Williams Field Services

Stewart Dew Point Hickory, PA

7-23-2012

A-Scan Baseline Inspection

Vessel No.: VKO-100
Vessel Name: Waste Gas K.O. Vessel

P&ID No: STWT-P01-014

DBI Incorporated
Lincoln Nebraska
4223 Progressive Avenue.Lincoln NE 68504.Telephone: 402-467-1818 Fax: 402-467-1766
Omaha Nebraska
2211 S. 156th Circle.Omaha NE 68130.Telephone:402-330-9612.Fax: 402-330-9640
Overland Park Kansas
11660 West 90th.Overland Park KS 66214.Telephone: 913-888-2321 Fax: 913-888-2351

Summary Report

Report Reviewed By: Mitchell Beres

API 510 #30888

Client: Williams Field Services
Location: Stewart Dew Point Hickory, PA

Vessel No.: VKO-100
Vessel Name: Waste Gas K.O. Vessel

Inspection Date: 7-23-2012

Type of Inspection: A-Scan Baseline Inspection

Note: An A-Scan baseline inspection was performed on the VKO-100 Waste Gas K.O. Vessel. The VKO-100 Waste Gas K.O. Vessel meets MAWP of 150 psi with a remaining service life of 20+ years. The long and short term corrosion rates were determined using the nominal thickness of the vessel.

Next UT Inspection: **7/22/2017** **API 510 para. 6.4**

Next Visual Inspection: **7/22/2017**

								Short Term Corrosion	Long Term Corrosion	Remaining Life
	TNom	**Top**	**Bottom**	**North**	**South**	**East**	**West**	**Rate**	**Rate**	**(Years)**
Top Head				0.378	0.369	0.379	0.380			
Bottom Head				0.368	0.380	0.361	0.373			
TML 1	0.375			0.386	0.382	0.390	0.369	0.002	0.002	20+
TML 2	0.375			0.388	0.406	0.403	0.385	<1 mil	<1 mil	20+

Client: Williams Field Services
Location: Stewart Dew Point Hickory, PA

Vessel No.: VKO-100
Vessel Name: Waste Gas K.O. Vessel

Vessel Parameters

Design Pressure (MAWP):	150 psi	Top Head Material:	SA-234-WPB
Design Temperature:	300 F	Top Head Type:	2:1 Ellipsoidal
Operating Pressure:	Unknown	Allowable Stress:	17,100
Operating Temperature:	Unknown	Joint Efficiency:	.85
Diameter: I.D or O.D	18" OD	Top Head Material:	SA-234-WPB
Length S/S:	72"	Top Head Type:	2:1 Ellipsoidal
Shell Material:	SA-106-B	Allowable Stress:	17,100
Allowable Stress:	17,100	Joint Efficiency:	.85
Joint Efficiency:	.85	Date Manufactured:	2009
Corrosion Allowance:	N/A	In Service Date:	2009

ASME CODE EDITION USED FOR CALCULATIONS
ASME Section VIII, Division 1. 1998 Edition

Paint Information

Average paint coating thickness:	N/A	Thickness measured with paint:	N/A
Paint Multiplier:	N/A	Thickness measured without paint:	N/A

Name Plate Information

U1A Available:	Yes	ASME stamp present on vessel:	Yes
Name Plate present:	Yes	Rubbing taken:	Digital Photo

Client: Williams Field Services
Location: Stewart Dew Point Hickory, PA

Vessel No.: VKO-100
Vessel Name: Waste Gas K.O. Vessel

Vessel Data

Vessel Class:	2	Date Manufactured:	2009
Manufactures Serial #:	KO-0001	In Service Date:	2009
Product in Vessel:	N/A	Date of ASME VIII Vessel Mfg. under:	2007
P&ID Drawing #:	014	Code Cases:	N/A
P&ID Prepared By:	Laurel Mountain Midstream, LLC	Addenda:	2008
Manufacturer:	Moneyhun Equipment Sales & Services	National Board Number:	2896
Vessel Length S/S:	72"	Vessel Insulated:	No
Diameter I.D or O.D:	18" OD	Describe openings (if any):	N/A
No. of Shell Sections:	1	ANSI Flange Rating:	150 #
No. of Nozzles:	5	Vessel Orientation:	Vertical
Design Pressure (MAWP):	150 psi	Operating Pressure:	Unknown
Design Temperature:	300 F	Operating Temperature:	Unknown
Top Head Type:	2:1 Ellipsoidal	Top Head Type:	2:1 Ellipsoidal
Top Head Material:	SA-234-WPB	Top Head Material:	SA-234-WPB
Top Head Weld Type:	Type 1	Top Head Weld Type:	Type 1
Shell Material:	SA-106-B	Shell Weld Type:	Seamless
Radiography:	N/A	Hydrostatic:	195 psi

Relief Valve Information

Relief Valve Tag Number:	1001	Relief Valve Pressure Setting:	125 psi
Relief Valve Test Date:	9.15.2012	Relief Valve Size:	1 1/2" x 2"

DBI, Inc. Quality Inspection and Consulting Services

Reliable...Responsive...Resourceful...Proactive

PRESSURE VESSEL EXTERNAL INSPECTION

Client:	Williams Field Services	Date Inspected:	7-23-2012
Location:	Stewart Dew Point Hickory, PA	Inspector(s):	Mike Troyer
Vessel No.:	VKO-100		
Vessel Name:	Waste Gas K.O. Vessel	Signature:	

NAME PLATE

Item Inspected Yes No NA = Not Applicable	Yes	No	N/A	Comments:
Name Plate present & legible	☒	☐	☐	Good condition
National Board #	☒	☐	☐	2896
Manufacturer	☒	☐	☐	Moneyhun Equipment Sales & Services
Serial #/ Year Built	☒	☐	☐	KO-0001/ 2009
Repair or Rerate Name Plate	☐	☐	☒	N/A

FOUNDATION

Concrete condition (spalling, cracks)	☒	☐	☐	None noted
Foundation settling	☒	☐	☐	Appears level
Coating condition	☐	☐	☒	N/A
Cradle supports (moisture, cracks)	☒	☐	☐	None noted

SUPPORTS

Describe type (legs, saddle, etc.)	☒	☐	☐	Skirt
Corrosion, pitting (describe)	☒	☐	☐	None noted
Weld condition	☒	☐	☐	Good condition
Paint condition	☒	☐	☐	No paint failure noted
Anchor bolts (tightness & corrosion	☒	☐	☐	Appears tight
Insulation deterioration	☐	☐	☒	N/A

SHELL

Corrosion, pitting (describe)	☒	☐	☐	None noted
Bulges/ Blisters/ Deformations	☒	☐	☐	None noted
Weld condition	☒	☐	☐	Good condition
Paint condition	☒	☐	☐	No paint failure noted
Insulation deterioration	☐	☐	☒	N/A
Biological growth	☒	☐	☐	None noted
UT Measurements	☒	☐	☐	See autocad drawing

HEADS

Item Inspected Yes No NA = Not Applicable	Yes	No	N/A	Comments:
Corrosion, pitting (describe)	☒	☐	☐	None noted
Bulges/ Blisters/ Deformations	☒	☐	☐	None noted
Weld condition	☒	☐	☐	Good condition
Paint condition	☒	☐	☐	No paint failure noted
Insulation deterioration	☐	☐	☒	N/A
UT Measurements	☒	☐	☐	See autocad drawing

MANWAYS & NOZZLES

Corrosion, pitting (describe)	☒	☐	☐	None noted
Weld condition	☒	☐	☐	Good condition
Flange condition	☒	☐	☐	Good condition
Bolting condition	☒	☐	☐	Good condition
Repad condition	☐	☐	☒	N/A
Insulation deterioration	☐	☐	☒	N/A
UT Measurements	☐	☐	☒	N/A

APPURTENANCES

Grounding (tightness & corrosion)	☒	☐	☐	Ground connection is tight
Gauges, Sight glass (damage)	☒	☐	☐	No damage noted
Relief Valve #/ Size/ Set Pressure	☒	☐	☐	1001/ 1 1/2" x 2"/ 125 psi

LADDERS, STAIRS, PLATFORMS

Corroded, Broken Parts	☐	☐	☒	N/A
Paint condition	☐	☐	☒	N/A
Wear (ladder rungs, stair treads)	☐	☐	☒	N/A
Handrails secure	☐	☐	☒	N/A
Flooring condition	☐	☐	☒	N/A
Tightness (bolts, tie down clips)	☐	☐	☒	N/A
Attachment welds	☐	☐	☒	N/A
Corrosion, pitting (describe)	☐	☐	☒	N/A

ADDITIONAL COMMENTS:


NB 2896
CERTIFIED BY
MESSCO
MAWP 150 PSI @ 300 F
MDMT -20 F @ 150 PSI
SERIAL NO. KO-0001
2009
MFG. FOR MULDAMS

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 Code Rules, Section VIII, Division 1

1. Manufactured and certified by **Moneyhun Equipment Sales & Service Co., Inc. 2220 Upland Street, Rock Springs, WY 82901** (Name and address of manufacturer)
2. Manufactured for **Williams Field Services, One Williams Center, Tulsa, OK 74172** (Name and address of purchaser)
3. Location of installation **Not Known**
4. Type **Vertical** (Horiz. or vert. tank) | **KO-0001** (Mfgr's serial No.) | **NA** (CRN) | **6MM-F-KO-18-1** (Drawing no.) | **2896** (Nat'l Bd. No.) | **2009** (Year Built)
5. The chemical and physical properties of all parts meet the requirement 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 **2008** Addenda (Date) | **NA** Code Case nos. | **NA** Special Service per UG 120(d)

6. Shell: **SA-106 B** Matl. (Spec. No., Grade) | **.375** Nom. Thk. (in.) | **None** Corr. Allow (in.) | **1'-4" 3/4"** Diam. I.D. (ft. & in.) | **6'-0"** Length (overall) (ft. & in.)
7. Seamless: **Seamless** Long. Welded, Dbl.,Sngl., Lap, Butt | **None** R.T. (Spot or Full) | **85** Eff. (%) | **NA** H.T. Temp (°F) | **NA** Time (hr) | **Butt-Type 1** Girth (welded, Dbl, Sngl, Lap, Butt | **NA** R.T. (Spot, Partial or Full | **70** Eff % | **1** No. of Courses
8. Heads (a) Matl. **SA234-WPB** (Spec. No., Grade) (b) Matl. **SA234-WPB** (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	.375"	None	---	---	2:1	---	---	---	Concave
(b)	Bottom	.375"	None	---	---	2:1	---	---	---	Concave

If removable, bolts used (describe other fastenings) **NA** (Matl., Spec. No., Gr., Size., No.)

9. MAWP **150** Psi at max temp. **300** °F
Min. design metal temp. **-20** °F at **150** Psi Hydro, pneu., or comb. test pressure **195** psi.
10. Nozzles, inspection and safety valve openings:

Purpose (Inlet, Outlet, Drain)	No.	Diam. Or Size	Type	Matl.	Nom. Thk.	Reinforcement Matl.	How Attached	Location
Inlet	1	3"	Cplg	SA105	3000#	None	Welded	Shell
Outlet	1	3"	Cplg	SA105	3000#	None	Welded	Head
Drain	1	2"	Cplg	SA105	3000#	None	Welded	Head
Sight Glass	2	1/2"	Cplg	SA105	3000#	None	Welded	Shell
Temp	1	1"	Cplg	SA105	3000#	None	Welded	Shell

11. Supports: Skirt **yes** (Yes or no) Lugs **2** (No.) Legs **None** (No.) Other **Baseplate** (Describe) Attached **head/Welded** (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:
Impact test exempt per UG-20 (f) (Name of part, item number. Mfgr's name and identifying stamp)
Vessel was tested in the horizontal position

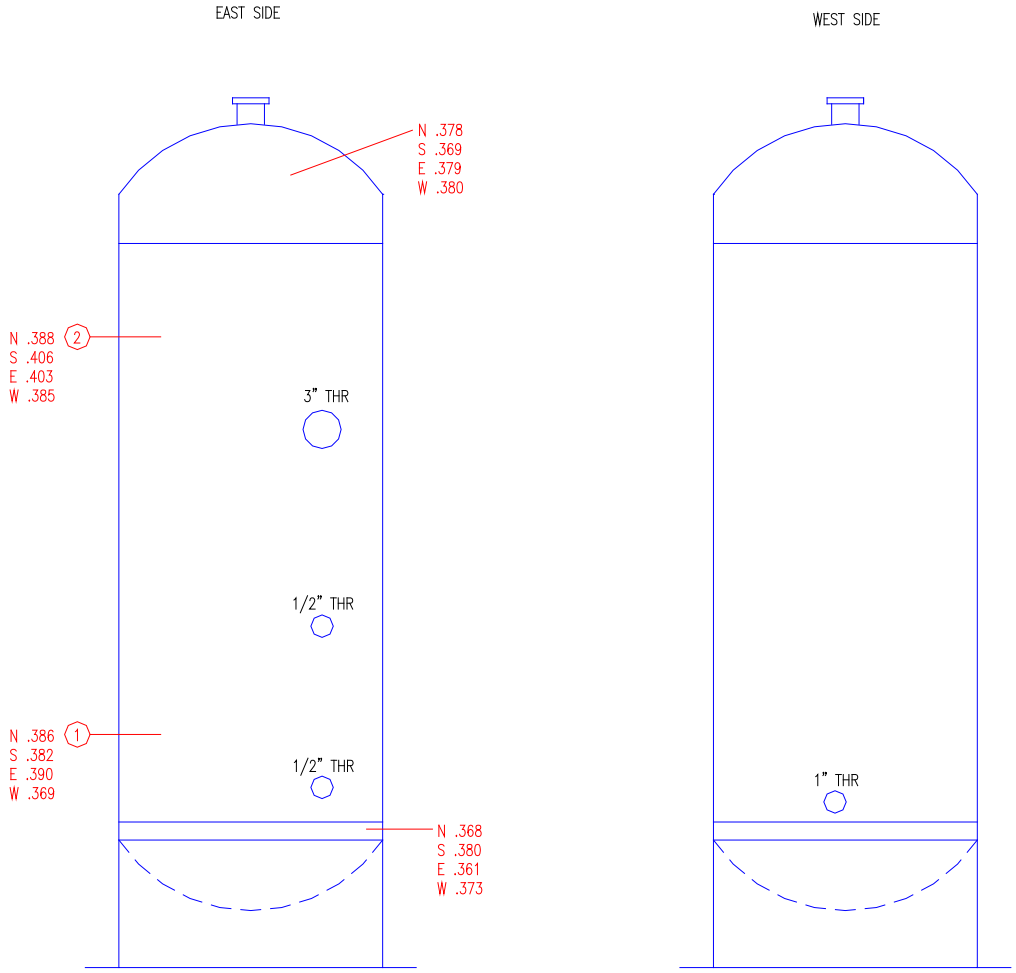
CERTIFICATE OF SHOP/FIELD COMPLIANCE

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 Code for Pressure Vessels, Section VIII, Division 1. "U" Certificate of Authorization No. **33,398** expires **June 23,2011**
Date **10/13/09** Co. name **MESSCO** (Manufacturer) Signed **John Moneyhun** (Representative)

CERTIFICATE OF SHOP/FIELD INSPECTION

Vessel constructed by **MESSCO** at **Rock Springs, WY**
I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of **Utah** and employed by **HSBCT** have inspected the component described in this Manufacturer's Data Report on **10/13/09**, and state that, to the best of my 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 a loss of any kind arising from or connected with this inspection.
Date **10/13/09** Signed **Ray Dodge** (Authorized Inspector) Commissions **12091 B/A UT 481** (Nat'l Board. (incl. endorsements) State, Prov. and No.)

This form may be obtained from the National Board of Boiler and Pressure Vessel Inspectors, 1055 Crupper Ave., Columbus, OH 43229



NOTES

1. P&ID NO: STWT-P01-014
2.
3.
4.
5.
6.

CLIENT: Williams Field Services	**DBI, Incorporated** 5330 N. 57th Street Lincoln, Nebraska 68507	
LOCATION: Stewart Dew Point Hickory. PA		
INSPECTION DATE: 7-23-2012	ACAD DWG. FILE: VKO-100	
VESSEL No: VKO-100	DWN BY: MCS	CKD BY:
VESSEL ID: Waste Gas K.O. Vessel	MECHANICAL INTEGRITY INSPECTION	