



Vessel Inspection Report

Jur #:	509830	Serial #:	04-538	Insp. Date:	Aug 27 2019
Client - Location Details					
Client:		District:	Pembina	Facility:	Easyford
		Plant Type:	Sour Oil	Facility Type:	Battery
Surface LSD:	11-14-50-8 W5	Downhole LSD:		Skid #:	
Vessel Details					
Description:	Horizontal Separator				
Jur #:	509830	Equipment #:		CRN:	R-6102.2
MFR:	Dacro	MFR S/N:	04-538		
MFR Date:	04-02-24	Orientation:	Horizontal	Code:	ASME 8 Div 1
Lgth/Ht:	40 ft	O.D.:	10 ft	C/A:	0.125"
MAWP:	730 psi	MAWT:	100 °F	MDMT:	-20 °F
OP Pressure:		OP Temp:		RT:	1
Status:	Blinded/ Disconnected	External Insulation:	Yes	HT:	Yes
Head					
Heads	Location:	Type:	Material:	Nominal:	
1:	East	Ellipsoidal	SA-516-70N	2.253"	
2:	West	Ellipsoidal	SA-516-70N	2.253"	
Shell					
Material:	SA-516-70N	Nominal:	2.5"		
Comments:					
PSV Details					
PSV#:		Make/Model:		CRN:	
MFR:		MFR S/N:		MFR Date:	
Service Co.:		Service Tag:		Last Service:	
Set:		Cap:		PSV Side:	
Code:		Location:		Vented to:	
Cap Seal:		Nameplate:		Drainage:	
Properly Supported:		External Body Condition:			
	Size:	Type:	# Rating:	Block Valve:	Locked / Carsealed:
Inlet:					
Outlet:					
PSV set at or below MAWP:		PSV set pressure verified against MAWP of Vessel:			
Repair/ Alteration/ PSV Calibration Required:	To be serviced				




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Good: No Concerns found (may still have recommendations); Fair: Minor repairs found that do not impair the "fitness of service" of the equipment (paint deterioration, general corrosion, no measurable metal loss); Poor: equipment has moderate to major concerns found (equipment damaged, severe external corrosion noted, cracked or broken components, etc.).					
Internal Inspection					
Item:	Condition:	Comments:			
HEADS	Good	No corrosion, damage or deformations			
HEADS - Pitting max depth		None			
SHELL	Good	No corrosion, damage or deformations			
SHELL - Pitting max depth		None			
CHANNEL HEADS / BOOT SHELL	N/A				
INTERNAL COATING	Good	Very good throughout with some minor exceptions			
WELDS	Good	No corrosion or damage			
NOZZLES	Good	No corrosion			
NOZZLES - Pitting max depth		None			
VORTEX BREAKERS, DEFLECTION PLATES	Good	All secure, no damage			
WEIRS, BAFFLES, DIVIDER PLATES	Good	No corrosion or damage, secure			
INTERNAL PIPING	N/A				
DEMISTER	N/A	Not removed for inspection			
MANWAY & COVER	Good	No corrosion or mechanical damage			
ANODES	N/A	None			
TRAYS	N/A				
REFRACTORY	N/A				
FIRETUBES	N/A				
FIRETUBES - Pitting max depth					
INTERNAL SUPPORTS / GUIDES	N/A				
FLOATS / LEVEL CONTROLS	N/A				
NDE PERFORMED	Yes				
UT / MT / PT / RT	UT	See attached UT report			
Other					



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Inspection Summary					
External Inspection Summary:	Internal inspection only.				
Internal Inspection Summary:	<p>This vessel is currently located at 11-14-50-8 W5 and is to be moved.</p> <p>Coating: Vessel is fully coated internally. The coating is in very good condition throughout, with the following exceptions. The west head (manway head). Has 2 areas with 1/4" coating chips. The manway throat has minor typical chips on it's bottom edge. No corrosion was found below these areas. There are very small pits in the coating (less than 1/32") throughout the shell at 4:00 and 8:00. No exposed metal was found.</p> <p>Remainder of vessel: No deformation of the shell or heads was found. All internal attachments are secure with no deformations noted. The demister was not removed for inspection. Visible nozzles are free of obstructions. Gasket surfaces are in good condition with no mechanical damage or corrosion found.</p> <p>Fit for service.</p>				
PSV Inspection Summary:	To be serviced				
Vessel Fit for Service:	Yes	Report Date:	Aug 27 2019	Report Status:	Final
TYLER BAITON CGSB REG# 15201 UTII / MTII / PTII IPV # 1128 API 510 / 570 # 63774 / 71802					
Inspector			Signature		



CURRENT LOCATION OF VESSEL



NAME PLATE



Vessel Inspection Report



VESSEL OVERVIEW



VESSEL OVERVIEW



MANWAY



MANWAY HEAD AND 2 AREAS WITH COATING FAILURE



INLET



SHELL VIEWED FROM OUTLET END



WIER PLATE



HEAD AND SHELL IN WIER



OUTLET, DEMISTER NOT REMOVED



HISTORICAL COATING REPAIR



Vessel Inspection Report

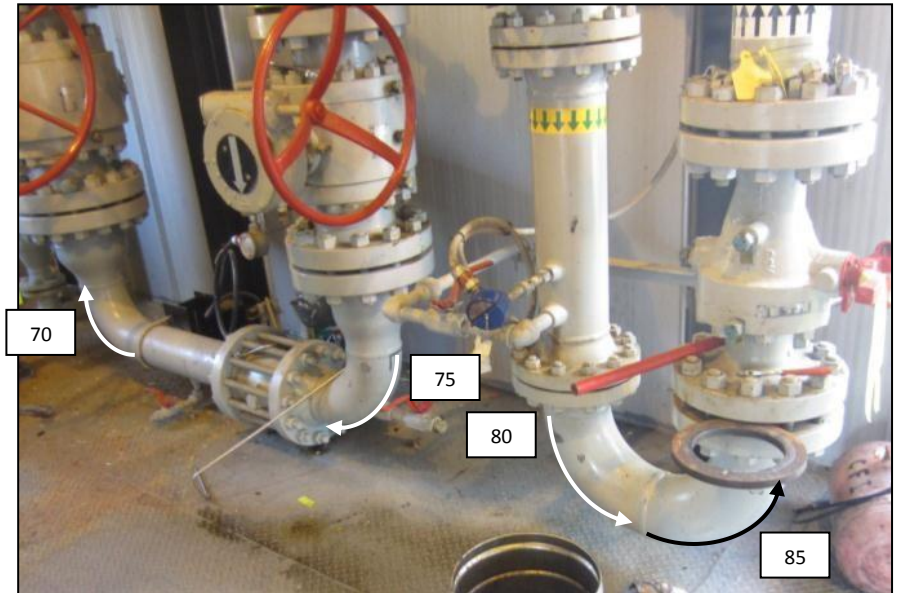


VIEW TYPICAL OF SMALL PITTING IN COATING AT 4:00 AND 8:00 THROUGHOUT SHELL

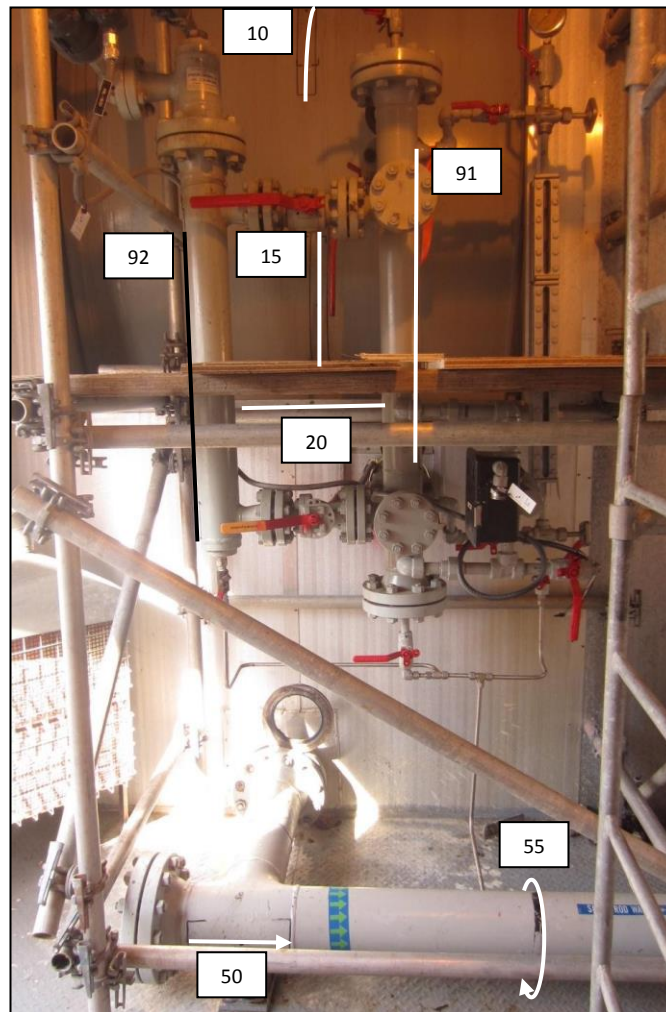
Dwg:	2	Vessel Name:	Group Separator	Shell MAWP PSI:	730	Shell MAWT F:	100
Surface LSD:	11-14-050-08W5	Vessel Number:	A0509830	Tube MAWP PSI:	0	Tube MAWT F:	0
Downhole LSD:		Serial Number:	04-538	Vessel Size:	120.00" OD	Vessel CA:	0.125"
District Unit:	Easyford	Tag Number:		Head Material:	SA-516-70	Head Nominal:	2.253"
Location:	Facility	CRN:	R 6102.2	Shell Material:	SA-516-70	Shell Nominal:	2.500"
Skid:	4831	Manufacturer:	Dacro Industries	Year Built:	2004	Technician:	T. Baiton
Notes:							



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Location:	Facility	CRN:	R 6102.2	Shell Material:	SA-516-70	Shell Nominal:	2.500"
Skid:	4831	Manufacturer:	Dacro Industries	Year Built:	2004	Technician:	T. Baiton
Notes:							





ULTRASONIC CORROSION SURVEY

Survey Name:

Report No.: 2

Survey Date: 08/27/2019

LSD: 11-14-050-08W5	Dwg: 2	Vessel Number: A0509830	Manufacturer: DACRO INDUSTRIES	Technician: T. BAITON
Downhole LSD:		Vessel Name: GROUP SEPARATOR	Serial Number: 04-538	Certification: CGSB / SNT-TC-1A
District Unit: EASYFORD		Year Built: 2004	Shell MAWP PSI: 730	MAWT F: 100
Location: FACILITY		Tag Number:	Tube MAWP PSI: 0	MAWT F: 0
Skid: 4831		CRN: R 6102.2	Vessel CA: 0.1250	

Band	Description		Baseline	Previous	Current	Material	Nominal	CA	TMIN	ST Loss MPY	LT Loss MPY	Recommended Retirement Date
00	Head	Ref	2019	2.4980	2019	2.4980						
Shape	Ellipsoidal	Min		2.4920		2.4920	SA 516 - 70	2.2530	0.1250	2.1203		
OD	120	Avg		2.5030		2.5030						
Spec.	VIII Div 1											
Comments:												
05	Head	Ref	2019	2.5040	2019	2.5040						
Shape	Ellipsoidal	Min		2.4870		2.4870	SA 516 - 70	2.2530	0.1250	2.1203		
OD	120	Avg		2.5060		2.5060						
Spec.	VIII Div 1											
Comments:												
10	Shell	Ref	2019	2.5510	2019	2.5510						
Shape	Cylindrical	Min		2.5490		2.5490	SA 516 - 70	2.5000	0.1250	2.1585		
OD	120	Avg		2.5520		2.5520						
Spec.	VIII Div 1											
Comments:												
15	Shell	Ref	2019	2.5550	2019	2.5550						
Shape	Cylindrical	Min		2.5540		2.5540	SA 516 - 70	2.5000	0.1250	2.1585		
OD	120	Avg		2.5570		2.5570						
Spec.	VIII Div 1											
Comments:												



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Downhole LSD:		Vessel Name: GROUP SEPARATOR	Serial Number: 04-538	Certification: CGSB / SNT-TC-1A
District Unit: EASYFORD		Year Built: 2004	Shell MAWP PSI: 730	MAWT F: 100
Location: FACILITY		Tag Number:	Tube MAWP PSI: 0	MAWT F: 0
Skid: 4831		CRN: R 6102.2	Vessel CA: 0.1250	

Band	Description		Baseline	Previous	Current	Material	Nominal	CA	TMIN	ST Loss MPY	LT Loss MPY	Recommended Retirement Date
20	Shell	Ref	2019	2.5370	2019	2.5370						
Shape	Cylindrical	Min		2.5350		2.5350	SA 516 - 70	2.5000	0.1250	2.1585		
OD	120	Avg		2.5400		2.5400						
Spec.	VIII Div 1											
Comments:												
25	Shell	Ref	2019	2.5450	2019	2.5450						
Shape	Cylindrical	Min		2.5430		2.5430	SA 516 - 70	2.5000	0.1250	2.1585		
OD	120	Avg		2.5450		2.5450						
Spec.	VIII Div 1											
Comments:												
30	Shell	Ref	2019	2.5660	2019	2.5660						
Shape	Cylindrical	Min		2.5420		2.5420	SA 516 - 70	2.5000	0.1250	2.1585		
OD	120	Avg		2.5680		2.5680						
Spec.	VIII Div 1											
Comments:												
35	Head	Ref	2019	2.5190	2019	2.5190						
Shape	Ellipsoidal	Min		2.5180		2.5180	SA 516 - 70	2.2500	0.1250	2.1203		
OD	120	Avg		2.5250		2.5250						
Spec.	VIII Div 1											
Comments:												



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Downhole LSD:		Vessel Name: GROUP SEPARATOR	Serial Number: 04-538	Certification: CGSB / SNT-TC-1A
District Unit: EASYFORD		Year Built: 2004	Shell MAWP PSI: 730 MAWT F: 100	UT II / MT II #15201
Location: FACILITY		Tag Number:	Tube MAWP PSI: 0 MAWT F: 0	
Skid: 4831		CRN: R 6102.2	Vessel CA: 0.1250	

Band	Description		Baseline	Previous	Current	Material	Nominal	CA	TMIN	ST Loss MPY	LT Loss MPY	Recommended Retirement Date
40	Head	Ref	2019	2.5580	2019	2.5580						
Shape	Ellipsoidal	Min		2.5450		2.5450	SA 516 - 70	2.2530	0.1250	2.1203		
OD	120	Avg		2.5590		2.5590						
Spec.	VIII Div 1											Comments:
45	Piping	Ref	2019	0.3530	2019	0.3530						
Shape	Tee	Min		0.3270		0.3270	A 234 - WPB	0.2260	0.0283	0.0807		
OD	4.5	Avg		0.3480		0.3480						
Spec.	B31.3											Comments:
50	Piping	Ref	2019	0.4050	2019	0.4050						
Shape	Tee	Min		0.3690		0.3690	A 234 - WPB	0.2800	0.0350	0.1187		
OD	6.625	Avg		0.4040		0.4040						
Spec.	B31.3											Comments:
55	Piping	Ref	2019	0.2810	2019	0.2810						
Shape	360° Circ	Min		0.2700		0.2700	A 106 - B	0.2800	0.0350	0.1187		
OD	6.625	Avg		0.2800		0.2800						
Spec.	B31.3											Comments:




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Downhole LSD:		Vessel Name: GROUP SEPARATOR	Serial Number: 04-538	Certification: CGSB / SNT-TC-1A
District Unit: EASYFORD		Year Built: 2004	Shell MAWP PSI: 730 MAWT F: 100	UT II / MT II #15201
Location: FACILITY		Tag Number:	Tube MAWP PSI: 0 MAWT F: 0	
Skid: 4831		CRN: R 6102.2	Vessel CA: 0.1250	

Band	Description		Baseline	Previous	Current	Material	Nominal	CA	TMIN	ST Loss MPY	LT Loss MPY	Recommended Retirement Date
60	Piping	Ref	2019	0.3040	2019	0.3040						
Shape	90° Elbow	Min		0.2830		0.2830	A 234 - WPB	0.2800	0.0350	0.1187		
OD	6.625	Avg		0.2930		0.2930						
Spec.	B31.3						Comments:					
65	Piping	Ref	2019	0.3280	2019	0.3280						
Shape	90° Elbow	Min		0.2990		0.2990	A 234 - WPB	0.2800	0.0350	0.1187		
OD	6.625	Avg		0.3250		0.3250						
Spec.	B31.3						Comments:					
70	Piping	Ref	2019	0.4080	2019	0.4080						
Shape	90° Elbow	Min		0.4030		0.4030	A 106 - B	0.4320	0.0540	0.1187		
OD	6.625	Avg		0.4070		0.4070						
Spec.	B31.3						Comments:					
75	Piping	Ref	2019	0.4900	2019	0.4900						
Shape	90° Elbow	Min		0.4760		0.4760	A 234 - WPB	0.4320	0.0540	0.1187		
OD	6.625	Avg		0.4950		0.4950						
Spec.	B31.3						Comments:					



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Downhole LSD:		Vessel Name: GROUP SEPARATOR	Serial Number: 04-538	Certification: CGSB / SNT-TC-1A
District Unit: EASYFORD		Year Built: 2004	Shell MAWP PSI: 730	MAWT F: 100
Location: FACILITY		Tag Number:	Tube MAWP PSI: 0	MAWT F: 0
Skid: 4831		CRN: R 6102.2	Vessel CA: 0.1250	

Band	Description		Baseline	Previous	Current	Material	Nominal	CA	TMIN	ST Loss MPY	LT Loss MPY	Recommended Retirement Date
80	Piping	Ref	2019	0.4580	2019	0.4580						
Shape	90° Elbow	Min		0.4430		0.4430	A 234 - WPB	0.4320	0.0540	0.1187		
OD	6.625	Avg		0.4520		0.4520						
Spec.	B31.3											Comments:
85	Piping	Ref	2019	0.4210	2019	0.4210						
Shape	90° Elbow	Min		0.4030		0.4030	A 234 - WPB	0.4320	0.0540	0.1187		
OD	6.625	Avg		0.4340		0.4340						
Spec.	B31.3											Comments:
90	Bridle - Shell	Ref	2019	0.2500	2019	0.2500						
Shape	Cylindrical	Min		0.2240		0.2240	A 106 - B	0.2370	0.1250	0.0809		
OD	4.5	Avg		0.2420		0.2420						
Spec.	VIII Div 1											Comments:
91	Bridle - Shell	Ref	2019	0.2560	2019	0.2560						
Shape	Cylindrical	Min		0.2400		0.2400	A 106 - B	0.2370	0.1250	0.0809		
OD	4.5	Avg		0.2480		0.2480						
Spec.	VIII Div 1											Comments:



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Downhole LSD:		Vessel Name: GROUP SEPARATOR	Serial Number: 04-538	Certification: CGSB / SNT-TC-1A
District Unit: EASYFORD		Year Built: 2004	Shell MAWP PSI: 730	MAWT F: 100
Location: FACILITY		Tag Number:	Tube MAWP PSI: 0	MAWT F: 0
Skid: 4831		CRN: R 6102.2	Vessel CA: 0.1250	

Band	Description		Baseline	Previous	Current	Material	Nominal	CA	TMIN	ST Loss MPY	LT Loss MPY	Recommended Retirement Date
92	Bridle - Shell	Ref	2019	0.3380	2019	0.3380						
Shape	Cylindrical	Min		0.3320		0.3320	A 106 - B	0.3370	0.1250	0.0809		
OD	4.5	Avg		0.3380		0.3380						
Spec.	VIII Div 1											

Comments: