

01-18-017-18W4M
CYCLONE SEPARATOR
A0465668 42622-61
REPORT # A#0465668_GRADY INSPECTION LTD VE UT INSP_30MAR2022

DATE 3/30/2022
CLIENT CNRL

Phone: 403-793-7697

8 Sarah King Crt E Brooks, Alberta, T1R 0J8
grady.rustebakke@gmail.com



PRESSURE EQUIPMENT										AB-506 INTERVAL													
DISTRICT		AB - OIL & NATURAL GAS				SHELL		TUBE		Well-head vessels (separators,													
FACILITY		Armada Gas Plant				MAWT		120		F		GRADE		YEARS		REG							
A#		A0465668		YR		2001		MAWP		1440		psi		Equip		PSV		UT		REG			
SERIAL #		42622-61		PSV		1440		psi				3		10		6		1		X			
CRN		P6805.2C		PSV CRN		0G2606.5C																	
EQUIP#				SERVICED		6/7/2017																	
STATUS		IN SERVICE				UNIT		Yard centre				VE		VI		MT		PT		ET		UT	
												X										X	
MANUFACTURER		NATCO CANADA LTD.										INSPECTION TYPE											
DH LSD						L		6.8 Ft		OD		1.07 Ft		INSPECTION RESULT:									
REPAD		UNIQUE ID										NCR-OPERATIONS											
												NCR-REGULATORY/ADMIN											
												ACTION ITEM RAISED											
												REPAIR REQUIRED											
												SUITABLE FOR SERVICE					X						
												RECOMMENDATIONS:											
												VE Inspection: No Recommendations from the External Inspection.											

RESULTS OF INSPECTION:

VE Inspection:
Fit For Service. Vessel is in good visual condition.
UT Inspection:
-9% (-.6 mm) wall loss found on Elbow CML 45 Nominal: (7.1 mm) T-Previous: (7 mm) T-Actual: (6.4 mm) T-Required: (6.1 mm) CR: (.14 mm/yr) RL: (2.47 years)
-8% (-1.5 mm) wall loss found on Reducer CML 40 Nominal: (17.5 mm) T-Previous: (17.9 mm) T-Actual: (16.4 mm) T-Required: (11.7 mm) CR: (.35 mm/yr) RL: (13.72 years)
-13% (-2.5 mm) wall loss found on Reducer CML 10 Nominal: (17.5 mm) T-Previous: (18.8 mm) T-Actual: (16.3 mm) T-Required: (11.7 mm) CR: (.58 mm/yr) RL: (8.05 years)

SIGN OFF		API 510	EXP.	IPV	EXP.	INSPECTOR - PRIMARY	INSPECTOR - REVIEW	CLIENT SIGN OFF
INSPECTED BY	ToddM Mckenzie	97445	12/31/2022	00133	7/13/2026			
REVIEWED BY	Ashley Rustebakke	60285	7/31/2024	966	6/16/2026			

Ultrasonic Report

LSD 01-18-017-18W4M

DH-LSD

Jurisdiction # A0465668

Serial # 42622-61

Ultrasonic Report #: A#0465668_GRADY INSPECTION LTD VE UT INSP_30MAR2022

Date

3/30/2022

Facility

Armada Gas Plant

Field


Red Deer District

Phone: 403-793-7697

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ULTRASONIC SET			COMPONENT DETAILS				CODE					
EQUIPMENT	CALIBRATION DUE	SERIAL NUMBER	MATERIAL GRADE	SURFACE PREP	TEMP	THICKNESS	CALIBRATION	EVALUATION				
EPOCH 600	2/25/2023	120388107	Carbon Steel	Painted	0C		ASME V	ASME VIII Div 1				
CALIBRATION BLOCK		PROBE							COUPLING		METHOD	
TYPE	SERIAL#	REF dB	SCAN dB	FREQ.	SIZE.	ANGLE	SERIAL #	TYPE	COUPLANT	CABLE	TECHNIQUE	PROCEDURE
10 Step Metric	14-2065	60	66	5 Mhz	0.25 "	0	15B00DU3	Dual	UT-X	6' BNC to Micro	LW Dual	UT01T1R4
SCOPE		As requested by Dustin Rumohr an ultrasonic inspection was completed on the SEPARATOR										
LIMITATIONS		None.										
RESULTS		-9% (-.6 mm) wall loss found on Elbow CML 45 Nominal: (7.1 mm) T-Previous: (7 mm) T-Actual: (6.4 mm) T-Required: (6.1 mm) CR: (.14 mm/yr) RL: (2.47 years) -8% (-1.5 mm) wall loss found on Reducer CML 40 Nominal: (17.5 mm) T-Previous: (17.9 mm) T-Actual: (16.4 mm) T-Required: (11.7 mm) CR: (.35 mm/yr) RL: (13.72 years) -13% (-2.5 mm) wall loss found on Reducer CML 10 Nominal: (17.5 mm) T-Previous: (18.8 mm) T-Actual: (16.3 mm) T-Required: (11.7 mm) CR: (.58 mm/yr) RL: (8.05 years)										

Technician Name	Certification Body	Certification #	Expiry	Technician Signature			
3 ToddM	CGSB	9234					
				Client Name			
				Client Signature			

External Inspection - (Vessel)		Date	3/30/2022		Phone: 403-793-7697		
LSD	01-18-017-18W4M	Facility	Armada Gas Plant		8 Sarah King Crt E Brooks, Alberta, T1R 0J8		
DH-LSD		Field	Red Deer District		grady.rustebakke@gmail.com		
Jurisdiction #	A0465668						

Fit For Service:	Fit For Service.
Inspection Summary:	Vessel is in good visual condition.
Recommendations:	No Recommendations from the External Inspection.

External Inspection Items	G/F/P	Comments
General Condition:	Good	No notable mechanical damage, areas of wear/fretting, distortion, misalignment, or visible weld defects.
External Coating:	Good	Vessel is in good visual condition. Paint is intact and well adhered to the vessel.
Insulation / Cladding:	N/A	Non insulated vessel
Nozzles, Piping and Connections:	Good	Number of nozzles repaded: Number of nozzles without repad: Nozzles and piping in good visual condition
Buried Vessels:	N/A	Above Ground
Ladders, Platforms and Walkways:	N/A	No attached ladder or platform
Foundations and Supports:	Good	Building is level on lumber with no signs off settling or heaving
Shell:.	Good	No notable mechanical damage, areas of wear/fretting, distortion, misalignment or visible weld defects.
Saddles / Skirts:	Good	Saddle is in good visual condition Vessel is mounted in piping string by flange bolting and is secure.
Grounding:	Good	Ground Wire is secure
Gauges and Instrumentation:	Good	<div>Shell Gauge (0 - 1500 @ 650 psi) Temp Gauge (- @)</div> <div>Gauge is clear, colorless and correct for the MAWP. No temperature gauge found.</div>
Pressure Protection:	Good	The PSV Set Pressure (1440 psi) is suitable for the MAWP (1440 psi)
NDE Summary:	Fair	-9% (-.6 mm) wall loss found on Elbow CML 45 Nominal: (7.1 mm) T-Previous: (7 mm) T-Actual: (6.4 mm) T-Required: (6.1 mm) CR: (.14 mm/yr) RL: (2.47 years) -8% (-1.5 mm) wall loss found on Reducer CML 40 Nominal: (17.5 mm) T-Previous: (17.9 mm) T-Actual: (16.4 mm) T-Required: (11.7 mm) CR: (.35 mm/yr) RL: (13.72 years) -13% (-2.5 mm) wall loss found on Reducer CML 10 Nominal: (17.5 mm) T-Previous: (18.8 mm) T-Actual: (16.3 mm) T-Required: (11.7 mm) CR: (.58 mm/yr) RL: (8.05 years)
Manway Davits/Quick Closure:	N/A	No Manway
Nameplate:	Good	Nameplate is legible and readily accessible and securely affixed

PSV Data

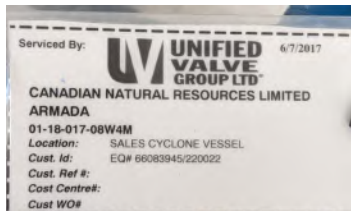
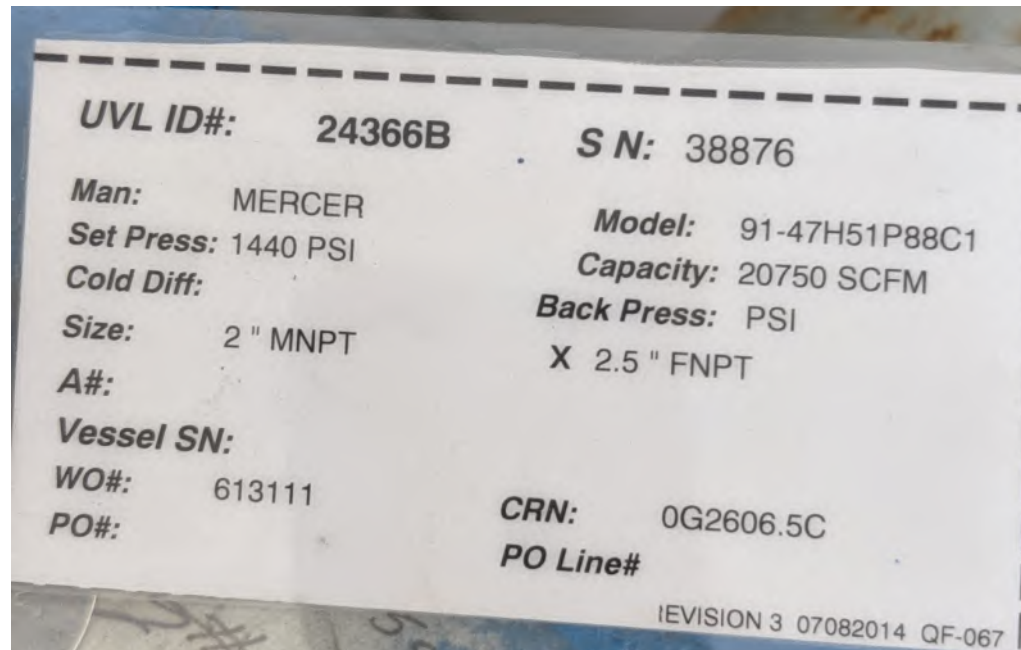
LSD

01-18-017-18W4M

FACILITY Armada Gas Plant

FIELD Red Deer District

Phone: 403-793-7697

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INSPECTION LTD

ASSOCIATED PRESSURE EQUIPMENT DATA

PV JUR/SER A0465668 42622-61

SHELL TUBE

MAWP 1440 psi

PSV FIT FOR SERVICE STATEMENT

Fit For Service.

PSV STATIC DATA

MODEL 91-47H51P88C1

SERIAL 38876

MANUFACTURER MERCER

TAG 24366B

CRN 0G2606.5C

SEAL Y

SET PRES 1440 psi

CAPACITY 20750 SCFM

SERVICE DATE 6/7/2017

SERVICE COMPANY Unified Valve Group

T/F UV NB

T UV NB

SIZE B VALVE CARSEAL

INLET 2 N

OUTLET 2.5 Y Y

PSV COMMENTS

Overview Photo

LSD 01-18-017-18W4M
Jur # A0465668
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Date

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FACILITY

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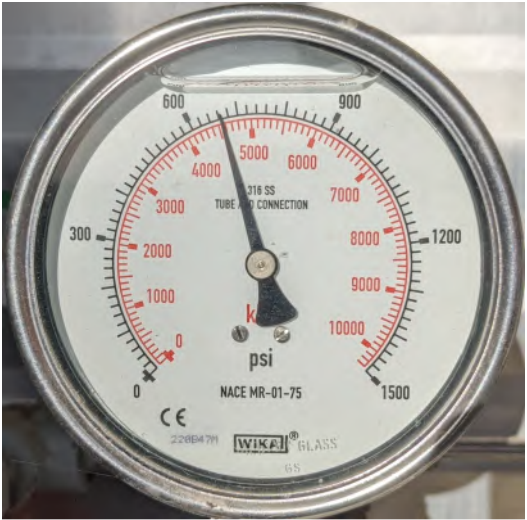
GRADY
INSPECTION LTD



Nameplate



Overview



Pressure Gauge



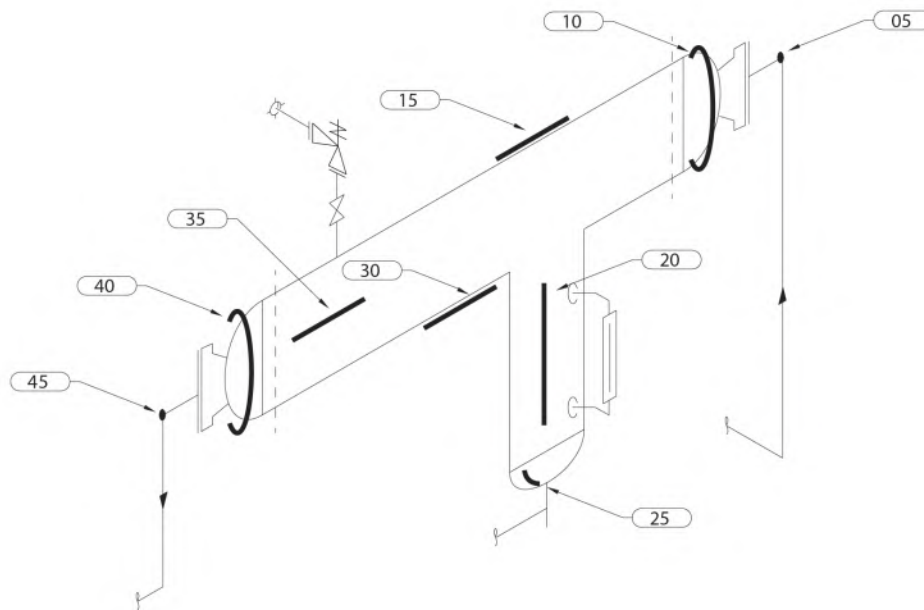
Liquid Level

GRADY
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Jur # A0465668 **DWG** 1 **Location:**

CML#	Nom	CA/Tol	SFlag	STmin	PTmin	>Tmin	Comp Type	Pipe Size	Code	MOP	Baseline		3rd Last		2nd Last		Last		# of Insp	Nom Wall Loss	Corrosion Rates			Rem Life	Next Insp	Insp Int	Insp Inspection Comments	
											Date	Min Ave	Date	Min Ave	Date	Min Ave	Date	Min Ave			ST	LTh	LTI	Rem Life Date	(yrs)	Insp Date	(yrs)	



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DH-LSD FIELD Red Deer District
Jur # A0465668 DWG 1 Location:
Ser # 42622-61

Phone: 403-793-7697

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Ser #		42622-61		Inspection Dates and Thickness Values (mm)																								
CML#	Nom	CA/Tol	SFlag	STmin	PTmin	> Tmin	Comp Type	Pipe Size	Code	MOP	Baseline		3rd Last		2nd Last		Last		# of Insp	% Nom Wall Loss	Corrosion Rates			Rem Life Date	Rem Life (yrs)	Next Insp Date	Insp Int (yrs)	Inspection Comments
											Date	Min Ave	Date	Min Ave	Date	Min Ave	Date	Min Ave			ST	LTn	LTi					
05	7.1	6.2	3.3	2.8	6.1	6.1	Elbow	6" STD 40--(7.1mm)	API570	1440	11/28/17	6.8	7.0				3/30/22	6.7	7.1	2	6%	0.02		1/26/2050		3/27/2032	10.0	
10	17.5	15.3	3.3	2.8	11.7	11.7	Reducer	12" -- 80--(17.5mm)	API570	1440	11/28/17	18.8	22.3				3/30/22	16.3	18.0	2	7%	0.58		4/15/2030	8.1	4/15/2026	4.0	12"x 6" low on 6"
15	17.5	15.3	3.3	2.8	11.7	11.7	Tee	12" -- 80--(17.5mm)	API570	1440	11/28/17	18.9	21.6				3/30/22	18.7	21.0	2	-7%	0.05			3/27/2032	10.0	Tee back side	
20	17.5	17.5	25.6		12.8	12.8	Boot Shell	12" -- 80--(17.5mm) UG27ShellInt	1440		11/28/17	17.7	18.1				3/30/22	17.5	17.8	2	0%	0.05			3/27/2032	10.0	Material Assumed	
25	17.5	17.5	10.5		10.5	10.5	Boot	12" -- 80--(17.5mm) UG32HeadElli	1440		11/28/17	14.8	15.8				3/30/22	14.8	15.8	2	15%				3/27/2032	10.0	Material Assumed	
30	17.5	17.5	25.8		12.9	12.9	Shell	12" -- 80--(17.5mm) UG27ShellInt	1440		11/28/17	18.1	18.2				3/30/22	17.8	18.0	2	-2%	0.07			3/27/2032	10.0	Material Assumed	
35	17.5	17.5	25.8		12.9	12.9	Shell	12" -- 80--(17.5mm) UG27ShellInt	1440		11/28/17	17.9	18.2				3/31/22	17.9	18.0	2	-2%				3/28/2032	10.0	Material Assumed	
40	17.5	15.3	3.3	2.8	11.7	11.7	Reducer	12" -- 80--(17.5mm)	API570	1440	11/28/17	17.9	19.5				3/31/22	16.4	18.0	2	6%	0.35		12/14/2035	13.7		6.9	12" x 6" low on 12"
45	7.1	6.2	3.3	2.8	6.1	6.1	Elbow	6" STD 40--(7.1mm)	API570	1440	11/28/17	7.0	7.3				3/30/22	6.4	7.0	2	10%	0.14		9/17/2024	2.5	6/24/2023	1.2	