

PRESSURE VESSEL & COLUMN INSPECTION REPORT

LSD: 14-03-051-19W5/100-03-10-051-19W5

Date: Mar 26, 2019

SAP Equipment ID: 66135818

VESSEL STATIC DATA									
Plant WELL PAD				Op Unit			System		
Prov. Insp. # A0584719				CRN 7217.2			Equip Tag #		
Equipment Description SEPARATOR							Serial # 11373		
Manufacturer RJV GAS FIELD							Vessel Class		
Internal Access: Description:							Year Built 2008		
MAWP 10204		kPa		@ 38		°C		MDMT -29 °C	
CODE : U				RT : 2			PWHT :		
Diameter		Length (T/T)		mm		OAL		mm	
Shell	Mat'l	SA-106B		Thickness	21.44	mm		Corr Allowance	1.6 mm
Head	Mat'l	SA-516-70		Thickness	20.63	mm		Corr Allowance	1.6 mm
Nozzle	Mat'l			Thickness	mm / in		Corr Allowance mm		
Internal Coating:				Internal Clad :			Capacity m ³		
Manway :				Inspection Port :					
Nozzle Rating		lb ANSI		Painted : YES			Insulated NO		
PROCESS DATA									
Product Description									
Operating Pressure				kPa		Operating Temperature °C			
PSV STATIC DATA									
Serial No.	Location		Set Pressure	Capacity SCFM	Manufacturer	Model / Type		Service Date / Company	
37395-306	PIPING		1440	5180	TAYLOR	82E8351311		10-16-17 ACCESS	
PSV DETAILS									
	Type (Thread/Flange)			ANSI Rating			Size (inches)		
PRD Inlet	Threaded						1		
PRD Outlet	Threaded						1		
NDE Equipment Records									
Procedure#	Description		Manufacturer	Model#	Serial#		Due Date		

INSPECTION SUMMARY

VESSEL WAS INSPECTED ON 3-26-2019
 -TOOLING MARKING ON UNION FITTING ON PSV
 -GROUNDING IS SECURED
 -SKID IS SECURED ON PILINGS
 -VESSEL IS SECURED TO SKID FLOOR
 -MINOR STAINS SIGHT GLASS COATING FAILED
 -ALL PIPING IS SECURE AND SUPPORTED PROPERLY
 -VESSEL IS FFS WITH NO RECOMMENDATIONS OR CONCERNS FOUND AT TIME OF INSPECTION

RECOMMENDATIONS

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NONCONFORMANCES / INSPECTION DEFICIENCIES

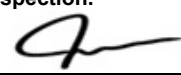
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INSPECTION PLANNING

Inspection Strategy	Availability	Inspection Interval
Inspection Date	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 JERRAD MOROSOFF  Date Mar 26, 2019

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Company	<u>Streamline Inspection Ltd</u>	PESL #	<u>404</u>	API #	<u>32933</u>
Reviewed and Approved by	<u></u>			Date	<u></u>
	<u></u>	PESL #	<u></u>	API #	<u></u>
Criticality Assessment Rerun	<u></u>	Inspection Planning Rerun	<u></u>		
Assessed Next Inspection Date	<u></u>				

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DETAILED INSPECTION VISUAL EXTERNAL

ID	Description	Condition	Location	NCR	Comments
V1	General Other (Please Explain)	Acceptable			Overall no significant concerns observed
V2	General Corrosion	Acceptable			No corrosion concerns noted
V3	General Leaks	Acceptable			
V4	Vibration	N/A			
V5	Dissimilar Flange Rating	N/A			
V6	Ladder/Stairway	N/A			
V7	Heads	Acceptable			No concerns noted
V8	Guy Wires	N/A			
V9	Electrical Ground	Acceptable			Securely grounded
V10	Painted Inactive Corrosion	Acceptable			
V11	Coating/Painting	Acceptable			No significant failures observed
V12	Expansion Joint or Bellows	N/A			
V13	Gauge/Site Glass	Acceptable			No leaks or damage noted
V14	Shell	Acceptable			No concerns noted
V15	Jacket	N/A			
V21	Support Other (Please explain)	N/A			
V22	Foundation	Acceptable			No concerns noted
V23	Anchor Bolts	N/A			
V24	Saddle/Skirt	Acceptable			Securely in place
V25	Davit	N/A			
V26	Fireproofing	N/A			
V31	Connections Other (Please explain)				
V32	Small Branches	Acceptable			No significant sign of strain or concerns
V33	Nozzles	Acceptable			No stresses, corrosion or misalignment
V34	Manways	N/A			
V35	Reinforcing Pads	N/A			
V36	Inadequate Thread Engagement	Acceptable			No concerns noted
V37	Bolting	Acceptable			Intact with no missing bolts or short bolting
V38	Flanges	Acceptable			No active leaks
V39	Leak Clamps	N/A			
V41	Insulation Other (Please explain)	N/A			
V42	Damage				
V43	Penetrations				
V44	Insulation Jacket				
V45	Banding				
V46	Seals/Joints				
V51	Relief Devices Other (Please explain)				
V52	Corrosion	N/A			
V53	Leaks	N/A			
V54	Restricted Inlet/Outlet	N/A			
V55	Manual Operation Lever	N/A			

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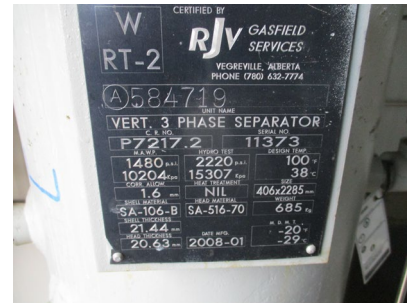
Date: Mar 26, 2019

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PHOTOS



LSD SIGN



DATA PLATE



OVERALL VIEW



PRESSURE GAUGE



TEMPERATURE GAUGE



SIGHT GLASS

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PSV OVERVIEW



PSV SERVICE TAG



PSV SERVICE TAG



OEM PSV DATA PLATE



PSV DISCHARGE PIPING

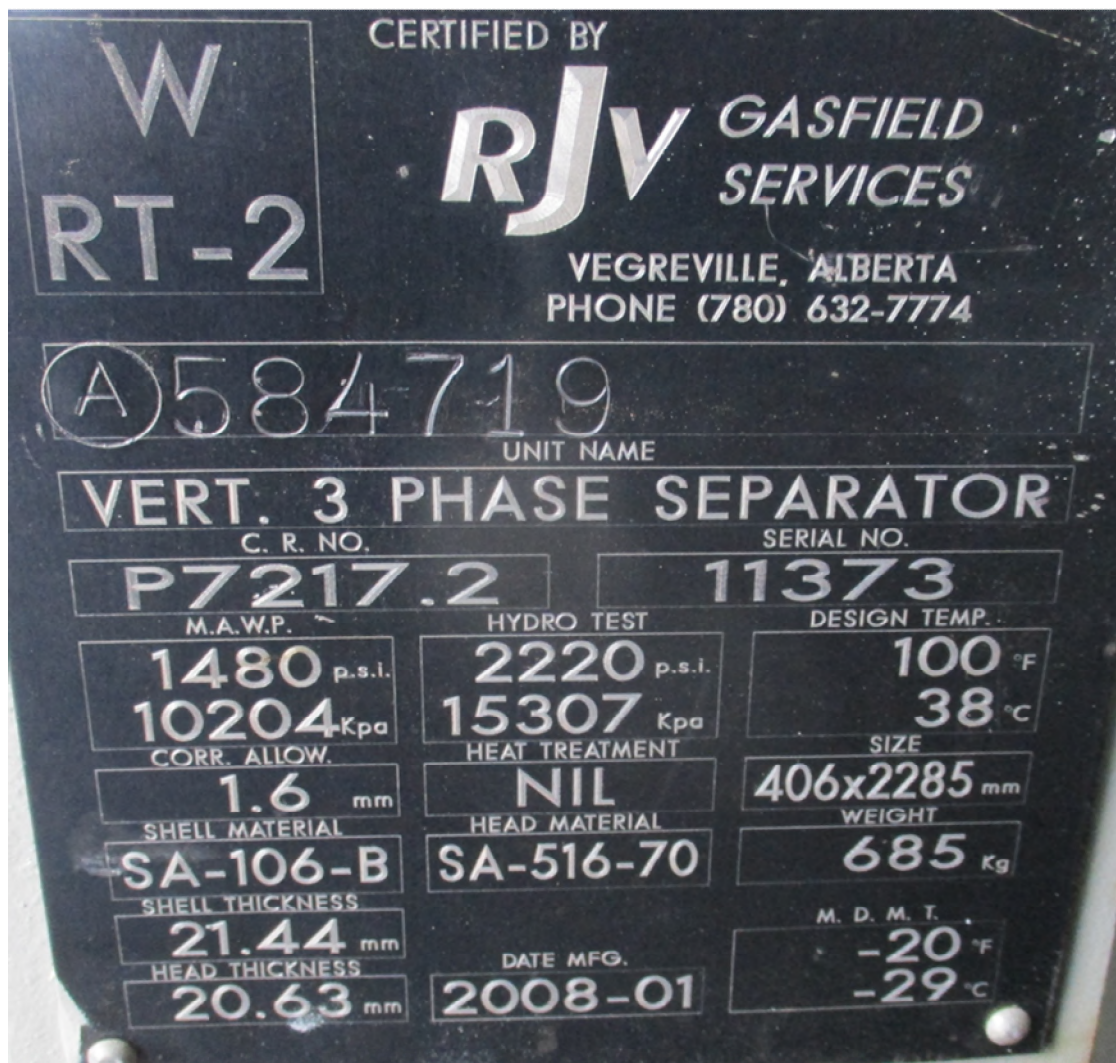


SKID GROUNDING



Location Name:	Ansell	LSD:	14-03-051-19W5 100/03-10-051-19W5
Jur #:	A0584719	Equipment/Tag No.	
Equipment Description:	Separator		
Manufacturer:	RJV Gas Field Services		
Serial Number:	11373	CRN:	P7217.2
Shell MAWP:	10205	KPA Shell Design Temp:	38 °C
Tube MAWP:		KPA Tube Design Temp:	°C
Shell Material:	SA-106-B	Head Material:	SA-516-70
Shell Thickness:	21.44	mm Head Thickness:	20.63 mm
Corrosion Allowance:	1.6	mm Date Built:	2008
Size:	406.4	mm Pipe / Rolled Plate:	
RT:	2		

NOTES: SAP# 66135818









Ultrasonic Corrosion Survey

*All values are in millimeters unless otherwise stated.

Survey Name: Husky Energy

Date: Mar 26, 2019

Inspector: Dennis Durnford

14-03-051-19W5									
LSD:	100/03-10-051-19W5	Area:	Ansell			Location:	Field		
Jur #:	A0584719	Tag Number:				Vessel Name:	Separator		
CRN:	P7217.2	Year Built:	2008			Serial Number:	11373		
RT:	2	Vessel CA:	1.600	mm		Manufacturer:	RJV Gas Field Services		
		Shell MAWP:	10205	MAWT:	38	Tube MAWP:		MAWT:	
			KPA		°C		KPA		°C
Pipe/Plate									
CML Description			Baseline			Flange ANSI:		Material: SA-516-70	
05	HEAD		2014	2019	Flag	CA	Nominal	T Min	STCR mm/yr
Shape:	Ellipsoidal	Min		22.28	19.030	1.600	20.630		0.000
OD:	406.4	Avg	21.79	22.83					
Spec:	ASME VIII Div.1	Comments:						Remaining Life:	
								Retirement Date:	
CML Description			Baseline			Flange ANSI:		Material: SA-106-B	
10	SHELL		2014	2019	Flag	CA	Nominal	T Min	STCR mm/yr
Shape:	Cylindrical	Min		22.58	19.840	1.600	21.440		0.000
OD:	406.4	Avg	22.68	23.32					
Spec:	ASME VIII Div.1	Comments:						Remaining Life:	
								Retirement Date:	
CML Description			Baseline			Flange ANSI:		Material: SA-106-B	
15	SHELL		2014	2019	Flag	CA	Nominal	T Min	STCR mm/yr
Shape:	Cylindrical	Min		22.02	19.840	1.600	21.440		0.000
OD:	406.4	Avg	22.02	22.45					
Spec:	ASME VIII Div.1	Comments:						Remaining Life:	
								Retirement Date:	
CML Description			Baseline			Flange ANSI:		Material: SA-106-B	
20	SHELL		2014	2019	Flag	CA	Nominal	T Min	STCR mm/yr
Shape:	Cylindrical	Min		21.21	19.840	1.600	21.440		0.000
OD:	406.4	Avg	21.31	21.74					0.021
Spec:	ASME VIII Div.1	Comments:						Remaining Life:	
								Retirement Date:	



Ultrasonic Corrosion Survey

*All values are in millimeters unless otherwise stated.

Survey Name: Husky Energy

Date: Mar 26, 2019

Inspector: Dennis Durnford

14-03-051-19W5									
LSD:	100/03-10-051-19W5	Area:	Ansell			Location:	Field		
Jur #:	A0584719	Tag Number:				Vessel Name:	Separator		
CRN:	P7217.2	Year Built:	2008			Serial Number:	11373		
RT:	2	Vessel CA:	1.600	mm		Manufacturer:	RJV Gas Field Services		
		Shell MAWP:	10205	MAWT:	38	Tube MAWP:		MAWT:	Pipe/Plate
			KPA		°C		KPA		°C
CML Description			Baseline			Flange ANSI:		Material: SA-106-B	
25	SHELL		2014	2019	Flag	CA	Nominal	T Min	STCR mm/yr
Shape:	Cylindrical	Min		21.21	19.840	1.600	21.440		0.000
OD:	406.4	Avg	21.29	21.84					0.021
Spec:	ASME VIII Div.1	Comments:							Remaining Life:
									Retirement Date:
CML Description			Baseline			Flange ANSI:		Material: SA-516-70	
30	HEAD		2014	2019	Flag	CA	Nominal	T Min	STCR mm/yr
Shape:	Ellipsoidal	Min		21.54	19.030	1.600	20.630		0.000
OD:	406.4	Avg	21.59	22.76					0.000
Spec:	ASME VIII Div.1	Comments:							Remaining Life:
									Retirement Date:
CML Description			Baseline			Flange ANSI:		Material: SA-234-WPB	
35	NOZZLE		2014	2019	Flag	CA	Nominal	T Min	STCR mm/yr
Shape:	90° Elbow	Min		5.56	7.112	1.600	8.712	2.235	0.000
OD:	60.325	Avg	5.54	5.84					0.286
Spec:	ASME VIII Div.1	Comments:	ASSUMED NOMINAL. Nominal value used for retirement calc.						Remaining Life:
									Retirement Date:
									11 yrs
									2030
CML Description			Baseline			Flange ANSI:		Material: SA-234-WPB	
40	PIPING		2014	2019	Flag	CA	Nominal	T Min	STCR mm/yr
Shape:	90° Elbow	Min		8.00	7.623	1.089	8.712		0.000
OD:	60.325	Avg	7.59	8.41					0.065
Spec:	ASME B31.3	Comments:	ASSUMED NOMINAL						Remaining Life:
									Retirement Date:



Ultrasonic Corrosion Survey

*All values are in millimeters unless otherwise stated.

Survey Name: Husky Energy

Date: Mar 26, 2019

Inspector: Dennis Durnford

14-03-051-19W5										
LSD:	100/03-10-051-19W5	Area:	Ansell			Location:	Field			
Jur #:	A0584719	Tag Number:				Vessel Name:	Separator			
CRN:	P7217.2	Year Built:	2008			Serial Number:	11373			
RT:	2	Vessel CA:	1.600	mm		Manufacturer:	RJV Gas Field Services			
		Shell MAWP:	10205	MAWT:	38	Tube MAWP:	MAWT:		Pipe/Plate	
			KPA		°C		KPA	°C		
CML Description			Baseline			Flange ANSI:		Material: SA-234-WPB		
45	PIPING		2014	2019	Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	90° Elbow	Min		7.62	4.801	0.686	5.486		0.000	0.000
OD:	88.9	Avg	7.42	8.00					Remaining Life:	
Spec:	ASME B31.3	Comments:	ASSUMED NOMINAL						Retirement Date:	
CML Description			Baseline			Flange ANSI:		Material: SA-234-WPB		
50	PIPING		2014	2019	Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	90° Elbow	Min		8.48	6.668	0.953	7.620		0.000	0.000
OD:	88.9	Avg	8.48	8.69					Remaining Life:	
Spec:	ASME B31.3	Comments:	ASSUMED NOMINAL						Retirement Date:	

ABSA, the pressure equipment safety authority
9410 - 20th Avenue
Edmonton, AB T6N 0A4
Partial/ Partiel ☐

**MANUFACTURER'S DATA REPORT
FOR PRESSURE VESSEL
DÉCLARATION DE CONFORMITÉ DU CONSTRUCTEUR
D'APPAREILS SOUS PRESSION**

A 584719

Upon shipment of a pressure vessel, this form fully and correctly filled in must be mailed to the office of the Chief Inspector in the province of installation in accordance with the regulations under the Act, governing the construction and installation of pressure vessels.

Au moment de l'expédition d'un appareil sous pression, ce formulaire complété correctement, doit être envoyé au bureau de l'inspecteur en chef de la province d'installation tel que prévu dans les règlements de la loi sur les appareils sous pression.

Manufactured by Construit par	Name and address of Manufacturer/ Nom et adresse du constructeur RJV Gas Field Services 4901-47th St. Bruce Rd. Vegreville, Alberta T9C 1C3
Manufactured for Construit pour	Name and address of Purchaser or Consignee/ Nom et adresse du client ou de son représentant RJV Gas Field Services 4901-47th St. Bruce Rd. Vegreville, Alberta T9C 1C3
Ultimate owner Utilisateur	Name and address/ Nom et adresse Stock
Location of installation Lieu d'installation	Address/ Adresse Stock

Pressure vessel/ Appareil

Type/ Genre Vertical 2 Phase Separator	Overall Length/Longueur totale 2285 mm sm/sm	Serial No./ N° de série 11373	Year built/Année de fabrication 2008
Provincial Registration No. - C.R.N./N° d'enregistrement provincial - N.E.C. P7217.2	National Board No./ N° National Board N/A	Drawing No./ N° de dessin V01-381	

The chemical and physical properties of all parts meet the requirements of material specifications of the A.S.M.E. Code.
Les propriétés chimiques et physiques de toutes les composantes respectent les exigences des spécifications de matériaux de code ASME.

The design, construction and workmanship conform to CSA B51. La conception, la construction et la façon sont conformes à ACNOR B51.	ASME Section VIII 2007 Edition	Division 1	Addenda/Supplément N/A	Code case No. N° de cas N/A
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Manufacturer's partial data reports properly identified and signed by authorized inspectors have been furnished for the following items of the report, and attached to this report:
Les rapports partiels du constructeur adéquatement identifiés et signés par les inspecteurs autorisés ont été produits pour les items suivants du rapport, et attachés à ce rapport:

Names of parts/ Nom de la composante	Item No./ N° d'item	Manufacturer's Name/ Nom du constructeur	Identifying Stamp/ Estampe d'identification

Shell/ Virole

Description	Material Matériau	Thickness Épaisseur	Corr. Allow. Surépais. de corr.	Diameter Diamètre	Longitudinal Joints Joints longitudinaux			P.W.H.T. Traitement therm		Girth Joints Joints de circonférence		Number of courses Nombre de sections
					Type	R.T. Radiog.	Efficiency Efficacité	Temp.	Time Durée	Type	R.T. Radiog.	
Shell	SA-106-B	21.44 mm	1.6 mm	406 mm	Sml's	N/A	100 %	N/A	N/A	1	Spot	1
											70 %	

Heads/ Têtes

Description	Material Matériau	Min. Thickn. Épais min.	Corr. Allow Surép. Corr.	Crown. Radius Rayon couron.	Knuckle Radius Petit rayon	Ellipse Ratio Rapp. ellipse	Conical Apex Angle Angle conique	Hemisph. Radius Ray. Hémisph	Flat Diameter Diam.plat	Side to pressure Côte sous pression
Top	SA-516-70	20.63 mm	1.6 mm	-----	-----	2:1	-----	-----	-----	Concave
Bottom	SA-516-70	20.63 mm	1.6 mm	-----	-----	2:1	-----	-----	-----	Concave
Removable bolts used (describe other fastenings) Boulons amovibles utilisés (décrire tout autre attache)					Mat'l Spec./ Spéc. du mat.			Grade		Size/ Dimension

Pressure - Temperature/ Pression - température

Pressure Vessel Part Partie de l'appareil	Constructed for max. allowable working pressure Construit pour une pression maximale de marche permise	At max. temp. A une temp. max.	Min. Temp. (when less than -29°C) Temp. min. (inférieure à -29°C)	Test pressure (hydro-pneumatic or combination) Pression d'épreuve (hydro-pneumatique ou combinaison)
Vessel	10,205 Kpa	38° C	-29° C	15,307 Kpa

Tube Section/ Faisceau tubulaire

Tubesheet/ Plaque tubulaire	Material/ Matériau	Diameter/ Diamètre	Nominal Thickness Épaisseur nominale	Corr. Allow. Surépais. corrosion	Attachment Mode d'attachement
Tube material/ Matériau des tubes	Diameter/ Diamètre	Nominal Thickness (gauge) Épaisseur nominale (calibre)	Number/ Nbre	Type (Straight or U) Type (Droit ou U)	Heating Surface Surface de chauffe

Jacket/ Chemise

Type of jacket/ Genre de chemise	Jacket closure Fermeture de chemise	Proof Test Pression d'épreuve	Heating Surface Surface de chauffe	Sketch/ Schéma
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Safety Valve Outlets/ Soupapes de sûreté

Number/ Nombre 1	Dimension 33.4 mm	Location/ Endroit Shell
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Nozzles and Openings/ Tubulures et ouvertures

Purpose/ But	Number Nombre	Dimension	Type	Material Matériau	Nominal Thickness Épaisseur nominale	Reinforcement material Matériau de renfort	How attached Genre d'attaches	Location/ Endroit
Inlet/Outlet	2	88.9 mm	CL600	SA-105/SA-106-B	15.24 mm	N/A	UW16.1 {c}	Shell/Top Head
(2)L.L.C./H.L.S.D./Drain	4	60.3 mm	Coupling	SA-105	CL6000	N/A	UW16.1 {c}	Shell/Bottom Head
(2) Liquid Out/ P.S.V.	3	33.4 mm	Coupling	SA-105	CL6000	N/A	UW16.1 {c}	Shell
(2) Sight Glass /Temp. Indicator	5	26.7 mm	Coupling	SA-105	CL6000	N/A	UW16.1 {c}	Shell
Pressure Indicator	1	21.4 mm	Coupling	SA-105	CL6000	N/A	UW16.1 {c}	Shell

Supports/ Supports

Skirt/ Jupe Yes/ Oui No/ Non ☒ ☐	Lugs/ Oreilles No./ Nbre No	Legs/ Pieds No./ Nbre No	Other/ Autres (Description) N/A	Attached/ Attaches (Where and How/ Méthode et endroit) Welded to bottom head
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Remarks/ Observations (Cubical capacity/ Volume)

Volume- (.262 cubic meters)
Except from impact test requirements as per UG 20(f) 1 to 5
Hydrostatically tested in the Vertical Position

Certificate of Compliance/ Certificat de conformité

We certify that the statements made in this data report are correct and that the said vessel has been constructed in accordance with the Provincial Registered design below and the requirements of standard CSA B51.

Nous certifions que les données de la déclaration de conformité sont correctes et que l'appareil a été construit en accord avec l'enregistrement provincial ci-dessous et les exigences de la norme ACNOR B51.

Provincial Registered Design
Enregistrement provincial P7217.2

Manufacturer
Constructeur RJV Gas Field Services

Signature David Hanson Date JAN 24 2008

Certificate of Compliance - Field Work/ Certificat de conformité - Installation au chantier

We certify that the field installation of all parts of the vessel conforms with the requirements of Provincial Regulations.

Nous certifions que l'installation au chantier de toutes les composantes de l'appareil est conforme aux règlements provinciaux.

Installer's Name
Nom de l'installateur _____

Signature _____

Date _____

Certificate of Shop Inspection/ Certificat d'inspection en usine

I, the undersigned, a duly authorized Boiler and Pressure Vessel Inspector
Je, soussigné, inspecteur autorisé de chaudières et appareil sous pression
employed by ABSA

of/ de Alberta
have inspected the above vessel and state that to the best of my knowledge and belief, the manufacturer has constructed the vessel in accordance with the Provincial registration CRN P7217.2
and the requirements of standard CSA B51.

ai inspecté l'appareil précité et autant que je sache, crois que le constructeur a construit l'appareil en accord avec l'enregistrement provincial NEC P7217.2
et les exigences de la norme ACNOR B51.

Inspector's Name
Nom de l'inspecteur D. Malteis AB54(R)
Signature [Signature] Date JAN 24 2008

Certificate of Field Inspection/ Certificat d'inspection - Installation au chantier

I, the undersigned, a duly authorized Boiler and Pressure Vessel Inspector
Je, soussigné, inspecteur autorisé de chaudières et appareil sous pression
employed by _____

have inspected the items not covered by the Shop Inspection Certificate and the installation of the items and state that to the best of my knowledge and belief the construction and assembly of the items are in accordance with the Provincial Regulations.

ai inspecté les composantes non couvertes par le certificat d'inspection en usine et l'installation de l'appareil et, autant que je sache, la construction et l'assemblage de l'appareil sont en accord avec les règlements provinciaux.

Inspector's Name
Nom de l'inspecteur _____

Signature _____ Date _____