Eq# 66048163 N# 6074131 W# 607715

Husky Energy
PRESSURE VESSEL INSPECTION REPORT

FACILITY Ansell Field	DATE May 4, 2008	REPORT # IR080504JNA

VESSEL STATIC DATA

Prov. Insp. # A 0416384	CRN K2360.21	Equip Tag # 002168
Equipment Location (LSD) 12-23-051-19 W5M		Serial # PE 4869
Equipment Description Vertical Separator		Vessel Class -
Manufacturer Penfabco Ltd.		Year Built 1997
MAWP 1436 psi KPag / psig @ 100°F °C / °F		MDMT -20°F °C / °F
CODE : UM ☐ U ☒ U2 ☐	RT : 1 ☐ 2 ☒ 3 ☐ 4 ☐	PWHT : YES ☐ NO ☒
Diameter 16" Length (S/S) mm/in OAL mm/in		Vertical ☒ Horizontal ☐
Shell Mat'l	Thickness mm	Corr Allowance 0 mm/in
Head Mat'l	Thickness mm	Corr Allowance 0 mm/in
Nozzle Mat'l	Thickness mm/in	Corr Allowance mm/in
Internal Coating : YES ☐ NO ☒	Internal Clad : YES ☐ NO ☒	Capacity N/A m^3
Manway : YES ☐ NO ☒	Inspection Port : YES ☐ NO ☒	Skirt ☒ Legs ☐ Saddle ☐
Nozzle Rating 600 lb ANSI	Painted : YES ☒ NO ☐	Insulated : YES ☐ NO ☒

PROCESS DATA

Product Description Sweet Gas		Sweet ☒ Sour ☐ PPM:	
Operating Pressure 550 psi	KPag / psig	Operating Temperature 60°F	°C / °F

PSV STATIC DATA

Tag / Serial No.	Location	Size Inlet	Size Outlet	Set Pressure	Capacity SCFM / Lbs/Hr / GPM	Manufacturer	Model / Type	Service Date
66030	Pipe	1"	1"	1436 psi	2918 SCFM	Mercer	9117D5 117145	07/06

INSPECTION HISTORY

RBI Category A☐ B☐ C☐ D☐	Last Inspection Date	W.O. #
Inspection Task List #	Inspection Type	Inspection Reason Integrity Inspection SM
Inspection Techniques Required	Next Inspection Type	Due Date
VE VI RT UT MT PT PT TT	Outstanding Repairs	

INSPECTION SUMMARY

An external inspection was performed to verify the vessels integrity.
No concerns were found and the vessel is considered acceptable for continued service.

RECOMMENDATIONS

-Cut a new 4" inspection hole in the east side of the vessel skirting to permit UT inspection on the bottom head in the future.
-Tighten minor oil leak in the 1" threaded piping.

REPAIRS COMPLETED

Object Name	Cause	Damage	Repair Activity
None			

VESSEL STATUS

Integrity Status	☒ *Suitable for Continued Service*	☐ *Immediate Repairs Required* ☐ *Future Repairs Required*		☐ *Replace*
Inventory Status	☒ In service Fully Utilized	☐ Idle	☐ Surplus	☐ Scrap
This IR completes a thorough inspection. Reschedule as indicated	☒	Partial IR only. Do not reschedule		☐

Husky Energy

PRESSURE VESSEL INSPECTION REPORT

FACILITY Ansell Field	DATE May 4, 2008	REPORT # IR080504JNA

INSPECTION OBSERVATIONS

NONCOMPLIANCES OR INSPECTION DEFICIENCIES ISSUED

-None at time of inspection.

EXTERNAL VISUAL INSPECTION

The vessel is painted and is in good condition with no notable corrosion being found.
The nameplate, bolting and external attachments are in good condition.
The piping is in fair condition, there are minor leaks in many of the threaded pipe unions.
The vessel is protected with a PSV that is attached and in good condition.
The gauges are clear and in good condition.
The vessel appears to be secure and level.
The overall condition of this vessel is good.

-Cut a new 4" inspection hole in the east side of the vessel skirting to permit UT inspection on the bottom head in the future.

EXTERNAL NDE EXAMINATION

-An external ultrasonic corrosion survey was completed. No relevant indications were noted at the time of inspection. For more details see formal UT report by Hunt Inspection - Project C2780

INTERNAL VISUAL INSPECTION

-There was no internal Visual at time of inspection.

INTERNAL NDE EXAMINATION

-There was no internal NDE at time of inspection.

PRESSURE TEST

Test Completed ☐ Yes ☐ No	Test Acceptable ☐ Yes ☐ No	Test Report #

INSPECTOR CERTIFICATION

I, the undersigned certify that the above equipment has been inspected in accordance with the assigned task list and that statements within this report are correct and represent inspection findings

Inspectors Name Joel Norman	Inspector's Signature J Norman
Inspection Company Hunt Inspection Ltd.	Date May 04, 2008

LEAD INSPECTOR'S ACCEPTANCE & SCHEDULE CONFIRMATION

Lead Inspector Bob Marchak	Signature	Date 10-10-2008
Vessel Inspection Interval 5 Years	Leave "as-is" ☐	Change to
PSV Inspection Interval 5 Years	Leave "as-is" ☐	Change to

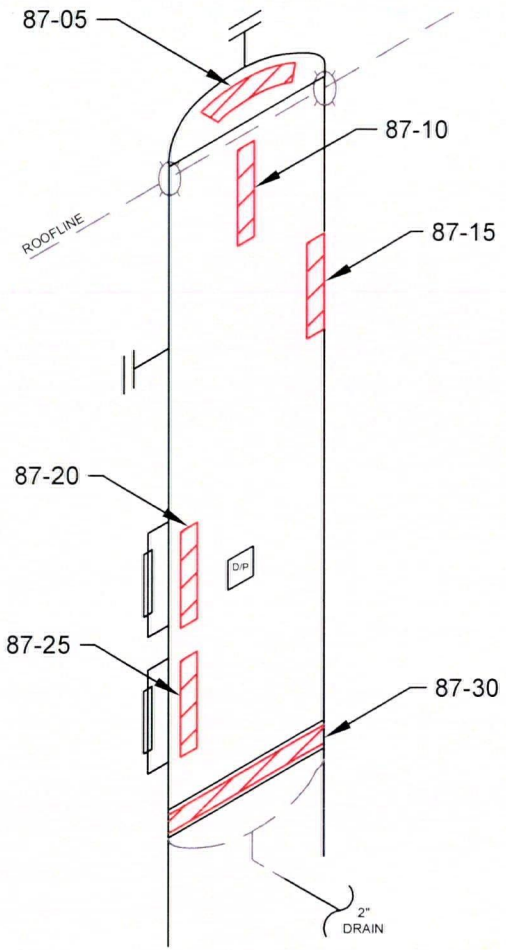
Office Use Only Report Entered to SEQA Database by Date
Static Data Verified by Date

FACILITY	Ansell Field	DATE	May 4, 2008	REPORT #	IR080504JNA

Data Plate Photo

66048163

ITEM: **VERTICAL SEPARATOR** **A 0416384**



HUNT INSPECTION LTD.

STETTLER, AB (403) 742-4868
LACOMBE, AB (403) 782-7855
BROOKS, AB (403) 501-8029
GRANDE PRAIRIE, AB (866) 422-9732

TECHNICIAN:
JOEL NORMAN
SNT LEVEL III
CGSB 48.9712
LEVEL III # 6951

DATE: 05/04/08	**DWG #** 87
CLIENT:	**HUSKY ENERGY**
LSD:	**12-23-051-19-W5M**
INSPECTOR :	BOB MARCHAK
LOCATION :	ANSELL FIELD
DISTRICT UNIT :	FH-FW
BLDG/SKID:	-
PROCESS:	SWEET
CODE:	ASME SEC VIII DIV 1
SPECIFICATION:	AS PER ASME SE 797
TECHNIQUE:	UT-1-1, REV. 1
METHOD:	UT CONTINUOUS / A SCAN
SURFACE COND:	PAINTED
SURFACE TEMP:	AMBIENT

VESSEL INFORMATION

VESSEL # :	**A 0416384**
CRN # :	K2360.2
SERIAL # :	PE 4869
MANUFACTURER:	PENFABCO LTD.
DATE BUILT:	1997
CLIENT ID / TAG:	BC 002168
M.A.W.P. :	1436 PSI
M.A.W.T. :	100 °F
JOINT EFFICIENCY/RT:	RT 2
STRESS RELIEVED:	NO
INSULATED :	NO
MANWAY :	NO

VESSEL SPECIFICATIONS

	OD	NOMINAL	MATERIAL	CA
VESSEL HEAD	16"	.750"	SA-516-70	0"
VESSEL SHELL	16"	.844"	SA-106-B	0"
BOOT HEAD	-	-	-	-
BOOT SHELL	-	-	-	-

COMMENTS: NO ACCESS TO BOTTOM HEAD & DRAIN BELOW SKIRTING

PROJECT: C2780

ULTRASONIC CORROSION SURVEY

Survey Name: HUSKY ENERGY

						Survey Date:	5/04/08
LSD:	12-23-051-19W5 Dwg: 87	Vessel Number:	A0416384	Manufacturer:	PENFABCO LTD.	Inspector:	BOB MARCHAK
District Unit:	FH-FW	Vessel Name:	VERTICAL SEPARATOR	Serial Number:	PE4869	Process:	SWEET
Location:	ANSELL FIELD	Year Built:	1997	Shell MAWP PSI:	1436 MAWT F: 100	Project #:	C2780
Skid:	-	Tag Number:	BC002168	Tube MAWP PSI:	0 MAWT F: 0		
		CRN:	K2360.2	Vessel CA:	0.0000		

Band	Description			Readings 1	2	3	4	5	6	Year	Avg Inches	Min Inches	Nominal	CA	TMIN	Recommended Next Inspection	Recommended Retirement Date
87-05	Top	Head	Baseline	0.736	0.731	0.731	0.732	0.731	0.733	2008	0.732	0.731	0.7500	0.0000	0.5998	2009	2028
Shape	Ellipsoidal	Shell Side	Previous										Comments-->				
OD	16		Current	0.736	0.731	0.731	0.732	0.731	0.733	2008	0.732	0.731	NOMINAL & MATERIAL ASSUMED				
Spec.	VIII Div 1									ST Loss MPY			Caution				
Material	SA 516 - 70									LT Loss MPY	0.000						
87-10	Upper	Shell	Baseline	0.830	0.830	0.833	0.835	0.838	0.837	2008	0.834	0.830	0.8440	0.0000	0.7287	2009	2028
Shape	Cylindrical	Shell Side	Previous										Comments-->				
OD	16		Current	0.830	0.830	0.833	0.835	0.838	0.837	2008	0.834	0.830	NOMINAL & MATERIAL ASSUMED				
Spec.	VIII Div 1									ST Loss MPY			Caution				
Material	SA 106 - B									LT Loss MPY	0.000						
87-15	Upper	Shell	Baseline	0.850	0.844	0.844	0.844	0.850	0.851	2008	0.847	0.844	0.8440	0.0000	0.7287	2009	2028
Shape	Cylindrical	Shell Side	Previous										Comments-->				
OD	16		Current	0.850	0.844	0.844	0.844	0.850	0.851	2008	0.847	0.844	NOMINAL & MATERIAL ASSUMED				
Spec.	VIII Div 1									ST Loss MPY			OK				
Material	SA 106 - B									LT Loss MPY	0.000						
87-20	Mid	Shell	Baseline	0.808	0.807	0.813	0.816	0.817	0.815	2008	0.813	0.807	0.8440	0.0000	0.7287	2009	2028
Shape	Cylindrical	Shell Side	Previous										Comments-->				
OD	16		Current	0.808	0.807	0.813	0.816	0.817	0.815	2008	0.813	0.807	NOMINAL & MATERIAL ASSUMED				
Spec.	VIII Div 1									ST Loss MPY			Caution				
Material	SA 106 - B									LT Loss MPY	0.000						

ULTRASONIC CORROSION SURVEY

Survey Name: HUSKY ENERGY

						Survey Date:	5/04/08
LSD:	12-23-051-19W5 Dwg: 87	Vessel Number:	A0416384	Manufacturer:	PENFABCO LTD.	Inspector:	BOB MARCHAK
District Unit:	FH-FW	Vessel Name:	VERTICAL SEPARATOR	Serial Number:	PE4869	Process:	SWEET
Location:	ANSELL FIELD	Year Built:	1997	Shell MAWP PSI:	1436 MAWT F: 100	Project #:	C2780
Skid:	-	Tag Number:	BC002168	Tube MAWP PSI:	0 MAWT F: 0		
		CRN:	K2360.2	Vessel CA:	0.0000		

Band	Description			Readings 1	2	3	4	5	6	Year	Avg Inches	Min Inches	Nominal	CA	TMIN	Recommended Next Inspection	Recommended Retirement Date
87-25	Lower	Shell	Baseline	0.810	0.810	0.815	0.818	0.825	0.829	2008	0.818	0.810	0.8440	0.0000	0.7287	2009	2028
Shape	Cylindrical	Shell Side	Previous										Comments-->				
OD	16		Current	0.810	0.810	0.815	0.818	0.825	0.829	2008	0.818	0.810	NOMINAL & MATERIAL ASSUMED				
Spec.	VIII Div 1								ST Loss MPY				Caution				
Material	SA 106 - B								LT Loss MPY		0.000						
87-30	Bottom	Head	Baseline	0.788	0.794	0.792	0.790	0.789	0.788	2008	0.790	0.788	0.7500	0.0000	0.5998	2009	2028
Shape	Ellipsoidal	Shell Side	Previous										Comments-->				
OD	16		Current	0.788	0.794	0.792	0.790	0.789	0.788	2008	0.790	0.788	NOMINAL & MATERIAL ASSUMED				
Spec.	VIII Div 1								ST Loss MPY				OK				
Material	SA 516 - 70								LT Loss MPY		0.000						
87-35		Piping	Baseline	0.319	0.310	0.315	0.316	0.321	0.325	2008	0.318	0.310	0.3000	0.0375	0.1213	2009	2028
Shape	90° Elbow	Shell Side	Previous										Comments-->				
OD	3.5		Current	0.319	0.310	0.315	0.316	0.321	0.325	2008	0.318	0.310					
Spec.	B31.3								ST Loss MPY				OK				
Material	A 234 - WPB								LT Loss MPY		0.000						
87-40		Piping	Baseline	0.319	0.310	0.307	0.308	0.315	0.319	2008	0.313	0.307	0.3000	0.0375	0.1213	2009	2028
Shape	90° Elbow	Shell Side	Previous										Comments-->				
OD	3.5		Current	0.319	0.310	0.307	0.308	0.315	0.319	2008	0.313	0.307					
Spec.	B31.3								ST Loss MPY				OK				
Material	A 234 - WPB								LT Loss MPY		0.000						

HUNT INSPECTION LTD.

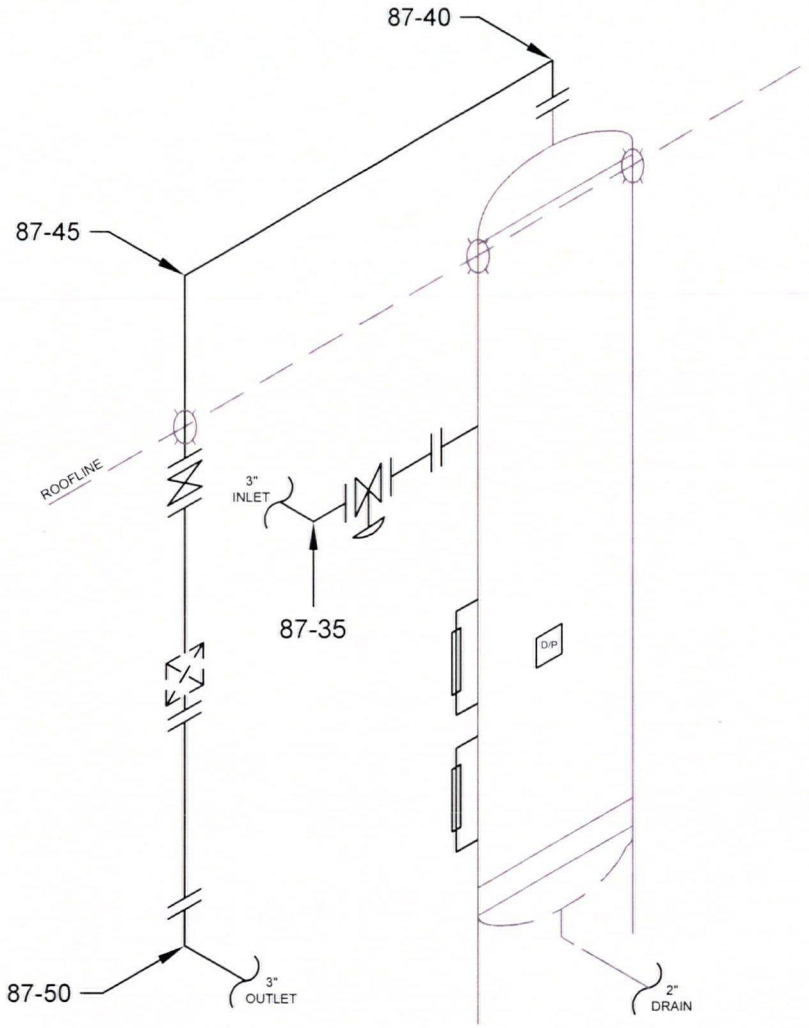
ULTRASONIC CORROSION SURVEY

Survey Name: HUSKY ENERGY

						Survey Date:	5/04/08
LSD:	12-23-051-19W5 Dwg: 87	Vessel Number:	A0416384	Manufacturer:	PENFABCO LTD.	Inspector:	BOB MARCHAK
District Unit:	FH-FW	Vessel Name:	VERTICAL SEPARATOR	Serial Number:	PE4869	Process:	SWEET
Location:	ANSELL FIELD	Year Built:	1997	Shell MAWP PSI:	1436 MAWT F: 100	Project #:	C2780
Skid:	-	Tag Number:	BC002168	Tube MAWP PSI:	0 MAWT F: 0		
		CRN:	K2360.2	Vessel CA:	0.0000		

Band	Description			Readings 1	2	3	4	5	6	Year	Avg Inches	Min Inches	Nominal	CA	TMIN	Recommended Next Inspection	Recommended Retirement Date
87-45		Piping	**Baseline**	0.312	0.306	0.308	0.306	0.310	0.312	2008	0.309	0.306	0.3000	0.0375	0.1213	2009	2028
Shape	90° Elbow	Shell Side	**Previous**										Comments-->				
OD	3.5		**Current**	0.312	0.306	0.308	0.306	0.310	0.312	2008	0.309	0.306					
Spec.	B31.3								**ST Loss MPY**				OK				
Material	A 234 - WPB								**LT Loss MPY**		0.000						
87-50		Piping	**Baseline**	0.303	0.278	0.278	0.277	0.290	0.303	2008	0.288	0.277	0.3000	0.0375	0.1213	2009	2028
Shape	90° Elbow	Shell Side	**Previous**										Comments-->				
OD	3.5		**Current**	0.303	0.278	0.278	0.277	0.290	0.303	2008	0.288	0.277					
Spec.	B31.3								**ST Loss MPY**				OK				
Material	A 234 - WPB								**LT Loss MPY**		0.000						

ITEM: **VERTICAL SEPARATOR - PIPING** A 0416384



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GRANDE PRAIRIE, AB (866) 422-9732

TECHNICIAN:
JOEL NORMAN
SNT LEVEL III
CGSB 48.9712
LEVEL III # 6951

DATE:	**05/04/08**
DWG #	**87A**
CLIENT:	**HUSKY ENERGY**
LSD:	**12-23-051-19-W5M**
INSPECTOR :	BOB MARCHAK
LOCATION :	ANSELL FIELD
DISTRICT UNIT :	FH-FW
BLDG/SKID:	-
PROCESS:	SWEET
CODE:	ASME B31.3
SPECIFICATION:	AS PER ASME SE 797
TECHNIQUE:	UT-1-1, REV. 1
METHOD:	UT CONTINUOUS / A SCAN
SURFACE COND:	PAINTED
SURFACE TEMP:	AMBIENT

PIPING INFORMATION

PIPING ID	SIZE	SCH	NOM	M.A.W.P. (VESSEL)	M.A.W.T. (VESSEL)	FLANGE RATING
87-35	3.50"	XS	.300"	1436 PSI	100 °F	-
87-40	"	"	"	"	"	"
87-45	"	"	"	"	"	"
87-50	"	"	"	"	"	"

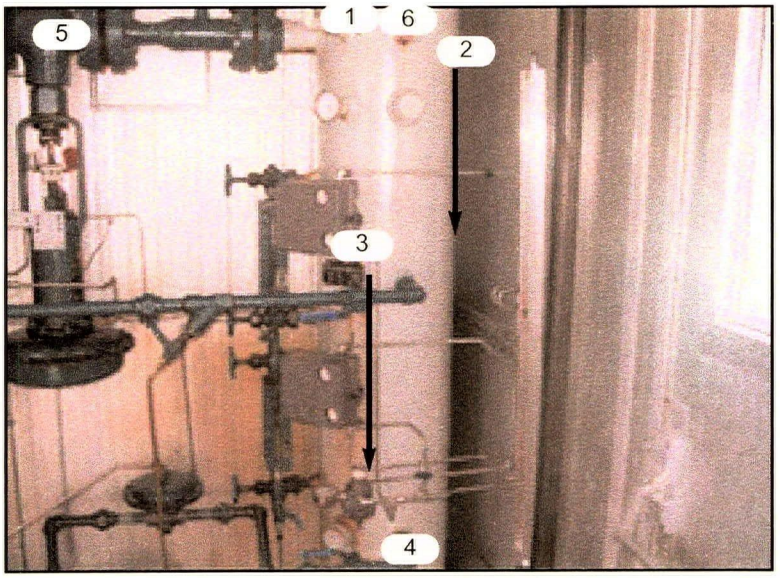
COMMENTS:

PROJECT: **C2780**

66048163

Husky Energy

VESSEL UT LOCATIONS



Name:	Vertical Separator	**MAWP:**	1436psi
A:	0416384	**Des. Temp.:**	100°F
S/N:	PE4869	**Head Material:**	SA-516-70
CRN:	K2360.2	**Head Thick:**	0.694"
LSD:	12-23-51-19 W5M	**Shell Material:**	SA-106-B
Location:	Ansel Field	**Shell Thick:**	0.844"
Corr. Allow.:	Nil	**Date Built:**	1997
Size:	14.32"ID x 7'6"	**Manufacturer:**	Penfabco Ltd.

Note:

Location 1 on top head.
Location 4 above bottom head.
Location 5 - 3" elbow east of vessel.
Location 6 - 3" elbow above top head
No access to bottom head.

alliance
ENGINEERING & INSPECTION LTD

AEI 03-677

Corrosion Monitoring E c ID Analysis Report

Report For: Husky Energy
Presented By: Alliance Engineering & Inspection Ltd.
Address: 333-50 Avenue SE, Calgary, AB T2G 2B3
Telephone: (403) 255-5100 Fax: (403) 255-5171 Web www.aeiltd.com

Report Date:11/11/2003

(Report in Inches, Corrosion Rates in MPY)
Analysis: Statistical/Straight Line

Unit: HUSKY
Eq/Circ ID: 0416384
Eq Type:
Class:
RBI:
Design Code: S8/D1

Flange Rating: 0 lb/in²
Design Pressure: 1436 lb/in²
Design Temperature: 100 °F

Description: VERTICAL SEPARATOR
TAG # N/A

Summary: Group Name:
Insp. Due Date = 09/09/2008
Pred. Ret. Date = 11/01/2032

Group Description:
RCR = 0.1 MPY
Rem. Life (from last survey 09/10/2003) = 29.1 yrs

0 C.A. Status: No
Total Caution TMLs = 0

TML No	Location Description	Ctn TML	First Survey Thick Nt	First Date	Previous Survey Thick Nt	Previous Date	Last Survey Thick Nt	Last Date	Shrt Term Rate	Long Term Rate	Best Rate	Max Hist CR	Retirement Thickness		Rep TML CR	TML Retirement Date	TML Inspection Date
1.01	TOP HEAD	N *	0.694 NM	04/15/1997		N/A	0.741	09/10/2003	N/A	0	N/A	0	0.684	U	2.0	03/11/2032	09/09/2008
1.02	TOP HEAD	N *	0.694 NM	04/15/1997		N/A	0.737	09/10/2003	N/A	0	N/A	0	0.684	U	2.0	03/11/2030	09/09/2008
1.03	TOP HEAD	N *	0.694 NM	04/15/1997		N/A	0.737	09/10/2003	N/A	0	N/A	0	0.684	U	2.0	03/11/2030	09/09/2008
1.04	TOP HEAD	N *	0.694 NM	04/15/1997		N/A	0.750	09/10/2003	N/A	0	N/A	0	0.684	U	2.0	09/09/2036	09/09/2008
1.05	TOP HEAD	N	0.694 NM	04/15/1997		N/A	0.803	09/10/2003	N/A	0	N/A	0	0.684	U	2.0	03/11/2063	09/09/2008
2.01	SHELL	N	0.844 NM	04/15/1997		N/A	0.873	09/10/2003	N/A	0	N/A	0	0.739	U	2.0	09/10/2070	09/09/2008
2.02	SHELL	N	0.844 NM	04/15/1997		N/A	0.852	09/10/2003	N/A	0	N/A	0	0.739	U	2.0	03/11/2060	09/09/2008
2.03	SHELL	N	0.844 NM	04/15/1997		N/A	0.852	09/10/2003	N/A	0	N/A	0	0.739	U	2.0	03/11/2060	09/09/2008
2.04	SHELL	N	0.844 NM	04/15/1997		N/A	0.845	09/10/2003	N/A	0	N/A	0	0.739	U	2.0	09/09/2056	09/09/2008
2.05	SHELL	N	0.844 NM	04/15/1997		N/A	0.846	09/10/2003	N/A	0	N/A	0	0.739	U	2.0	03/11/2057	09/09/2008
2.06	SHELL	N	0.844 NM	04/15/1997		N/A	0.844	09/10/2003	N/A	0	N/A	0	0.739	U	2.0	03/11/2056	09/09/2008
2.07	SHELL	N	0.844 NM	04/15/1997		N/A	0.842	09/10/2003	N/A	0.3	N/A	0.3	0.739	U	2.0	03/11/2055	09/09/2008
2.08	SHELL	N	0.844 NM	04/15/1997		N/A	0.844	09/10/2003	N/A	0	N/A	0	0.739	U	2.0	03/11/2056	09/09/2008
2.09	SHELL	N	0.844 NM	04/15/1997		N/A	0.844	09/10/2003	N/A	0	N/A	0	0.739	U	2.0	03/11/2056	09/09/2008
2.10	SHELL	N	0.844 NM	04/15/1997		N/A	0.843	09/10/2003	N/A	0.2	N/A	0.2	0.739	U	2.0	09/10/2055	09/09/2008
2.11	SHELL	N	0.844 NM	04/15/1997		N/A	0.846	09/10/2003	N/A	0	N/A	0	0.739	U	2.0	03/11/2057	09/09/2008
2.12	SHELL	N	0.844 NM	04/15/1997		N/A	0.842	09/10/2003	N/A	0.3	N/A	0.3	0.739	U	2.0	03/11/2055	09/09/2008
3.01	SHELL	N	0.844 NM	04/15/1997		N/A	0.834	09/10/2003	N/A	1.6	N/A	1.6	0.739	U	2.0	03/11/2051	09/09/2008
3.02	SHELL	N	0.844 NM	04/15/1997		N/A	0.830	09/10/2003	N/A	2.2	N/A	2.2	0.739	U	2.2	01/20/2045	09/09/2008
3.03	SHELL	N	0.844 NM	04/15/1997		N/A	0.828	09/10/2003	N/A	2.5	N/A	2.5	0.739	U	2.5	04/17/2039	09/09/2008

Report For: Husky Energy
Presented By: Alliance Engineering & Inspection Ltd.
Address: 333-50 Avenue SE, Calgary, AB T2G 2B3
Telephone: (403) 255-5100 Fax: (403) 255-5171 Web www.aeiltd.com

Report Date:11/11/2003

(Report in Inches, Corrosion Rates in MPY)
Analysis: Statistical/Straight Line

Unit: HUSKY
Eq/Circ ID: 0416384
Eq Type:
Class:
RBI:
Design Code: S8/D1

Flange Rating: 0 lb/in²
Design Pressure: 1436 lb/in²
Design Temperature: 100 °F

Description: VERTICAL SEPARATOR
TAG # N/A

Summary: Group Name:
Insp. Due Date = 09/09/2008
Pred. Ret. Date = 11/01/2032

Group Description:
RCR = 0.1 MPY
Rem. Life (from last survey 09/10/2003) = 29.1 yrs

0 C.A. Status: No
Total Caution TMLs = 0

TML No	Location Description	Ctn TML	First Survey Thick Nt	First Date	Previous Survey Thick Nt	Previous Date	Last Survey Thick Nt	Last Date	Shrt Term Rate	Long Term Rate	Best Rate	Max Hist CR	Retirement Thickness		Rep TML CR	TML Retirement Date	TML Inspection Date
3.04	SHELL	N	0.844 NM	04/15/1997		N/A	0.829	09/10/2003	N/A	2.3	N/A	2.3	0.739	U	2.3	10/27/2042	09/09/2008
3.05	SHELL	N *	0.844 NM	04/15/1997		N/A	0.821	09/10/2003	N/A	3.6	N/A	3.6	0.739	U	3.6	06/21/2026	09/09/2008
3.06	SHELL	N *	0.844 NM	04/15/1997		N/A	0.820	09/10/2003	N/A	3.7	N/A	3.7	0.739	U	3.7	08/01/2025	09/09/2008
3.07	SHELL	N *	0.844 NM	04/15/1997		N/A	0.826	09/10/2003	N/A	2.8	N/A	2.8	0.739	U	2.8	10/06/2034	09/09/2008
3.08	SHELL	N *	0.844 NM	04/15/1997		N/A	0.823	09/10/2003	N/A	3.3	N/A	3.3	0.739	U	3.3	02/22/2029	09/09/2008
3.09	SHELL	N *	0.844 NM	04/15/1997		N/A	0.827	09/10/2003	N/A	2.7	N/A	2.7	0.739	U	2.7	04/13/2036	09/09/2008
3.10	SHELL	N	0.844 NM	04/15/1997		N/A	0.828	09/10/2003	N/A	2.5	N/A	2.5	0.739	U	2.5	04/17/2039	09/09/2008
3.11	SHELL	N *	0.844 NM	04/15/1997		N/A	0.827	09/10/2003	N/A	2.7	N/A	2.7	0.739	U	2.7	04/13/2036	09/09/2008
3.12	SHELL	N	0.844 NM	04/15/1997		N/A	0.828	09/10/2003	N/A	2.5	N/A	2.5	0.739	U	2.5	04/17/2039	09/09/2008
4.01	BOTTOM HEAD	N	0.694 NM	04/15/1997		N/A	0.796	09/10/2003	N/A	0	N/A	0	0.684	U	2.0	09/10/2059	09/09/2008
4.02	BOTTOM HEAD	N	0.694 NM	04/15/1997		N/A	0.799	09/10/2003	N/A	0	N/A	0	0.684	U	2.0	03/11/2061	09/09/2008
4.03	BOTTOM HEAD	N	0.694 NM	04/15/1997		N/A	0.837	09/10/2003	N/A	0	N/A	0	0.684	U	2.0	03/11/2080	09/09/2008
4.04	BOTTOM HEAD	N	0.694 NM	04/15/1997		N/A	0.835	09/10/2003	N/A	0	N/A	0	0.684	U	2.0	03/11/2079	09/09/2008
4.05	BOTTOM HEAD	N	0.694 NM	04/15/1997		N/A	0.804	09/10/2003	N/A	0	N/A	0	0.684	U	2.0	09/10/2063	09/09/2008
4.06	BOTTOM HEAD	N	0.694 NM	04/15/1997		N/A	0.801	09/10/2003	N/A	0	N/A	0	0.684	U	2.0	03/11/2062	09/09/2008
4.07	BOTTOM HEAD	N	0.694 NM	04/15/1997		N/A	0.804	09/10/2003	N/A	0	N/A	0	0.684	U	2.0	09/10/2063	09/09/2008
4.08	BOTTOM HEAD	N	0.694 NM	04/15/1997		N/A	0.804	09/10/2003	N/A	0	N/A	0	0.684	U	2.0	09/10/2063	09/09/2008
4.09	BOTTOM HEAD	N	0.694 NM	04/15/1997		N/A	0.807	09/10/2003	N/A	0	N/A	0	0.684	U	2.0	03/11/2065	09/09/2008
4.10	BOTTOM HEAD	N	0.694 NM	04/15/1997		N/A	0.808	09/10/2003	N/A	0	N/A	0	0.684	U	2.0	09/10/2065	09/09/2008
4.11	BOTTOM HEAD	N	0.694 NM	04/15/1997		N/A	0.801	09/10/2003	N/A	0	N/A	0	0.684	U	2.0	03/11/2062	09/09/2008
4.12	BOTTOM HEAD	N	0.694 NM	04/15/1997		N/A	0.804	09/10/2003	N/A	0	N/A	0	0.684	U	2.0	09/10/2063	09/09/2008

Report For: Husky Energy
Presented By: Alliance Engineering & Inspection Ltd.
Address: 333-50 Avenue SE, Calgary, AB T2G 2B3
Telephone: (403) 255-5100 Fax: (403) 255-5171 Web www.aeiltd.com

Report Date:11/11/2003

(Report in Inches, Corrosion Rates in MPY)
Analysis: Statistical/Straight Line

Unit: HUSKY
Eq/Circ ID: 0416384
Eq Type:
Class:
RBI:
Design Code: S8/D1

Flange Rating: 0 lb/in²
Design Pressure: 1436 lb/in²
Design Temperature: 100 °F

Description: VERTICAL SEPARATOR
TAG # N/A

Summary: Group Name:
Insp. Due Date = 09/09/2008
Pred. Ret. Date = 11/01/2032

Group Description:
RCR = 0.1 MPY
Rem. Life (from last survey 09/10/2003) = 29.1 yrs

0 C.A. Status: No
Total Caution TMLs = 0

TML No	Location Description	Ctn TML	First Survey Thick Nt	First Date	Previous Survey Thick Nt	Previous Date	Last Survey Thick Nt	Last Date	Shrt Term Rate	Long Term Rate	Best Rate	Max Hist CR	Retirement Thickness		Rep TML CR	TML Retirement Date	TML Inspection Date
5.01	3" ELBOW	N	0.300 NM	04/15/1997		N/A	0.352	09/10/2003	N/A	0	N/A	0	0.263	U	2.0	03/11/2048	09/09/2008
5.02	3" ELBOW	N	0.300 NM	04/15/1997		N/A	0.338	09/10/2003	N/A	0	N/A	0	0.263	U	2.0	03/11/2041	09/09/2008
5.03	3" ELBOW	N	0.300 NM	04/15/1997		N/A	0.333	09/10/2003	N/A	0	N/A	0	0.263	U	2.0	09/10/2038	09/09/2008
5.04	3" ELBOW	N *	0.300 NM	04/15/1997		N/A	0.325	09/10/2003	N/A	0	N/A	0	0.263	U	2.0	09/10/2034	09/09/2008
5.05	3" ELBOW	N	0.300 NM	04/15/1997		N/A	0.338	09/10/2003	N/A	0	N/A	0	0.263	U	2.0	03/11/2041	09/09/2008
6.01	3" ELBOW	N	0.300 NM	04/15/1997		N/A	0.335	09/10/2003	N/A	0	N/A	0	0.263	U	2.0	09/10/2039	09/09/2008
6.02	3" ELBOW	N *	0.300 NM	04/15/1997		N/A	0.329	09/10/2003	N/A	0	N/A	0	0.263	U	2.0	09/09/2036	09/09/2008
6.03	3" ELBOW	N *	0.300 NM	04/15/1997		N/A	0.331	09/10/2003	N/A	0	N/A	0	0.263	U	2.0	09/10/2037	09/09/2008
6.04	3" ELBOW	N	0.300 NM	04/15/1997		N/A	0.344	09/10/2003	N/A	0	N/A	0	0.263	U	2.0	03/11/2044	09/09/2008
6.05	3" ELBOW	N	0.300 NM	04/15/1997		N/A	0.350	09/10/2003	N/A	0	N/A	0	0.263	U	2.0	03/11/2047	09/09/2008

Report For: Husky Energy
Presented By: Alliance Engineering & Inspection Ltd.
Address: 333-50 Avenue SE, Calgary, AB T2G 2B3
Telephone: (403) 255-5100 Fax: (403) 255-5171 Web www.aeiltd.com

Report Date: 11/11/2003

(Report in Inches, Corrosion Rates in MPY)
Analysis: Statistical/Straight Line

Unit: HUSKY
Eq/Circ ID: 0416384
Design Code: S8/D1
Eq Type:
Class:
RBI:

Flange Rating: 0 lb/in²
Design Pressure: 1436 lb/in²
Design Temperature: 100 °F

Description: VERTICAL SEPARATOR
TAG # N/A

TML Corrosion Rates are each the Maximum of:
(A) -- Calculated Corrosion Rates x 1.00 : Varies
(B) -- Default Corrosion Rate : 2.0 MPY

Representative Corrosion Rate is the Maximum of:
(A) -- Average Corrosion Rate x 1.10 : Not Used.
(B) -- Average Max 25.0% of TMLs, Min of 2 : Not Used.
(C) -- Formula Corrosion Rate (Sigma = 1.28) : Not Used.
(D) -- Default Corrosion Rate : 0.1 MPY
Representative Corrosion Rate = 0.1 MPY

TML thickness readings have not been compensated for high Temperatures.
TML thickness readings have not been compensated for growths.

TML Life calculations are based on the maximum of the Rep. TML CR and the RCR using Short Term and Long Term Corrosion Rates.

Nominal thickness is used for TML corrosion rate calculations with less than 3 surveys.

Minimum time between inspections required for corrosion rate calculation is 6 months.

TML Inspection Interval is:
(A) -- Minimum(TML Life / 2.00, 5.0 years)

Eq/Circ ID Last Survey Date is based on the LAST of the last 0% of TML survey dates (Min 1).

Eq/Circ ID Estimated life = 29.1 years from the most recent survey date.
(Estimated Life based on the ave of the earliest 25% (Min 1) TML retirement dates.)

Predicted Eq/Circ ID Retirement date is 11/01/2032

Recommended Eq/Circ Internal Inspection Date is 09/09/2008
Internal Inspection Interval is the minimum(Remaining life / 2.0, 5.0 years).

Caution TML Logic: TML Corrosion Rate > 15.0 MPY .OR. TML Remaining Life < 1.00 Years.
There are 0 Caution TMLs in this Eq/Circ ID.

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) 416384

1. Manufactured and certified by Penfabco Ltd. 5720 - 103A Street Edmonton, Alberta T6H 2J5
(Name and address of manufacturer)

2. Manufactured for Jiro Manufacturing Ltd. P.O. Box 1886 Stettler, Alberta T0C 2L0
(Name and address of purchaser)

3. Location of installation Stock Item
(Name and address)

4. Type Vertical | PF 4869 (Mfg's serial No.) | K2360.21 (CRN) | PE-3213 Rev. 1 (Drawing No.) | N/A (Nat'l. Bd. No.) | 1997 (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 1995 (Year)

to 1995 (Addenda (Date)) | N/A (Code Case Nos.) | N/A (Special Services per UG-120(d))

6. Shell: SA-106-B (Mat'l. (Spec. No., Grade)) | .844" (Nom. Thk. (in.)) | Nil (Corr. Allow. (in.)) | 14.32" (Diam. I.D. (ft. & in.)) | 7'6" s/s (Length (overall) (ft. & in.))

7. Seams: Smls (Long. (Welded, Dbl., Sngl., Lap, Butt)) | N/A (R.T. (Spot or Full)) | 100% (Eff. (%)) | N/A (H.T. Temp. (°F)) | N/A (Time (hr)) | Type 1 (Circ (Welded, Dbl., Sngl., Lap, Butt)) | Full UW11(a)5(b) (R.T. (Spot, Partial, or Full)) | 1 (No. of Courses)

8. Heads: (a) Matl. SA-516-70N (Spec. No., Grade) (b) Matl. SA-516-70N (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	.694"	Nil	N/A	N/A	2:1	N/A	N/A	N/A	Concave
(b)	Bottom	.694"	Nil	N/A	N/A	2:1	N/A	N/A	N/A	Concave

If removable, bolts used (describe other fastenings) None
(Matl., Spec. No., Gr., Size, No.)

9. MAWP 1436 psi at max. temp. 100 °F

Min. design metal temp. -20 °F at 1436 psi, Hydro., pneu., or comb. test pressure 2154 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" 600#	RFWN	SA-105N/SA-106-B	Sch 160	N/A	Welded	Shell
Outlet	1	3" 600#	RFWN	SA-105N/SA-106-B	Sch 160	N/A	Welded	Top Head
Drain	1	2"3000#	Cplg	SA-105N/SA-106-B	Sch 160	N/A	Welded	Btm Head
Dump/Insp	1	2"3000#	Cplg	SA-105N	N/A	N/A	Welded	Shell

11. Supports: Skirt Yes (Yes or no) Lugs No (No.) Legs No (No.) Other No (Describe) Attached Welded to Btm Head (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)

Ultimate Owner:
Jiro Manufacturing Ltd.
P.O. Box 1886 Stettler, Alberta
T0C 2L0

Impact Tests Not Required Per UG-20(f)1-5
Volume: .26 m³ Vertical 3-Phase Separator
Continued on U-4 Supplementary Sheet

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. 14,383 expires 12-28 .96.

Date Apr. 15/97 Co. name Penfabco Ltd. (Manufacturer) Signed M Bayer (Representative)

CERTIFICATE OF SHOP INSPECTION

Vessel constructed by Penfabco Ltd. at Edmonton, 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 Boilers Safety Association

have inspected the component described in this Manufacturer's Data Report on April 15, 1997, 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 April 15/97 Signed [signature] (Authorized Inspector) Commissions Alberta 5 (Nat'l Board (incl. endorsements), State, Prov. and No.)

(A) 416 384

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 Penfabco Ltd. 5720 - 103A Street Edmonton, Alberta T6H 2J5 (Name and address of Manufacturer)

2. Manufactured for Jir o Manufacturing Ltd. P.O. Box 1886 Stettler, Alberta T0C 2G0 (Name and address of Purchaser)

3. Location of installation Stock Item (Name and address)

4. Type: Ver tic? (Horiz., vert., or spher.) 3-Phase Separator (Tank, separator, heat exch., etc.) PE 4869 (Mfg's. serial No.)

K2360.21 (CRN) PE-3213 Rev. 1 (Drawing No.) N/A (Nat'l. Bd. No.) 1997 (Year built)

Data Report Item Number		Remarks	
LG	4	1/2" 6000# Cplg SA-105N	Welded Shell
PI	1	1/2" 6000# Cplg SA-105N	Welded Shell
TI	1	3/4" 6000# Cplg SA-105N	Welded Shell
Inspections	2	2" 3000# Cplg SA-105N	Welded Shell
LLC	2	2" 3000# Cplg SA-105N	Welded Shell
Dump	1	2" 3000# Cplg SA-105N	Welded Shell
PSV	1	1" 3000# Cplg SA-105N	Welded Top Head
HLSD	1	2" 3000# Cplg SA-105N	Welded Shell

Certificate of Authorization: Type U No. 14,323 Expires 12-28 , 19 98

Date Apr 15/97 Name Penfabco Ltd. (Manufacturer) Signed M. Bajai (Representative)

Date April 15/97 Name W Simpson (Authorized Inspector) Commission Alberta (Nat'l Board incl. endorsement, State, Province and No.)

(12/91) This form (E00118) may be obtained from the ASME Order Dept., 22 Law Drive, Box 2300, Fairfield, NJ 07007-2300 REPRINT 9/92

Husky Energy
PRESSURE VESSEL INSPECTION REPORT

W# 6023064 C.T.
6600458163

FACILITY	DATE	REPORT #
Ansell Gas Plant Field	AUGUST 19, 2003	030819-DD-0

VESSEL STATIC DATA

Prov. Insp. # 416384	CRN K 2360.21	Equip Tag #
Equipment Location (LSD) 12-23-51-19W5		Serial # PE 4869
Equipment Description 3 PHASE SEPARATOR		Vessel Class
Manufacturer PENFAB CO LTD		Year Built 1997
MAWP 1436 KPag / (psig) @ 100 °C / (°F)		MDMT -20 °C / (°F)
CODE : UM ☐ U ☒ U2 ☐	RT : 1 ☐ 2 ☒ 3 ☐ 4 ☐	PWHT : YES ☐ NO ☒
Diameter 16" Mm/in | Length | (T/T) Mm/in OAL Mm/in		Vertical ☒ Horizontal ☐
Shell Mat'l —	Thickness — Mm/in	Corr Allowance 0 Mm/in
Head Mat'l —	Thickness — Mm/in	Corr Allowance Mm/in
Nozzle Mat'l	Thickness Mm/in	Corr Allowance Mm/in
Internal Coating : YES ☐ NO ☒	Internal Clad : YES ☐ NO ☒	Capacity m^3
Manway : YES ☐ NO ☒	Inspection Port : YES ☒ NO ☐	Skirt ☒ Legs ☐ Saddle ☐
Nozzle Rating lb ANSI	Painted : YES ☒ NO ☐	Insulated : YES ☐ NO ☒

PROCESS DATA

Product Description	SOLUTION GAS	Sweet ☒ Sour ☐ PPM:	
Operating Pressure	420 KPag / (psig)	Operating Temperature	52 °C / (°F)

PSV STATIC DATA

Tag / Serial No.	Location	Size Inlet	Size Outlet	Set Pressure	Capacity (SCFM) / Lbs/Hr / GPM	Manufacturer	Model / Type	Service Date
	OUTLET					MERCER		
66030	PIPING	1"	1"	1436	2918	~~BAKER~~		2003

INSPECTION HISTORY

RBI Category A☐ B☐ C☐ D☐	Last Inspection Date	W.O. # 6023534
Inspection Task List #	Inspection Type VE, UT	Inspection Reason INTEGRITY
Inspection Techniques Required	Next Inspection Type VE, UT	Due Date 2008
VE VI RT UT MT PT PT TT	Outstanding Repairs	

INSPECTION SUMMARY

VISUAL AND UT INSPECTIONS DID NOT REVEAL ANY DEFECTS AT THIS TIME.

RECOMMENDATIONS

REPAIRS COMPLETED

Object Name	Cause	Damage	Repair Activity

VESSEL STATUS

Integrity Status	☒ *Suitable for Continued Service*	☐ *Immediate Repairs Required* ☐ *Future Repairs Required*		☐ *Replace*
Inventory Status	☒ In service Fully Utilized	☐ Idle	☐ Surplus	☐ Scrap
This IR completes a thorough inspection. Reschedule as indicated	☒	Partial IR only. Do not reschedule	☐	

Husky Energy

PRESSURE VESSEL INSPECTION REPORT

FACILITY	DATE	REPORT #
Ansell Gas Plant Field	AUGUST 19, 2003	030819-DD-O

INSPECTION OBSERVATIONS

NONCOMPLIANCES OR INSPECTION DEFICIENCIES ISSUED

EXTERNAL VISUAL INSPECTION

VESSEL IS BOLTED TO SKID.
MINOR OXIDIZING ON SHELL AND NOZZLES. PAINTED SURFACES ARE ACCEPTABLE.
PIPING IS SECURE AND PROPERLY SUPPORTED.
SIGHT GLASSES ARE IN GOOD WORKING CONDITION.

EXTERNAL NDE EXAMINATION

UT CARRIED OUT BY ALLIANCE ENG. NO SIGNIFICANT FINDINGS.

INTERNAL VISUAL INSPECTION

INTERNAL NDE EXAMINATION

PRESSURE TEST

Test Completed ☐ Yes ☐ No	Test Acceptable ☐ Yes ☐ No	Test Report #

INSPECTOR CERTIFICATION

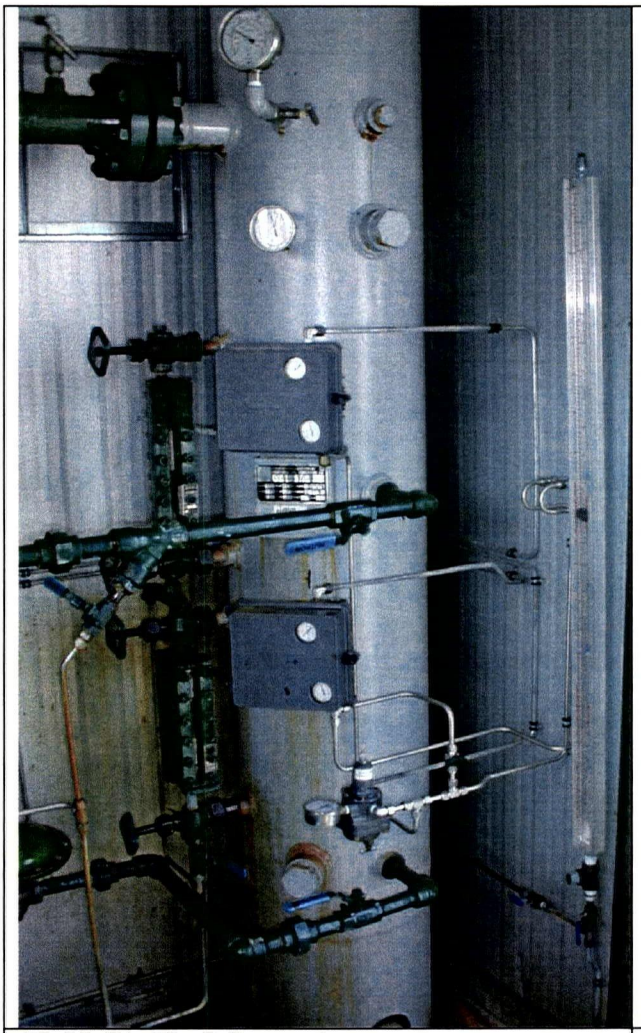
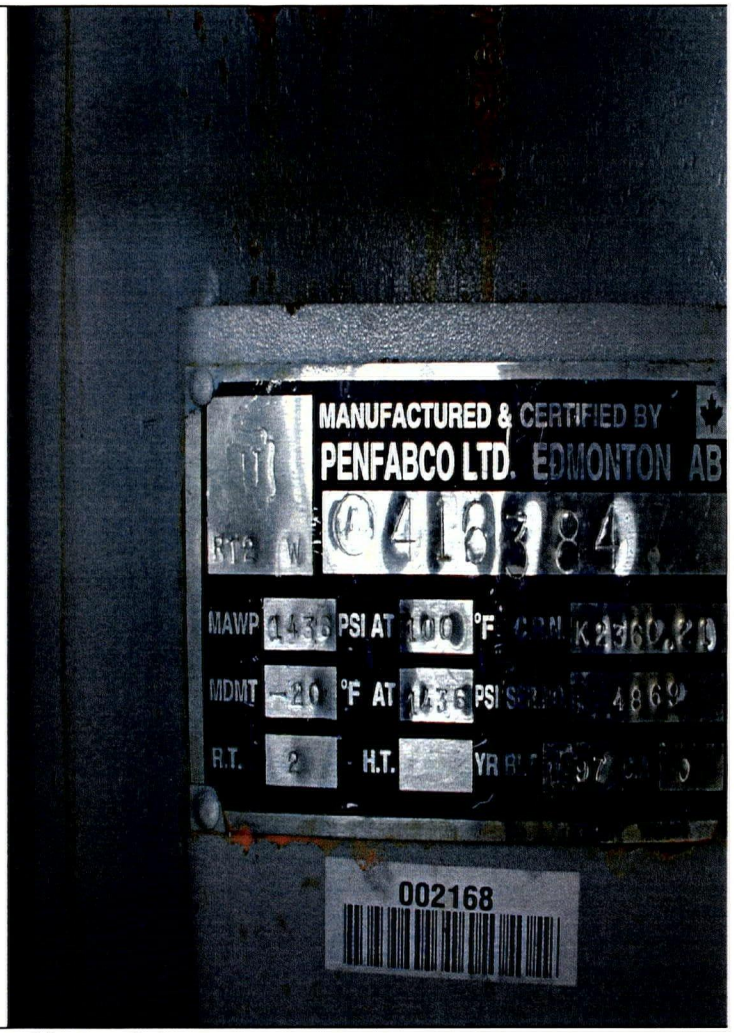
I, the undersigned certify that the above equipment has been inspected in accordance with the assigned task list and that statements within this report are correct and represent inspection findings

Inspectors Name	DOUG DAVEY	Inspector's Signature	
Inspection Company	ALLIANCE ENG. + INSP.	Date	NOV 10/03

LEAD INSPECTOR'S ACCEPTANCE & SCHEDULE CONFIRMATION

Lead Inspector	Signature	Date
Vessel Inspection Interval 5	Leave "as-is" ☐	Change to
PSV Inspection Interval 5	Leave "as-is" ☐	Change to

Office Use Only — Report Entered to SEQA Database by — Date
Static Data Verified by — Date

	
12-23-51-19w5 Separator	Name plate