

PRESSURE VESSEL & COLUMN INSPECTION REPORT

LSD: 13-22-050-19W5

Date: Jun 17, 2018

SAP Equipment ID: 66168641

VESSEL STATIC DATA									
Plant Minehead				Op Unit Satellite				System Field	
Prov. Insp. # A604368				CRN P7217.231				Equip Tag # NA	
Equipment Description Gas Separator								Serial # 12014	
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'I	SA-106B		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	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
007956-58	Separator	1440 psi	5180	Taylor	82E8351311	19/04/16/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 shell, lower head and drain nozzle. Coating failures were present throughout the vessel. Sight glass connections noted leaks. All other items were found acceptable, separator was fit for continued service at time of inspection.

RECOMMENDATIONS

All leaking connections should be addressed to prevent future leakage. Coating failures on shell should be repaired to prevent corrosion.

NONCONFORMANCES / INSPECTION DEFICIENCIES

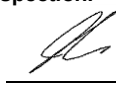
None noted

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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Date: Jun 17, 2018

SAP Equipment ID: 66168641

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	Good	Sight glass		
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	Poor	Coating Failures		
V12	Expansion Joint or Bellows	N/A			
V13	Gauge/Site Glass	Good	Leak		
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	Good	Leaks found		
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	Good	Leaks found		
V51	Relief Devices Other (Please explain)	Acceptable	Good condition		
V52	Corrosion	Good	Surface corrosion		
V53	Leaks	Good	Sight glass		
V54	Restricted Inlet/Outlet	Acceptable	No restrictions located		
V55	Manual Operation Lever	N/A			

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PHOTOS



LSD



VESSEL DATA PLATE



Overview



Lower Sight Glass Leak



Surface rust on lower head and drain nozzle



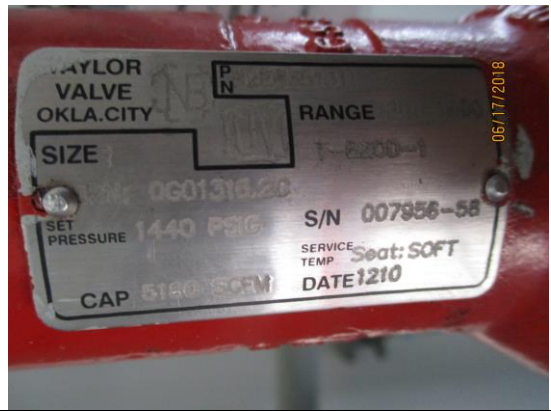
Coating failure on shell

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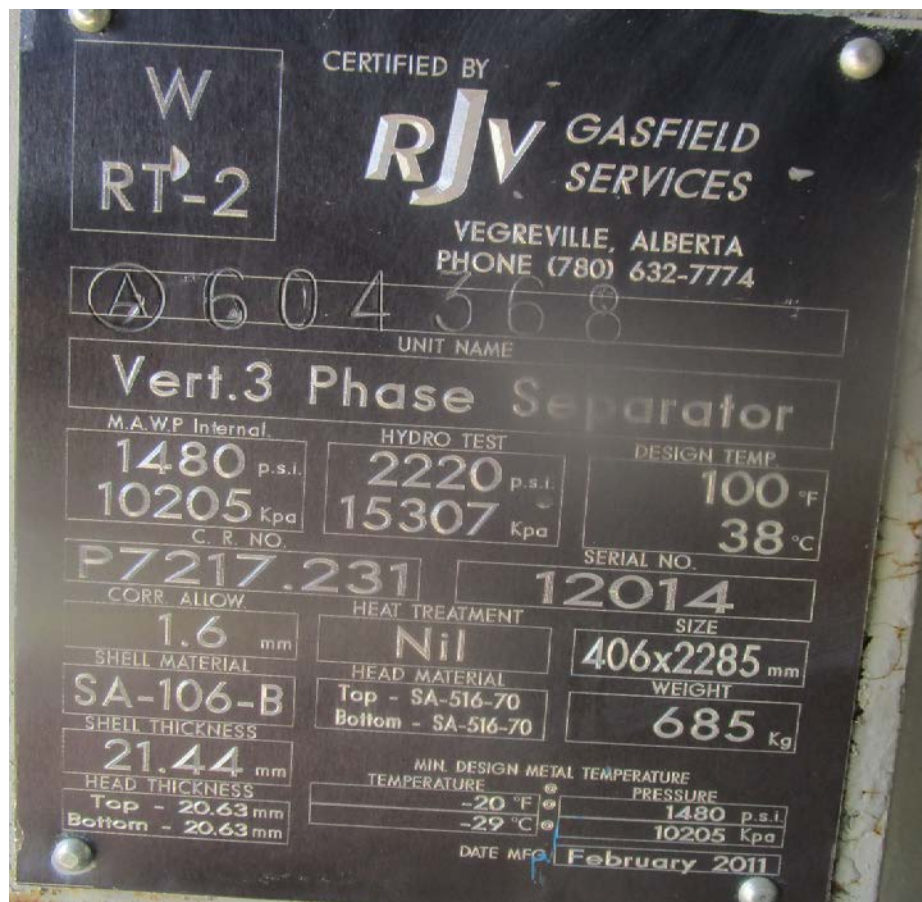
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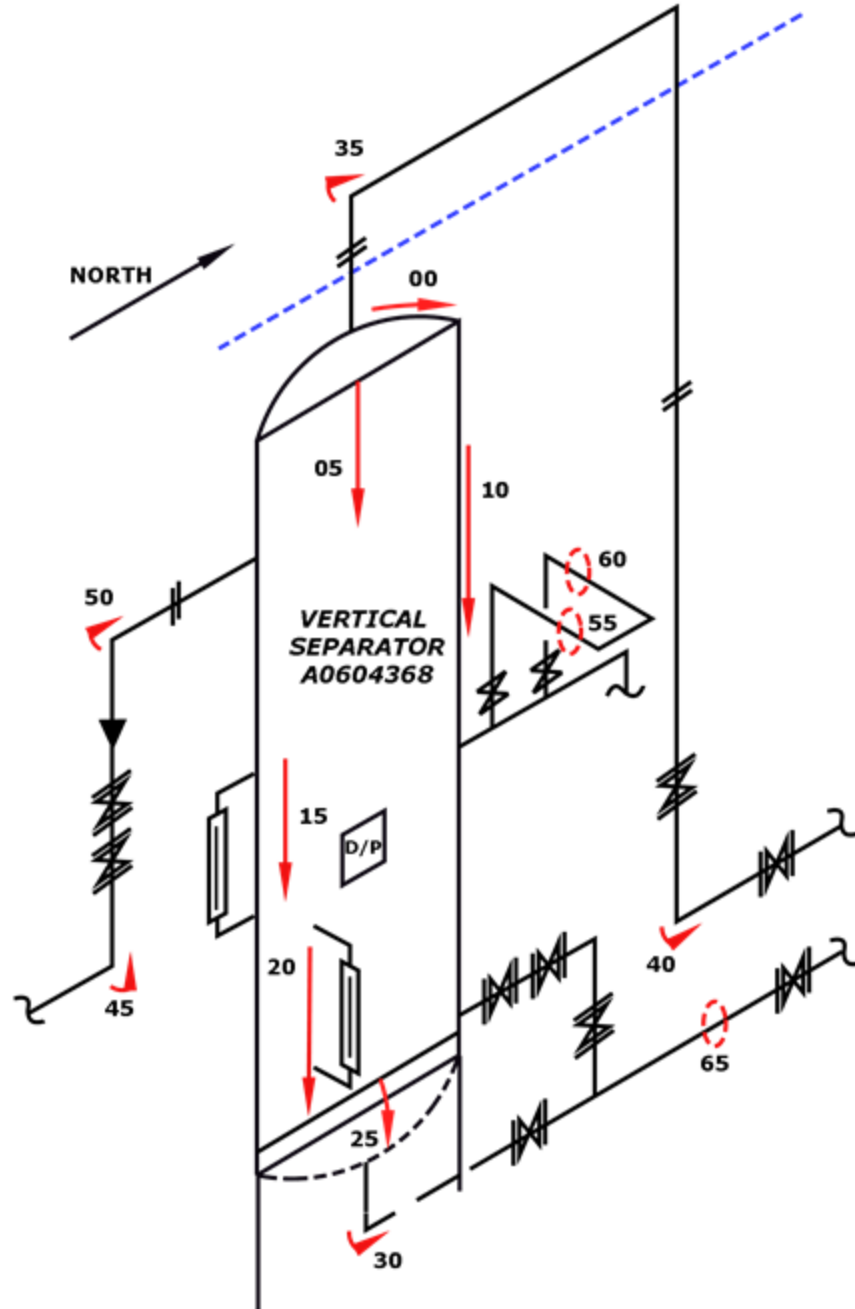
 06/17/2018	 06/17/2018
Coating failure on outlet nozzle	PSV Data Plate
 06/17/2018	
PSV Service tag	



Location Name:	MINEHEAD	LSD:	13-22-50-19W5
Jur #:	A0604368	Equipment/Tag No.	
Equipment Description:	VERTICAL SEPARATOR		
Manufacturer:	RJV GASFIELD SERVICES LTD.		
Serial Number:	12014	CRN:	P7217.231
Shell MAWP:	10205	KPA	Shell Design Temp: 38 °C
Tube MAWP:		KPA	Tube Design Temp: °C
Shell Material:	SA-106-B	Head Material:	SA-516-70N
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 37

NOTES: SAP# 66168641









Ultrasonic Corrosion Survey

*All values are in millimeters unless otherwise stated.

Survey Name: Husky Energy

Date: Jun 17, 2018

Streamline Report #: STL-18-xxx-DMS 37

Inspector: E. Legare

LSD: 13-22-50-19W5	Area: MINEHEAD	Location: FIELD
Jur #: A0604368	Tag Number:	Vessel Name: VERTICAL SEPARATOR
CRN: P7217.231	Year Built: 2011	Serial Number: 12014
RT: 2	Vessel CA: 1.600 mm	Manufacturer: RJV GASFIELD SERVICES LTD.
	Shell MAWP: 10205 KPA	Tube MAWP: KPA
	MAWT: 38 °C	MAWT: °C
		Pipe/Plate PIPE
CML Description	Baseline	Flange ANSI:
00 HEAD	2018	Material: SA-516-70N
Shape: Ellipsoidal	Min 20.98	CA 1.600
OD: 406.4	Avg 21.56	Nominal 20.630
Spec: ASME VIII Div.1	Comments:	T Min
		STCR mm/yr 0.000
		LTCR mm/yr 0.000
		Remaining Life:
		Retirement Date:
CML Description	Baseline	Flange ANSI:
05 SHELL	2018	Material: SA-106-B
Shape: Cylindrical	Min 21.13	CA 1.600
OD: 406.4	Avg 21.23	Nominal 21.440
Spec: ASME VIII Div.1	Comments:	T Min
		STCR mm/yr 0.000
		LTCR mm/yr 0.044
		Remaining Life:
		Retirement Date:
CML Description	Baseline	Flange ANSI:
10 SHELL	2018	Material: SA-106-B
Shape: Cylindrical	Min 20.73	CA 1.600
OD: 406.4	Avg 21.41	Nominal 21.440
Spec: ASME VIII Div.1	Comments: ISOLATED PITS	T Min
		STCR mm/yr 0.000
		LTCR mm/yr 0.102
		Remaining Life:
		Retirement Date:
CML Description	Baseline	Flange ANSI:
15 SHELL	2018	Material: SA-106-B
Shape: Cylindrical	Min 21.11	CA 1.600
OD: 406.4	Avg 21.54	Nominal 21.440
Spec: ASME VIII Div.1	Comments: ISOLATED PITS	T Min
		STCR mm/yr 0.000
		LTCR mm/yr 0.048
		Remaining Life:
		Retirement Date:



Ultrasonic Corrosion Survey

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Date: Jun 17, 2018

Streamline Report #: STL-18-xxx-DMS 37

Inspector: E. Legare

LSD: 13-22-50-19W5	Area: MINEHEAD	Location: FIELD
Jur #: A0604368	Tag Number:	Vessel Name: VERTICAL SEPARATOR
CRN: P7217.231	Year Built: 2011	Serial Number: 12014
RT: 2	Vessel CA: 1.600 mm	Manufacturer: RJV GASFIELD SERVICES LTD.
	Shell MAWP: 10205 KPA	Tube MAWP: KPA
	MAWT: 38 °C	MAWT: °C
		Pipe/Plate PIPE

CML Description	Baseline	Flange ANSI:	Material: SA-106-B
20 SHELL	2018	CA	T Min
Shape: Cylindrical	Min 20.88	Nominal 21.440	STCR mm/yr 0.000
OD: 406.4	Avg 21.79		LTCR mm/yr 0.080
Spec: ASME VIII Div.1	Comments:		Remaining Life:
			Retirement Date:

CML Description	Baseline	Flange ANSI:	Material: SA-516-70N
25 HEAD	2018	CA	T Min
Shape: Ellipsoidal	Min 21.44	Nominal 20.630	STCR mm/yr 0.000
OD: 406.4	Avg 21.56		LTCR mm/yr 0.000
Spec: ASME VIII Div.1	Comments:		Remaining Life:
			Retirement Date:

CML Description	Baseline	Flange ANSI: Unknown	Material: SA-234-WPB
30 NOZZLE	2018	CA	T Min
Shape: 90° Elbow	Min 8.20	Nominal 8.712	STCR mm/yr 0.000
OD: 60.325	Avg 8.51		LTCR mm/yr 0.073
Spec: ASME VIII Div.1	Comments: ASSUMED NOMINAL		Remaining Life:
			Retirement Date:

CML Description	Baseline	Flange ANSI: Unknown	Material: SA-234-WPB
35 PIPING	2018	CA	T Min
Shape: 90° Elbow	Min 4.75	Nominal 5.486	STCR mm/yr 0.000
OD: 88.9	Avg 5.33		LTCR mm/yr 0.105
Spec: ASME B31.3	Comments: EROSION FOUND		Remaining Life: 14 Yrs
			Retirement Date: 2032



Ultrasonic Corrosion Survey

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Inspector: E. Legare

LSD: 13-22-50-19W5	Area: MINEHEAD	Location: FIELD
Jur #: A0604368	Tag Number:	Vessel Name: VERTICAL SEPARATOR
CRN: P7217.231	Year Built: 2011	Serial Number: 12014
RT: 2	Vessel CA: 1.600 mm	Manufacturer: RJV GASFIELD SERVICES LTD.
	Shell MAWP: 10205 KPA	Tube MAWP: KPA
	MAWT: 38 °C	MAWT: °C
		Pipe/Plate PIPE
CML Description	Baseline	Flange ANSI: Unknown
40 PIPING	2018	Material: SA-234-WPB
Shape: 90° Elbow	Min 7.11	CA 0.953
OD: 88.9	Avg 7.26	Nominal 7.620
Spec: ASME B31.3	Comments:	T Min 0.000
		STCR mm/yr 0.000
		LTCR mm/yr 0.073
		Remaining Life:
		Retirement Date:
CML Description	Baseline	Flange ANSI: Unknown
45 PIPING	2018	Material: SA-234-WPB
Shape: 90° Elbow	Min 8.36	CA 1.089
OD: 60.325	Avg 8.74	Nominal 8.712
Spec: ASME B31.3	Comments:	T Min 0.000
		STCR mm/yr 0.000
		LTCR mm/yr 0.051
		Remaining Life:
		Retirement Date:
CML Description	Baseline	Flange ANSI: Unknown
50 PIPING	2018	Material: SA-234-WPB
Shape: 90° Elbow	Min 5.36	CA 0.686
OD: 88.9	Avg 5.56	Nominal 5.486
Spec: ASME B31.3	Comments:	T Min 0.000
		STCR mm/yr 0.000
		LTCR mm/yr 0.018
		Remaining Life:
		Retirement Date:
CML Description	Baseline	Flange ANSI: Unknown
55 PIPING	2018	Material: SA-106-B
Shape: 360° Circ	Min 6.35	CA 0.794
OD: 33.401	Avg 6.48	Nominal 6.350
Spec: ASME B31.3	Comments: ASSUMED NOMINAL	T Min 0.000
		STCR mm/yr 0.000
		LTCR mm/yr 0.000
		Remaining Life:
		Retirement Date:



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Inspector: E. Legare

LSD: 13-22-50-19W5	Area: MINEHEAD	Location: FIELD
Jur #: A0604368	Tag Number:	Vessel Name: VERTICAL SEPARATOR
CRN: P7217.231	Year Built: 2011	Serial Number: 12014
RT: 2	Vessel CA: 1.600 mm	Manufacturer: RJV GASFIELD SERVICES LTD.
	Shell MAWP: 10205 KPA	Tube MAWP: KPA
	MAWT: 38 °C	MAWT: °C
		Pipe/Plate PIPE
CML Description	Baseline	Flange ANSI: Unknown
60 PIPING	2018	Material: SA-106-B
Shape: 360° Circ	Min 6.17	CA 0.794
OD: 33.401	Avg 6.40	Nominal 6.350
Spec: ASME B31.3	Comments: ASSUMED NOMINAL	T Min
		STCR mm/yr 0.000
		LTCR mm/yr 0.025
		Remaining Life:
		Retirement Date:
CML Description	Baseline	Flange ANSI: Unknown
65 PIPING	2018	Material: SA-106-B
Shape: 360° Circ	Min 6.10	CA 0.794
OD: 33.401	Avg 6.55	Nominal 6.350
Spec: ASME B31.3	Comments: ASSUMED NOMINAL	T Min
		STCR mm/yr 0.000
		LTCR mm/yr 0.036
		Remaining Life:
		Retirement Date: