

PRESSURE VESSEL & COLUMN INSPECTION REPORT

LSD: 07-27-051-19W5M

Date: JULY 10, 2014

SAP Equipment ID: 66046596

VESSEL STATIC DATA						
Plant		Ansell Gas Plant		Op Unit		System
Prov. Insp. #		A2663964		CRN		K8423.2
Equipment Description		Glycol Contactor		Serial #		5413-20
Manufacturer		Presson Manufacturing		Vessel Class		
Internal Access: no		Description:		Year Built		1994
MAWP		1415	PSI	@	150	°F
CODE : U		RT : 1		PWHT : no		
Diameter		36 in	Length	(s/s) ? - tower	in	OAL
						mm / in
Shell	Mat'l	SA-516-70N	Thickness	1.500	in	Corr Allowance
						0.0625 in
Head	Mat'l	SA-516-70N	Thickness	1.435	in	Corr Allowance
						0.0625 in
Nozzle	Mat'l		Thickness		in	Corr Allowance
						mm
Internal Coating: YES—NO		Internal Clad : YES—NO		Capacity		m3
Manway : no		Inspection Port : no		Skirt		
Nozzle Rating	600	lb ANSI	Painted : yes	Insulated		no
PROCESS DATA						
Product Description		Gas		Sweet		
Operating Pressure		PSI		Operating Temperature		°F
PSV STATIC DATA						
Serial No.	Location	Set Pressure	Capacity SCFM / Lbs/Hr / GPM	Manufacturer	Model / Type	Service Date / Company
94C0958	Bottom shell	950psi	7092scfm	Consolidated	1997C	13-Sep-2011. Wizard. PSV- 2493-01
PSV DETAILS						
	Type (Thread/Flange)		ANSI Rating		Size (in)	
PRD Inlet	Threaded				1.5"	
PRD Outlet	Threaded				2"	
NDE Equipment records						
Procedure#	Description	Manufacturer	Model#	Serial#	Due Date	

INSPECTION SUMMARY

Barcode # 002878

A visual external inspection was conducted on vessel. In plant 1 dehy building. Plant 1 down at time of inspection. Dataplate secure and legible. Vessel and piping are in good condition, piping well supported. No significant paint deterioration found. Vessel skirt securely bolted to skid floor. Inspection port present in skirt. Ground cable securely attached to skid. PSV service up to date, set below MAWP, vents to flare header. UT inspection performed 2014 by Streamline Inspection.

Vessel was found to be in good condition and fit for continued service.

RECOMMENDATIONS

Review UT survey results.

NONCONFORMANCES / INSPECTION DEFICIENCIES

No deficiencies noted

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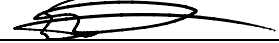
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INSPECTION PLANNING

Inspection Strategy	Availability	Inspection Interval
Inspection Date July 10, 2014	Date of Last Inspect	Date of Next Inspect

REPORT CERTIFICATION

The signatures below certify that inspections/tests have been completed in accordance with the identified inspection strategy and that the specified equipment is considered fit for service until the date of next inspection.

Inspected by	Ed Tymensen		Date	July 10, 2014	
Company	Streamline Inspection	PESL #	000711	API #	27479
Reviewed and Approved by			Date		
		PESL #		API #	
Criticality Assessment Rerun		Inspection Planning Rerun			
Assessed Next Inspection Date					

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DETAILED INSPECTION VISUAL EXTERNAL

ID	Description	Condition	Location	NCR	Comments
V1	General Other (Please Explain)	Good			Overall
V2	General Corrosion	n/a			No corrosion noted
V3	General Leaks	n/a			No leaks noted
V4	Vibration	n/a			
V5	Dissimilar Flange Rating	Good			Similar ratings
V6	Ladder/Stairway	Good	Caged ladder above roof		Appears secure
V7	Heads	Good			No corrosion or damage noted
V8	Guy Wires	n/a			
V9	Electrical Ground	Good	Attached to skid		Ground cable present and secure
V10	Painted Inactive Corrosion	n/a			
V11	Coating/Painting	Good			No deterioration noted
V12	Expansion Joint or Bellows	n/a			
V13	Gauge/Site Glass	Good	temp, level, pressure		Gauges clear and legible
V14	Shell	Good			No corrosion or damage noted
V15	Jacket	n/a			
V21	Support Other (Please explain)	Good	Piping		Well supported
V22	Foundation	Good			Vessel on steel skid.
V23	Anchor Bolts	Good			Tight and secure
V24	Saddle/Skirt	Good	Skirt		Bolted to skid, inspection port present
V25	Davit	n/a			
V26	Fireproofing	n/a			
V31	Connections Other (Please explain)	Good			All connections appear secure
V32	Small Branches	Good	Tubing		No leaks or kinks
V33	Nozzles	Good			No corrosion or damage
V34	Manways	n/a			
V35	Reinforcing Pads	Good			Weepholes present, free of debris, no evidence of leaks
V36	Inadequate Thread Engagement	Good			Adequate engagement
V37	Bolting	Good			All bolting tight and secure, no corrosion of threads
V38	Flanges	Good			No leaks or corrosion
V39	Leak Clamps	n/a			
V41	Insulation Other (Please explain)	n/a			
V42	Damage	n/a			
V43	Penetrations	n/a			
V44	Insulation Jacket	n/a			
V45	Banding	n/a			
V46	Seals/Joints	n/a			
V51	Relief Devices Other (Please explain)	Good	Bottom shell		Service up to date, set below MAWP
V52	Corrosion	n/a			None noted
V53	Leaks	n/a			None noted
V54	Restricted Inlet/Outlet	n/a			
V55	Manual Operation Lever	n/a			

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DETAILED INSPECTION VISUAL INTERNAL

ID	Description	Condition	Location	NCR	Comments
V1	General Other (Please Explain)	n/a			
V2	Corrosion (depth, length, width)	n/a			
V3	Erosion	n/a			
V4	Distortion	n/a			
V5	Blisters	n/a			
V6	Deposits	n/a			
V7	Heads	n/a			
V8	Welds	n/a			
V9	Nozzles	n/a			
V10	Shell	n/a			
V11	Gasket Surfaces	n/a			
V21	Internals Other (Please explain)	n/a			
V22	Demister	n/a			
V23	Baffle/Wier	n/a			
V24	Sparger	n/a			
V25	Thermowells	n/a			
V26	Metallic Linings	n/a			
V27	Nonmetallic Linings	n/a			
V28	Trays	n/a			
V29	Tray Rings	n/a			
V30	Other Welded Attachments	n/a			

DETAILED INSPECTION OTHER TECHNIQUES

ID	Location	Observation/Measurement	Acceptance Criteria	NCR	Comments
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

DETAILED INSPECTION UT THICKNESS

CML	Nom. Thk	Current Reading	Short Term Corr Rate	Long Term Corr Rate	Remaining Life	Comments

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PHOTOS



LSD sign



DATAPLATE



TOWER OVERVIEW



TOWER OVERVIEW ABOVE ROOF



PSV SERVICE TAG



PSV DATAPLATE

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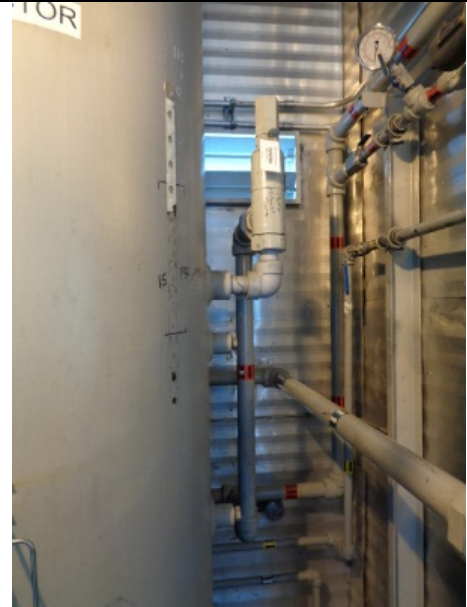
Date: JULY 10, 2014

SAP Equipment ID: 66046596

PHOTOS



PSV DATAPLATE



PSV OVERVIEW

Location Name:	ANSELL GAS PLANT	LSD:	07-27-051-19W5
A#:	A2663964	Equipment/Tag No.	C-300
Equipment Description:	GLYCOL CONTACTOR	Serial Number:	5413-20
		CRN: (or other ID#)	T8423.2
MAWP:	1415 PSI	Design Temp:	150°F
Shell Material:	SA 516 70N	Head Material:	SA 516 70N
Shell Thickness:	1.5"	Head Thickness:	1.435"
Corrosion Allowance:	0.0625"	Date Built:	1994
Size:	36"	Manufacturer:	PRESSON

Notes: **NO ACCESS ABOVE ROOF. CML 30 & 35 EROSION NOTED.**







Ultrasonic Corrosion Survey

Survey Name: Husky Energy

Date: Jul 11, 2014

Inspector: C. Graham

LSD: 07-27-051-19W5 Area: Ansell Location: Gas Plant
A #: A2663964 Tag Number: C-300 Vessel Name: Glycol Contractor
CRN: T8423.2 Year Built: 1994 Serial Number: 5413-20
Vessel CA: 1.5875 mm Manufacturer: Presson
Shell MAWP: 1415psi MAWTF: 150°F Tube MAWP: MAWTF:

TML Description		Baseline				Material:	SA-516-70N
00	Shell	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	Cylindrical	Min	36.513	1.588	38.100		
OD:	36"	Avg					Remaining Life:
Spec:	ASME VIII Div.1	Comments:					Retirement Date:

TML Description		Baseline				Material:	SA-516-70N
05	Shell	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	Cylindrical	Min	36.513	1.588	38.100		
OD:	36"	Avg					Remaining Life:
Spec:	ASME VIII Div.1	Comments:					Retirement Date:

TML Description		Baseline				Material:	SA-516-70N
10	Shell	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	Cylindrical	Min	36.513	1.588	38.100		
OD:	36"	Avg					Remaining Life:
Spec:	ASME VIII Div.1	Comments:					Retirement Date:

TML Description		Baseline				Material:	SA-516-70N
15	Shell	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	Cylindrical	Min	36.513	1.588	38.100		
OD:	36"	Avg					Remaining Life:
Spec:	ASME VIII Div.1	Comments:					Retirement Date:



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Date: Jul 11, 2014

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LSD: 07-27-051-19W5 Area: Ansell Location: Gas Plant
A #: A2663964 Tag Number: C-300 Vessel Name: Glycol Contractor
CRN: T8423.2 Year Built: 1994 Serial Number: 5413-20
Vessel CA: 1.5875 mm Manufacturer: Presson
Shell MAWP: 1415psi MAWTF: 150°F Tube MAWP: MAWTF:

TML Description		Baseline				Material:	SA-516-70N
20	Head	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	Ellipsoidal	Min	37.060	34.862	1.588	36.449	
OD:	36"	Avg	37.540				Remaining Life:
Spec:	ASME VIII Div.1	Comments:					Retirement Date:

TML Description		Baseline				Material:	A-234-WPB
25	Nozzle	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	90° Elbow	Min	5.640	4.845	0.692	5.537	
OD:	2.375"	Avg	5.820			Assumed	Remaining Life:
Spec:	ASME VIII Div.1	Comments:					Retirement Date:

TML Description		Baseline				Material:	A-234-WPB
30	Piping	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	90° Elbow	Min	10.360	9.601	1.372	10.973	
OD:	6.625"	Avg	10.520			Assumed	Remaining Life:
Spec:	ASME B31.3	Comments:	Erosion Noted				Retirement Date:

TML Description		Baseline				Material:	A-234-WPB
35	Piping	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	45° Elbow	Min	10.240	9.601	1.372	10.973	
OD:	6.625"	Avg	10.800			Assumed	Remaining Life:
Spec:	ASME B31.3	Comments:	Erosion Noted				Retirement Date:

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

(A) 2663964

(B) 2663954

1. Manufactured and certified by PRESSON MANUFACTURING LTD. 2103-8TH STREET NISKU, ALBERTA T0C 2G0
(Name and address of manufacturer)
2. Manufactured for RENAISSANCE ENERGY LTD., 3000-1 ST., S.W., CALGARY, AB., T2P 3L8
(Name and address of purchaser)
3. Location of installation STOC
(Name and address)
4. Type VERT 5413-20 K8432.2 B5220-240 1994
(Serial or cert. tank) (Mfg's serial No.) (CRN) (Drawing No.) (Mkt. Bd. No.) (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 1992
Year

6. Shell: SA51670N 1.5" .0625" 36"OD 29'-0"
(Matl. (Spec. No., Grade)) (Nom. Thk. (in.)) (Corr. Allow. (in.)) (Diam. I.D. (ft. & in.)) (Length (overall) (ft. & in.))

7. Seams: DBL BUTT FULL 100 DBL BUTT FULL 3
(Long. Welded, DBL, Spd., Lap, Butt) (R.T. (Spot or Full)) (ET. (in.)) (H.T. Temp. (°F)) (Time (hr)) (Circ. Welded, DBL, Spd., Lap, Butt) (R.T. (Spot, Partial, or Full)) (No. of Courses)

8. Heads: (a) Matl. SA51670N (Spec. No., Grade) (b) Matl. SA51670N (Spec. No., Grade)

Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical R ₁ : R ₂	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Concave or Convex)
(a) TOP	1.435"	.0625"			2:1				CONCAVE
(b) BOTTOM	1.435"	.0625"			2:1				CONCAVE

If removable, bolts used (describe other fastenings):

(Matl., Spec. No., Gr., Size, No.)

9. MAWP 1415 psi at max. temp. 150 °F
Min. design metal temp. -20 °F at 1415 psi. Hydro., pneu., or comb. test pressure 2123 psi.

10. Nozzles, inspection and safe valve openings:

Purpose (Inlet, Outlet, Drain)	No.	L ₁ diam. or Size	Type	Matl.	Nom. Thk.	Reinforcement Matl.	How Attached	Location
INLET	1	6"	RFWN	SA106B	XXH	SA51670	WELDED	SHELL
GAS OUT	1	6"	RFWN	SA106B	XXH		WELDED	HEAD
DRAIN	1	1"	CPLG	SA106B	160#		WELDED	HEAD
GLY COIL	2	1"	RFWN	SA106B	160#		WELDED	SHELL

11. Supports: Skirt YES Lugs NO Legs NO Other NO Attached WELDED
(Yes or no) (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, Mfg's name and identifying stamp)

CONTACTOR (C-300)
IMPACT PER UCS 66a
VOLUME = 168 cu ft

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. "U" Certificate of Authorization No. 16081 expires SEPT., 19 95
Date MAY 18 1994 Co. name PRESSON MANUFACTURING LTD. Signed [Signature] (Manufacturer) (Approved)

CERTIFICATE OF SHOP INSPECTION

Vessel constructed by PRESSON MANUFACTURING LTD. at NISKU, ALBERTA
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 ALBERTA BOILER & PRESSURE VESSEL SAFETY
have inspected the component described in this Manufacturer's Data Report on May 18, 19 94, 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 May 18/94 Signed [Signature] (Authorizing Inspector) Commission ALBERTA 5
(Mat'l Board (incl. endorsement), State, Prov. and No.)

(A) 2663964

Name and address of manufacturer

(Name and address of purchaser)

Name and address:

(Harris, 1971, 1972, 1973, 1974)

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▶

Q

(Platz. Bd. 14.)

1994

(Your bold)

Item Number

Remarks

Date _____

Co. name

values of ρ between 0.5 and 0.9.

Signature

Abstract

Date

Signed

Unpublished (in press)

Commissions

[Plant, Board Post, undergarments, and No. 1]

This form (E00118) is available from the Order Dept., NCJAE, 345 E. 47 St., New York, N.Y. 10017