

PRESSURE VESSEL & COLUMN INSPECTION REPORT

LSD: 16-22-049-19W4M

Date: May 9, 2016

SAP Equipment ID: 66174977

VESSEL STATIC DATA									
Plant Minehead				Op Unit Field			System		
Prov. Insp. # A0607778				CRN P7217.231			Equip Tag #		
Equipment Description 3 Phase Separator							Serial # 12095		
Manufacturer RJV Gas field Services							Vessel Class		
Internal Access: Description: 2" Ports							Year Built 2011		
MAWP 1480		PSI		@ 100		°F		MDMT -20 °F	
CODE :				RT : 2				PWHT :	
Diameter 16"		Length (T/T) 90 in		OAL		mm			
Shell	Mat'I	SA-106-B		Thickness	21.44	mm		Corr Allowance	1.6 mm
Head	Mat'I	SA-516-70		Thickness	20.63	mm		Corr Allowance	1.6 mm
Nozzle	Mat'I			Thickness	mm / in		Corr Allowance		mm
Internal Coating:				Internal Clad :				Capacity m ³	
Manway : NO				Inspection Port : YES				Skirt	
Nozzle Rating	600	lb ANSI		Painted :	YES		Insulated	NO	

PROCESS DATA						
Product Description	Gas			Sweet		
Operating Pressure	380	PSI	Operating Temperature	50	°F	

PSV STATIC DATA						
Serial No.	Location	Set Pressure	Capacity SCFM	Manufacturer	Model / Type	Service Date / Company
010610-14	North shell	1440	5180	Taylor	82E8351311	07/2015

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 and piping is secured. Vessel/piping is painted. Paint is in good condition. Data plate is secured and legible. No short bolting found. Ground cable located. PSV set below MAWP, vents to atmosphere. PSV service tag is attached and service is up to date. Downhole location 100/10-22-049-19W5. UT was done by Streamline Inspection May, 2016.

RECOMMENDATIONS

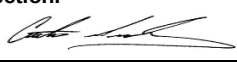
NONCONFORMANCES / INSPECTION DEFICIENCIES

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 Curtis Graham  Date May 9, 2016

Company Streamline Inspection Ltd PESL # 000785 API # 51479

Reviewed and Approved by _____ Date _____

PESL # _____ API # _____

Criticality Assessment Rerun

Inspection Planning Rerun

PRESSURE VESSEL & COLUMN INSPECTION REPORT

LSD: 16-22-049-19W4M

Date: May 9, 2016

SAP Equipment ID: 66174977

Assessed Next Inspection Date

PRESSURE VESSEL & COLUMN INSPECTION REPORT

LSD: 16-22-049-19W4M

Date: May 9, 2016

SAP Equipment ID: 66174977

DETAILED INSPECTION VISUAL EXTERNAL

ID	Description	Condition	Location	NCR	Comments
V1	General Other (Please Explain)	N/A			
V2	General Corrosion	N/A			
V3	General Leaks	Acceptable	No evidence of leaks		
V4	Vibration	Acceptable	No vibration		
V5	Dissimilar Flange Rating	Acceptable			
V6	Ladder/Stairway	N/A			
V7	Heads	Acceptable			
V8	Guy Wires	N/A			
V9	Electrical Ground	Acceptable	Indirect ground		
V10	Painted Inactive Corrosion	N/A	No pitting located		
V11	Coating/Painting	Acceptable	Good condition		
V12	Expansion Joint or Bellows	N/A			
V13	Gauge/Site Glass	Acceptable	Clear & legible		
V14	Shell	Acceptable			
V15	Jacket	N/A			
V21	Support Other (Please explain)	N/A			
V22	Foundation	Acceptable			
V23	Anchor Bolts	N/A			
V24	Saddle/Skirt	Acceptable	Secured		
V25	Davit	N/A			
V26	Fireproofing	N/A			
V31	Connections Other (Please explain)	Acceptable	Instrumentation		
V32	Small Branches	Acceptable			
V33	Nozzles	Acceptable	No short bolting		
V34	Manways	N/A			
V35	Reinforcing Pads	N/A			
V36	Inadequate Thread Engagement	Acceptable			
V37	Bolting	Acceptable	No short bolting		
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	Joined as per code		
V52	Corrosion	N/A			
V53	Leaks	Acceptable	No evidence found		
V54	Restricted Inlet/Outlet	N/A			
V55	Manual Operation Lever	Acceptable			

PRESSURE VESSEL & COLUMN INSPECTION REPORT

LSD: 16-22-049-19W4M

Date: May 9, 2016

SAP Equipment ID: 66174977

PHOTOS



LSD



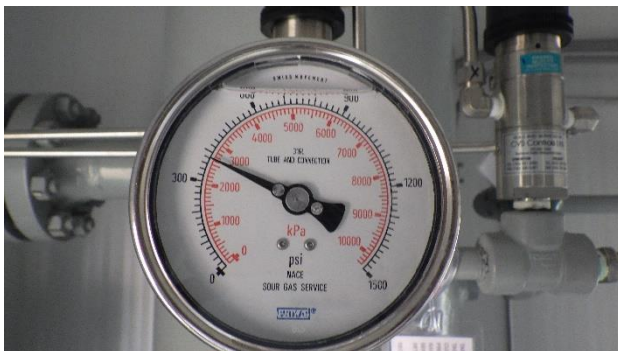
VESSEL DATA PLATE



VESSEL OVERVIEW



FOUNDATION OVERVIEW



PRESSURE GAUGE



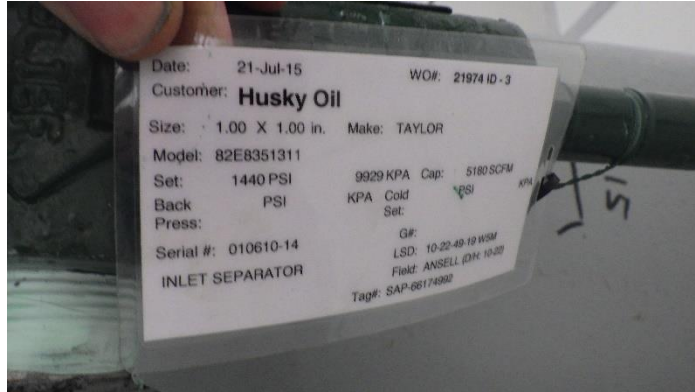
PSV DATA PLATE

PRESSURE VESSEL & COLUMN INSPECTION REPORT

LSD: 16-22-049-19W4M

Date: May 9, 2016

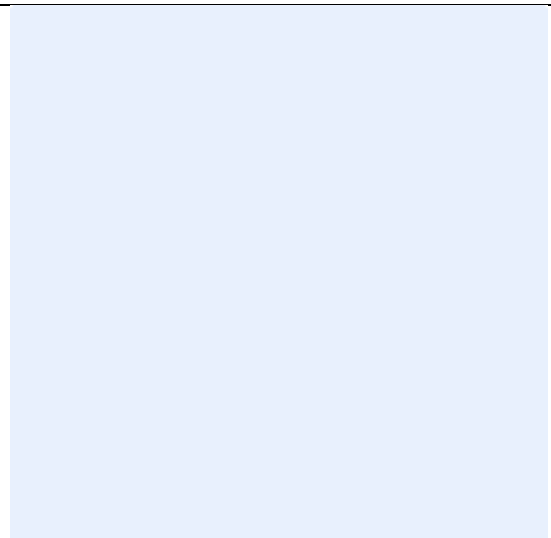
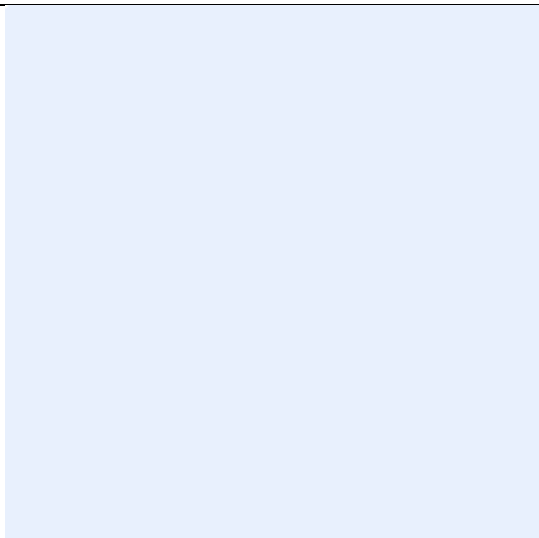
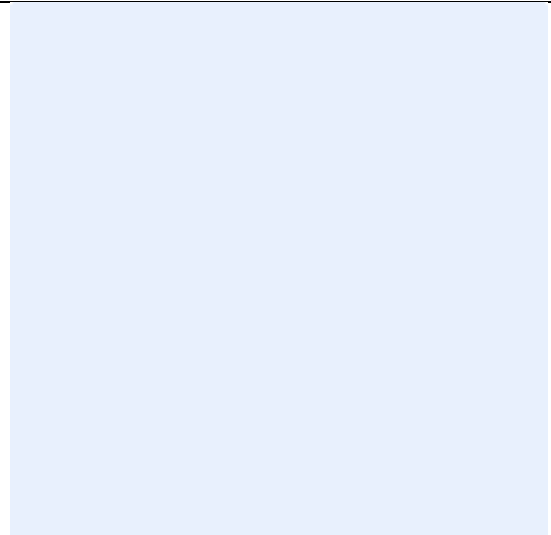
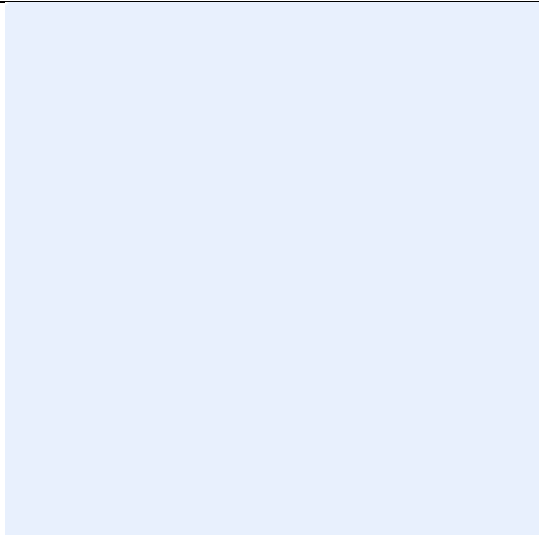
SAP Equipment ID: 66174977



PSV SERVICE TAG

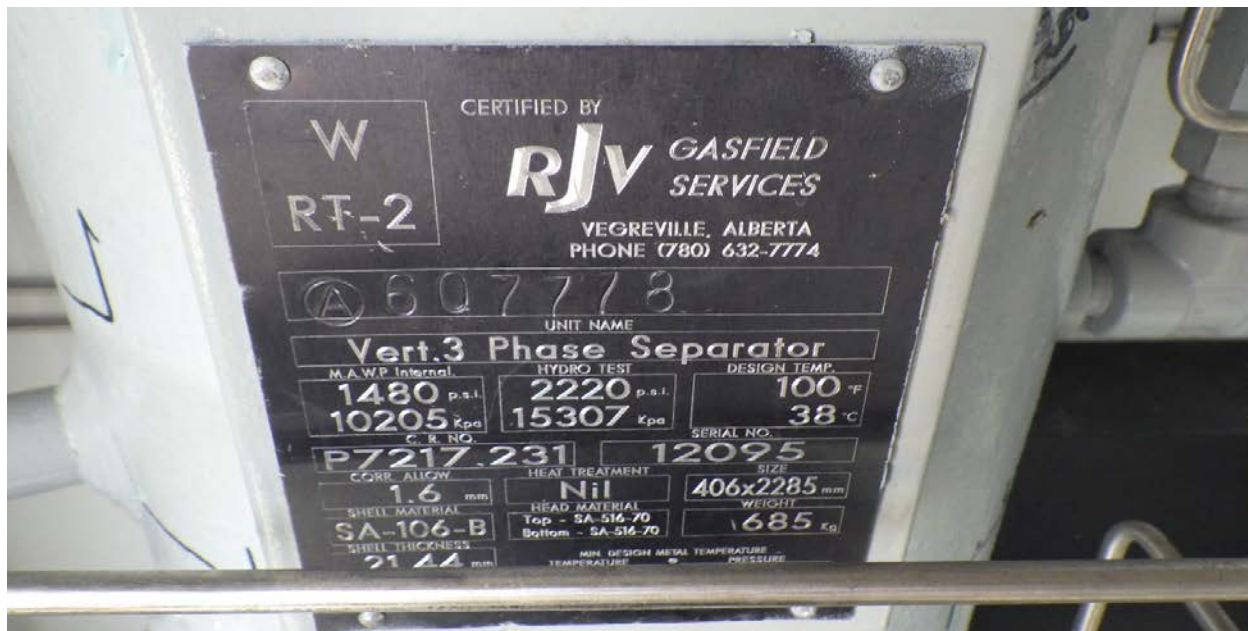


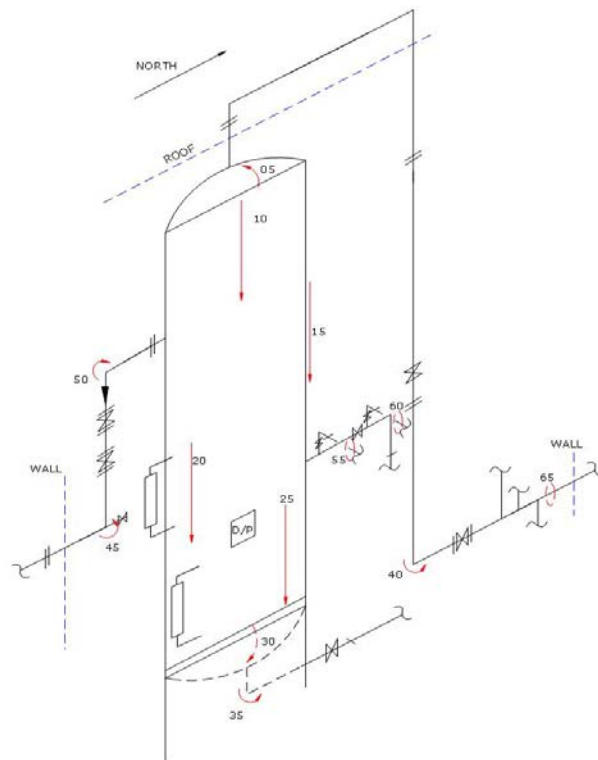
PSV OVERVIEW



Location Name:	MINEHEAD	LSD:	16-22-049-19W5M
Jur #:	A0607778	Equipment/Tag No.	
Equipment Description:	3 PHASE SEPARATOR		
Manufacturer:	RJV GASFIELD SERVICES		
Serial Number:	12095	CRN:	P7217.213
Shell MAWP:	1480	PSI	Shell Design Temp: 100 °F
Tube MAWP:		PSI	Tube Design Temp: °F
Shell Material:	A-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		

NOTES:







Ultrasonic Corrosion Survey

*All values are in millimeters unless otherwise stated.

Survey Name: Husky Energy

Date: MAY 9/2016

Inspector: C. Graham

LSD: 16-22-049-19W5M	Area: MINEHEAD	Location: FIELD
Jur #: A0607778	Tag Number:	Vessel Name: 3 PHASE SEPARATOR
CRN: P7217.213	Year Built: 2011	Serial Number: 12095
RT: 2	Vessel CA: 1.600 mm	Manufacturer: RJV GASFIELD SERVICES
	Shell MAWP: 1480 PSI	Tube MAWP: MAWTF: 100 °F
		MAWTF: °F
		Pipe/Plate PIPE
TML Description		Material: SA-516-70
05 HEAD	Baseline 2016	Flag CA Nominal T Min STCR mm/yr LTCR mm/yr
Shape: Ellipsoidal	Min 21.29	19.030 1.600 20.630 0.000 0.000
OD: 406.4	Avg 21.64	
Spec: ASME VIII Div.1	Comments:	Remaining Life: Retirement Date:
TML Description		Material: A-106-B
10 SHELL	Baseline 2016	Flag CA Nominal T Min STCR mm/yr LTCR mm/yr
Shape: Cylindrical	Min 20.73	19.840 1.600 21.440 0.000 0.143
OD: 406.4	Avg 21.08	
Spec: ASME VIII Div.1	Comments:	Remaining Life: Retirement Date:
TML Description		Material: A-106-B
15 SHELL	Baseline 2016	Flag CA Nominal T Min STCR mm/yr LTCR mm/yr
Shape: Cylindrical	Min 19.79	19.840 1.600 21.440 16.739 0.000 0.331
OD: 406.4	Avg 20.35	
Spec: ASME VIII Div.1	Comments:	Remaining Life: 9 Yrs Retirement Date: 2025
TML Description		Material: A-106-B
20 SHELL	Baseline 2016	Flag CA Nominal T Min STCR mm/yr LTCR mm/yr
Shape: Cylindrical	Min 20.83	19.840 1.600 21.440 0.000 0.122
OD: 406.4	Avg 21.34	
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: MAY 9/2016

Inspector: C. Graham

LSD:	16-22-049-19W5M	Area:	MINEHEAD		Location:	FIELD			
Jur #:	A0607778	Tag Number:			Vessel Name:	3 PHASE SEPARATOR			
CRN:	P7217.213	Year Built:	2011		Serial Number:	12095			
RT:	2	Vessel CA:	1.600	mm	Manufacturer:	RJV GASFIELD SERVICES			
		Shell MAWP:	1480	MAWTF:	100	Tube MAWP:		MAWTF:	
			PSI		°F		PSI		°F
									Pipe/Plate
									PIPE
TML Description			Baseline			Material: A-106-B			
25	SHELL		2016		Flag	CA	Nominal	T Min	STCR mm/yr
Shape:	Cylindrical	Min	20.17		19.840	1.600	21.440		0.000
OD:	406.4	Avg	20.90						0.254
Spec:	ASME VIII Div.1	Comments:							Remaining Life:
									Retirement Date:
TML Description			Baseline			Material: SA-516-70			
30	HEAD		2016		Flag	CA	Nominal	T Min	STCR mm/yr
Shape:	Ellipsoidal	Min	20.75		19.030	1.600	20.630		0.000
OD:	406.4	Avg	21.01						0.000
Spec:	ASME VIII Div.1	Comments:							Remaining Life:
									Retirement Date:
TML Description			Baseline			Material: A-234-WPB			
35	NOZZLE		2016		Flag	CA	Nominal	T Min	STCR mm/yr
Shape:	90° Elbow	Min	8.13		7.623	1.089	8.712		0.000
OD:	60.325	Avg	8.51						0.117
Spec:	ASME B31.3	Comments:	ASSUMED NOMINAL						Remaining Life:
									Retirement Date:
TML Description			Baseline			Material: A-234-WPB			
40	PIPING		2016		Flag	CA	Nominal	T Min	STCR mm/yr
Shape:	90° Elbow	Min	6.73		4.801	0.686	5.486		0.000
OD:	88.9	Avg	7.59						0.000
Spec:	ASME B31.3	Comments:	EROSION NOTED						Remaining Life:
									Retirement Date:



Ultrasonic Corrosion Survey

*All values are in millimeters unless otherwise stated.

Survey Name: Husky Energy

Date: MAY 9/2016

Inspector: C. Graham

LSD:	16-22-049-19W5M	Area:	MINEHEAD		Location:	FIELD				
Jur #:	A0607778	Tag Number:			Vessel Name:	3 PHASE SEPARATOR				
CRN:	P7217.213	Year Built:	2011		Serial Number:	12095				
RT:	2	Vessel CA:	1.600	mm	Manufacturer:	RJV GASFIELD SERVICES				
		Shell MAWP:	1480	MAWTF:	100	Tube MAWP:		MAWTF:		Pipe/Plate
			PSI		°F		PSI		°F	PIPE
TML Description			Baseline			Material: A-234-WPB				
45	PIPING		2016		Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	90° Elbow	Min	7.92		7.623	1.089	8.712		0.000	0.157
OD:	60.325	Avg	8.46						Remaining Life:	
Spec:	ASME B31.3	Comments:	EROSION NOTED					Retirement Date:		
TML Description			Baseline			Material: A-234-WPB				
50	PIPING		2016		Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	90° Elbow	Min	5.00		4.801	0.686	5.486		0.000	0.097
OD:	88.9	Avg	5.59						Remaining Life:	
Spec:	ASME B31.3	Comments:	ASSUMED NOMINAL					Retirement Date:		
TML Description			Baseline			Material: SA-106-B				
55	PIPING		2016		Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	360° Circ	Min	6.05		5.556	0.794	6.350		0.000	0.061
OD:	33.401	Avg	6.45						Remaining Life:	
Spec:	ASME B31.3	Comments:	ASSUMED NOMINAL					Retirement Date:		
TML Description			Baseline			Material: SA-106-B				
60	PIPING		2016		Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	360° Circ	Min	6.02		5.556	0.794	6.350		0.000	0.066
OD:	33.401	Avg	6.50						Remaining Life:	
Spec:	ASME B31.3	Comments:	ASSUMED NOMINAL					Retirement Date:		



Ultrasonic Corrosion Survey

*All values are in millimeters unless otherwise stated.

Survey Name: Husky Energy

Date: MAY 9/2016

Inspector: C. Graham

LSD:	16-22-049-19W5M	Area:	MINEHEAD	Location:	FIELD
Jur #:	A0607778	Tag Number:		Vessel Name:	3 PHASE SEPARATOR
CRN:	P7217.213	Year Built:	2011	Serial Number:	12095
RT:	2	Vessel CA:	1.600 mm	Manufacturer:	RJV GASFIELD SERVICES
		Shell MAWP:	1480 PSI	Tube MAWP:	MAWTF: °F
					Pipe/Plate PIPE
TML Description		Baseline		Material:	SA-106-B
65 PIPING		2016	Flag	CA	Nominal T Min
Shape: 360° Circ	Min	5.21	4.801	0.686	5.486
OD: 88.9	Avg	5.64			
Spec: ASME B31.3	Comments:	ASSUMED NOMINAL			
					STCR mm/yr
					0.000
					LT CR mm/yr
					0.056
					Remaining Life:
					Retirement Date: