

PRESSURE VESSEL & COLUMN INSPECTION REPORT

LSD: 04-33-049-19W5

Date: Jun 18, 2018

SAP Equipment ID: 66181959

VESSEL STATIC DATA						
Plant	Minehead	Op Unit	Satellite	System	Field	
Prov. Insp. #	A611099	CRN	P7217.231	Equip Tag #	NA	
Equipment Description	Gas Separator	Serial #	12199			
Manufacturer	RJV Gasfield Services	Vessel Class				
Internal Access:	Description: NA	Year Built	2011			
MAWP	1480	PSI	@ 100	°F	MDMT	-20 °F
CODE : U		RT : 2			PWHT : No	
Diameter	16"	Length (T/T)	88 in	OAL	112 in	Vertical
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	NA	Thickness	NA	mm / in	Corr Allowance 1.6 mm
Internal Coating:	NO	Internal Clad :	NO	Capacity	NA	m ³
Manway :	NO	Inspection Port :	NO	Skirt		
Nozzle Rating	600	lb ANSI	Painted :	YES	Insulated	NO

PROCESS DATA						
Product Description	Separator					
Operating Pressure	1480	PSI	Operating Temperature	100	°F	

PSV STATIC DATA						
Serial No.	Location	Set Pressure	Capacity SCFM	Manufacturer	Model / Type	Service Date / Company
012392-263	Separator	1440 psi	5180	Taylor	82E8351311	21/09/17/Access

PSV DETAILS			
	Type (Thread/Flange)	ANSI Rating	Size (inches)
PRD Inlet	Threaded	N/A	1"
PRD Outlet	Threaded	N/A	1"

NDE Equipment Records					
Procedure#	Description	Manufacturer	Model#	Serial#	Due Date

INSPECTION SUMMARY

Inspection noted surface rusting on the lower head and drain nozzle. All other items were found acceptable, separator was fit for continued service at time of inspection.

RECOMMENDATIONS

None noted

NONCONFORMANCES / INSPECTION DEFICIENCIES

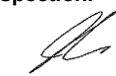
None noted

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 Justin Currie  Date Jun 16, 2018

Company Streamline Inspection Ltd PESL # 000885 API # 57452

Reviewed and Approved by _____ Date _____

PESL # _____ API # _____

Criticality Assessment Rerun

Inspection Planning Rerun

PRESSURE VESSEL & COLUMN INSPECTION REPORT

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Assessed Next Inspection Date

PRESSURE VESSEL & COLUMN INSPECTION REPORT

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DETAILED INSPECTION VISUAL EXTERNAL

ID	Description	Condition	Location	NCR	Comments
V1	General Other (Please Explain)	Acceptable			
V2	General Corrosion	Good	Surface corrosion		
V3	General Leaks	Acceptable			
V4	Vibration	Acceptable	No vibration		
V5	Dissimilar Flange Rating	N/A			
V6	Ladder/Stairway	N/A			
V7	Heads	Acceptable	Surface rust, lower head		
V8	Guy Wires	N/A			
V9	Electrical Ground	Acceptable	Secured/Indirect		
V10	Painted Inactive Corrosion	N/A			
V11	Coating/Painting	Acceptable			
V12	Expansion Joint or Bellows	N/A			
V13	Gauge/Site Glass	Acceptable			
V14	Shell	Acceptable			
V15	Jacket	N/A			
V21	Support Other (Please explain)	N/A			
V22	Foundation	N/A			
V23	Anchor Bolts	N/A			
V24	Saddle/Skirt	Acceptable	Skirt, welded		
V25	Davit	N/A			
V26	Fireproofing	N/A			
V31	Connections Other (Please explain)	Acceptable	Flanged and threaded okay		
V32	Small Branches	Acceptable			
V33	Nozzles	Acceptable			
V34	Manways	N/A			
V35	Reinforcing Pads	N/A			
V36	Inadequate Thread Engagement	Acceptable			
V37	Bolting	Acceptable			
V38	Flanges	Acceptable			
V39	Leak Clamps	N/A			
V41	Insulation Other (Please explain)	N/A			
V42	Damage	N/A			
V43	Penetrations	N/A			
V44	Insulation Jacket	N/A			
V45	Banding	N/A			
V46	Seals/Joints	Acceptable			
V51	Relief Devices Other (Please explain)	Acceptable	Good condition		
V52	Corrosion	Good	Surface corrosion		
V53	Leaks	Acceptable			
V54	Restricted Inlet/Outlet	Acceptable	No restrictions located		
V55	Manual Operation Lever	N/A			

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PHOTOS



LSD



VESEL DATA PLATE



Overview



3" Inlet Nozzle



Lower head and Drain surface rust



Pressure indicator

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Date: Jun 18, 2018

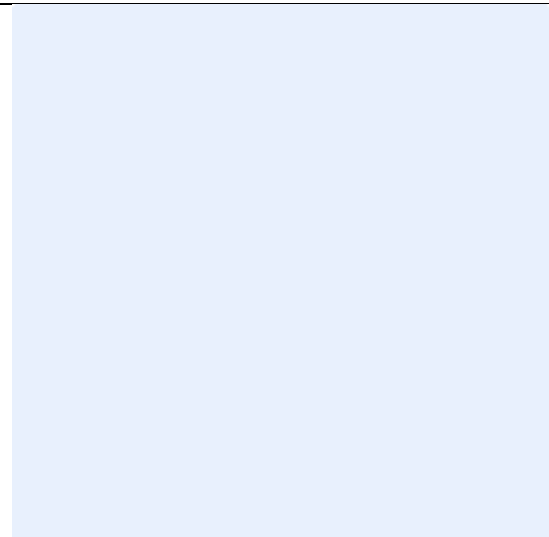
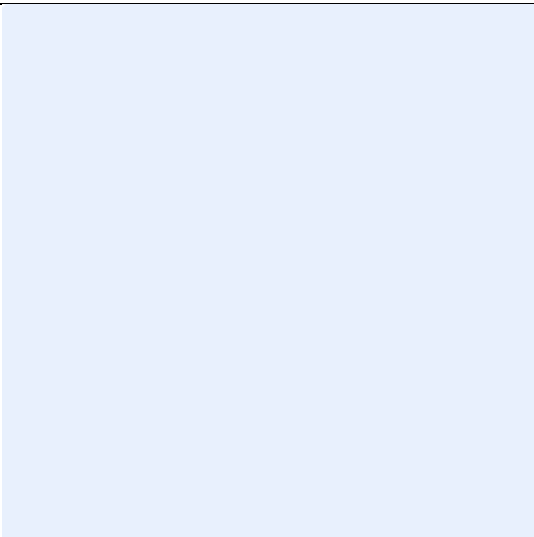
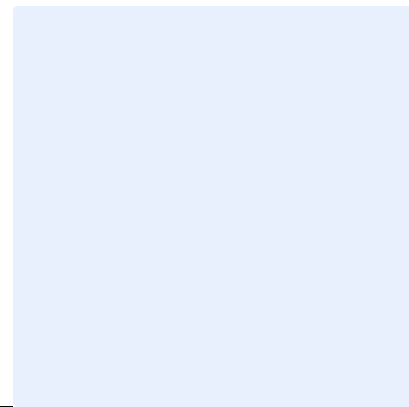
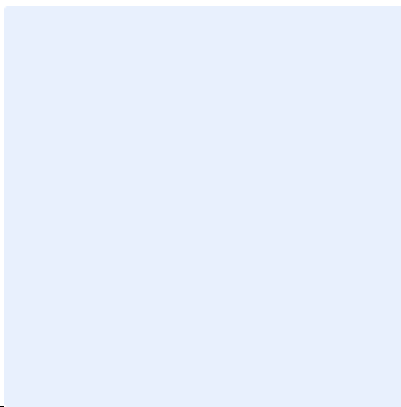
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PSV Overview



PSV Service tag

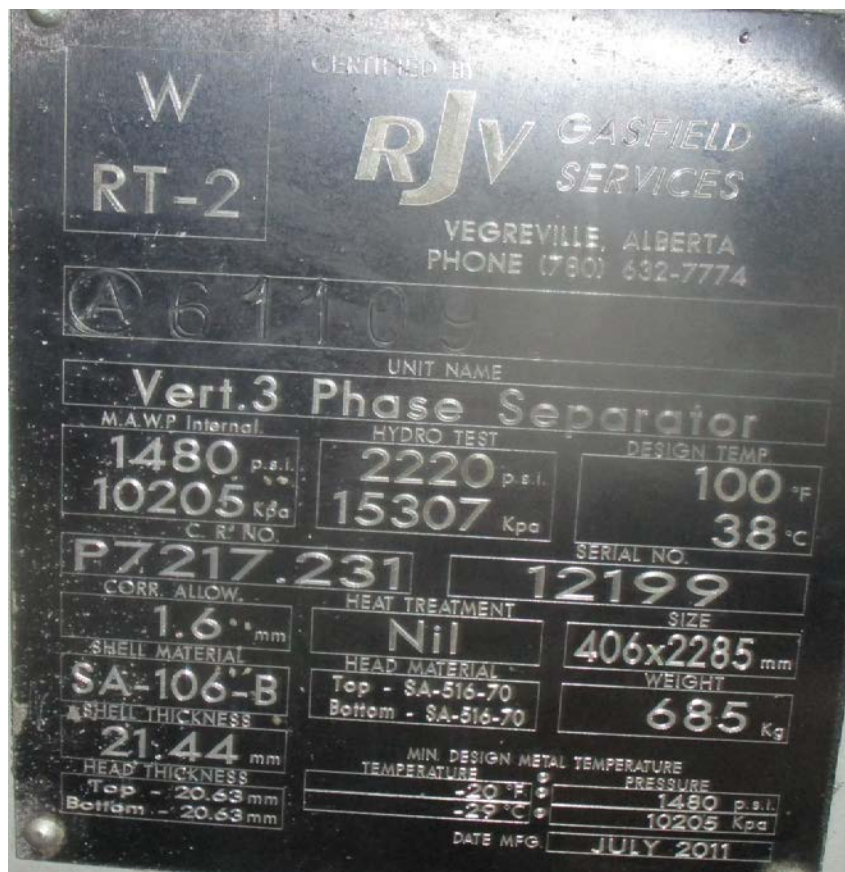


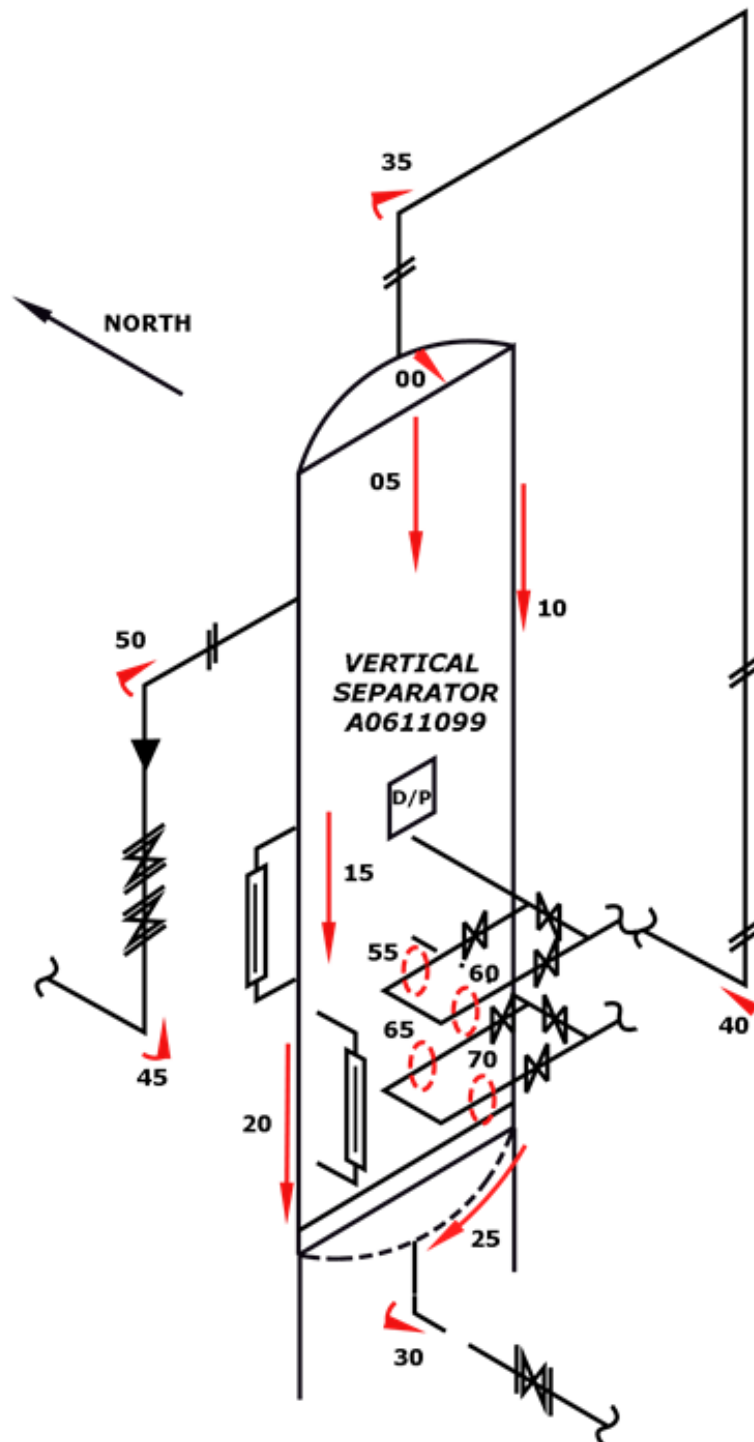


Husky Energy

Location Name:	MINEHEAD	LSD:	06-33-49-19W5 (SURF)/04-33-49-19W5 (DH)
Jur #:	A0611099	Equipment/Tag No.	
Equipment Description:	VERTICAL SEPARATOR		
Manufacturer:	RJV GASFIELD SERVICES LTD.		
Serial Number:	12199	CRN:	P7217.231
Shell MAWP:	10205	PSI	Shell Design Temp: 38 °F
Tube MAWP:		KPA	Tube Design Temp: °F
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: 2011
Size:	406	mm	Pipe / Rolled Plate: PIPE
RT:	2	Streamline Report #:	STL-18-xxx-DMS 45

NOTES: SAP# 66181959







Ultrasonic Corrosion Survey

*All values are in millimeters unless otherwise stated.

Survey Name: Husky Energy

Date: Jun 18, 2018

Streamline Report #: STL-18-xxx-DMS 45

Inspector: J. Smith

06-33-49-19W5 (SURF)/04-

LSD:	33-49-19W5 (DH)	Area:	MINEHEAD		Location:	FIELD		
Jur #:	A0611099	Tag Number:			Vessel Name:	VERTICAL SEPARATOR		
CRN:	P7217.231	Year Built:	2011		Serial Number:	12199		
RT:	2	Vessel CA:	1.600	mm	Manufacturer:	RJV GASFIELD SERVICES LTD.		
		Shell MAWP:	10205	MAWT: 38	Tube MAWP:		MAWT:	Pipe/Plate
			PSI	°F		KPA	°F	PIPE

CML Description		Baseline	Flange ANSI:			Material: SA-516-70		
00	HEAD	2018	Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	Ellipsoidal	Min	21.41	19.030	1.600	20.630	0.000	0.000
OD:	406.4	Avg	22.07					
Spec:	ASME VIII Div.1	Comments:					Remaining Life:	
							Retirement Date:	

CML Description		Baseline	Flange ANSI:			Material: SA-106-B		
05	SHELL	2018	Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	Cylindrical	Min	22.68	19.840	1.600	21.440	0.000	0.000
OD:	406.4	Avg	23.37					
Spec:	ASME VIII Div.1	Comments:					Remaining Life:	
							Retirement Date:	

CML Description		Baseline	Flange ANSI:			Material: SA-106-B		
10	SHELL	2018	Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	Cylindrical	Min	21.89	19.840	1.600	21.440	0.000	0.000
OD:	406.4	Avg	22.66					
Spec:	ASME VIII Div.1	Comments:					Remaining Life:	
							Retirement Date:	

CML Description		Baseline	Flange ANSI:			Material: SA-106-B		
15	SHELL	2018	Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	Cylindrical	Min	22.05	19.840	1.600	21.440	0.000	0.000
OD:	406.4	Avg	22.45					
Spec:	ASME VIII Div.1	Comments:					Remaining Life:	
							Retirement Date:	

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Date: Jun 18, 2018

Streamline Report #: STL-18-xxx-DMS 45

Inspector: J. Smith

06-33-49-19W5 (SURF)/04-

LSD:	33-49-19W5 (DH)	Area:	MINEHEAD		Location:	FIELD		
Jur #:	A0611099	Tag Number:			Vessel Name:	VERTICAL SEPARATOR		
CRN:	P7217.231	Year Built:	2011		Serial Number:	12199		
RT:	2	Vessel CA:	1.600	mm	Manufacturer:	RJV GASFIELD SERVICES LTD.		
		Shell MAWP:	10205	MAWT: 38	Tube MAWP:		MAWT:	Pipe/Plate
			PSI	°F		KPA	°F	PIPE

CML Description		Baseline	Flange ANSI:			Material: SA-106-B		
20	SHELL	2018	Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	Cylindrical	Min	21.16	19.840	1.600	21.440	0.000	0.040
OD:	406.4	Avg	21.79					
Spec:	ASME VIII Div.1	Comments:					Remaining Life:	Retirement Date:

CML Description		Baseline	Flange ANSI:			Material: SA-516-70		
25	HEAD	2018	Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	Ellipsoidal	Min	21.01	19.030	1.600	20.630	0.000	0.000
OD:	406.4	Avg	21.72				Remaining Life:	
Spec:	ASME VIII Div.1	Comments:					Retirement Date:	

CML Description		Baseline	Flange ANSI: Unknown		Material: SA-234-WPB			
30	NOZZLE	2018	Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	90° Elbow	Min	7.47	7.112	1.600	8.712	0.000	0.178
OD:	60.325	Avg	8.59				Remaining Life:	
Spec:	ASME VIII Div.1	Comments:	ASSUMED NOMINAL. EROSION FOUND.				Retirement Date:	

CML Description		Baseline		Flange ANSI: Unknown		Material: SA-234-WPB		
35	PIPING	2018	Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	90° Elbow	Min	5.89	4.801	0.686	5.486	0.000	0.000
OD:	88.9	Avg	6.30				Remaining Life:	
Spec:	ASME B31.3	Comments:					Retirement Date:	



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Inspector: J. Smith

06-33-49-19W5 (SURF)/04-33-49-19W5 (DH)									
LSD:		Area:		MINEHEAD		Location:		FIELD	
Jur #:		Tag Number:				Vessel Name:		VERTICAL SEPARATOR	
CRN:		Year Built:		2011		Serial Number:		12199	
RT:		Vessel CA:		1.600 mm		Manufacturer:		RJV GASFIELD SERVICES LTD.	
		Shell MAWP:		10205 PSI		MAWT:		38 °F	
						Tube MAWP:		KPA	
								MAWT:	
								Pipe/Plate	
								PIPE	
CML Description				Baseline		Flange ANSI:		Unknown	
40				2018		Flag		Material:	
PIPING						CA		SA-234-WPB	
Shape:				Min		Nominal		T Min	
90° Elbow				7.59		7.620		STCR mm/yr	
OD:				Avg				0.000	
88.9				7.90				Remaining Life:	
Spec:				Comments:				Retirement Date:	
ASME B31.3				LIMITED ACCESS.					
CML Description				Baseline		Flange ANSI:		600	
45				2018		Flag		Material:	
PIPING						CA		SA-234-WPB	
Shape:				Min		Nominal		T Min	
90° Elbow				7.90		8.712		STCR mm/yr	
OD:				Avg				0.000	
60.325				8.66				Remaining Life:	
Spec:				Comments:				Retirement Date:	
ASME B31.3				LIMITED ACCESS. EROSION NOTED.					
CML Description				Baseline		Flange ANSI:		600	
50				2018		Flag		Material:	
PIPING						CA		SA-234-WPB	
Shape:				Min		Nominal		T Min	
90° Elbow				5.36		5.486		STCR mm/yr	
OD:				Avg				0.000	
88.9				5.69				Remaining Life:	
Spec:				Comments:				Retirement Date:	
ASME B31.3				LIMITED ACCESS.					
CML Description				Baseline		Flange ANSI:		Unknown	
55				2018		Flag		Material:	
PIPING						CA		SA-106-B	
Shape:				Min		Nominal		T Min	
360° Circ				6.40		6.350		STCR mm/yr	
OD:				Avg				0.000	
33.401				6.71				Remaining Life:	
Spec:				Comments:				Retirement Date:	
ASME B31.3				ASSUMED NOMINAL					



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LSD:	33-49-19W5 (DH)	Area:	MINEHEAD	Location:	FIELD				
Jur #:	A0611099	Tag Number:		Vessel Name:	VERTICAL SEPARATOR				
CRN:	P7217.231	Year Built:	2011	Serial Number:	12199				
RT:	2	Vessel CA:	1.600 mm	Manufacturer:	RJV GASFIELD SERVICES LTD.				
		Shell MAWP:	10205 PSI	MAWT:	38 °F	Tube MAWP:	KPA	MAWT:	°F
									Pipe/Plate PIPE
CML Description		Baseline		Flange ANSI: Unknown		Material: SA-106-B			
60	PIPING	2018		Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	360° Circ	Min	6.55	5.556	0.794	6.350		0.000	0.000
OD:	33.401	Avg	6.81					Remaining Life:	
Spec:	ASME B31.3	Comments:	ASSUMED NOMINAL					Retirement Date:	
CML Description		Baseline		Flange ANSI: Unknown		Material: SA-106-B			
65	PIPING	2018		Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	360° Circ	Min	6.48	5.556	0.794	6.350		0.000	0.000
OD:	33.401	Avg	6.68					Remaining Life:	
Spec:	ASME B31.3	Comments:	ASSUMED NOMINAL					Retirement Date:	
CML Description		Baseline		Flange ANSI: 600		Material: SA-234-WPB			
70	PIPING	2018		Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	90° Elbow	Min	6.53	5.556	0.794	6.350		0.000	0.000
OD:	33.401	Avg	6.83					Remaining Life:	
Spec:	ASME B31.3	Comments:						Retirement Date:	