.625"	0.0625	N/A	N/A	N/A	N/A	N/A	6" x 28.375"	N/A
(b)	ENDS	.5"	0.0625	N/A	N/A	N/A	N/A	N/A	6" x 5.4375"	N/A

If removable, bolts used (describe other fastenings)

N/A

(Material spec. number, grade, size, number)

9. MAWP 350 psi N/A at max. temp. 300 °F N/A
(Internal) (External) (Internal) (External)
- Min. design metal temp. -49 °F at 350 psi Hydro, pneu., or comb. test pressure HYDRO. at 455 psi
- Proof test N/A

10. Nozzles, inspection and safety valve openings:

Purpose (Inlet, Outlet, Drain)	Number	Diameter or Size	Type	Material	Nominal Thickness	Reinforcement Material	How Attached	Location
IN/OUT	2	6"	300# RFWN	SA350 LF2/SA333 GR.6	SCH-80	Weld	Welded	Header
DRAIN	1	1"	CPLG	SA350 LF2	6000#	Weld	Welded	Header
DRAIN	2	1"	CPLG	SA350 LF2	6000#	Weld	Welded	Header

11. Supports: Skirt NO Lugs N/A Legs N/A Other Structure Attached Bolted
(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)

Line 6 - -Tube and Plug Dimensions OR Header Dimensions: 6.6875" X 0.7500" X 2' 4.3750"

Straight length of tubes, OR, Distance between the headers: 24' 0.0"

(A) TUBES: 70 x .625" OD, Gauge: 16BWG, Material: SA214 Rolled Tube Sheet (B) INSP. OPENINGS:

Additional Remarks - See Attached U-4...

CERTIFICATE OF SHOP/FIELD COMPLIANCE

We certify that the statements made 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 No. 4241 expires 12/31/2011

Date 07/28/2010

Co. name

Harsco Industrial Air-X-Changers

(Manufacturer)

Signed

John R. Messer
(Representative)

CERTIFICATE OF SHOP/FIELD INSPECTION

Vessel constructed by Harsco Industrial Air-X-Changers at 5215 Arkansas Road, Catoosa, Oklahoma, 74015, USA I, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province OK and employed by OneBeacon America Insurance Co. of Lynn, MA have inspected the component described in this Manufacturer's Data Report on July 19, 2010 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 07/29/2010

Signed

[Signature]
(Authorized Inspector)

Commissions

11672A, OK765

(National Board (incl. endorsements), State, Province and number)

PSV - 300 PSI / 2067 KPA SCFM - 4471

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,

1. Manufactured and certified by Harsco Industrial Air-X-Changers, 5215 Arkansas Road, Catoosa, Oklahoma, 74015, USA
(Name and address of Manufacturer)

2. Manufactured for ENERFLEX LTD., C&P- BARLOW, 10121 BARLOW TRAIL NE, CALGARY, T3J 3C6, CANADA
(Name and address of Purchaser)

3. Location of Installation UNKNOWN
(Name and address)

4. Type Heat Exchanger N/A 104078.3
(Horizontal, vertical, or sphere) (Tank, separator, heat exh., etc.) (Manufacturer's serial number)

V1683.213 HDR-3, REV0 68466 2010
(CRN) (drawing no.) (National Board number) (Year built)

Additional nozzles, inspection and safety valve openings:

Additional Remarks:

140, Type: 3/4X16UNF-Threaded, Material: SA350 LF2 (C) IMPACT REQUIREMENTS: PLATE IMPACT EXEMPT
PER: UCS-66(A) & FIGURE UCS-66 CURVE D & UCS 68. PIPE AND FLANGE IMPACT EXEMPT PER: UCS-66(G).
Constructed in conformance with Appendix 28.

Certificate of Authorization: Type "U" No. 4241 Expires 12/31/2011

Date 07/28/2010 Name Harsco Industrial Air-X-Changers Signed Jan R. Messer
(Manufacturer) (Representative)

Date 07/29/2010 Name [Signature] Commissions: 11672A, OK765
(Authorized Inspector) (National Board (incl. endorsements), State, Province and number)



#1, 12181 44TH STREET S.E. CALGARY ALBERTA PH:403-215-6961

AUTHORIZED BLUE TAG ASSEMBLER
CALIBRATION REPORT

DATE	July 07, 2010
CUSTOMER:	Enerflex Ltd.
ADDRESS	10121 Barlow Trail NE Calgary, AB T3J 3C6
SERIAL NUMBER	592026
PRODUCT NUMBER	91-34H12T82U1
INLET AND OUTLET	1.5" 300 RF X 2" 150 RF "H" Orifice
SERIES SAFETY RELIEF VALVE	9100
SET PRESSURE	300 PSI
LEAK TEST	0 BPM @ 285.0 PSI
CAPACITY	4,471 SCFM AIR
BACK PRESSURE	
TEMPERATURE	70F
COLD SET	
TRIM	STD
CANADIAN REGISTRATION #	0G8841.5C
QUOTE ORDER NUMBER	2094667 REV.1
WORK ORDER NUMBER	212335
CUSTOMER P.O. NUMBER	MP527114
LOCATION:	
CUSTOMER ID#:	
CUSTOMER REFERENCE:	

THE VALVES PURCHASED ON THE ABOVE WORK ORDER NUMBER WERE BUILT PER SECTION VIII, DIVISION 1 OF THE ASME BOILER AND PRESSURE VESSEL CODE.



CERTIFIED INDIVIDUAL
QUALITY CONTROL



MERCER VALVE CO., INC.®
AUTO SEAT TECHNOLOGY®

CORPORATE HEADQUARTERS

9609 NW 4th Street
Oklahoma City, OK 73127
1-800-833-6402
Phone: (405) 495-6533
Fax: (405) 495-8728
sales@mercervalue.net
www.mercervalue.net

HOUSTON OFFICE

6218 Long Drive
Houston, TX 77087
1-866-833-6402
Phone: (713) 242-6960
Fax: (713) 242-6963
houston@mercervalue.net

BRIDGEPORT OFFICE

5758 US 380
Bridgeport, TX 76426
1-866-683-9002
Phone: (940) 683-9002
Fax: (940) 683-9004
bridgeport@mercervalue.net

CALGARY OFFICE

#203, 2835 23rd St. NE
Calgary, Alberta T2E 7A4
Phone: (403) 250-5557
Fax: (403) 250-5661
canada@mercervalue.net

CHICAGO OFFICE

CUSTOMER RELATIONS
PO Box 597
Libertyville, IL 60048
1-866-855-5460
Phone: (405) 921-9457
Fax: (224) 433-6482
chicago@mercervalue.net

August 4, 2010

Mercer Valve Canada Warehouse
P.O. 208076 S.O. C5437
S/N 592026-27 SET @ 300 PSI
P/N 91-34H12T82U1

CERTIFICATE OF COMPLIANCE

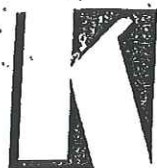
We, Mercer Valve Company, Inc. hereby certify that the attached material certifications and or mill test reports supplied to us by our vendor (s) is representative of actual materials used to manufacture our finished product or sub assemblies, whichever may be applicable.

Sincerely
MERCER VALVE COMPANY, INC.

Quality Control



THINK...MERCER FIRST®



KERKAU
Manufacturing

FLANGES - PRECISION MACHINING

1321 VALLEY CENTER DR. BAY CITY, MI 48706
PHONE (989) 686-0350 / TOLL FREE (800) 248-5060 / FAX (989) 686-0399

MATERIAL TEST REPORT

DATE: 5/24/2010

SOLD TO: DODSON GLOBAL, INC.-HOUSTON
324959

SHIP TO: DODSON GLOBAL, INC.-HOUSTON

ORDER NO: S103260

81-223001
PO 54227
6/10/10

ITEM DESCRIPTION

1.5 300# SO RF A105/SA105 ASTM 05/ASME 08a

HEAT NO.

HHR

C % ✓	Mn % ✓	P % ✓	S % ✓	Si % ✓	Cu % ✓	Ni % ✓	Cr % ✓	Mo % ✓
0.190	1.050	0.009	0.020	0.230	0.180	0.070	0.090	0.020

V % ✓	Cb % ✓
0.002	0.002

TENSILE (psi)	YIELD (psi)	ELONG %	REDUCTION %	BHN
81,300 ✓	49,500 ✓	35.00 ✓	64.00 ✓	163

ELONGATION TAKEN FROM ROUND SPECIMEN

TEST SIZE: 0.247

All material supplied under this order is certified to be free of Mercury contamination and no Mercury bearing equipment was used in manufacturing, fabrication or testing.

DIN 50049/EN10204 3.1 / ISO 10474

Brian Dennis

QUALITY CONTROL

Karen Person

AUTHORIZED SIGNATURE

ex mfg. co., l.p.

ates Road Houston, TX 77013
675-9433 Fax: (713)672-6527

ORDER NUMBER	0093295
PO NUMBER	3126875
ORDER DATE	08/28/08

MATERIAL TEST REPORT

S O L D	WILSON SUPPLY P O BOX 1492 HOUSTON TX 77251	S H I P	WILSON SUPPLY 1400 SE 29TH OKLAHOMA CITY OK 73129
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ITEMS

Ln#	Qty	Description	Matl Spec	Heat Code	Mill Heat Number
001	250	2" 600 RF SO	SA105-N-05	I118	SM258964
002	75	1-1/2" 150 RF SO	SA105-05	J8C	H1833
003	39	1-1/2" 300 RF SO	SA105-05	F124	SM250900
003	41	1-1/2" 300 RF SO	SA105-05	L6J	H134672005
003	20	1-1/2" 300 RF SO	SA105-05	Y6N	19597
004	50	2-1/2" 150 RF SO	SA105-05	I144	SM259383

81-223001
PO 49408
7/15/08

CHEMICAL PROPERTIES

HEAT CODE	C	SI	MN	P	S	CR	AL	CU	NI	MO	V	CB	CE			
I118	0.190	0.180	0.880	0.009	0.019	0.100	0.000	0.290	0.110	0.028	0.001	0.002	0.000	0.000	0.000	0.389
J8C	0.220	0.200	1.060	0.024	0.022	0.050	0.000	0.080	0.006	0.001	0.002	0.001	0.000	0.000	0.000	0.413
F124	0.190	0.170	0.850	0.012	0.012	0.140	0.000	0.360	0.090	0.020	0.000	0.002	0.000	0.000	0.000	0.394
L6J	0.240	0.210	0.940	0.022	0.020	0.010	0.000	0.010	0.010	0.006	0.010	0.000	0.000	0.000	0.000	0.403
Y6N	0.170	0.170	1.130	0.010	0.012	0.070	0.029	0.250	0.120	0.020	0.001	0.000	0.000	0.000	0.000	0.401
I144	0.160	0.180	0.850	0.009	0.025	0.100	0.002	0.250	0.090	0.024	0.001	0.003	0.000	0.000	0.000	0.349

PHYSICAL PROPERTIES

HEAT CODE	TENSIL	YIELD	%ELONG	%R.P.	BHN	CHARPY	FT-LBS	LAT EXPSN	SHR FRACT	TEST TEMP
I118	76100	46500	34.60	60.50	156					
J8C	76899	46064	31.80	47.97	164					
F124	79116	45903	31.00	56.00	163					
L6J	72849	46076	30.40	53.01	144					
Y6N	72645	51475	28.00	51.56	150					
I144	72200	59300	22.00	66.00	143					

NOTES

HEAT CODE	NOTE
I118	NORMALIZED, TEMP/1650F, TIME @ TEMP/1 HR PER INCH, AIR COOL
J8C	
F124	
L6J	
Y6N	
I144	

We certify our flanges are capable of passing a hydrostatic test compatible with their rating and all test results and process information contained herein are correct and true as contained in company records. All Flanges meet NACE MRO-175 and/or MRO-10: Latest Revision. Our Quality system has been registered by ABS to ISO 9001, certification no.: 30696

Test results complies with: EN 10204-3.1.

Our flanges satisfy the material requirements for PED 97/23/EC annex 1-4.3.

Notwithstanding the absence of a signature, the organization submitting either a printed certificate or an EDI transmitted certificate is responsible for content of the report. (ASTM A961/A 961-04a Section 19.4)

7/30/2008

SWS

SWS Order: 709191-1

Customer: Mercer Valve Company
P.O. Box 270970
Nashville, TN 37207

CUST PO #: 0047170
Heat Number: 1007803
Quantity: 13
Heat Code: XN

CUST PO #: 0047170
Heat Number: 1007803
Quantity: 13
Heat Code: XN

Packing Slip: 12860

Test Repo rt

Part No: 81-401001
Description: BODY - 1/2" ORIFACE SA
Part No: 81-401000

Specification: ASME SA216 Gr. WCB

TENSILE PSI YIELD PSI
77500 45000
RA 560
BHN 158

TENSILE PSI YIELD PSI
81000 50500
RA 58.3
BHN 170

Southwest Steel Casting Company
600 Foundry Drive
Longview, Texas 75604

Southwest Steel Casting Company
600 Foundry Drive
Longview, Texas 75604



Southwest Steel Casting Company
David Dwyer

5/18/2009



SOUTHWEST STEEL CASTING COMPANY

600 FOUNDRY DRIVE
LONGVIEW, TX 75604

Page 1 of 18

SWS Ord#: 710700-1

Customer: Mercer Valve Company
P. O. Box 270970
Oklahoma City, OK 73137

Test Report

Part No.: 81-401001 ✓
Description: BODY, "H" ORIFACE SA-
Pattern: 81-401000

6/2/09

CUST PO #: 0049572

Packing Slip: 20463

Specification: ASME SA216 Gr. WCB ✓

CHEMICAL ANALYSIS

Heat Number	C	Mn	P	S	Si	Ni	Cr	Mo	Cu	V	Al
1008243	0.24	0.86	0.011	0.014	0.45	0.09	0.10	0.04	0.13	0.007	0.056
Quantity = 2											
Heat Code ZE											

PHYSICAL ANALYSIS

TENSILE PSI	YIELD PSI	% ELONG	R/A	BHN
83000 ✓	50500 ✓	27 ✓	56.2 ✓	170

Heat Number	C	Mn	P	S	Si	Ni	Cr	Mo	Cu	V	Al
1008300	0.24	0.81	0.011	0.011	0.41	0.09	0.08	0.03	0.19	0.006	0.049
Quantity = 1											
Heat Code ZK											

TENSILE PSI	YIELD PSI	% ELONG	R/A	BHN
75000 ✓	47500 ✓	26 ✓	58.1 ✓	149

This is to certify that the above is a true and correct copy of test results as evidenced by the records of the company

Southwest Steel Casting Company
600 Foundry Drive
Longview, Texas 75604



Southwest Steel Casting Company
Daniel E. Dutcher
Daniel E. Dutcher

Piping Products, Inc.

Merced Valley Co.

P.O. 46925 E

FORGED STEEL FLANGES AND SPECIAL FITTINGS

1681 Kress St., Houston, Texas 77020

Phone: 713-675-5374, 800-775-5374, Fax: 713-675-7910

*** MILL TEST REPORT ***

S SOUTH COAST SUPPLY
O P.O. BOX 55649
L
D HOUSTON, TX 77055

S SOUTH COAST SUPPLY
H 1325 SILBER RD.
I
P HOUSTON, TX 77055

CUST #: S0U01
CUST PO: 484405
DATE: 08/04/08
PPI S/O #: 245319
TAG #:

ITEM DESCRIPTION
10 2 150 SO RF

SA105 125-250 AARH

ITEMS

CHEMICAL PROPERTIES

ITEM	HEATING	C	SIL	MN	PHOS	SUL	CR	NI	MO	N	CO	CU	V	AL	MB	C/EQ
10	CBDW	0.210	0.200	0.840	0.024	0.017	0.001	0.001	0.001	0.000	0.000	0.001	0.001	0.000	0.001	0.351

PHYSICAL PROPERTIES

ITEM	YIELD STRENGTH	TENSILE STRENGTH	ELONG. % IN 2"	RED. AREA	BHN	CHARPY TEST	LAT. EXPAN	SHEAR FRAC.	TEST TEMP
10	46,643	75,339	32.60	48.16	152			0.00	

ITEM NOTES

81-216001
P.O. 46925 E
8/7/08

ORDER NOTES

Additional Notes or Comments:

We hereby certify that all test results and process information contained herein are correct and true as contained in the records of the company.

Quality Assurance Asst. Mgr
[Signature]

ATTN: TOM R.



NATIONAL FLANGE & FITTING CO.

4420 CREEKMONT ST.

P. O. BOX 924149

HOUSTON, TEXAS 77292 - 4149

(713) 688 - 2515

FAX (713) 688 - 0205

SOLD TO SOUTH COAST SUPPLY
P. O. BOX 55649
HOUSTON, TX 77255

MILL TEST REPORT

INVOICE

NUMBER DATE
10588600 04/21/10

CUSTOMER'S ORDER NO: 515462

ITEM	QTY	DESCRIPTION	MATERIAL	H CODE
1	150	2" 150# S/O RF	SA-105-04	JRR-06
2	63	2" 600# S/O RF	SA-105-04 N	GGY-09
3	16	2" 600# S/O RF	SA-105-04 N	GTN-07
4	1	2" 600# S/O RF	SA-105-04 N	GYL-06
5	40	1" 150# S/O RF	SA-105-04	GGG-09

51216001
PC 53926
4/27/10

ITM	H CODE	CAR	MAN	PHOS	SUL	NIC	CHR	MOL	SIL	CU	VA	NB
1	JRR-06	.200	.860	.017	.015	.006	.140	.001	.230	.001	.003	.001
TEN:	72,530 YLD:	45,789 EL:	27.80	RED:	42.23	CVN@					BHN:	152/155
2	GGY-09	.212	.892	.023	.024	.052	.078	.006	.203	.041	.002	.001
TEN:	75,562 YLD:	48,440 EL:	30.00	RED:	64.95	CVN@					BHN:	143/146
3	GTN-07	.240	1.010	.030	.029	.001	.001	.064	.190	.001	.001	.001
TEN:	78,029 YLD:	46,265 EL:	30.40	RED:	54.49	CVN@					BHN:	152
4	GYL-06	.190	.850	.011	.008	.100	.100	.036	.220	.300	.002	.002
TEN:	80,200 YLD:	49,700 EL:	33.00	RED:	58.00	CVN@					BHN:	156/156
5	GGG-09	.204	.893	.022	.025	.079	.057	.006	.215	.041	.004	.001
TEN:	77,447 YLD:	48,440 EL:	32.00	RED:	66.82	CVN@					BHN:	146/149

COMMENT: ITEM 2: NORMALIZED @ 1670 F 1 HR PER INCH OF THICKNESS, AIR COOLED. ITEM 3: NORMALIZED @ 1650 F 1 HR PER INCH OF THICKNESS, AIR COOLED. ITEM 4: NORMALIZED @ 1675 F 4 HRS, AIR COOLED.

PER DIN EN 10204 3.1.B

THIS IS TO CERTIFY THAT THE MATERIAL FURNISHED ON THIS ORDER COMPLIES IN ALL RESPECT WITH THE SPECIFICATIONS INDICATED IN DESCRIPTION. WE FURTHER CERTIFY THIS PRODUCT WAS MANUFACTURED IN THE UNITED STATES.

NATIONAL FLANGE & FITTING COMPANY

BY: *Sherry Jones*

QUALITY ASSURANCE REPRESENTATIVE



3601 Paul R. Lowry
Memphis, TN 38109
(901)786-5900
1-888-NUCORTN
Fax (901)786-5901

Mill Certification
April 13, 2009

CMC Dallas
Greensport Terminal
13609 Industrial Road- Gate 5

Length tolerance:
Size tolerance

Customer P.O.	61685
Customer Part #	TD-PUR-402
BOF #	201068
Heat #	MM09100116
Finished Good Lot #	MM0910011601
Grade #	1045
Process	Continuous cast
Finish Size	4.75"

I hereby certify that the material described has been manufactured in accordance to the standards listed below and on the reverse side, and that it satisfies those requirements.

Chemical test results of Heat Lot # MM09100116

Chemistry	C	Mn	Si	S	P	Cu	Cr	Ni	Mo	Al	V	Nb	Sn	N
Wt%	0.46	0.77	0.16	0.019	0.008	0.14	0.08	0.05	0.010	0.022	0.004	0.002	0.009	0.0094
	B	Ti	H	DI Value										
	0.0003	0.002	1.5 ppm	1.18										

Physical test results of Heat Lot # MM0910011601

Yield: 52.4 ksi
Tensile: 102.8 ksi
Elongation: 17.6 %
ROA %: 14.7 %

Austenitic Grain Size per ASTM E112- 8

Brinell Hardness at Surface- 201 bhn

Reduction Ratio- 8.08

Macroetch Results per ASTM E381: Center- 2, Mid-Radius- 2, Surface-1

91-036003
Bnt
PO 53739
6/1/10

The following statements are applicable to the material described in this test report:

- 1) All Manufacturing processes, including melting have been performed in the U.S.A.
- 2) Melted by Electric Arc Furnace-ladle refined- vacuum degassed- continuously cast.
- 3) Mercury, in any form, has not been used in the production or testing of this material.
- 4) Welding or weld repair was not performed on this material.
- 5) This material conforms to the specifications described on this document and may not be reproduced except in full, without written approval of Nucor Corporation.
- 6) This product is NAFTA certified under Paragraph "B" of the NAFTA rule of origin.
- 7) Made in compliance with ASTM A322 and ASTM A29
- 8) Made in compliance with EN 10204 3.1



[Signature]

Signature

Todd Evilsizor
Division Metallurgist



MODERN
INVESTMENT CASTING CO.
P.O. Box 707
Ponca City, Oklahoma 74602
enico.com

91-041014
N26
PO 53194
2/12/10

CERTIFICATION

Customer: Mercer Valve Heat Number: 1-RFCC
Part Number: 91-650004 ✓ Specification: ASTM A 351 ✓
Alloy: CF3M ✓ Quantity: 482
Purchase Order: 45284 Date Shipped: 06-30-08

Chemical Composition

C: 0.02 ✓ Si: 1.2 ✓ Mn: 1.34 ✓ S: 0.008 ✓ P: 0.029 ✓ Cr: 18 ✓
Mo: 2.34 ✓ Fe: BAL Cb: Cu: V: Ni: 11.3 ✓
Co: N: Al: Ti: Pb: Zn:
Sb: Mg: W: Sn: Ta:

Mechanical Properties

Tensile (KSI): 74.5 ✓ Yield (KSI): 32.2 ✓ Elongation: 52 ✓

Reduction/Area: Hardness: 78 HRB

Special Notes: Castings supplied in the solution annealed condition.
Material charpy tested @ -320°F per ASME VIII UHA-51.
Lateral expansion in inches is 0.027, 0.028, & 0.032.

Dave Cashon, President

This report is in compliance with EN 10204 3.1 B

06/30/08

Date

**OUTO
KUMPU**

Certificate of Test

* CERTIFICATION *

HEAT E91600

ORDER 610595/ 05 BOL 0205852 BUNDLE 2008984/1K

02/19/10

SHIP TO:
ROLLED ALLOYS INC.
30 BAKER HOLLOW RD
(860)687-2157 MUST MAKE APPT
WINDSOR 060950000

GM-29

APPROVED

5-4-10 #139/k

QC-139

H19877

YOUR ORDER & DATE

2/19/10 CUST# 0773001 CUST TAG#335044900001-05

✓ GRADE 316L/316

Size 316L RND CFA CONDA 2.7500 X 144.000 RL

Country of Melt: UNITED KINGDOM

Country of Mfg.: UNITED STATES ✓

NAFTA Country of Origin is Country of Melt

No weld repair

Free of mercury contamination, Free of Radiation Contamination

No WEEE Relevant Substances; Meets EU Electrical ROHS

Total Bundles 1

Bundle Weight

2070

SPECIFICATIONS

MFG TO FINISHED BAR IN THE USA FROM BILLETS IMPORTED UNITED KINGDOM

AMS 5648K, 5653F

SAE AMS-QQ-S-763B

ASME SA182 E07 A07, A08 & A09

ASME SA193 E07

ASME SA479 E07, A07, A08 & A09

ASME SA320 B8M CL1 E04 A05

ASTM A182 09

ASTM A262 02a Practice A/E

ASTM A276 08a

ASTM A314 97

✓ ASTM A479/A479M 09

ASTM A484 09

ASTM A320 08 B8M Class 1

ASTM A193 09 B8M

NACE MR0175-03, ISO 15156:03

DFARS 252.225.7014 6/05

Federal Spec QQ-S-763F

UNS S31600, AISI 316

UNS S31603, AISI 316L

Prodec Quality

EN 10204 Type 3.1 Document

RA-53 RAM 316L

Sol Anneal @ 1900F min/WQ

MECHANICAL & OTHER TESTS

Hardness as shipped 174 HB

Hardness as shipped (86 HRC)

Grain size 6.0

Micro OK

Intergranular corrosion OK

Tensile strength, KSI (MPa)

87.4 (603)

0.2% Yield Strength, KSI (MPa)

40.4 (279)

Elongation % in 4D

54.5

Reduction of area %

76.5

Charpy (ft lb)

0 0 0 Avg 64

CHEMICAL COMPOSITION

Carbon (C) .023 ✓

Phosphorus (P) .036 ✓

Silicon (Si) .520 ✓

Nickel (Ni) 10.080 ✓

Copper (Cu) .457

Nitrogen (N) .063

Titanium (Ti) .002

Tin (Sn) .015

Vanadium (V) .070

Columbium/

Tantalum (Cb+Ta) .019

Iron (Fe) Balance

Melt Practice EAF

Refining Practice AOD

De-long Ferrite

Manganese (Mn) 1.710 ✓

Sulphur (S) .026 ✓

Chromium (Cr) 16.530 ✓

Cobalt (Co) .252 ✓

Moly (Mo) 2.020 ✓

Columbium (Cb) .019

Aluminum (Al) .004

Boron (B) .005

ROLLED ALLOYS QUALITY ASSURANCE

Approved *[Signature]*

Date 2-25-10



TRACER# 202285

Knowingly & willfully falsifying or concealing a material act on this form, or making false, fictitious or fraudulent statements or representations herein could constitute a felony punishable under federal statutes.

We hereby certify that the test results shown in this report are correct and contained in the records of the company and are in compliance with the specifications, codes, and standards listed above.

Outokumpu Rolled Alloys Inc.
3043 Crenshaw Blvd
Richburg, SC 29729

[Signature]

12517

FORM U-3 MANUFACTURER'S CERTIFICATE OF COMPLIANCE
COVERING PRESSURE VESSELS TO BE STAMPED WITH THE UM SYMBOL, SEE U1(i)
As required by the provisions of the ASME Code Rules, Section VIII, Division 1

1. Manufactured and certified by GEA PHE SYSTEMS NORTH AMERICA, INC. 100 GEA DRIVE YORK PENNSYLVANIA 17402 USA
(Name and address of Manufacturer)
2. Manufactured for Vilter Manufacturing, LLC 5555 South Packard Avenue Cudahy, WI 53110
(Name and address of Purchaser)
3. Location of installation Southwest Cheese
(Name and address)
4. Type Vertical Brazed Plate Heat Exchanger 0.762 & 0.771 cu. ft. H180CN19010002
(Horz., vert., or sphere) (Tank, separator, etc.) (Capacity) (Mfg's. serial No.)
OH0788.9C FPA10X20-180M/7858 2010
(CRN) (Drawing No.) (Year built)
5. ASME Code, Section VIII, Div. 1 2007 Edition, (ADD.2009b) 1518-4
[Edition and Addenda (date)] (Code Case No.)
6. Shell (a) No. of course(s): 180 (b) Overall length (ft & in.): 15.48'

Course(s)			Material	Thickness		Long. Joint (Cat. A)			Circum. Joint (Cat. A, B, & C)			Heat Treatment	
No.	Diameter, in.	Length (ft & in.)	Spec./Grade or Type	Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp.	Time
180	10X20	0.094"	SA-240 316L	.016	0	LAP	None	N/A	LAP	None	N/A	N/A	N/A
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-

7. Heads: (a) SA-240 304 (b) SA-240 304													
<small>(Mat'l Spec. No., Grade or Type) (H.T. - Time & Temp.)</small>													
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	.134	0	N/A	N/A	N/A	N/A	N/A	10X20	N/A	N/A	N/A	None	N/A
(b) BOTTOM	.179	0	N/A	N/A	N/A	N/A	N/A	10X20	N/A	N/A	N/A	None	N/A

If removable, bolts used (describe other fastening)

N/A

8. Type of Jacket N/A Jacket Closure N/A
(Describe as ogee & weld, bar, etc.)
- If bar, give dimensions, if bolted describe or sketch N/A
9. MAWP 400 - psi at max. temp. 350 - °F. Min. design metal temp. -320 °F at 400 psi.
(internal) (external)
10. Impact test None, Exempt per UHA51 at test temperature of - °F.
(Indicate yes or no and the component(s) impact tested)
11. Hydro., pneu. test press. pneu. 525 psig Proof test Burst 2300psig -- Tested per UG101 (p)-- Witnessed 2/25/2000

12. 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	2.5	SW	SA-312	N/A	.152	0	N/A	*1	N/A	-
Outlet	2	2.5	SW	SA-312	N/A	.152	0	N/A	*1	N/A	-
Inlet	6	2.5	SW	SA-312	N/A	.152	0	N/A	*1	N/A	-
Outlet	7	2.5	SW	SA-312	N/A	.152	0	N/A	*1	N/A	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-

13. Supports: Skirt No Lugs 0 Legs 0 Others Studs Attached Welded
(Yes or no) (No.) (No.) (Describe) (Where and how)
14. Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report: (List name of part, item number, mfg's. name and identifying number)
-None
15. Remarks: -Nickel brazed plate heat exchanger for non-corrosive and non-lethal service 15.48" x 10" x 20" (DxWxL)

-1.UW-16.1 (bb)

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 vessel conform to the ASME Code for Pressure Vessels, Section VIII, Division 1.
 UM Certificate of Authorization No. 30,373 Expires 6/24/2011

Date 7-22-2010 Name GEA PHE SYSTEMS NORTH AMERICA, INC. Signed Heather D. Smith
(Manufacturer) (Representative)

Signed Heather D. Smith
(Certified Individual)



PRESSURE PIPING CONSTRUCTION AND TEST DATA REPORT

In accordance with the provisions of the PESR Section 31(1)

Shop Construction ☒; Field Construction ☐;
 Final Data Report ☒; Partial Data Report ☐ (from one ABSA- authorized Contractor to another
 ABSA- authorized Contractor).

Complete both sides of this Form

1. Constructed By: Enerflex Ltd Owner's Job No: 12517
 (Name of ABSA authorized primary contractor or subcontractor)
10121 Barlow Trail N.E. Calgary, AB T3J 3C6
 (Address)

Certificate of Authorization Permit No. AQP-1405(S) Expiry Date: November 26th 2011

2. Constructed For: N/A
 (Name of primary contractor if different from above)

N/A
 (Address)

Certificate of Authorization Permit No. AQP-N/A Expiry Date: NA
 (Required when the primary contractor undertakes some/all of the quality functions, e.g., NDE, PWHT, Tie-in, fabrication, hydro test, final assembly etc.)

3. Owner: Husky Oil Operations Ltd.
 (Name and address)

Site: McMullen TCP LSD: 03-35-078-25 W4
 (Location of installation)

Certificate of Authorization Permit No. AQP-NA Expiry Date: NA
 (Required when the owner undertakes some/all of the quality functions, e.g., NDE, PWHT, Tie-in, fabrication, hydro test, final assembly etc.)

4. Piping Design Alberta Registration No.: PP-0079-G-120-P
 (Required if aggregate piping volume is over 0.5m³)

5. Design Responsibility: Owner ☐; Contractor ☒

6. WP No.: WP-496.2; Company: Enerflex Ltd Owner's WP No. (If used): WP-
 (Alberta Registration No.) (Alberta Registration No.)
 WPS No(s). used: 1,5,6,7; Owner's WPS No(s). (If used):

7. Code: ASME B31.1 Non Boiler External Piping ☐; ASME B31.1 Boiler External Piping ☐;
 B31.5 ☐; B31.9 ☐; CSA Z662 Steam Distribution Piping ☐;
 ASME B31.3 ☒ - Service Category: Normal ☒, D ☐, M ☐, High Pressure ☐; Severe Cyclic Condition ☐

Drawing No. Rev. No. Line No.	Fluid (Air/Stm. Etc.)	Des. Press. KPA	Des. Temp. °C (Max. & Min.)	Pressure Test KPA	Test Medium	Pipe Mat'l Spec. & Grade	C.A. mm	Pipe NPS & Schedule	Flange Material & Rating	PWHT/ Preheat Temp. °C	NDE
12517-111 R6 12517-113 R8 12517-115 R7											
12"-Air-FR0100-1-C31 10"-Air-K0100-1-C31 10"-Air-V0100-1-C31 8"-Air-AC-1-C31 8"-Air-AC-2-C31 3"-Air-V0100-3-C31	Air	2068	-29/121	3102	Water	SA 106B	1.6	12" Std. 10" Std. 8" Std. 6" Std.	SA 105, 300#	15.5	RT-10% MT-10% Filletts
10"-Air-V0100-1-L31 8"-Air-AC-1-L31 8"-Air-AC-2-L31	Air	2068	-29/121	3102	Water	SA 333-6	1.6	10" Std. 8" Std.	SA350-LF2 CL1, 300#	15.5	RT-10% MT-10% Filletts
6"-Air-V0100-3-C11	Air	1670	-29/121	2505	Water	SA 106B	1.6	6" Std.	SA 105, 150#	15.5	RT-10% MT-10% Filletts
3"-L-V0100-2-C31 4"-L-E0101-1-C31 3"-L-E0101-1-C31	Lube Oil	2068	-29/121	2275	Air	SA 106B	1.6	3" Std. 2" Std.	SA 105, 300#	15.5	RT-10% MT-10% Filletts

3"-L-E0101-2-C31											
1"-Air-AC-3-C31 From V0100 to K0100	Air	2068	-29/121	2275	Air	SA 106B	1.6	1" XH 1/2" S160	SA 105, 300#	NA	NA
1"-Air-AC-3-C11 1"-Air-V0100-3-C11	Air	1670	-29/121	1837	Air	SA 106B	1.6	1" XH	SA 105, 300#	NA	NA
2"-F-Supply-1-C11 2"-F-V0101-1-C11 2"-HG-Supply-1-C11 4"-HG-Supply-1-C11	Gas	1034	-29/121	1137	Air	SA106B	1.6	4" XH 2" XH 1 1/2" XH	SA 105, 150#	NA	NA
1"-IA-Supply-1-C11	Air	1034	-29/121	1137	Air	SA106B	1.6	1" XH	SA 105, 3000 NPT	NA	NA
PCV Inst. Tubing Instrument Air	Air	1034	-29/121	1137	Air	SA 213-316	0	1/2" .049" 3/8" .035"	NA	NA	NA
TC Inst. Tubing	Gas	244	-29/121	268	Air	SA 213-316	0	1/2" .049" 3/8" .035"	NA	NA	NA
Hydrocarbon Drain Tubing	Hydrocarbons	1692	-29/121	1861	Air	SA 213-316	0	1/2" .049" 3/8" .035"	NA	NA	NA

Partial Data Reports certified by sub-contractors are listed below and attached to this Data Report ☐

No.	Line No.	Spool No.	Drg. No. (with Rev. No.)	Sub-contractor (Name)	AQP No. (if from Alberta)	Expiry (if from Alberta)

Remarks: For partial data report provide information about the code work that was not completed by the subcontractor (e.g., hydrostatic test, PWHT etc.). For final data report provide information about the code work that was not completed by subcontractors and subsequently completed by the primary contractor (e.g., hydrostatic test of entire assembly, PWHT etc.)

Endorse certificate 'A' or 'B'	
<p>A. CERTIFICATE OF COMPLIANCE Signed by the subcontractor when supplying this certificate as a Partial Data Report</p> <p>We certify that the statements in this Data Report are correct and that materials, construction and workmanship of the piping fabrication conform to the registered quality system and the applicable Piping code(s).</p> <p>Date: _____</p> <p style="text-align: right;">_____ Contractor</p> <p>_____ Print Authorized Representative's Name _____ Signature</p> <p>This certificate is not valid unless it forms part of a Final Data Report signed by Primary Contractor</p>	<p>B. CERTIFICATE OF COMPLIANCE Signed by the primary contractor when supplying this certificate as a Final Data Report</p> <p>We certify that the statements in this Data Report are correct and that piping job no. <u>12517</u> described in this Data Report was constructed in accordance with the Province of Alberta Safety Codes Act and Regulations, and applicable ASME Piping Code(s).</p> <p>Date: <u>Feb 23, 2011</u> <u>Enerflex Ltd.</u></p> <p style="text-align: right;">_____ Contractor</p> <p><u>Rebecca West</u> _____ Print Authorized Representative's Name _____ Signature</p>

CERTIFICATE OF INSPECTION

I, the undersigned, employed by _____ have verified that all required examination and testing has been completed, and inspected the piping described in this construction data report to the extent necessary to be satisfied that it conforms to all applicable examination requirements of the Code and of the engineering design, and state that, to the best of my knowledge and belief, the contractor has constructed this piping in accordance with the Alberta Safety Codes Act and Regulations. By signing this certificate neither the inspector nor his or her employer makes any warranty, expressed or implied, concerning the piping described in this construction data report. Furthermore, neither the inspector nor his or 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: _____ Date: _____

Owner's Inspector Name (please print) _____
ABSA Safety Codes Officer (please print)
(BOILER EXTERNAL PIPING ONLY)

Owner's Inspector Signature: _____
ABSA Safety Codes Officer's Signature