

PRESSURE VESSEL & COLUMN INSPECTION REPORT

LSD: 07-27-051-19W5M

Date: JULY 14, 2014

SAP Equipment ID: 66004972

VESSEL STATIC DATA									
Plant			Ansell Gas Plant			Op Unit		System	
Prov. Insp. #			A0157920			CRN		F-1007.2	
Equipment Description			Propane B Bullet			Serial #		1668-201B	
Manufacturer						Vessel Class			
Internal Access:			yes			Description:		Manway, side shell	
MAWP			280			PSI		@ 154 °F	
CODE : U						RT : 2		PWHT :	
Diameter			Length (s/s)			in		OAL mm / in	
Shell Mat'l			SA-516-70			Thickness		1.220 in	
Head Mat'l			SA-516-70			Thickness		1.375 in	
Nozzle Mat'l						Thickness		in	
Internal Coating:			YES — NO			Internal Clad :		YES — NO	
Manway :			yes			Inspection Port :		no	
Nozzle Rating			lb ANSI			Painted :		yes	
						Insulated		no	
PROCESS DATA									
Product Description			Propane			Sweet			
Operating Pressure			110			PSI		Operating Temperature 18 °C	
SOUTH PSV STATIC DATA									
Serial No.		Location		Set Pressure		Capacity		Manufacturer	
						SCFM / Lbs/Hr / GPM			
C25277-A10		top shell		280psi		7245scfm		Farris	
								26JA11-120	
								09/11. Wizard. PSV-7003B	
SOUTH PSV DETAILS									
		Type (Thread/Flange)				ANSI Rating		Size (in)	
PRD Inlet		Flanged				300		2"	
PRD Outlet		Flanged				150		3"	
NORTH PSV STATIC DATA									
Serial No.		Location		Set Pressure		Capacity		Manufacturer	
						SCFM / Lbs/Hr / GPM			
17018A		Top shell		250psi		9724scfm		Fisher Combo Joe – Manifold. 4 x Fisher gas Safety release valves	
								H501-250	
								Installed 09/11, service tag on manifold missing. PSV-7003A	
NORTH PSV DETAILS									
		Type (Thread/Flange)				ANSI Rating		Size (in)	
PRD Inlet		Flanged						4" flanged into manifold, 4 x 3" out of manifold swedging down to 2"	
PRD Outlet		Threaded						4 x 3" stacks	
NDE Equipment records									
Procedure#		Description		Manufacturer		Model#		Serial#	

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INSPECTION SUMMARY

A visual external inspection was conducted on vessel while in operation. Dataplate appears secure, too high to access. Dataplate worn, only stamped info legible. Vessel high off ground. Vessel and piping are in good condition, piping well supported. Vessel paint in good condition with some minor areas of deterioration of outer paint layer, and one small location to bare steel, no corrosion. Vessel saddle seal welded, bolted securely to support structure. Ground cable securely attached directly to saddle support. 2 PSVs. South is a single unit, vertical stack has a weather cap and a hole drilled at bottom of 90 for drainage. North is a 1 into 4 manifold, with all 4 stacks having a weather cap. South PSV has up to date service. Service tag missing on north PSV manifold, but can see where one was attached, likely last serviced 09/11. South PSV set at MAWP, North PSV manifold set below MAWP, both vent to atmosphere. PSV inlet isolation valves are carsealed open. 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.
Check PSV records to confirm north PSV-7003A last service date.

NONCONFORMANCES / INSPECTION DEFICIENCIES


No deficiencies noted

INSPECTION PLANNING

Inspection Strategy	Availability	Inspection Interval
Inspection Date <u>July 14, 2014</u>	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	<u>Ed Tymensen</u>		Date	<u>July 14, 2014</u>
Company	<u>Streamline Inspection</u>	PESL # <u>000711</u>	API #	<u>27479</u>
Reviewed and Approved by	_____	_____	Date	_____
	_____	PESL # _____	API #	_____
Criticality Assessment Rerun	_____	Inspection Planning Rerun	_____	_____
Assessed Next Inspection Date	_____			

PRESSURE VESSEL & COLUMN INSPECTION REPORT

LSD: 07-27-051-19W5M

Date: JULY 14, 2014

SAP Equipment ID: 66004972

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	Ladder, platform		Secure, safety chain across platform opening present
V7	Heads	Good			No corrosion or damage
V8	Guy Wires	n/a			
V9	Electrical Ground	Good	Attached to Saddle support		Present and secure
V10	Painted Inactive Corrosion	n/a			
V11	Coating/Painting	Good	Vessel shell		Some minor outer layer paint deterioration, one location to bare steal, no corrosion
V12	Expansion Joint or Bellows	n/a			
V13	Gauge/Site Glass	Good	Psi, level, temp		Gauges clear and legible
V14	Shell	Good			No corrosion or damage
V15	Jacket	n/a			
V21	Support Other (Please explain)	Good	Piping		Well supported
V22	Foundation	Good			Bolted to steel structure / steel piles
V23	Anchor Bolts	Good			Appear secure, limited visual
V24	Saddle/Skirt	Good	Saddle		bolted to I beam, saddle seal welded
V25	Davit	n/a			
V26	Fireproofing	Fair	Steel piles / supports		Some fireproofing damage at base of supports directly above ground
V31	Connections Other (Please explain)	Good			All connections appear secure
V32	Small Branches	Good	Tubing		No leaks or kinks
V33	Nozzles	Good			No damage or corrosion
V34	Manways	Good			Davit single nut only
V35	Reinforcing Pads	Good			Weepholes present, free of debris, no evidence of leaks
V36	Inadequate Thread Engagement	Good			Adequate
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	Top shell		South PSV service up to date, set at MAWP. Service tag missing on north manifold
V52	Corrosion	n/a			None noted
V53	Leaks	n/a			None noted
V54	Restricted Inlet/Outlet	n/a			
V55	Manual Operation Lever	Good	PSV inlet isolation valves		Isolation valves carsealed open

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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

PRESSURE VESSEL & COLUMN INSPECTION REPORT

LSD: 07-27-051-19W5M

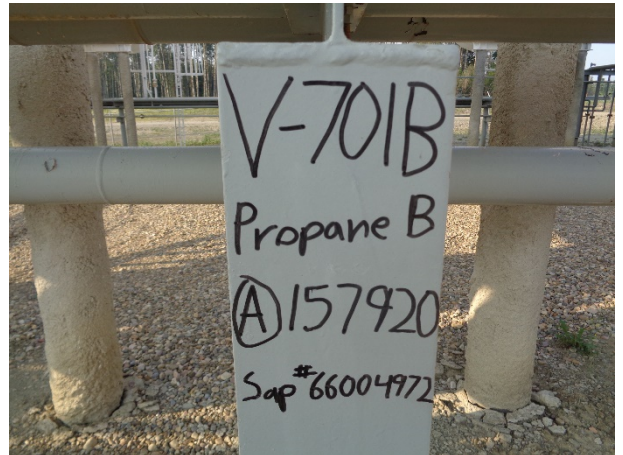
Date: JULY 14, 2014

SAP Equipment ID: 66004972

PHOTOS



LSD sign



Vessel information



Dataplate



Vessel overview



Vessel overview



Shell paint deterioration to bare steel

PRESSURE VESSEL & COLUMN INSPECTION REPORT

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Date: JULY 14, 2014

SAP Equipment ID: 66004972

PHOTOS



Minor fireproofing damage at base of supports



South PSV tag



South PSV service tag



South PSV Dataplate



South PSV and north PSV manifold overview



South PSV tag

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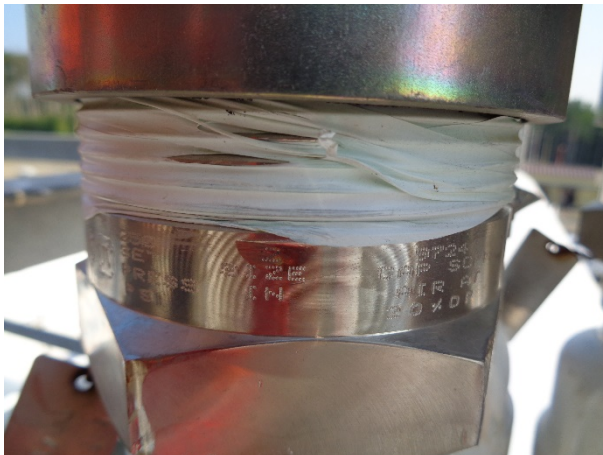
PHOTOS



North PSV manifold Dataplate



North PSV manifold "installed on" tag



North PSV manifold individual PSV data

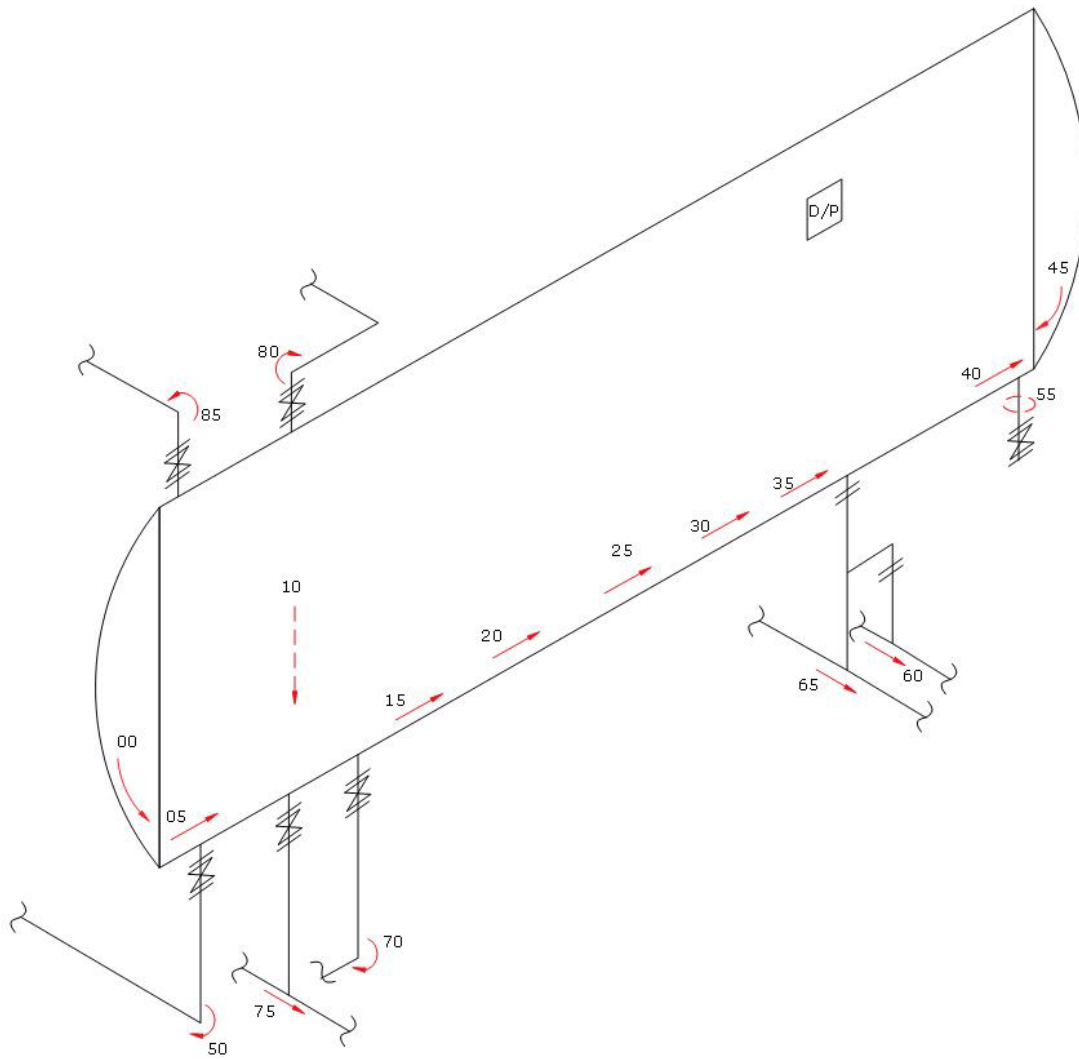


North PSV manifold individual PSV data

Location Name:	ANSELL GAS PLANT	LSD:	07-27-051-19W5
A#:	A0157920	Equipment/Tag No.	V-701B
Equipment Description:	PROPANE B	Serial Number:	1668-201B
		CRN: (or other ID#)	F-1007.2
MAWP:	280 PSI	Design Temp:	154°F
Shell Material:	SA 516 70	Head Material:	SA 516 70
Shell Thickness:	1.250"	Head Thickness:	1.196"
Corrosion Allowance:	0.063"	Date Built:	1984
Size:	144"	Manufacturer:	N/A

Notes:









Ultrasonic Corrosion Survey

Survey Name: Husky Energy

Date: Jul 14, 2014

Inspector: C. Graham

LSD: 07-27-051-19W5 Area: Ansell Location: Gas Plant
A #: A0157920 Tag Number: V-701B Vessel Name: Propane B
CRN: F-1007.2 Year Built: 1984 Serial Number: 1668-201B
Vessel CA: 1.6002 mm Manufacturer:
Shell MAWP: 280psi MAWTF: 154°F Tube MAWP: MAWTF:

TML Description		Baseline				Material:	SA-516-70
00	Head	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	Ellipsoidal	Min	36.090	28.778	1.600	30.378	
OD:	144"	Avg	36.730				Remaining Life:
Spec:	ASME VIII Div.1	Comments:					Retirement Date:

TML Description		Baseline				Material:	SA-516-70
05	Shell	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	Cylindrical	Min	31.520	30.150	1.600	31.750	
OD:	144"	Avg	31.600				Remaining Life:
Spec:	ASME VIII Div.1	Comments:					Retirement Date:

TML Description		Baseline				Material:	SA-516-70
10	Shell	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	Cylindrical	Min	31.470	30.150	1.600	31.750	
OD:	144"	Avg	31.550				Remaining Life:
Spec:	ASME VIII Div.1	Comments:					Retirement Date:

TML Description		Baseline				Material:	SA-516-70
15	Shell	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	Cylindrical	Min	31.520	30.150	1.600	31.750	
OD:	144"	Avg	31.700				Remaining Life:
Spec:	ASME VIII Div.1	Comments:					Retirement Date:



Ultrasonic Corrosion Survey

Survey Name: Husky Energy

Date: Jul 14, 2014

Inspector: C. Graham

LSD: 07-27-051-19W5 Area: Ansell Location: Gas Plant
A #: A0157920 Tag Number: V-701B Vessel Name: Propane B
CRN: F-1007.2 Year Built: 1984 Serial Number: 1668-201B
Vessel CA: 1.6002 mm Manufacturer:
Shell MAWP: 280psi MAWTF: 154°F Tube MAWP: MAWTF:

TML Description		Baseline				Material:	SA-516-70
20	Shell	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	Cylindrical	Min	30.150	1.600	31.750		
OD:	144"	Avg					Remaining Life:
Spec:	ASME VIII Div.1	Comments:					Retirement Date:

TML Description		Baseline				Material:	SA-516-70
25	Shell	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	Cylindrical	Min	30.150	1.600	31.750		
OD:	144"	Avg					Remaining Life:
Spec:	ASME VIII Div.1	Comments:					Retirement Date:

TML Description		Baseline				Material:	SA-516-70
30	Shell	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	Cylindrical	Min	30.150	1.600	31.750		
OD:	144"	Avg					Remaining Life:
Spec:	ASME VIII Div.1	Comments:					Retirement Date:

TML Description		Baseline				Material:	SA-516-70
35	Shell	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	Cylindrical	Min	30.150	1.600	31.750		
OD:	144"	Avg					Remaining Life:
Spec:	ASME VIII Div.1	Comments:					Retirement Date:



Ultrasonic Corrosion Survey

Survey Name: Husky Energy

Date: Jul 14, 2014

Inspector: C. Graham

LSD: 07-27-051-19W5 Area: Ansell Location: Gas Plant
A #: A0157920 Tag Number: V-701B Vessel Name: Propane B
CRN: F-1007.2 Year Built: 1984 Serial Number: 1668-201B
Vessel CA: 1.6002 mm Manufacturer:
Shell MAWP: 280psi MAWTF: 154°F Tube MAWP: MAWTF:

TML Description		Baseline				Material:	SA-516-70
40	Shell	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	Cylindrical	Min	31.720	30.150	1.600	31.750	
OD:	144"	Avg	31.900				Remaining Life:
Spec:	ASME VIII Div.1	Comments:					Retirement Date:

TML Description		Baseline				Material:	SA-516-70
45	Head	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	Ellipsoidal	Min	36.700	28.778	1.600	30.378	
OD:	144"	Avg	38.050				Remaining Life:
Spec:	ASME VIII Div.1	Comments:					Retirement Date:

TML Description		Baseline				Material:	A-234-WPB
50	Piping	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	90° Elbow	Min	5.790	4.801	0.686	5.486	
OD:	3.5"	Avg	5.920				Remaining Life:
Spec:	ASME B31.3	Comments:					Retirement Date:

TML Description		Baseline				Material:	A-234-WPB
55	Nozzle	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	360° Circ	Min	8.970	7.623	1.089	8.712	
OD:	2.375"	Avg	9.580				Remaining Life:
Spec:	ASME VIII Div.1	Comments:					Retirement Date:



Ultrasonic Corrosion Survey

Survey Name: Husky Energy

Date: Jul 14, 2014

Inspector: C. Graham

LSD: 07-27-051-19W5
A #: A0157920
CRN: F-1007.2

Area: Ansell
Tag Number: V-701B
Year Built: 1984
Vessel CA: 1.6002 mm
Shell MAWP: 280psi MAWTF: 154°F

Location: Gas Plant
Vessel Name: Propane B
Serial Number: 1668-201B
Manufacturer:
Tube MAWP: MAWTF:

TML Description	Baseline	Material:	A-234-WPB
60 Piping	2014	Flag	CA
Shape: Tee	Min 8.080	Nominal 5.486	T Min
OD: 3.5"	Avg 8.640		Corr. Rate
Spec: ASME B31.3	Comments:		Remaining Life:
			Retirement Date:

TML Description	Baseline	Material:	A-234-WPB
65 Piping	2014	Flag	CA
Shape: Tee	Min 11.130	Nominal 8.179	T Min
OD: 8.625"	Avg 11.860		Corr. Rate
Spec: ASME B31.3	Comments:		Remaining Life:
			Retirement Date:

TML Description	Baseline	Material:	A-234-WPB
70 Piping	2014	Flag	CA
Shape: 90° Elbow	Min 3.610	Nominal 3.912	T Min
OD: 2.375"	Avg 3.910		Corr. Rate
Spec: ASME B31.3	Comments:		Remaining Life:
			Retirement Date:

TML Description	Baseline	Material:	A-234-WPB
75 Piping	2014	Flag	CA
Shape: Tee	Min 7.340	Nominal 3.912	T Min
OD: 2.375"	Avg 7.900		Corr. Rate
Spec: ASME B31.3	Comments:		Remaining Life:
			Retirement Date:



Ultrasonic Corrosion Survey

Survey Name: Husky Energy

Date: Jul 14, 2014

Inspector: C. Graham

LSD: 07-27-051-19W5	Area: Ansell	Location: Gas Plant
A #: A0157920	Tag Number: V-701B	Vessel Name: Propane B
CRN: F-1007.2	Year Built: 1984	Serial Number: 1668-201B
	Vessel CA: 1.6002 mm	Manufacturer:
	Shell MAWP: 280psi	Tube MAWP: MAWTF:
	MAWTF: 154°F	

TML Description	Baseline	Material: A-234-WPB
80 Piping	2014	Corr. Rate
Shape: 90° Elbow	Min 5.740	Flag 4.801
OD: 3.5"	Avg 5.870	CA 0.686
Spec: ASME B31.3	Comments:	Nominal 5.486
		T Min
		Remaining Life:
		Retirement Date:

TML Description	Baseline	Material: A-234-WPB
85 Piping	2014	Corr. Rate
Shape: 90° Elbow	Min 5.790	Flag 4.845
OD: 2.375"	Avg 6.020	CA 0.692
Spec: ASME B31.3	Comments:	Nominal 5.537
		T Min
		Remaining Life:
		Retirement Date:

C-600

(Alternative Form for Single Chamber, Completely Shop-Fabricated Vessels Only)
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

A157920

1. Manufactured and certified by Vada Industries, Steel-Flo Div. 100 Stockton Avenue Okotoks
(Name and address of manufacturer) Alberta

2. Manufactured for Cord Projects Ltd. 4th Floor, 10201 Southport Rd. S.W. Calgary
(Name and address of purchaser) Alberta

3. Location of installation User-Western Decalta L.S.D. -10, -12, -19, -2, -W5M
(Name and address)

4. Type Horizontal 1668-201 B F1007.2 SFV 1668-201 B Rev.3 1984
(Name of code book) (Material No.) (ASME Code) (Date)

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, 1983
(Year)

to Winter 1983
(Addenda Date)

6. Shell SA 516-70 1.250 .063 11' 8 1/2" 76' 0"
(Mat. Spec. No. Grade) (Nom. Thickness) (Cor. Allowance) (Diam. O.D. H & V) (Length overall) (H & V)

7. Seams DBL Butt Full 1.0 N/A DBL Butt Partial 7
(Long. (Welded) Dist. Sing. Lap Butt) (R.T. (Spot or Full)) (EM Dist) (H.T. Temp. (F)) (Time (hr)) (Girth (Welded) Dist. Sing. Lap Butt) (R.T. (Spot or Full) or Full) (No. of Sources)

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

Location (Top Bottom Ends)	Minimum Thickness	Cor. Allowance	Ratio	Ratio	Ratio	Ratio	Ratio	Ratio	Ratio	Ratio
Ends	1.196	.063			2:1				12' 0"	Concave

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

9. MAWP INT' 1-280/EXT' 1-15 154 420
(psi at max. temp.) (F) (Hydro, pneu. or comb. test pressure) (psi)

Min. temp. (when less than -20°F) _____

10. Nozzles, inspection and safety valve openings

Purpose (Inlet Outlet Drain)	No.	Diam. or Size	Type	Matl.	No. of Studs	Matl. (Inlet and Outlet)	Matl. Attached	Location
See Remarks								

11. Supports: Skirt No Lugs No Legs 2 Other Attached Welded to Shell
(Yes or no) (No) (No) (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: See attached U2 & U4 forms for Item 10 & Heads, Hackney Inc.
(Name of part, item number, Mfr's name and identifying stamp) S.N. 5904 & 5924

Volume - 8123 Ft³
Cord Projects F.O. #PCL-177-2000-1
Propane Storage Tank

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. 18,180 expires Jan. 6, 1986
Date Nov 13 1984 Co. name Vada Ind. Steel-Flo Div. Signed [Signature]
(Manufacturer) (Representative)

CERTIFICATE OF SHOP INSPECTION

Vessel constructed by Vada Ind. Steel-Flo Div. at 100 Stockton Avenue Okotoks Alta
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 _____ and employed by General Safety Services, Boilers Branch
have inspected the component described in this Manufacturer's Data Report on NOVEMBER 13, 1984 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 Nov 13 1984 Signed [Signature] Commissions _____
(Authorized Inspector) (National Board, State, Provincial, or Federal)

A157920

FORM U-4 MANUFACTURER'S DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

1. Manufactured and certified by Vada Ind. Steel-Flo Div. 100 Stockton Avenue Okotoks, Alta
(Name and address of manufacturer)
2. Manufactured for Cord Projects Ltd. 4th Floor, 10201 Southport Rd. S.W. Calgary, Alta
(Name and address of purchaser)
3. Location of installation User-Western Decalta L.S.D.-10,-12,-19.-2.-W5M
(Name and address)
4. Type Horizontal 1668-201 B F1007.2 SFV 1668-201-B Rev.3 1984

[illegible]

Date NOVEMBER 13 1984 Co. name Yada Iron Steel-Flt Div. Signed [Signature]
(Manufacturer) (Representative)

Date NOV 13, 84 Signed [Signature] Commissions _____
(Authorizing Inspector) (Post Board (incl. endorse, notes), State, Prov. and Fed.)

④ 157920

CERTIFIED

1. (a) Manufactured by Hackney, Inc., P.O. Box 528, Navasota, Texas 77868
(b) Manufactured for Steel Flo Division, P.O. Box 250, Obitoks, Alberta, Canada T0L1T0

2. 5904 NA N13, 18-01 NA 1984
(Metal Sec. No. of Part) (Mat. No.) (Part No.) (Mat. No.) (Year)

3. (a) Drawing Number 2200-RE-1-1
(b) Description of Part 1 piece construction head

4. The chemical and physical properties of all parts must meet the requirements of material specifications of the ASME Boiler and Pressure Vessel Code. The construction and workmanship conform to ASME Rules Section VIII, Division 1, 1984
(Year)

and Addenda through _____ and Code Case No. _____

5. Spec's Section QC 100

6. Post-weld Heat Treatment: Temperature 1125 for 90 min.
Items 7-12 not to be completed for single _____ and self executed _____ of feet and _____

7. Shell _____
Matl. (Spec. No., Grade) _____ (N. m. The (in) Corr. Allow. (in.) _____ Diam. (ft. & in.) _____ Length (overall) (ft. & in.) _____

8. Seams: Longitudinal _____
(Welded, Dbl. Singl. Lap, Butt) _____ RT _____ Efficiency _____ %
(Spot or Full)

H.T. Temp. _____ °F. Time _____ (hr.) Girth _____
(Welded, Dbl. Singl. Lap, Butt)

RT _____
Spec. Part _____ No. of _____

9. Head: Is Male _____ SABIA-70
(Spec. No., Grade) _____ (Spec. No., Grade) _____

[illegible]

10. Type of Jacket _____ Foot Test _____
 11. Jacket Closure _____ If bar, give dimensions _____
 (Describe as pipe & weld, bar, etc.)
 If bolted, describe or sketch.
 12. Constructed for max. allowable working pressure _____ psi at max. temp. _____ °F Min. temp.
 (when less than -20°F.) _____ °F. Hydrostatic, pneumatic, or combination test pressure _____ psi

Items 13 and 14 to be completed for each section

13. Tubesheets: _____

14. Tubes: Material _____ O.D. _____ in. No. _____

RECEIVED _____

DATE _____

QUANTITY _____

Items 15-18 incl. to be completed for inner chambers of jacketed vessels or channels of heat exchangers.

15. Shell: Material _____ (Spec. No., Grade) Nominal Thickness _____ in. ~~Corrosion Allowance~~ _____ in. Price _____

Diam. _____ ft. _____ in. Length _____ ft. _____ in. EXTENSIONS _____

16. Seams: Longitudinal _____ (Welded, Dbl., Singl., Lap, Butt) R.T. _____ (Spot or Full) Efficiency _____ %

H.T. Temp _____ °F. Time _____ (Hr.) Girth _____ R.T. _____ No. of Courses _____
(Welded, Dbl., Singl., Lap, Butt) (Spot, Partial or Full)

17. Heads: (a) Material _____ (Spec. No., Grade) (b) Material _____ (Spec. No., Grade)

[illegible]

18. Constructed for max. allowable working pressure _____ psi at max. temp. _____ °F. Min. temp. (when less than -20° F.) _____ °F. Hydrostatic, pneumatic, or combination test pressure _____ psi.

item: to be completed for a vessels where applicable

19. Safety Valve Outlets. Number _____ Size _____ Location _____

20. **Newsies**[illegible][illegible]

Manholes No.	Size	Location
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[illegible]

Threaded No.	Size	Location
1	1/4"	Top of wall
2	1/4"	Bottom of wall
3	1/4"	Center of wall
4	1/4"	Left side of wall
5	1/4"	Right side of wall
6	1/4"	Top of wall
7	1/4"	Bottom of wall
8	1/4"	Center of wall
9	1/4"	Left side of wall
10	1/4"	Right side of wall

22 Support System

[illegible]

(6) *How many times have you been married?*

23. Remarks: 144 DE 1-1/2 NOM 1.198 MIN FLIP SA516-70

Double Butt Weld

100% X-Ray

Code WDP-1/WDMI

CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and that all details of material, construction, and workmanship of this vessel conform to the ASME Code for Pressure Vessels, Section VIII, Division 1.

Date 7-19-84 Signed Hackney, Inc. by Cary Hickler
(Manufacturer) (Representative)

"U" Certificate of Authorization No. 11,008 expires June 30th, 19 86

CERTIFICATE OF SHOP INSPECTION

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 Texas and employed by Employer's Casualty Co. of Dallas, Texas have inspected the part of a pressure vessel described in this Manufacturer's Partial Data Report on July 19 19 84 and state that, to the best of my knowledge and belief, the Manufacturer has constructed this part in accordance with the ASME Boiler and Pressure Vessel Code, Section VIII, Division 1.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in this Manufacturers' Partial 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.

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Signed

Commissions

(No.) Board State Province and No.

A157920

A157920

FORM U-2 MANUFACTURERS' PARTIAL DATA REPORT

A part of a Pressure Vessel Fabricated by One Manufacturer for Another Manufacturer

As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

CERTIFIED &

1. (a) Manufactured by HACKNEY, INC. PO BOX 938 NAVASOTA, TEXAS 77868
 (b) Manufactured for STEEL FLO DIV VERITAS RESOURCE SVC LTD PO BOX 850 OKOTOKS ALB CAN
2. 5924 NA N13118-02 NA 1984
 (Mfgs. Ser. No. of Part) (CBN) (E-9) (Nat'l Bd. No. of Part) (Year)
3. (a) Drawing Prepared by HACKNEY, INC.
 (b) Description of Part Inspected 2 (TWO) PIECE CONST HEAD
4. The chemical and physical properties of all parts meet the requirements of material specifications of the ASME Boiler and Pressure Vessel Code. The construction and workmanship conform to ASME Rules, Section VIII, Division 1, 1983 (Year)
 and Addenda through _____ and Code Case No. _____

5. Special Service per UG-120(d) _____
 6. Postweld Heat Treatment: Temperature 1125 °F Time 90 MINUTES

Items 7-12 incl. to be completed for single wall vessels, jackets of jacketed vessels, or shells of heat exchangers

7. Shell: Matl. (Spec. No., Grade) Nom. Thk. (in.) Corr. Allow. (in.) Diam. (ft. & in.) Length (over all) (ft. & in.)
8. Seams: Longitudinal (Welded, Dbl., Sngl., Lap, Butt) R.T. (Spot or Full) Efficiency %
H.T. Temp. °F. Time (Hr.) Girth (Welded, Dbl., Sngl., Lap, Butt)
R.T. No. of Courses
(Spot, Partial, Or Full)

9. Heads: (a) Material SA516-70 (Spec. No., Grade) (b) Material _____ (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)	HD #3	1.198		127	24.35	2:1				
(b)										

If removable, bolts used (describe other fastenings) _____

(Material, Spec. No., Grade, Size, etc.)

10. Type of Jacket _____ Proof Test _____
 11. Jacket Closure _____ If bar, give dimensions _____
 (Describe as ogee & weld, bar, etc.)

If bolted, describe or sketch.

12. Constructed for max. allowable working pressure _____ psi at max. temp. _____ °F. Min. temp. _____ °F. (when less than -20°F.) _____ °F. Hydrostatic, pneumatic, or combination test pressure _____ psi.

Items 13 and 14 to be completed for tube sections

13. Tubesheets: Stationary Matl. (Spec. No., Grade) Diam. (in.) (Subject to pressure) Nom. Thk. (in.) Corr. Allow. (in.) Attach. (Weld, Bolted)
Floating Matl. (Spec. No., Grade) Diam. (in.) Nom. Thk. (in.) Corr. Allow. (in.) Attach.

14. Tubes: Material _____ (Spec. No., Gr.) O.D. _____ in. Nominal Thickness _____ in. or gauge
Number _____ Type _____
 (Straight or "U")

Items 15-18 incl. to be completed for inner chambers of jacketed vessels or channels of heat exchangers

15. Shell: Material _____ (Spec. No., Grade) Nominal Thickness _____ in. Corrosion Allowance _____ in.
Diam. ft. _____ in. Length ft. _____ in.
16. Seams: Longitudinal _____ R.T. _____ (Spot or Full) Efficiency %
(Welded, Dbl., Sngl., Lap, Butt) H.T. Temp. °F. Time (Hr.) Girth (Welded, Dbl., Sngl., Lap, Butt) R.T. No. of Courses
(Spot, Partial or Full)
17. Heads: (a) Material _____ (Spec. No., Grade) (b) Material _____ (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)										
(b)										

18. Constructed for max. allowable working pressure _____ psi at max. temp. _____ °F. Min. temp. (when less than -20°F.) _____ °F. Hydrostatic, pneumatic, or combination test pressure _____ psi.

A157920

Items below to be completed for all vessels where applicable

19. Safety Valve Outlets: Number _____ Size _____ Location _____

20. Nozzles:

PURPOSE (INLET, OUTLET, DRAIN)	NUMBER	DIAM. OR SIZE	TYPE	MATERIAL	NOMINAL THICKNESS	REINFORCEMENT MATERIAL	HOW ATTACHED

21. Inspection Openings:

Manholes No. _____ Size _____ Location _____

Handholes No. _____ Size _____ Location _____

Threaded No. _____ Size _____ Location _____

22. Supports: Short _____ Lugs _____ (Yes or No) _____ Lugs _____ (No) _____ Other _____

Attached _____

(Where and how)

23. Remarks: 144 OD 1-1/2 NOM 1.198 MIN ELIP SA516-70 HEAD

DOUBLE BUTT WELD

100% X-RAY

CODE WDIT/WDIU

CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and that all details of material, construction, and workmanship of this vessel conform to the ASME Code for Pressure Vessels, Section VIII, Division 1.

Date 7/26/84 Signed HACKNEY, INC. by Cary Hackler

(Manufacturer)

(Representative) CARY HACKLER

"U" Certificate of Authorization No. 11,008 expires JUNE 30TH, 19 86

CERTIFICATE OF SHOP INSPECTION

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 TEXAS and employed by EMPLOYERS CASUALTY CO of DALLAS, TEXAS have inspected the part of a pressure vessel described in this Manufacturer's Partial Data Report on JULY 26, 19 84 and state that, to the best of my knowledge and belief, the Manufacturer has constructed this part in accordance with the ASME Boiler and Pressure Vessel Code, Section VIII, Division 1.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in this Manufacturers' Partial 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 7/30/84

Signed Stephen Smith (Authorized Inspector) Commissions TEXAS-915 (Natl. Board, State Province and No.)