

# Husky Energy

## PRESSURE VESSEL INSPECTION REPORT

66147000 ✓ W0# 6083544

N# 6080174 ✓

FACILITY	Minehead Field	DATE	February 28, 2009	REPORT #	IR090228JNb
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### VESSEL STATIC DATA

Prov. Insp. #	A#502821	CRN	R4547.2	Equip Tag #	222181										
Equipment Location (LSD)	01-13-049-19 w5m			Serial #	B6982-20										
Equipment Description	Produced Water Flash Tank			Vessel Class	-										
Manufacturer	Enerflex Compression			Year Built	2003										
MAWP	675 PSI	KPag / psig	@ 200°F	MDMT	-20°F										
CODE : UM	<input type="checkbox"/>	U	<input checked="" type="checkbox"/>	U2	<input type="checkbox"/>										
RT :	1	<input checked="" type="checkbox"/>	2	<input type="checkbox"/>	3	<input type="checkbox"/>	4	<input type="checkbox"/>	PWHT :	YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>		
Diameter	24" (NPS)	Length	108" (S/S)	OAL	mm/in	Vertical	<input checked="" type="checkbox"/>	Horizontal	<input type="checkbox"/>						
Shell	Mat'l	SA 516-70 N	Thickness	15.9mm	mm	Corr Allowance	3.2mm	mm/in							
Head	Mat'l	SA 516-70 N	Thickness	14.2mm	mm	Corr Allowance	3.2mm	mm/in							
Nozzle	Mat'l		Thickness		mm/in	Corr Allowance		mm/in							
Internal Coating :	YES	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>	Internal Clad :	YES	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>	Capacity	N/A	m <sup>3</sup>			
Manway :	YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	Inspection Port :	YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	Skirt	<input checked="" type="checkbox"/>	Legs	<input type="checkbox"/>	Saddle	<input type="checkbox"/>
Nozzle Rating	300	lb ANSI	Painted :	YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	Insulated	:	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>		

### PROCESS DATA

Product Description	Sour Water	Sweet	<input type="checkbox"/>	Sour	<input checked="" type="checkbox"/>	PPM: 7-14%
Operating Pressure	KPag / psig	Operating Temperature	°C / °F			

### PSV STATIC DATA

Tag / Serial No.	Location	Size		Set Pressure	Capacity	Manufacturer	Model / Type	Service Date
		Inlet	Outlet		SCFM / Lbs/Hr / GPM			
457989-1-A70	Vessel	1.5"	2"	653 PSI	4277 SCFM	Farris	26FA12-120/S7	06/07

### INSPECTION HISTORY

RBI Category	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	Last Inspection Date	W.O. #					
Inspection Task List #		Inspection Type	Inspection Reason Integrity Inspection					
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.  
 The vessel was idle at the time of inspection.  
 No concerns were found and the vessel is considered acceptable for future service.

### RECOMMENDATIONS

Monitor Piping band 295-65 in the future to determine a corrosion rate.

### REPAIRS COMPLETED

Object Name	Cause	Damage	Repair Activity
None			

### VESSEL STATUS

Integrity Status	<input checked="" type="checkbox"/> Suitable for Continued Service	<input type="checkbox"/> Immediate Repairs Required	<input type="checkbox"/> Replace
		<input type="checkbox"/> Future Repairs Required	
Inventory Status	<input type="checkbox"/> In service Fully Utilized	<input checked="" type="checkbox"/> Idle	<input type="checkbox"/> Surplus
			<input type="checkbox"/> Scrap
This IR completes a thorough inspection. Reschedule as indicated		<input checked="" type="checkbox"/>	Partial IR only. Do not reschedule
			<input type="checkbox"/>

MP



<b>FACILITY</b> Minehead Field	<b>DATE</b> February 28, 2009	<b>REPORT #</b> IR090228JNb
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**INSPECTION OBSERVATIONS**

**NONCOMPLIANCES OR INSPECTION DEFICIENCIES ISSUED**

No NCR's were issued.

**EXTERNAL VISUAL INSPECTION**

The overall condition of this vessel is good.

- The vessel dataplate is legible and has the required information. / *Data Plate Condition - Good*
- The vessel is protected with a PSV. The PSV is attached to the vessel, has a set pressure at or under MAWP and a current service date. / *PSV Condition - Good*
- The gauges are clearly legible and appear to be functioning properly. / *Gauges Condition - Good*
- The vessel appears to be properly secured and level. / *Vessel Secure - Yes*
- The vessel is indirectly grounded. / *Vessel Grounded - Yes*
- The piping, bolting, tubing and external attachments are secure with no active leaks. / *Piping & Bolting Condition - Good*
- The vessel and piping are painted with no notable corrosion found. / *Vessel Paint Condition - Good*
- The floor is painted with no notable corrosion found. / *Floor Condition - Good*

**EXTERNAL NDE EXAMINATION**

An external ultrasonic corrosion survey was completed as requested.  
 Piping band 295-65, 2" 90 degree elbow has wall loss. Nominal should be XS / .218". Low UT reading .148". *Inspect in 1 year. JH.*  
 No other relevant indications were noted at the time of inspection.  
 For more details see formal UT report by Hunt Inspection - Project C2946

**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 <i>[Signature]</i>
Inspection Company Hunt Inspection Ltd.	Date February 28, 2009

**LEAD INSPECTOR'S ACCEPTANCE & SCHEDULE CONFIRMATION**

Lead Inspector Bob Marchak	Signature <i>[Signature]</i>	Date Apr. 28, 2009
Vessel Inspection Interval <del>5</del> Years 1yr.	Leave "as-is" <input type="checkbox"/>	Change to
PSV Inspection Interval 4 Years	Leave "as-is" <input type="checkbox"/>	Change to

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

SEIM Changes  
 Serial B6982-20 ✓  
 LSD-01-13-049-19WS ✓  
 Vessel Diameter - 24" ✓  
 Manway - Yes  
 Internal Note

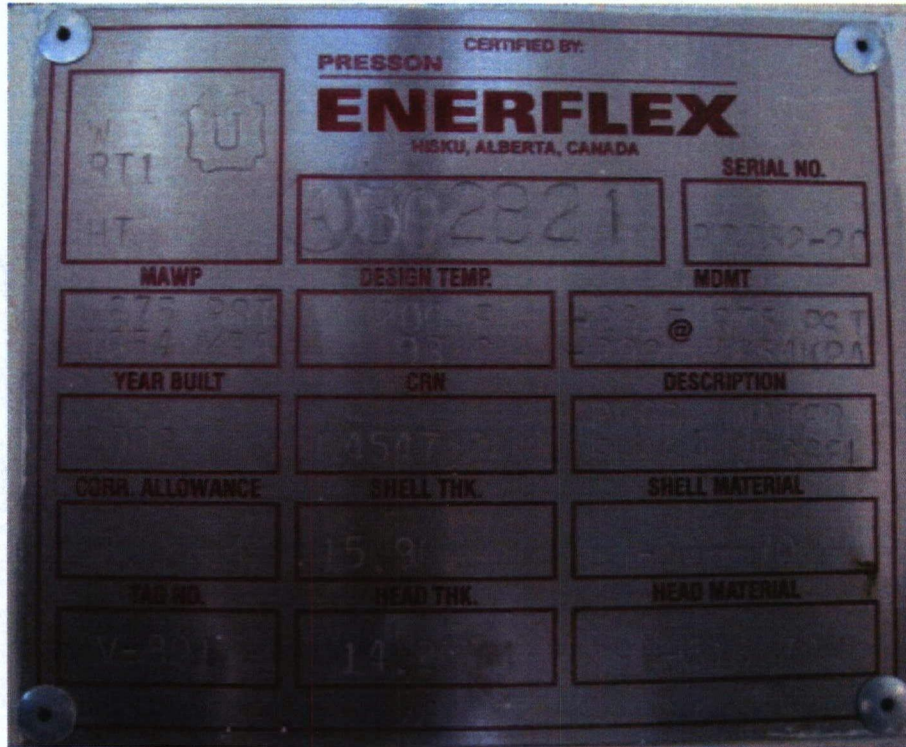


**Husky Energy**  
**PRESSURE VESSEL INSPECTION REPORT**

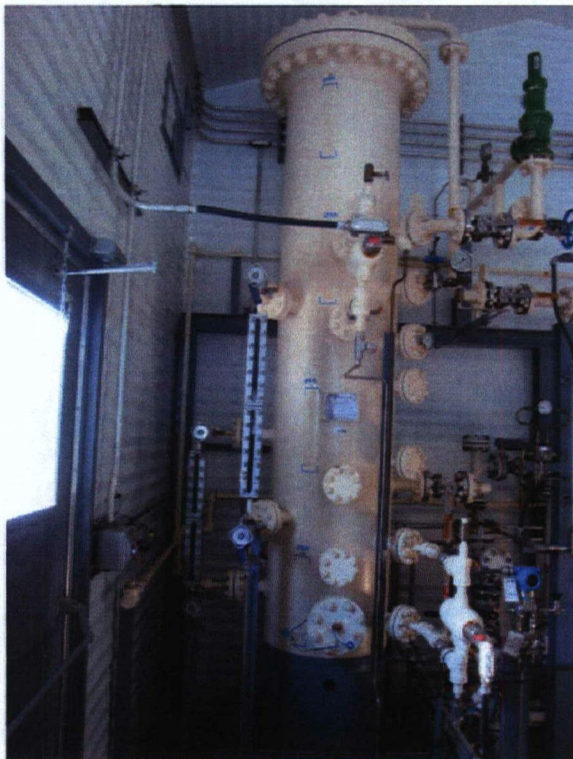
FACILITY	Minehead Field	DATE	February 28, 2009	REPORT #	IR090228JNb
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Photos

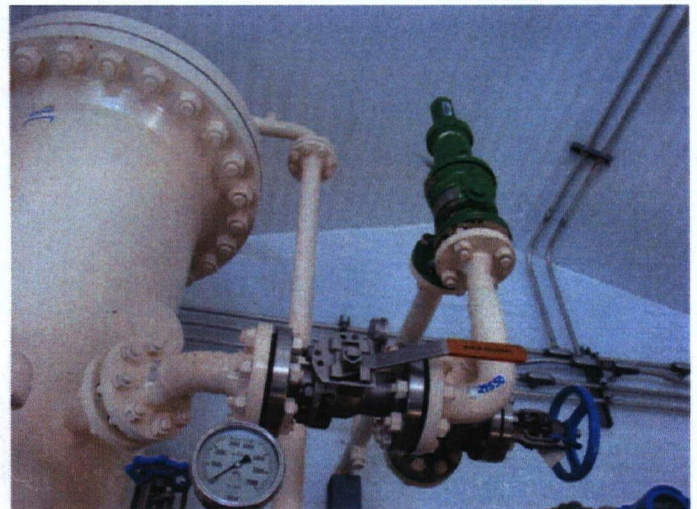
Data Plate



Vessel



PSV





**Husky Energy**  
**PRESSURE VESSEL INSPECTION REPORT**

FACILITY	Minehead Field	DATE	February 28, 2009	REPORT #	IR090228JNb
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Photos

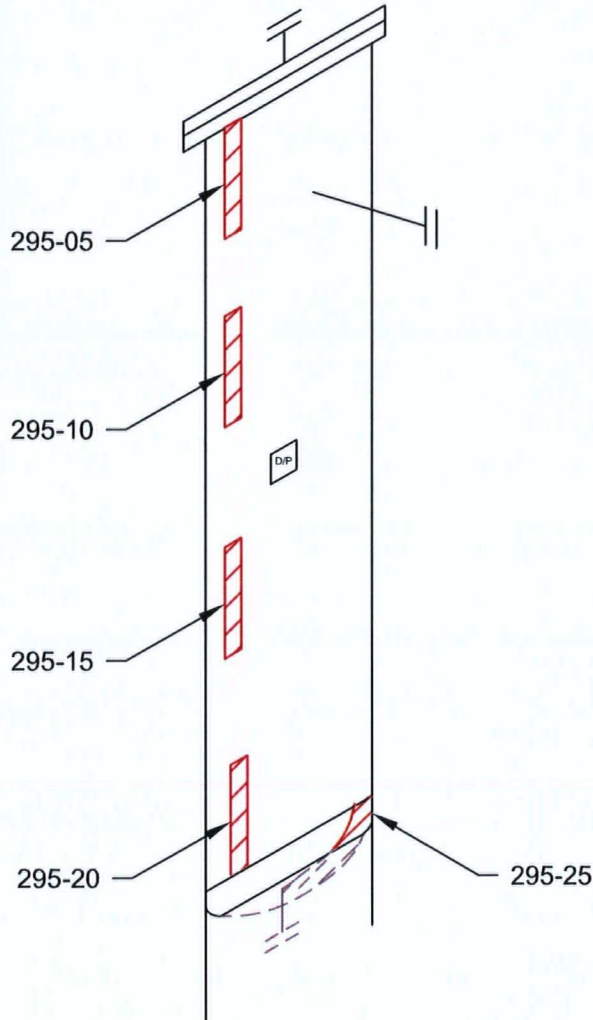
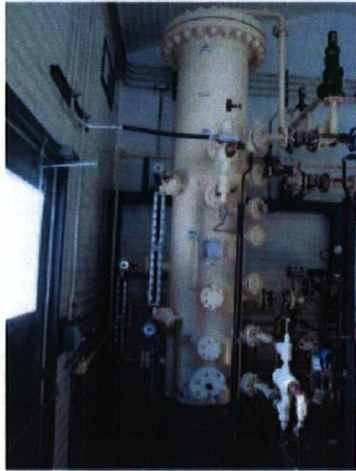
Building	PSV Tag
	 <p>             DATE: June 6/07      SET PRESS: 653 / 4502              SIZE: 1 1/2 x 2"      BACK PRESS: PSI / KPA              MAN: FARRIS      COLD SET: 653 / 4502              MODEL: 26FA12-120/S7      W.O./I.D.: 9845C-01              S.N.: 457989-1-A10      P.S.V. #: 50-0113-801              4277 SCFM      FACILITY: Prud'homme Fish              Petro Canada      LOCATION: 1-13-49-19WS         </p>
	



ITEM:

**PRODUCED WATER FLASH VESSEL**

**A 0502821**



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: **02/28/09**

DWG # **295**

CLIENT: **HUSKY ENERGY**

LSD: **01-13-049-19-W5M**

INSPECTOR : BOB MARCHAK

LOCATION : MINEHEAD FIELD

DISTRICT UNIT : FH-FW

BLDG/SKID : -

PROCESS : SOUR

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 0502821**

CRN # : R4547.2

SERIAL # : B6982.2C

MANUFACTURER : ENERFLEX

DATE BUILT : 2003

CLIENT ID / TAG : BC# 222181

M.A.W.P. : 675 PSI

M.A.W.T. : 200 °F

JOINT EFFICIENCY/RT : RT 1

STRESS RELIEVED : YES

INSULATED : NO

MANWAY : YES

**VESSEL SPECIFICATIONS**

	OD	NOMINAL	MATERIAL	CA
<b>VESSEL HEAD</b>	24"	.559"	SA-516-70	.125"
<b>VESSEL SHELL</b>	24"	.626"	SA-516-70	.125"
<b>BOOT HEAD</b>	-	-	-	-
<b>BOOT SHELL</b>	-	-	-	-

COMMENTS:

PROJECT:

**C2946**





# ULTRASONIC CORROSION SURVEY

Survey Name: HUSKY ENERGY

Survey Date: 2/28/09

LSD: 01-13-049-19W5 Dwg: 295

Vessel Number: A0502821

Manufacturer: ENERFLEX

Inspector: BOB MARCHAK

District Unit: FH-FW

Vessel Name: PRODUCED WATER FLASH VESSEL

Serial Number: B6982.2C

Process: SOUR

Location: MINEHEAD FIELD

Year Built: 2003

Shell MAWP PSI: 675 MAWT F: 200

Project #: C2946

Skid: -

Tag Number: BC#222181

Tube MAWP PSI: 0 MAWT F: 0

CRN: R4547.2

Vessel CA: 0.1250

Band	Description			Readings						Year	Avg Inches	Min Inches	Nominal	CA	TMIN	Recommended Next Inspection	Recommended Retirement Date	
				1	2	3	4	5	6									
295-05	Upper	Shell	Baseline	0.612	0.611	0.612	0.613	0.614	0.615	2009	0.613	0.611	0.6260	0.1250	0.3918	2010	2029	
Shape	Cylindrical	Shell Side	Previous														Comments-->	
OD	24		Current	0.612	0.611	0.612	0.613	0.614	0.615	2009	0.613	0.611						
Spec.	VIII Div 1																ST Loss MPY	OK
Material	SA 516 - 70																LT Loss MPY	0.000
295-10	Mid	Shell	Baseline	0.618	0.618	0.615	0.621	0.618	0.621	2009	0.619	0.615	0.6260	0.1250	0.3918	2010	2029	
Shape	Cylindrical	Shell Side	Previous														Comments-->	
OD	24		Current	0.618	0.618	0.615	0.621	0.618	0.621	2009	0.619	0.615						
Spec.	VIII Div 1																ST Loss MPY	OK
Material	SA 516 - 70																LT Loss MPY	0.000
295-15	Mid	Shell	Baseline	0.619	0.621	0.619	0.621	0.620	0.621	2009	0.620	0.619	0.6260	0.1250	0.3918	2010	2029	
Shape	Cylindrical	Shell Side	Previous														Comments-->	
OD	24		Current	0.619	0.621	0.619	0.621	0.620	0.621	2009	0.620	0.619						
Spec.	VIII Div 1																ST Loss MPY	OK
Material	SA 516 - 70																LT Loss MPY	0.000
295-20	Lower	Shell	Baseline	0.618	0.617	0.613	0.611	0.610	0.609	2009	0.613	0.609	0.6260	0.1250	0.3918	2010	2029	
Shape	Cylindrical	Shell Side	Previous														Comments-->	
OD	24		Current	0.618	0.617	0.613	0.611	0.610	0.609	2009	0.613	0.609						
Spec.	VIII Div 1																ST Loss MPY	OK
Material	SA 516 - 70																LT Loss MPY	0.000





# ULTRASONIC CORROSION SURVEY

Survey Name: HUSKY ENERGY

LSD: 01-13-049-19W5 Dwg: 295	Vessel Number: A0502821	Manufacturer: ENERFLEX	Survey Date: 2/28/09
District Unit: FH-FW	Vessel Name: PRODUCED WATER FLASH VESSEL	Serial Number: B6982.2C	Inspector: BOB MARCHAK
Location: MINEHEAD FIELD	Year Built: 2003	Shell MAWP PSI: 675 MAWT F: 200	Process: SOUR
Skid: -	Tag Number: BC#222181	Tube MAWP PSI: 0 MAWT F: 0	Project #: C2946
	CRN: R4547.2	Vessel CA: 0.1250	

Band	Description			Readings						Year	Avg Inches	Min Inches	Nominal	CA	TMIN	Recommended Next Inspection	Recommended Retirement Date	
				1	2	3	4	5	6									
295-25	Bottom	Head	Baseline	0.586	0.598	0.601	0.598	0.596	0.597	2009	0.596	0.586	0.5590	0.1250	0.3874	2010	2029	
Shape	Ellipsoidal	Shell Side	Previous	Comments-->														
OD	24		Current	0.586	0.598	0.601	0.598	0.596	0.597	2009	0.596	0.586						
Spec.	VIII Div 1									ST Loss MPY	OK							
Material	SA 516 - 70									LT Loss MPY	0.000							
295-30		Piping	Baseline	0.280	0.271	0.266	0.267	0.271	0.274	2009	0.272	0.266	0.3000	0.0375	0.0581	2010	2029	
Shape	90° Elbow	Shell Side	Previous	Comments-->														
OD	3.5		Current	0.280	0.271	0.266	0.267	0.271	0.274	2009	0.272	0.266						
Spec.	B31.3									ST Loss MPY	OK							
Material	A 234 - WPB									LT Loss MPY	0.000							
295-35		Piping	Baseline	0.185	0.188	0.189	0.188	0.193	0.196	2009	0.190	0.185	0.2180	0.0272	0.0394	2010	2029	
Shape	90° Elbow	Shell Side	Previous	Comments-->														
OD	2.375		Current	0.185	0.188	0.189	0.188	0.193	0.196	2009	0.190	0.185						
Spec.	B31.3									ST Loss MPY	Caution							
Material	A 234 - WPB									LT Loss MPY	0.000							
295-40		Piping	Baseline	0.205	0.204	0.204	0.206	0.206	0.204	2009	0.205	0.204	0.2180	0.0272	0.0394	2010	2029	
Shape	90° Elbow	Shell Side	Previous	Comments-->														
OD	2.375		Current	0.205	0.204	0.204	0.206	0.206	0.204	2009	0.205	0.204						
Spec.	B31.3									ST Loss MPY	OK							
Material	A 234 - WPB									LT Loss MPY	0.000							





# ULTRASONIC CORROSION SURVEY

Survey Name: HUSKY ENERGY

Survey Date: 2/28/09

LSD: 01-13-049-19W5 Dwg: 295

Vessel Number: A0502821

Manufacturer: ENERFLEX

Inspector: BOB MARCHAK

District Unit: FH-FW

Vessel Name: PRODUCED WATER FLASH VESSEL

Serial Number: B6982.2C

Process: SOUR

Location: MINEHEAD FIELD

Year Built: 2003

Shell MAWP PSI: 675 MAWT F: 200

Project #: C2946

Skid: -

Tag Number: BC#222181

Tube MAWP PSI: 0 MAWT F: 0

CRN: R4547.2

Vessel CA: 0.1250

Band	Description		Readings						Year	Avg Inches	Min Inches	Nominal	CA	TMIN	Recommended Next Inspection	Recommended Retirement Date
			1	2	3	4	5	6								
295-45	Piping	Baseline	0.202	0.206	0.202	0.200	0.198	0.195	2009	0.201	0.195	0.2180	0.0272	0.0394	2010	2029
Shape	45° Elbow	Shell Side	Previous	Comments-->												
OD	2.375	Current	0.202	0.206	0.202	0.200	0.198	0.195	2009	0.201	0.195					
Spec.	B31.3			ST Loss MPY						OK						
Material	A 234 - WPB			LT Loss MPY						0.000						
295-50	Piping	Baseline	0.195	0.195	0.197	0.196	0.199	0.198	2009	0.197	0.195	0.2180	0.0272	0.0394	2010	2029
Shape	90° Elbow	Shell Side	Previous	Comments-->												
OD	2.375	Current	0.195	0.195	0.197	0.196	0.199	0.198	2009	0.197	0.195					
Spec.	B31.3			ST Loss MPY						OK						
Material	A 234 - WPB			LT Loss MPY						0.000						
295-55	Piping	Baseline	0.270	0.271	0.267	0.264	0.259	0.254	2009	0.264	0.254	0.3000	0.0375	0.0581	2010	2029
Shape	90° Elbow	Shell Side	Previous	Comments-->												
OD	3.5	Current	0.270	0.271	0.267	0.264	0.259	0.254	2009	0.264	0.254					
Spec.	B31.3			ST Loss MPY						Caution						
Material	A 234 - WPB			LT Loss MPY						0.000						
295-60	Piping	Baseline	0.283	0.278	0.270	0.275	0.279	0.276	2009	0.277	0.270	0.3000	0.0375	0.0581	2010	2029
Shape	90° Elbow	Shell Side	Previous	Comments-->												
OD	3.5	Current	0.283	0.278	0.270	0.275	0.279	0.276	2009	0.277	0.270					
Spec.	B31.3			ST Loss MPY						OK						
Material	A 234 - WPB			LT Loss MPY						0.000						





# ULTRASONIC CORROSION SURVEY

Survey Name: HUSKY ENERGY

LSD: 01-13-049-19W5 Dwg: 295  
 District Unit: FH-FW  
 Location: MINEHEAD FIELD  
 Skid: -

Vessel Number: A0502821  
 Vessel Name: PRODUCED WATER FLASH VESSEL  
 Year Built: 2003  
 Tag Number: BC#222181  
 CRN: R4547.2

Manufacturer: ENERFLEX  
 Serial Number: B6982.2C  
 Shell MAWP PSI: 675  
 Tube MAWP PSI: 0  
 Vessel CA: 0.1250

Survey Date: 2/28/09  
 Inspector: BOB MARCHAK  
 Process: SOUR  
 Project #: C2946

Band	Description			Readings						Year	Avg Inches	Min Inches	Nominal	CA	TMIN	Recommended Next Inspection	Recommended Retirement Date
				1	2	3	4	5	6								
295-65	Piping	Baseline	0.158	0.157	0.148	0.149	0.152	0.155	2009	0.153	0.148	0.2180	0.0272	0.0394	2010	2029	
Shape	90° Elbow	Shell Side	Previous													Comments-->	
OD	2.375	Current	0.158	0.157	0.148	0.149	0.152	0.155	2009	0.153	0.148	GENERAL WALL LOSS					
Spec.	B31.3									ST Loss MPY			Caution				
Material	A 234 - WPB									LT Loss MPY	0.000						
295-70	Piping	Baseline	0.192	0.192	0.188	0.185	0.187	0.188	2009	0.189	0.185	0.2180	0.0272	0.0394	2010	2029	
Shape	90° Elbow	Shell Side	Previous													Comments-->	
OD	2.375	Current	0.192	0.192	0.188	0.185	0.187	0.188	2009	0.189	0.185						
Spec.	B31.3									ST Loss MPY			Caution				
Material	A 234 - WPB									LT Loss MPY	0.000						
295-75	Piping	Baseline	0.322	0.325	0.326	0.325	0.326	0.322	2009	0.324	0.322	0.3370	0.0421	0.0747	2010	2029	
Shape	Cylindrical	Shell Side	Previous													Comments-->	
OD	4.5	Current	0.322	0.325	0.326	0.325	0.326	0.322	2009	0.324	0.322						
Spec.	B31.3									ST Loss MPY			OK				
Material	A 234 - WPB									LT Loss MPY	0.000						
295-80	Piping	Baseline	0.191	0.193	0.183	0.184	0.185	0.192	2009	0.188	0.183	0.2180	0.0272	0.0394	2010	2029	
Shape	90° Elbow	Shell Side	Previous													Comments-->	
OD	2.375	Current	0.191	0.193	0.183	0.184	0.185	0.192	2009	0.188	0.183						
Spec.	B31.3									ST Loss MPY			Caution				
Material	A 234 - WPB									LT Loss MPY	0.000						





# ULTRASONIC CORROSION SURVEY

Survey Name: HUSKY ENERGY

LSD: 01-13-049-19W5	Dwg: 295	Vessel Number: A0502821	Manufacturer: ENERFLEX	Survey Date: 2/28/09
District Unit: FH-FW		Vessel Name: PRODUCED WATER FLASH VESSEL	Serial Number: B6982.2C	Inspector: BOB MARCHAK
Location: MINEHEAD FIELD		Year Built: 2003	Shell MAWP PSI: 675 MAWT F: 200	Process: SOUR
Skid: -		Tag Number: BC#222181	Tube MAWP PSI: 0 MAWT F: 0	Project #: C2946
		CRN: R4547.2	Vessel CA: 0.1250	

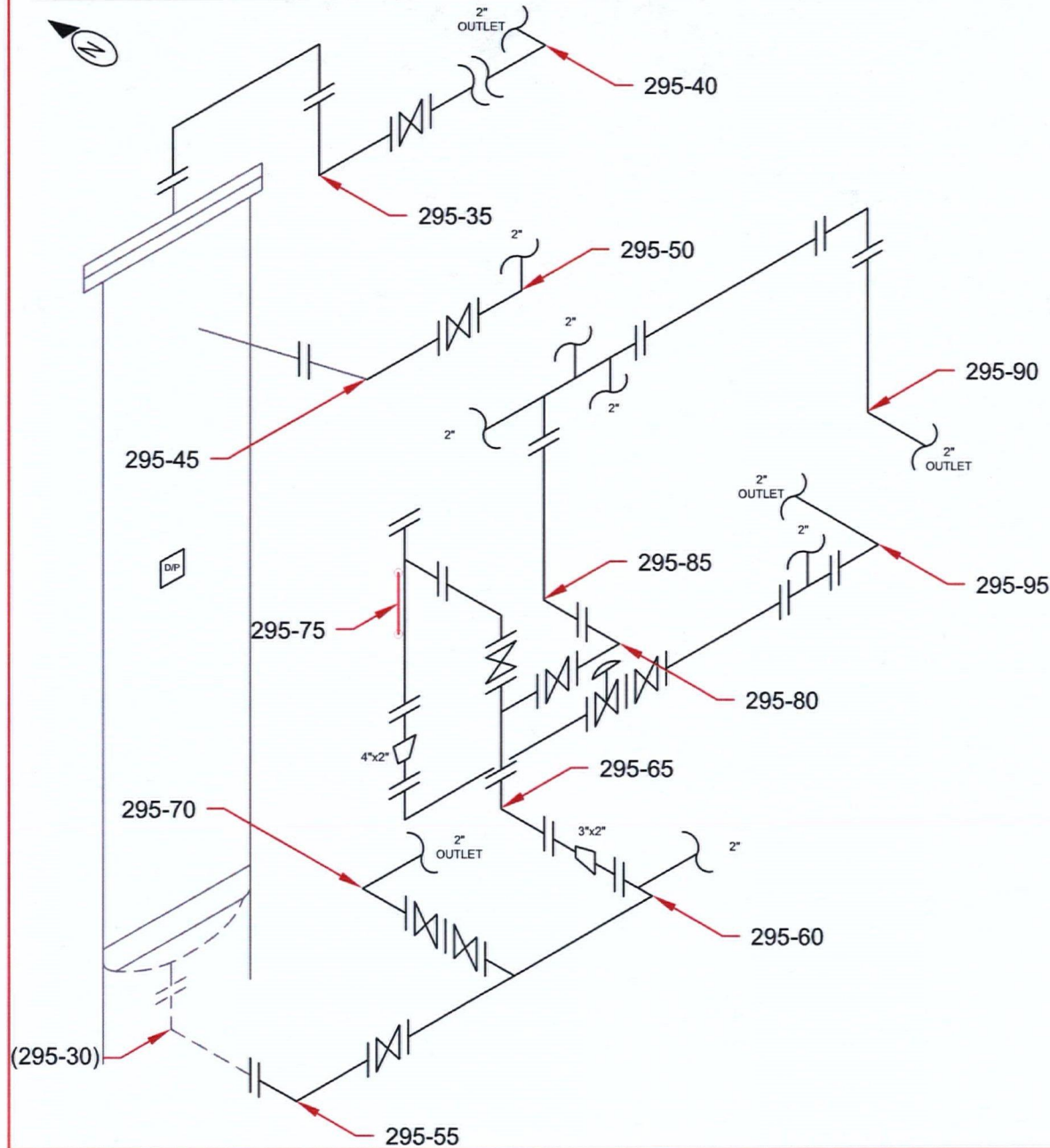
Band	Description		Readings						Year	Avg Inches	Min Inches	Nominal	CA	TMIN	Recommended Next Inspection	Recommended Retirement Date
			1	2	3	4	5	6								
295-85	Piping	Baseline	0.203	0.197	0.192	0.191	0.194	0.198	2009	0.196	0.191	0.2180	0.0272	0.0394	2010	2029
Shape	90° Elbow	Shell Side	Previous													
OD	2.375	Current	0.203	0.197	0.192	0.191	0.194	0.198	2009	0.196	0.191	Comments-->				
Spec.	B31.3		ST Loss MPY													
Material	A 234 - WPB										LT Loss MPY		0.000	OK		
295-90	Piping	Baseline	0.191	0.189	0.181	0.174	0.175	0.184	2009	0.182	0.174	0.2180	0.0272	0.0394	2010	2029
Shape	90° Elbow	Shell Side	Previous													
OD	2.375	Current	0.191	0.189	0.181	0.174	0.175	0.184	2009	0.182	0.174	Comments-->				
Spec.	B31.3		ST Loss MPY													
Material	A 234 - WPB										LT Loss MPY		0.000	Caution		
295-95	Piping	Baseline	0.185	0.182	0.176	0.178	0.182	0.188	2009	0.182	0.176	0.2180	0.0272	0.0394	2010	2029
Shape	90° Elbow	Shell Side	Previous													
OD	2.375	Current	0.185	0.182	0.176	0.178	0.182	0.188	2009	0.182	0.176	Comments-->				
Spec.	B31.3		ST Loss MPY													
Material	A 234 - WPB										LT Loss MPY		0.000	Caution		



ITEM:

**PRODUCED WATER FLASH VESSEL - PIPING**

A 0502821



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: **02/28/09**

DWG # **295A**

CLIENT: **HUSKY ENERGY**

LSD: **01-13-049-19-W5M**

INSPECTOR: BOB MARCHAK

LOCATION: MINEHEAD FIELD

DISTRICT UNIT: FH-FW

BLDG/SKID: -

PROCESS: SOUR

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
295-30	3.50"	XS	.300"	675 PSI	200 °F	600
295-35	2.375"	XS	.218"	"	"	"
295-40	"	"	"	"	"	"
295-45	"	"	"	"	"	"
295-50	"	"	"	"	"	"
295-55	3.50"	XS	.300"	"	"	"
295-60	"	"	"	"	"	"
295-65	2.375"	XS	.218"	"	"	"
295-70	"	"	"	"	"	"
295-75	4.50"	XS	.337"	"	"	"
295-80	2.375"	XS	.218"	"	"	"
295-85	"	"	"	"	"	"
295-90	"	"	"	"	"	"
295-95	"	"	"	"	"	"

COMMENTS:

PROJECT:

**C2946**



HDMS ✓

01-13

A 0502821

6614 7006



the pressure equipment safety authority

V-2601

Please submit to:  
9410 - 20<sup>th</sup> Avenue  
Edmonton, AB T6N 0A4  
Tel (780) 437-9100 Fax (780) 437-7787

AB-10 2008-04

### BOILER AND PRESSURE VESSEL STATUS REPORT

Note: This form may be used to provide notification of changes in ownership, location, operating status or scrapping of boilers and pressure vessels.

Please review the responsibilities of the vendor and the new owner under Section 36 of the Pressure Equipment Safety Regulation.

Re: Vessel (A) 1) see attach 2) \_\_\_\_\_ 3) \_\_\_\_\_  
Serial No. \_\_\_\_\_  
CRN \_\_\_\_\_

Vessel(s) **sold or purchased**. Please transfer the registration of the vessel(s) to:

Name of New Owner: Husky Oil Operation Ltd

Mailing Address: \_\_\_\_\_

New Location of Vessel: \_\_\_\_\_

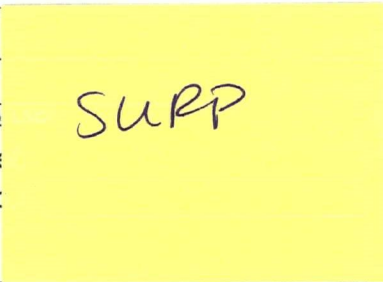
(Street Address or LSD)

Contact Person: \_\_\_\_\_

Te

Date of Sale: June 6, 2008

PO No



Vessel(s) removed from service<sup>1</sup> on \_\_\_\_\_

Vessel(s) relocated \_\_\_\_\_

(Street Address or LSD)

We own but do not know the location of this vessel. (our records will indicate the vessel location is unknown, the applicable annual fee is charged unless you tell us it is not in service).

We are not operating this vessel, we sold it but do not know to whom. (Your name will remain as owner in our records).

Vessel(s) operating outside of the Province of Alberta since \_\_\_\_\_ (Date). Please remove from annual registration<sup>1</sup>.

The above vessel(s) returned to service on: \_\_\_\_\_ (Date).

Inspected on: \_\_\_\_\_ (Date). Inspection Report attached

The above vessel(s) **are unfit for service** and were destroyed and/or disposed of as scrap material on: \_\_\_\_\_ (Date).

The Alberta Identification (A) Number has been obliterated.

**NOTE:** Scrapped and Destroyed vessels **Shall Not** return to service.

Company Name: PetroCanada Oil and Gas Limited

Position Title: Asset Integrity Supervisor

Tel: 403 296 6363

(Please print name): Philip Girard

E-mail: pgirard@petro-canada.ca

Signature: \_\_\_\_\_

Date: July 29, 2008

Note <sup>1</sup>: The owner of the boiler or pressure vessel is responsible for ensuring that the above equipment is inspected by ABSA prior to it being returned to service in the Province of Alberta



520291	IPS MANUFACTURING	V-3024-001B	01-23-049-19W5	T0211.2	VS	3 PHASE VERTICAL SEPARATOR
528016	IPS MANUFACTURING	V-3304-001E	07-31-048-18W5	T0211.2	VS	3 PHASE VERTICAL SEPARATOR
495600	PRESSON	B6940-50	03-06-049-18W5	E9867.2, E9865.	FL	14-06 WELLSITE HEATER
506454	2003 PRESSON	B6994-20	03-06-049-18W5	R3254.2	VS	VERTICAL SOUR GAS SEPARATOR
520757	ENERFLEX MANUFACTURING	050021-06	03-06-049-18W5	P6185.213	VB	2ND STAGE DISCHARGE BOTTLE
520758	ENERFLEX MANUFACTURING	050021-05	03-06-049-18W5	L6206.213	VB	2ND STAGE SUCTION BOTTLE
520759	ENERFLEX MANUFACTURING	050021-03	03-06-049-18W5	L6204.213	VB	1ST STAGE SUCTION BOTTLE
520788	ENERFLEX MANUFACTURING	050021-04	03-06-049-18W5	T1493.213	VB	1ST STAGE DISCHARGE BOTTLE
523529	ENERFLEX MANUFACTURING	050021-02	03-06-049-18W5	P6183.213	VS	2ND STAGE SUCTION SCRUBBER
523541	ENERFLEX MANUFACTURING	050021-01	03-06-049-18W5	P6182.213	VS	1ST STAGE SUCTION SCRUBBER
526475	RUSHTON	C2391A.H.S	03-06-049-18W5	T1583.2	VS	HORIZONTAL SEPARATOR
526476	RUSHTON	C2391.A.HB	03-06-049-18W5	T1656.2	VS	BLOWCASE
526623	ENERFLEX MANUFACTURING	040819-04	03-06-049-18W5	K-6363.213	VS	COMPRESSOR FUEL GAS FILTER
526699	AIR-X-CHANGERS	045289.3	03-06-049-18W5	R7618.213	HA	COMPRESSOR INTERCOOLER
526700	AIR-X-CHANGERS	045289.4	03-06-049-18W5	R7619.213	HA	COMPRESSOR AFTERCOOLER
528420	BILTON WELDING & MANUFACTURING LTD	13728	03-06-049-18W5	R8180.2	VS	FLARE KNOVK OUT DRUM
495593	PRESSON	B6940-20	03-07-049-18W5	R3254.2	VS	VERTICAL SOUR GAS SEPARATOR
497953	PRESSON	B7047-20	03-07-049-18W5	R4547.2	VS	WATER BOOT
506462	PRESSON	B 6994-50	03-07-049-18W5	E9865.213	FL	05-07 WELLSITE HEATER
509893	MARQUINN INDUSTRIES	135-10-04	03-07-049-18W5	R4156.2	VF	#2 PRODUCED WATER FILTER
509894	MARQUINN INDUSTRIES	135-11-04	03-07-049-18W5	R4156.2	VF	#1 PRODUCED WATER FILTER
527837	IPS MANUFACTURING	V-3151-001C	05-14-049-19W5	R4582.231	VS	3 PHASE VERTICAL SEPARATOR
577647	MARQUINN	148-87-07	06-16-048-18W5	P3289.213	VS	3 PHASE SEPARATOR
528042	IPS MANUFACTURING	V-3304-001B	06-01-049-19W5	T0211.2	VS	3 PHASE VERTICAL SEPARATOR
536245	IPS MANUFACTURING	V-4043-001	06-18-049-18W5	T0211.2	VS	3 PHASE VERTICAL SEPARATOR
527994	IPS MANUFACTURING	V-3193-001E	06-29-048-18W5	T0211.2	VS	3 PHASE VERTICAL SEPARATOR
527944	IPS MANUFACTURING	V-3193-001C	07-21-048-18W5	T0211.2	VS	3 PHASE VERTICAL SEPARATOR
497985	PRESSON	B7054-20	07-32-048-18W5	R3254.2	VS	VERTICAL SOUR GAS SEPARATOR
497987	PRESSON	B7054-50	07-32-048-18W5		FL	11-32 WELLSITE HEATER
502846	PRESSON	K3012-21	07-32-048-18W5	R4763.2C	VS	VERTICAL SEPARATOR
495735	MARQUINN INDUSTRIES	133-24-03	08-13-049-19W5	R4156.2	VF	#2 PRODUCED WATER FILTER
495736	MARQUINN INDUSTRIES	133-25-03	08-13-049-19W5	R4156.2	VF	#1 PRODUCED WATER FILTER
495768	PRESSON	B6977-20	08-13-049-19W5	R3254.2	VS	VERTICAL SOUR GAS SEPARATOR
502821	PRESSON	B6982-20	08-13-049-19W5	E4547.2	VS	PRODUCED WATER FLASH VESSEL
502824	PRESSON	B6977-50	08-13-049-19W5	E9867.213, E986	FL	01-13 WELLSITE HEATER
516664	MARQUINN INDUSTRIES	138-02-04	08-13-049-19W5	R9125.213	VS	Sour Horizontal Inlet Separator (Rental)
518339	ENERFLEX MANUFACTURING	040634-01	08-13-049-19W5	P8054.213	VS	COMPRESSOR SUCTION SCRUBBER
520710	AIR-X-CHANGERS	045585.3	08-13-049-19W5	R8538.213	HA	COMPRESSOR INTERCOOLER
520711	AIR-X-CHANGERS	045585.4	08-13-049-19W5	T0393.213	HA	COMPRESSOR AFTERCOOLER
521072	ENERFLEX MANUFACTURING	040820-01	08-13-049-19W5	L2030.213	VS	COMPRESSOR FUEL GAS SCRUBBER
522612	SUNWELL INDUSTRIES	04-393	08-13-049-19W5	R8991.213	VS	MINI-BLOWCASE
522799	SUNWELL INDUSTRIES	05-006	08-13-049-19W5	T0932.2	VS	BLOWCASE
523479	ENERFLEX MANUFACTURING	040844-02	08-13-049-19W5	T0674.213	VB	1ST STAGE SUCTION BOTTLE
523480	ENERFLEX MANUFACTURING	040844-03	08-13-049-19W5	T0675.213	VB	1ST STAGE DISCHARGE BOTTLE
526681	ENERFLEX MANUFACTURING	040844-01	08-13-049-19W5	R9967.213	VS	SLUG CATCHER
550849	IPS MANUFACTURING	V4631-001	08-36-048-19W5	T5094.2	VS	3 PHASE VERTICAL SEPARATOR
527954	IPS MANUFACTURING	V-3193-001A	10-18-048-18W5	T0211.2	VS	3 PHASE VERTICAL SEPARATOR
536195	IPS MANUFACTURING	V-4042-001	10-26-049-19W5	T0211.2	VS	3 PHASE VERTICAL SEPARATOR
549492	RJV	2006	11-01-049-18W5	P7217.2	VS	3 PHASE VERTICAL SEPARATOR
527830	IPS MANUFACTURING	V-3151-001C	11-11-049-19W5	R4582.231	VS	3 PHASE VERTICAL SEPARATOR
547686	IPS MANUFACTURING	V-4664-001	11-12-049-19W5	R6694.213	VS	3 PHASE VERTICAL SEPARATOR
525094	NUSCO	9930-200	11-16-048-18W5	R2959.213	VS	3 PHASE VERTICAL SEPARATOR
527961	IPS MANUFACTURING	V-3193-001D	11-16-048-18W5	T0211.2	VS	3 PHASE VERTICAL SEPARATOR
550869	IPS MANUFACTURING	V-4688-001	14-30-048-18W5	R6694.213	VS	3 PHASE VERTICAL SEPARATOR
536246	IPS MANUFACTURING	V-4044-001	14-35-049-19W5	T0211.2	VS	3 PHASE VERTICAL SEPARATOR

HOMS ✓

Hanlan Robb  
Petro-Canada



# Inspection Report

Print Date: 11/9/2007 2:30:14 PM

<b>Equipment Detail</b>		
<b>Plant/Area:</b> Hanlan - Minehead	<b>Type:</b> VS	<b>Number:</b> ..W-MIN-01-13-A-V-801
<b>Equipment Name:</b> PRODUCED WATER FLASH VESSEL		
<b>Report Information</b>		<b>Stream</b>
<b>Memo No.:</b> 7833	<b>Job File No.:</b>	Internal
<b>Report Number:</b>	<b>Work Order No.:</b>	<b>Extent</b>
<b>Date Created:</b> 11/7/2007	<b>Date Inspected:</b> 11/7/2007	Full
<b>Due Date:</b>	<b>Completed:</b> <input checked="" type="checkbox"/>	<b>Date Completed:</b> 11/7/2007
<b>Title:</b> Routine Inspection VI, VE, US		
<b>Summary</b>		
<b>A.I. Name:</b>	<b>Inspector:</b> R. Murtha & B. Paulson	
<b>Reason for Inspection:</b> Routine		
<b>Regulatory Comment:</b> Suitable for further service		
<b>Chief Inspector:</b>	<b>Chief Inspec. Date:</b>	
<b>Inspection Summary</b>		
VI		
- Done through 4" 300 Flange. Couldn't see much		
- Original anode 2" high silicon cast iron. Needs to be changed out to an aluminum treater style anode (may require machining down and a new blind flange)		
VE		
- No apparent defects		
US		
- Survey showed no signs of corrosion		
<b>Details (Whole Equipment)</b>		
<b>Inspection Details</b>		
<b>Repairs</b>		
<input type="checkbox"/> Repairs Completed		
<b>Action Taken</b>		
<b>Activity Codes</b>		
US	<b>Prob/Failure Code:</b>	
VE		
VI		
<b>Process/Continuous History</b>		



Attachments	
<b>Attach. No.:</b> 1 <b>Description:</b> <b>File Name:</b> \\PCREDSN\WORKGRP\OIP\Pressure Equipment Integrity\Pictures & Electronic Data \Unit #50\50-0113-A-V-801 Nov 2007\IMG_0105.JPG	<b>Attachment Type:</b> Linked <b>File Size:</b> 60,578 bytes
-- attachment not printable --	
<b>Attach. No.:</b> 2 <b>Description:</b> <b>File Name:</b> \\PCREDSN\WORKGRP\OIP\Pressure Equipment Integrity\Pictures & Electronic Data \Unit #50\50-0113-A-V-801 Nov 2007\IMG_0106.JPG	<b>Attachment Type:</b> Linked <b>File Size:</b> 51,851 bytes
-- attachment not printable --	
<b>Attach. No.:</b> 3 <b>Description:</b> <b>File Name:</b> \\PCREDSN\WORKGRP\OIP\Pressure Equipment Integrity\Pictures & Electronic Data \Unit #50\50-0113-A-V-801 Nov 2007\IMG_0107.JPG	<b>Attachment Type:</b> Linked <b>File Size:</b> 70,396 bytes
-- attachment not printable --	
<b>Attach. No.:</b> 4 <b>Description:</b> <b>File Name:</b> \\PCREDSN\WORKGRP\OIP\Pressure Equipment Integrity\Pictures & Electronic Data \Unit #50\50-0113-A-V-801 Nov 2007\IMG_0108.JPG	<b>Attachment Type:</b> Linked <b>File Size:</b> 49,836 bytes
-- attachment not printable --	
<b>Attach. No.:</b> 5 <b>Description:</b> <b>File Name:</b> \\PCREDSN\WORKGRP\OIP\Pressure Equipment Integrity\Pictures & Electronic Data \Unit #50\50-0113-A-V-801 Nov 2007\IMG_0109.JPG	<b>Attachment Type:</b> Linked <b>File Size:</b> 39,535 bytes
-- attachment not printable --	

*Nov 9/07*  
-----  
Date

*[Signature]*  
-----  
Inspector

-----  
Date

-----  
Chief Inspector

HDMS ✓



Oil and Gas

# WESTERN CANADA UPSTREAM INSPECTION PROCEDURES FOR OIP

PROCEDURE NO. <b>IP-300</b>	SUBJECT <b>PROCESS VESSELS</b>
--------------------------------	-----------------------------------

50-0113-V-801  
750 VS 113B

Produced Water Flush Vessel

## CHECKLIST #1 - EXTERNAL INSPECTION

- |     |  |  |
|-----|--|--|
| 1.  | Ladders, stairways, platforms and walkways | <input type="checkbox"/> N/A                   |
| 2.  | Foundations and supports                   | <input checked="" type="checkbox"/>            |
| 3.  | Nozzles                                    | <input checked="" type="checkbox"/>            |
| 4.  | Grounding connections                      | <input checked="" type="checkbox"/> Skid       |
| 5.  | Protective coatings and insulation         | <input checked="" type="checkbox"/>            |
| 6.  | External metal surfaces                    | <input checked="" type="checkbox"/>            |
| 7.  | Pressure relief devices                    | <input checked="" type="checkbox"/>            |
| 8.  | Name plate                                 | <input checked="" type="checkbox"/>            |
| 9.  | Ultrasonic thickness survey                | <input type="checkbox"/> To be added to Survey |
| 10. | Inspection report completed                | <input type="checkbox"/> N/A                   |
| 11. | Nonconformance report completed            | <input type="checkbox"/> N/A                   |

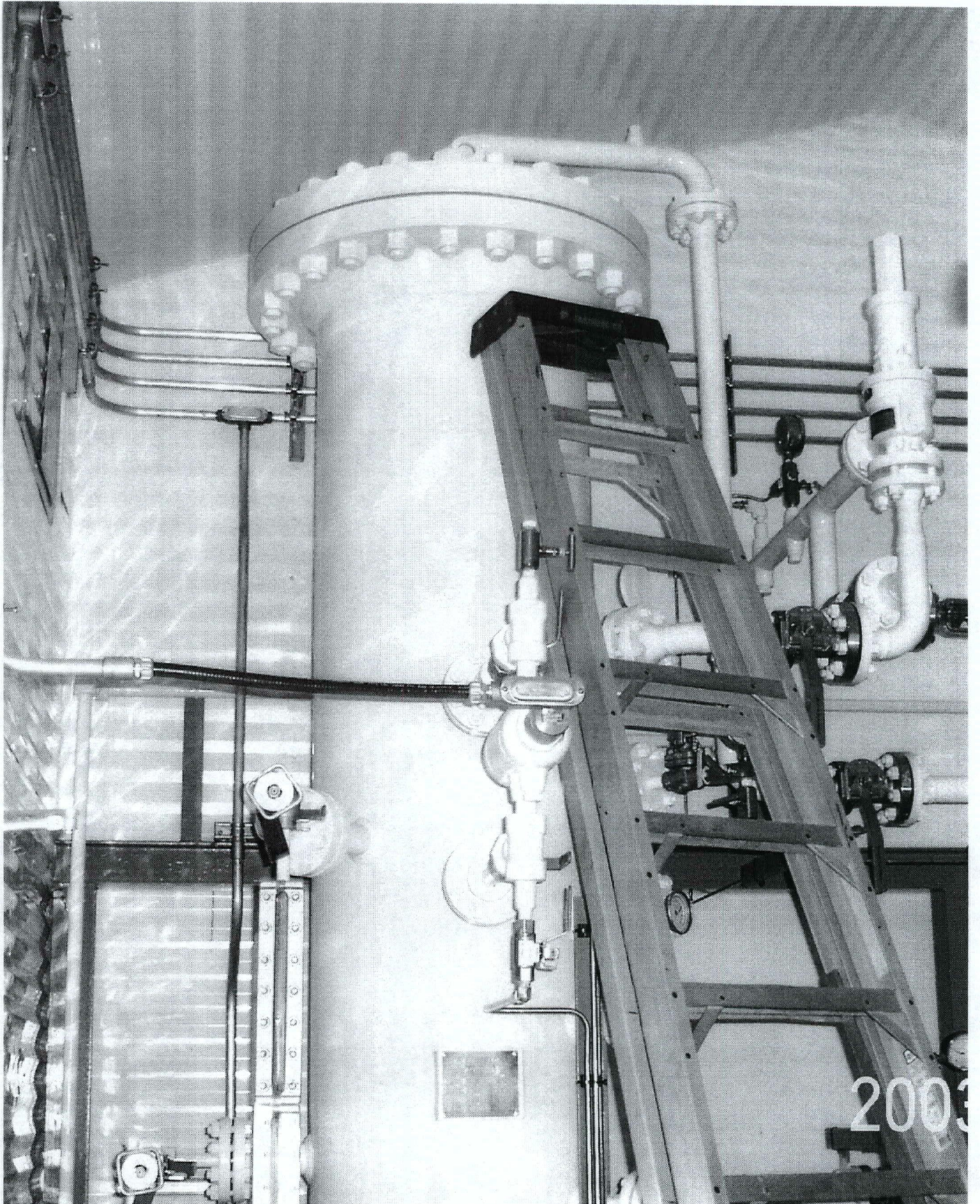
Dec 1/03

APPROVAL <b>CHIEF INSPECTOR</b>	DATE <b>MAY, 1999</b>	REVISION	PAGE
			<b>1</b>
			<b>7 OF 8</b>



50-0113-DEC 2003

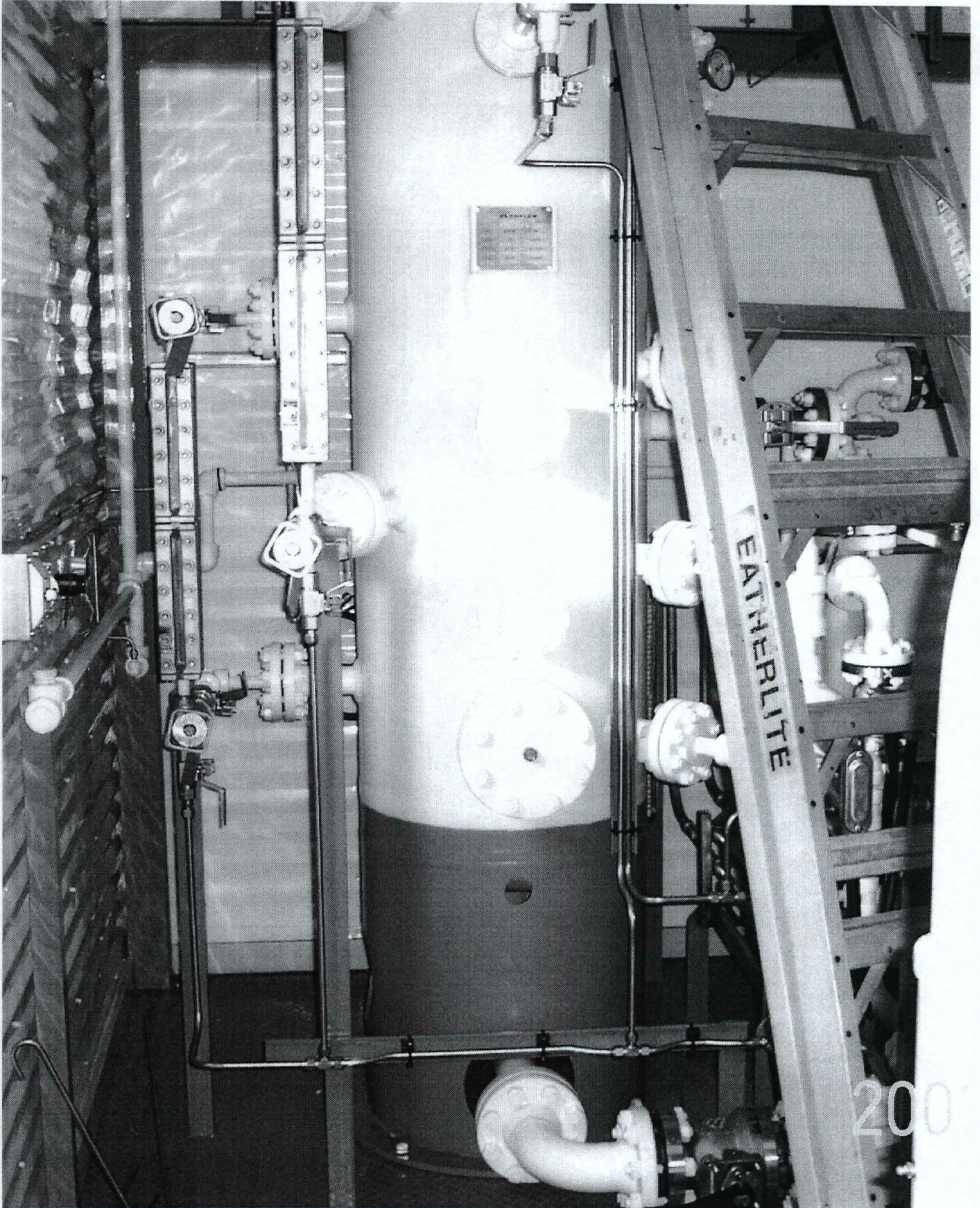
V-801





50-0113-DEC 2003

V-801



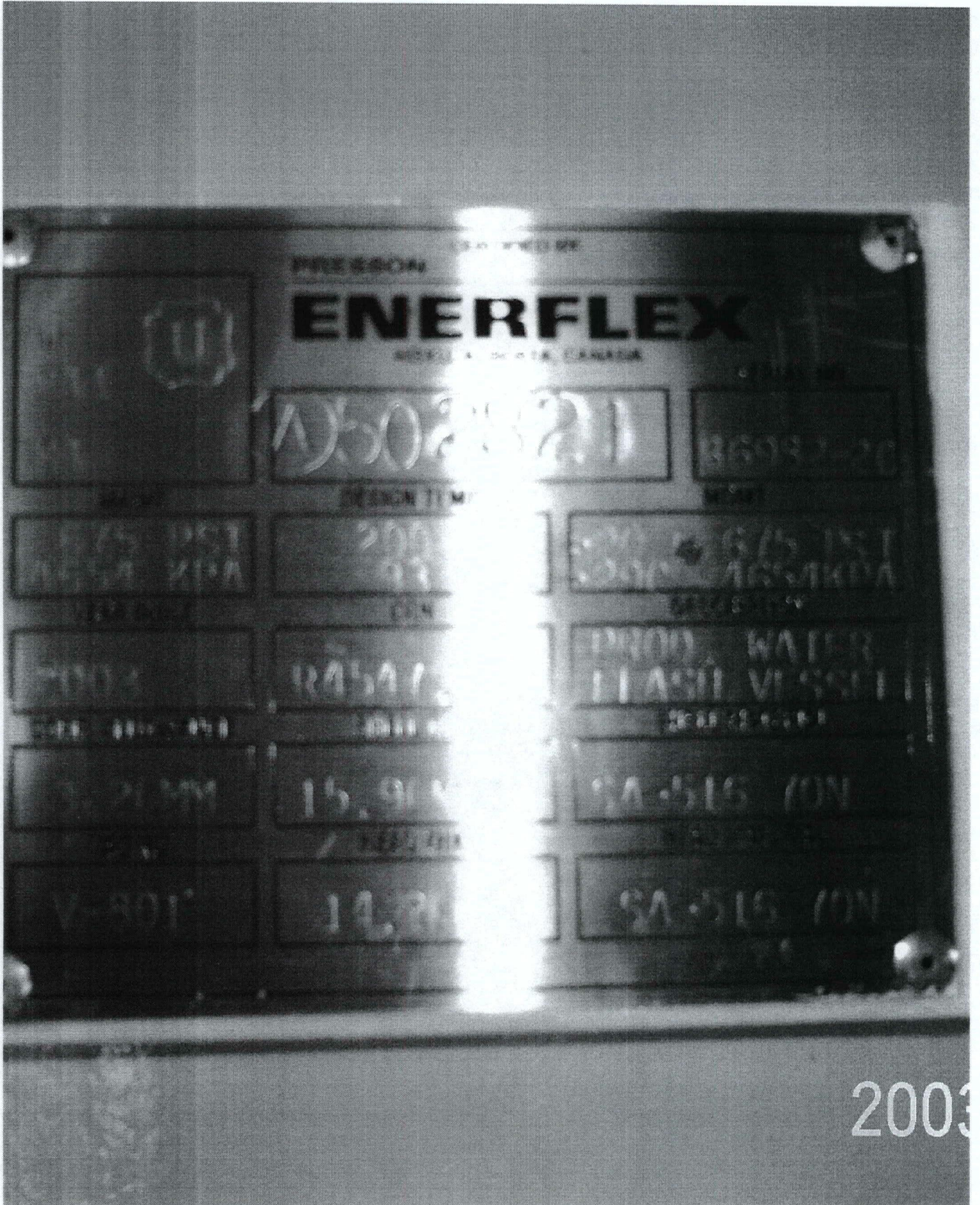
2003



50-0113-DEC 2003

POOR QUALITY

V-801



2003



HDMS-

EQUIPMENT NO. 750VS113A/C  
Unique Num. System

PCR DATA

TAG NO. 50-013-V-801 PROV. REG. NO. (A) 502821 PROP. CODE NO. \_\_\_\_\_  
 FACILITY Hanlon Robb LOCATION 01-13 YR. INSTALLED 2003  
 EQUIP. NAME Produce Water Flush Vessel TYPE \_\_\_\_\_ PCR DWG NO. \_\_\_\_\_  
 SERVICE Sour Water M/WAY No HANDHOLE \_\_\_\_\_ S/D REQT. Partial

MANUFACTURER DATA

MFG. Presson DWG. NO. \_\_\_\_\_ Ser. No. B6982-20 YR. BUILT 2003

DESIGN & MATERIALS DATA

CRN # R4547.2C CODE/DW. \_\_\_\_\_ PARA. \_\_\_\_\_ CODE STAMP \_\_\_\_\_  
 MAWP 4654 kPa @ TEMP. 93 °C MDMT \_\_\_\_\_ °C  
 OP. PRESS. \_\_\_\_\_ kPa OP. TEMP. \_\_\_\_\_ °C ORIG. TEST PRESS. \_\_\_\_\_ kPa

MATERIAL DATA (Specify material spec. and grade E.g. SA 516 Gr. 70N)  
 SHELL SA 516 70N NOM. THK 15.9 mm CA 3.2 mm MIN. THK \_\_\_\_\_ mm  
 HEAD TOP SA 516 TYPE \_\_\_\_\_ NOM. THK \_\_\_\_\_ mm CA \_\_\_\_\_ mm MIN. THK \_\_\_\_\_ mm  
 HEAD BTM SA 516 70N TYPE \_\_\_\_\_ NOM. THK 14.2 mm CA 3.2 mm MIN. THK \_\_\_\_\_ mm  
 PWHT V9 REASON Service RADIOGRAPHY RT-1  
 SIZE ID \_\_\_\_\_ mm LENGTH/HEIGHT \_\_\_\_\_ mm SUPPORT \_\_\_\_\_ mm  
 FLANGE RATING 300 INSULATION TYPE \_\_\_\_\_ THK \_\_\_\_\_ mm

TUBING DATA (Complete for Exchangers, Coolers, Line Heaters or Boilers etc.)

MATERIAL (Specify material spec. and grade) TEMA CLASS \_\_\_\_\_ TYPE \_\_\_\_\_  
 TUBES \_\_\_\_\_ O.D. \_\_\_\_\_ mm GAUGE \_\_\_\_\_ mm TYPE \_\_\_\_\_  
 TUBESHEET \_\_\_\_\_ O.D. \_\_\_\_\_ mm NOM. THK \_\_\_\_\_ mm CA \_\_\_\_\_ mm  
 CHANNEL \_\_\_\_\_ I.D. \_\_\_\_\_ mm NOM. THK \_\_\_\_\_ mm CA \_\_\_\_\_ mm  
 DESIGN PRESS. \_\_\_\_\_ kPa DESIGN TEMP. \_\_\_\_\_ °C TEST PRESS. \_\_\_\_\_ kPa

TRAY/PACKING DATA (Complete for Towers, Columns, etc.)

TRAY TYPE \_\_\_\_\_ MATERIAL \_\_\_\_\_ NUMBER \_\_\_\_\_ PACKING: \_\_\_\_\_  
 Bubble, Vane, Sieve E.g. Cr. 304 Type/Mat. (NOTE 7)

PROTECTIVE COATING DATA (Complete for Internally/externally coated vessels)

EXTERNAL: TYPE \_\_\_\_\_ MATERIAL \_\_\_\_\_ YR. APPLIED \_\_\_\_\_  
 INTERNAL: TYPE \_\_\_\_\_ MATERIAL \_\_\_\_\_ YR. APPLIED \_\_\_\_\_

LINING/GLADDING DATA (Complete for lined or cladded vessels)

TYPE \_\_\_\_\_ MATERIAL \_\_\_\_\_ YR. APPLIED \_\_\_\_\_  
 Metal, Refractory, Ceramic, Rubber, PVC, etc. Material Grade/Brand Name

PRESSURE RELIEF DEVICES DATA

1. TAG NO. \_\_\_\_\_ TYPE \_\_\_\_\_ MANUFACTURER \_\_\_\_\_  
 SIZE \_\_\_\_\_ mm x \_\_\_\_\_ mm MODEL NO. \_\_\_\_\_ SER. NO. \_\_\_\_\_  
 FLG. RATING \_\_\_\_\_ SET PRESSURE \_\_\_\_\_ kPa DISCHARGE \_\_\_\_\_  
 LOCATION \_\_\_\_\_ BLOCK VALVE \_\_\_\_\_ CARSEAL \_\_\_\_\_ LAST TEST YR. \_\_\_\_\_  
 2. TAG NO. \_\_\_\_\_ TYPE \_\_\_\_\_ MANUFACTURER \_\_\_\_\_  
 SIZE \_\_\_\_\_ mm x \_\_\_\_\_ mm MODEL NO. \_\_\_\_\_ SER. NO. \_\_\_\_\_  
 FLG. RATING \_\_\_\_\_ SET PRESSURE \_\_\_\_\_ kPa DISCHARGE \_\_\_\_\_  
 LOCATION \_\_\_\_\_ BLOCK VALVE \_\_\_\_\_ CARSEAL \_\_\_\_\_ LAST TEST YR. \_\_\_\_\_

SCHEDULE DATA

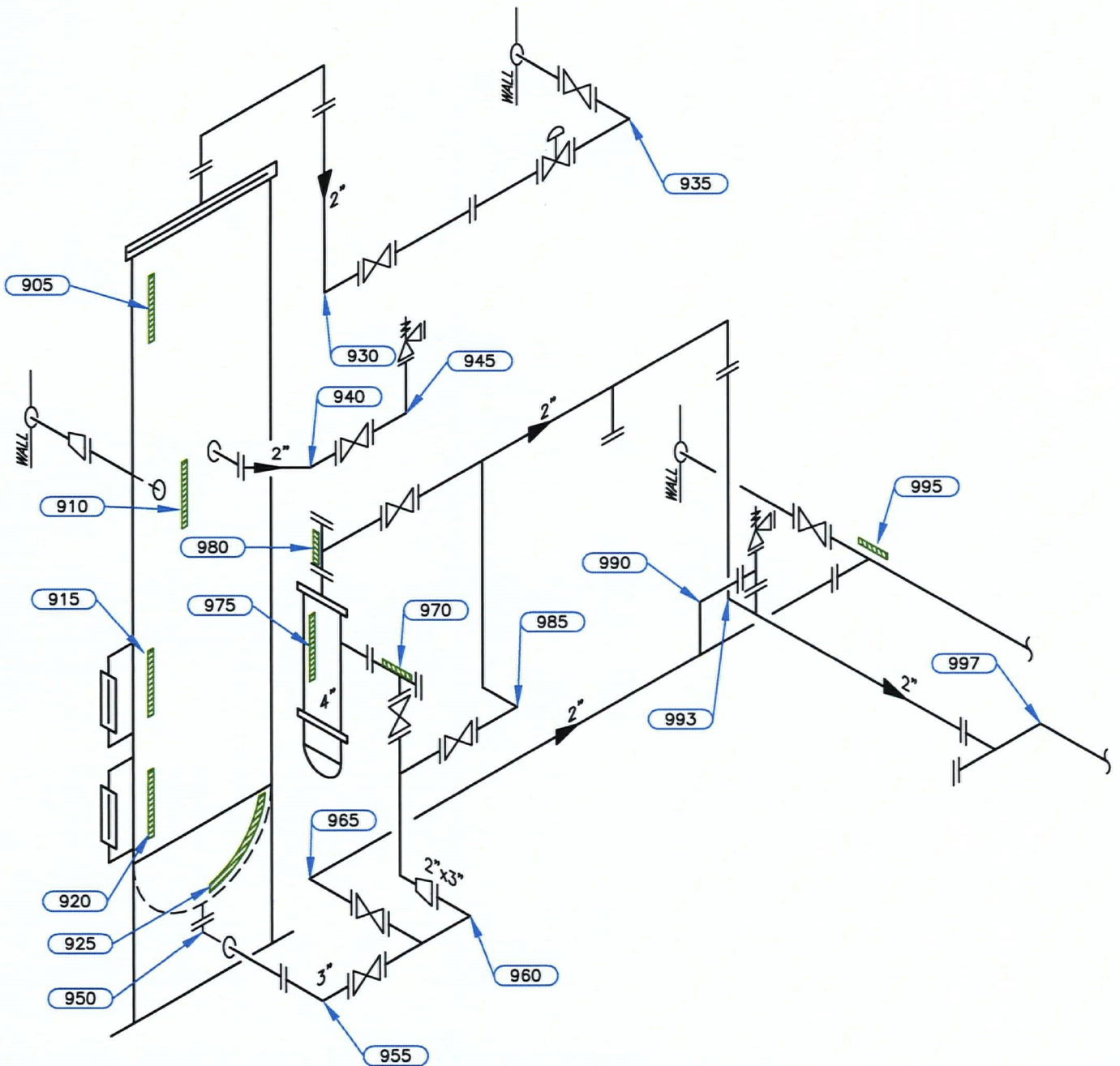
ASSGN. CATEGORY 3 PREVIOUS VT \_\_\_\_\_ PREVIOUS UT \_\_\_\_\_  
 Category I, II or III Visual Insp. Year UT INL Year

Completed by: Brian Paulsen Date: Dec/03 Reviewed by: \_\_\_\_\_

*Internally Coated  
Device 253*



66147006



Equip. No. 50-0113-V-801 v. Reg. No. Ⓐ 502821 C.R.N. R-4547.2 Serial No. B-6982-2 Yr. Inst. \_\_\_\_\_  
 Code/Div. ASME Size: \_\_\_\_\_ Manufacturer: ENERFLEX Yr. Bld. 2003  
 C. Stamp: NO Service: SOUR PWHT: YES Radiography: RT-1 Insulated: NO

**Design & Materials Data**

**HEAD:**  
 Mat'l. SA 516 70N Nom. 14.2mm C.A. 3.2mm  
 Mat'l. \_\_\_\_\_ Nom. \_\_\_\_\_ C.A. \_\_\_\_\_

**CHANNEL:**  
 Material: \_\_\_\_\_ Nominal: \_\_\_\_\_ C.A. \_\_\_\_\_

**BOOT**  
 Head Mat'l. \_\_\_\_\_ Head Nom. \_\_\_\_\_ Head C.A. \_\_\_\_\_  
 Shell Mat'l. \_\_\_\_\_ Shell Nom. \_\_\_\_\_ Shell C.A. \_\_\_\_\_

**SHELL**  
 Material: SA 516 70N Nominal: 15.9mm C.A. 3.2mm  
 MAWP Shell Side: 4654 kPa @ Temp. 93°C  
 MAWP Tube Side: \_\_\_\_\_ @ Temp. \_\_\_\_\_

CLIENT	PETRO CANADA	
FACILITY	HANLAN-ROBB GAS PLANT MINEHEAD FIELD UNIT#50 LSD 01-13-49-19 W5M	
ITEM	PRODUCED WATER FLASH VESSEL	
BY: CB	DATE: 01/2004	DWG.# 9



QUALITY SERVICES

# UTS DATA

**CLIENT:** PETRO-CANADA OIL AND GAS  
**EQUIPMENT:** PRODUCED WATER FLASH VESSEL  
**EQUIPMENT ID#:**  
**PROV REG:** A 502821

**FACILITY:** UNIT 50 MINEHEAD  
**SERVICE:** SOUR  
**LOCATION:** 01-13-49-19 W5M  
**RTD JOB #:** 2121176

**TESTED ON STREAM**

**REFER TO DRAWING: 9**

Test Point	THICKNESS DATA								Flag	Crit	C.A.	Nom.	Short Term	Long Term	Ave. mm/py	Flag Date
905	Description: TOP SHELL															
	2004	1	2005	4	2006	4	2007	5								
Min. Thick.	15.8		15.8		15.8		15.8		12.7	12.7	3.2	15.9	0	0		L
Average:	15.9		15.9		15.9		15.9						0	0		L
Analysis:																
910	Description: UPPER SHELL															
	2004	1	2005	4	2006	4	2007	5								
Min. Thick.	15.9		15.9		15.9		15.9		12.7	12.7	3.2	15.9	0	0		L
Average:	16.0		16.0		16.0		16.0						0	0		L
Analysis:																
915	Description: MID SHELL															
	2004	1	2005	4	2006	4	2007	5								
Min. Thick.	15.9		15.9		15.9		15.9		12.7	12.7	3.2	15.9	0	0		L
Average:	16.0		16.0		16.0		16.0						0	0		L
Analysis:																
920	Description: BOTTOM SHELL															
	2004	1	2005	4	2006	4	2007	5								
Min. Thick.	15.7		15.7		15.7		15.7		12.7	12.7	3.2	15.9	0	0		L
Average:	15.8		15.8		15.8		15.8						0	0		L
Analysis:																
925	Description: BOTTOM HEAD															
	2004	1	2005	4	2006	4	2007	5								
Min. Thick.	15.5		15.4		15.4		15.4		11.0	11.0	3.2	14.2	0	.03		L
Average:	15.7		15.6		15.6		15.6						0	.03		L
Analysis:																





QUALITY SERVICES

# UTS DATA

**CLIENT:** PETRO-CANADA OIL AND GAS  
**EQUIPMENT:** PRODUCED WATER FLASH VESSEL PIPING  
**EQUIPMENT ID#:**  
**PROV REG:**

**FACILITY:** UNIT 50 MINEHEAD  
**SERVICE:** SOUR  
**LOCATION:** 01-13-49-19 W5M  
**RTD JOB #:** 2121176

**TESTED ON STREAM**

**REFER TO DRAWING: 9**

Test Point	THICKNESS DATA								Flag	Crit	C.A.	Nom.	Short Term	Long Term	Ave. mm/py	Flag Date
930																
Description: 2" 90° ELBOW																
	2004	1	2005	4	2006	4	2007	5								
Min. Thick.	4.8		4.8		4.8		4.8		2.5	2.5	3.0	5.5	0	0		L
Average:	5.2		5.2		5.2		5.2						0	0		L
Analysis: 2004/01 MID SCAN @ MID BAND																
935																
Description: 2" 90° ELBOW																
	2004	1	2005	4	2006	4	2007	5								
Min. Thick.	5.0		5.0		5.3		5.3		2.5	2.5	3.0	5.5	0	0		S
Average:	5.2		5.2		5.5		5.5						0	0		S
Analysis:																
940																
Description: 2" 45° ELBOW																
	2004	1	2005	4	2006	4	2007	5								
Min. Thick.	4.9		4.9		4.9		4.9		2.5	2.5	3.0	5.5	0	0		L
Average:	5.3		5.3		5.3		5.3						0	0		L
Analysis:																
945																
Description: 2" 90° ELBOW																
	2004	1	2005	4	2006	4	2007	5								
Min. Thick.	5.1		5.1		5.1		5.1		2.5	2.5	3.0	5.5	0	0		L
Average:	5.4		5.4		5.4		5.4						0	0		L
Analysis:																
950																
Description: 3" 90° ELBOW																
	2004	1	2005	4	2006	4	2007	5								
Min. Thick.	6.7		7.0		7.0		7.0		2.5	2.5	5.1	7.6	0	0		S
Average:	7.2		7.4		7.4		7.4						0	0		S
Analysis: 2005/04 UNABLE TO LOCATED LAST YEARS MIN SCAN																
955																
Description: 3" 90° ELBOW																
	2004	1	2005	4	2006	4	2007	5								
Min. Thick.	6.5		6.6		6.6		6.6		2.5	2.5	5.1	7.6	0	0		S
Average:	7.5		7.1		7.1		7.1						0	.12		L 2045
Analysis: 2005/04 MIN SCAN 1" FROM D.S.W.																



# UTS DATA

**CLIENT:** PETRO-CANADA OIL AND GAS  
**EQUIPMENT:** PRODUCED WATER FLASH VESSEL PIPING  
**EQUIPMENT ID#:**  
**PROV REG:**

**FACILITY:** UNIT 50 MINEHEAD  
**SERVICE:** SOUR  
**LOCATION:** 01-13-49-19 W5M  
**RTD JOB #:** 2121176

**TESTED ON STREAM**

**REFER TO DRAWING: 9**

Test Point	THICKNESS DATA								Flag	Crit	C.A.	Nom.	Short Term	Long Term	Ave. mm/yr	Flag Date
960	Description: 3" 90° ELBOW															
	2004	1	2005	4	2006	4	2007	5								
Min. Thick.	6.5		6.9		6.9		6.9		2.5	2.5	5.1	7.6	0	0		S
Average:	7.5		7.4		7.4		7.4						0	.03		L
Analysis:	2005/04 MIN SCAN @ MID BAND															
965	Description: 2" 90° ELBOW															
	2004	1	2005	4	2006	4	2007	5								
Min. Thick.	4.9		4.9		4.9		4.9		2.5	2.5	3.0	5.5	0	0		L
Average:	5.2		5.2		5.2		5.2						0	0		L
Analysis:																
970	Description: 2 X 2 TEE															
	2004	1	2005	4	2006	4	2007	5								
Min. Thick.	5.3		6.3		6.3		6.3		2.5	2.5	3.0	5.5	0	0		S
Average:	5.6		7.2		7.2		7.2						0	0		S
Analysis:	2005/04 PIPE CHANGE															
975	Description: SIDE BAND ON 4"															
	2004	1	2005	4	2006	4	2007	5								
Min. Thick.	8.1		8.1		8.1		8.1		5.4	5.4	3.2	8.6	0	0		L
Average:	8.3		8.3		8.3		8.3						0	0		L
Analysis:																
985	Description: 2" 90° ELBOW															
	2004	1	2005	4	2006	4	2007	5								
Min. Thick.	5.3		4.8		4.8		4.8		2.5	2.5	3.0	5.5	0	.15		L 2022
Average:	5.7		5.2		5.2		5.2						0	.15		L 2025
Analysis:	2004/01 MID SCAN @ MID BAND															
990	Description: 2" 90° ELBOW															
	2004	1	2005	4	2006	4	2007	5								
Min. Thick.	4.6		4.6		4.6		4.6		2.5	2.5	3.0	5.5	0	0		L
Average:	4.9		4.9		4.9		4.9						0	0		L
Analysis:																





QUALITY SERVICES

# UTS DATA

**CLIENT:** PETRO-CANADA OIL AND GAS  
**EQUIPMENT:** PRODUCED WATER FLASH VESSEL PIPING  
**EQUIPMENT ID#:**  
**PROV REG:**

**FACILITY:** UNIT 50 MINEHEAD  
**SERVICE:** SOUR  
**LOCATION:** 01-13-49-19 W5M  
**RTD JOB #:** 2121176

TESTED ON STREAM

REFER TO DRAWING: 9

Test Point	THICKNESS DATA								Flag	Crit	C.A.	Nom.	Short Term	Long Term	Ave. mm/yr	Flag Date	
993	Description: 2" 90° ELBOW																
	2004	1	2005	4	2006	4	2007	5									
Min. Thick.	5.0		4.6		4.6		4.6		2.5	2.5	3.0	5.5	0	.12	L	2024	
Average:	5.3		5.1		5.1		5.1						0	.06	L	2050	
Analysis:	2005/04 MIN SCAN @ MID BAND																

995	Description: 2 X 2 TEE															
	2004	1	2005	4	2006	4	2007	5								
Min. Thick.	6.6		6.6		6.6		6.6		2.5	2.5	3.0	5.5	0	0	L	
Average:	7.3		7.3		7.3		7.3						0	0	L	
Analysis:																

997	Description: 2" 90° ELBOW															
	2004	1	2005	4	2006	4	2007	5								
Min. Thick.	4.8		4.7		4.7		4.7		2.5	2.5	3.0	5.5	0	.03	L	
Average:	5.0		4.9		4.9		4.9						0	.03	L	
Analysis:																