



Client:
CNRL

PRESSURE EQUIPMENT DATA REPORT

EQUIPMENT GENERAL INFORMATION

District:	Medicine Hat		
Facility:	Grand Forks East		
Location /LSD:	04-01-013-13W4	Operating Province:	Alberta
Equipment Name:	FREE WATER KNOCK OUT		
Equipment Status:	Operating	Orientation:	Horizontal
Skid No.:	F.W.K.O #2	Unit:	

EQUIPMENT STATIC DATA

AB Registration No.:	0161444		Serial No.:	LM-1671	
Registration No./Other:			Equipment No.:	N/S	
CRN NO.:	C-8805.2.		Unique ID No.:		
National Board No.:	N/S		Oncor ID No.:	158937	
Manufacturer:	C.E Natco		Year Built:	1980	
MAWP:	75.00 (psi)	517.11 (Kpa)	Temperature:	200.00 (F)	93.33 (C)
Diameter.:	92.000 (In)	2336.80(mm)	Length:	240.00 (In)	6096.00 (mm)
Radiography:	RT2		Heat Treatment:	No	
Corrosion allowance:	0.000 (In)	0.000 (mm)	MDMT:		
Lining Or Coated:			Painted:	Yes	
Insulated:	Yes		Internally Clad:		
Hand Hole:	No		Support Type:	Saddle	
Manway:	Yes		Manway Size(In):	16.00	
Capacity/Volume(m3):			Nozzle Rating:	150.00	

MATERIALS/COMPONENTS

Name	Joint Efficiency	Outside Diameter(in.)	Head Type	Material Type	Stress Value (PSI)	Nominal Thickness(In.)
SHELL	1.00	92.000		SA-285 C	13800	0.31
HEAD	1.00	92.000	Ellipsoidal	SA-285 C	13800	0.50
HEAD (FT)	1.00	92.000	Ellipsoidal	SA-285 C	13800	0.63
BOOT SHELL	1.00	18.000		Unknown	17500	
BOOT HEAD	1.00	18.000	Ellipsoidal	Unknown	17500	

PIPING STATIC DATA

Primary Flange Rating:	150	ASME B16.5 - Table 2-1.1 @ 150F:	285 (psi)
Pressure Use For TMin:	Vess Design Press	Piping Operating Press:	75 (psi)
Stress Value:	20000 (psi)	E Value:	1.00 Joint: SMLS

SERVICE CONDITIONS

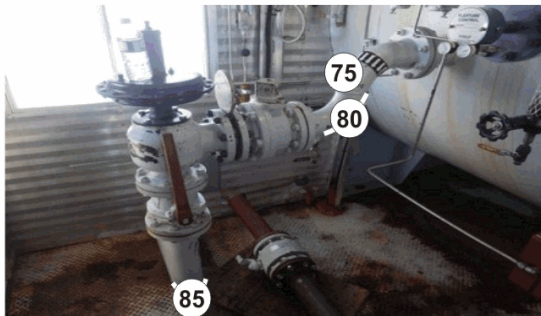
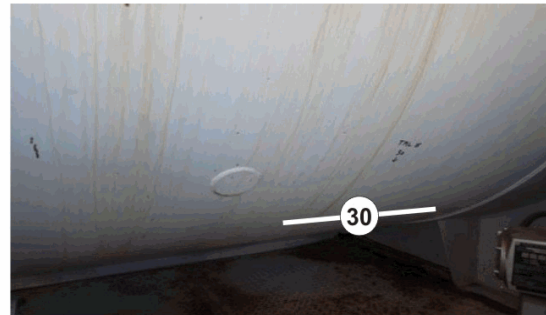
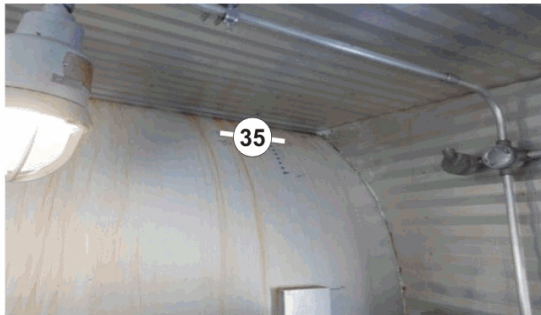
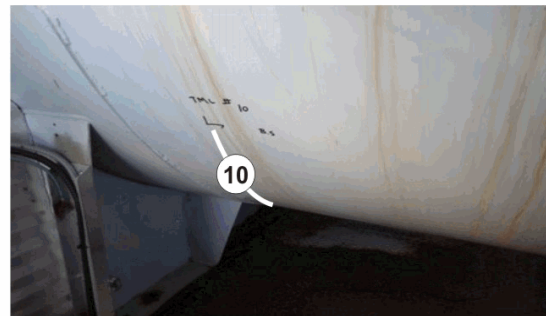
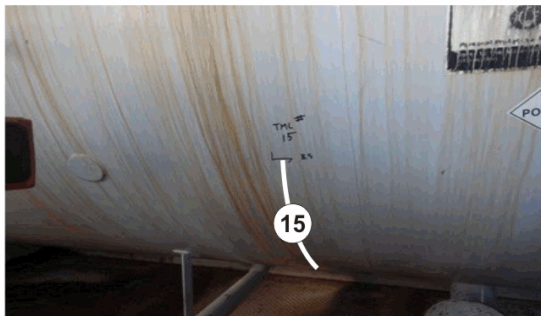
Sweet	Sour ✓	Oil ✓	Gas ✓	Water ✓
Amine	LPG	Condensate	Air	Glycol

COMMENTS

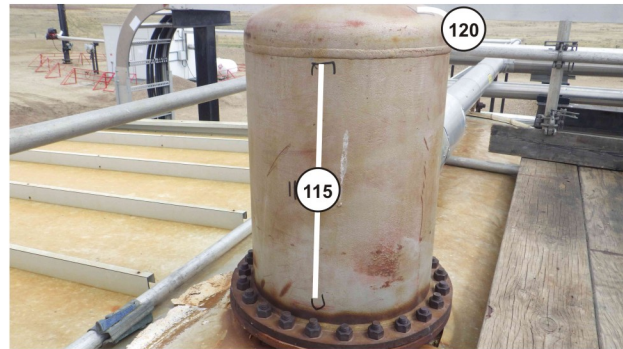
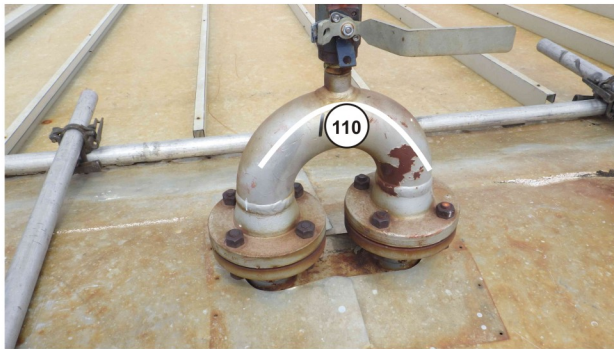
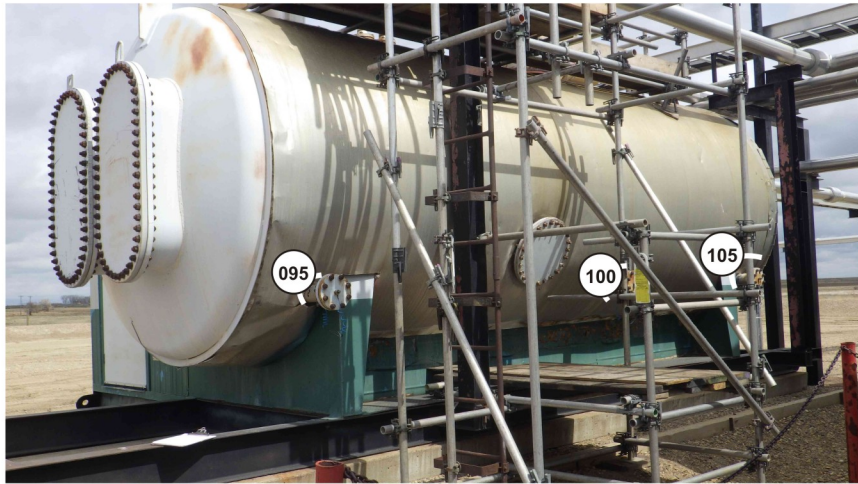
NO SAFE ACCESS TO OBTAIN P.S.V DATA/ PICTURES

EXAMINATION ILLUSTRATION

DISTRICT:	Medicine Hat	FACILITY:	Grand Forks East	LOCATION/LSD:	04-01-013-13W4
EQUIP NAME:	FREE WATER KNOCK OUT			PROV REG No.:	0161444
SERIAL No.:	LM-1671	Equip No.:	N/S	National Board No.:	N/S



NOTES:



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ULTRASONIC CORROSION SURVEY REPORT

DISTRICT:	Medicine Hat	FACILITY:	Grand Forks East	LOCATION/LSD:	04-01-013-13W4
EQUIP NAME:	FREE WATER KNOCK OUT			PROV REG No.:	0161444
SERIAL No.:	LM-1671	Equip No.:	N/S	National Board No.:	N/S

SUMMARY

TYPE	LAST INSPECTIONS	INSPECTION INTERVAL (YEARS)	CORROSION RATE (IN/YR)		REMAINING LIFE (YEARS)	NEXT INSPECTION DATE
			SHORT TERM	LONG TERM		
VESSEL	Apr 26, 2019	5.0	0.0014	0.0014	61.1	Apr 26, 2024
PIPING	Apr 26, 2019	5.0	0.0069	0.0069	32.5	

VESSEL SURVEY READINGS

POINT NUMBER	TYPE	POINT DATA (INCH)			DATE	SURVEY READINGS			CALCULATIONS			Flag		
		NOM.	C.A.	NOM-CA		LOW	AVG	T Req (inch)	short term corr	long term	remaining life			
005	HEAD	0.5000	0.0000	0.5000	Apr 26/19			0.249	0.0014	0.0014	222.2			
					Feb 19/19	0.556	0.585	0.249						
					Mar 30/16	0.560	0.570	0.249						
010	SHELL	0.3125	0.0000	0.3125	Apr 26/19			0.249	0.0003	0.0003	253.3			
					Feb 19/19	0.337	0.340	0.249						
					Mar 30/16	0.338	0.340	0.249						
015	SHELL	0.3125	0.0000	0.3125	Apr 26/19			0.249	0.0000	0.0000	198.0			
					Feb 19/19	0.331	0.333	0.249						
					Mar 30/16	0.331	0.335	0.249						
020	SHELL	0.3125	0.0000	0.3125	Apr 26/19			0.249	0.0014	0.0014	61.1			
					Feb 19/19	0.334	0.338	0.249						
					Mar 30/16	0.338	0.340	0.249						
025	SHELL	0.3125	0.0000	0.3125	Apr 26/19			0.249	0.0003	0.0003	262.0			
					Feb 19/19	0.340	0.342	0.249						
					Mar 30/16	0.341	0.345	0.249						
030	SHELL	0.3125	0.0000	0.3125	Apr 26/19			0.249	0.0003	0.0003	262.0			
					Feb 19/19	0.340	0.343	0.249						
					Mar 30/16	0.341	0.345	0.249						
035	SHELL	0.3125	0.0000	0.3125	Apr 26/19			0.249	0.0003	0.0003	279.3			
					Feb 19/19	0.346	0.350	0.249						
					Mar 30/16	0.347	0.350	0.249						
040	HEAD	0.5000	0.0000	0.5000	Apr 26/19			0.249	0.0000	0.0000	198.0			
					Feb 19/19	0.686	0.702	0.249						
					Mar 30/16	0.684	0.700	0.249						
115	BOOT SHELL	0.0000	0.0000	0.0000	Apr 26/19			0.333	0.340	0.039	0.0000	0.0000	198.0	NO COMMENTS
120	BOOT HEAD	0.0000	0.0000	0.0000	Apr 26/19			0.313	0.320	0.038	0.0000	0.0000	198.0	NO COMMENTS

PIPING SURVEY READINGS

POINT NUMBER	TYPE	POINT DATA (INCH)					DATE	SURVEY READINGS			CALCULATIONS			Flag
		SIZE	SCH	NOM.	Mill Tol./CA	NOM-CA		LOW	AVG	T Req (inch)	short term corr	long term corr rate	remaining life	
045	90L 6 XS	6.00	XS	0.4320	0.0540	0.3780	Apr 26/19			0.012	0.0038	0.0038	109.6	
							Feb 19/19	0.429	0.438	0.012				
							Mar 30/16	0.440	0.455	0.012				



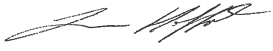
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POINT NUMBER	TYPE	SIZE	SCH	POINT DATA (INCH)			SURVEY READINGS				CALCULATIONS			Flag
				NOM.	Mill Tol./CA	NOM-CA	DATE	LOW	AVG	T Req (inch)	short term corr	long term corr rate	remaining life	
050	90L 4 STD	4.00	STD	0.2370	0.0296	0.2074	Apr 26/19			0.008	0.0035	0.0035	52.0	
		4.00	STD				Feb 19/19	0.188	0.216	0.008				
		4.00	STD				Mar 30/16	0.198	0.210	0.008				
055	90L 3 80	3.00	80	0.3000	0.0375	0.2625	Apr 26/19			0.007	0.0000	0.0000	198.0	
		3.00	80				Feb 19/19	0.264	0.271	0.007				
		3.00	80				Mar 30/16	0.258	0.265	0.007				
060	90L 3 80	3.00	80	0.3000	0.0375	0.2625	Apr 26/19			0.007	0.0069	0.0069	32.5	
		3.00	80				Feb 19/19	0.231	0.259	0.007				
		3.00	80				Mar 30/16	0.251	0.260	0.007				
065	90L 3 80	3.00	80	0.3000	0.0375	0.2625	Apr 26/19			0.007	0.0000	0.0000	198.0	
		3.00	80				Feb 19/19	0.231	0.261	0.007				
		3.00	80				Mar 30/16	0.226	0.240	0.007				
Comments: DOUBLE CHECKED CALIBRATION & CONFIRMED READINGS. MINOR INTERNAL CORROSION OBSERVED WITH UT SCAN.														
070	90L 3 STD	3.00	STD	0.2160	0.0270	0.1890	Apr 26/19			0.007	0.0000	0.0000	198.0	
		3.00	STD				Feb 19/19			0.007				
		3.00	STD				Mar 30/16	0.128	0.200	0.007				
Comments: PIPING REMOVED DOUBLE CHECKED CALIBRATION & CONFIRMED READINGS. INTERNAL CORROSION OBSERVED WITH UT SCAN.														
075	90L 4 STD	4.00	STD	0.2370	0.0296	0.2074	Apr 26/19			0.008	0.0052	0.0052	42.3	
		4.00	STD				Feb 19/19	0.228	0.247	0.008				
		4.00	STD				Mar 30/16	0.243	0.265	0.008				
Comments: DOUBLE CHECKED CALIBRATION & CONFIRMED READINGS. MINOR INTERNAL CORROSION OBSERVED WITH UT SCAN.														
080	90L 4 STD	4.00	STD	0.2370	0.0296	0.2074	Apr 26/19			0.008	0.0010	0.0010	224.3	
		4.00	STD				Feb 19/19	0.241	0.252	0.008				
		4.00	STD				Mar 30/16	0.244	0.265	0.008				
Comments: DOUBLE CHECKED CALIBRATION & CONFIRMED READINGS. MINOR INTERNAL CORROSION OBSERVED WITH UT SCAN.														
085	90L 4 STD	4.00	STD	0.2370	0.0296	0.2074	Apr 26/19			0.008	0.0000	0.0000	198.0	
		4.00	STD				Feb 19/19	0.189	0.201	0.008				
		4.00	STD				Mar 30/16	0.186	0.200	0.008				
Comments: DOUBLE CHECKED CALIBRATION & CONFIRMED READINGS. MINOR INTERNAL CORROSION OBSERVED WITH UT SCAN.														
090	BAND 3 XS	3.00	XS	0.3000	0.0375	0.2625	Apr 26/19			0.007	0.0000	0.0000	198.0	
		3.00	XS				Feb 19/19	0.255	0.271	0.007				
Comments: LOW READING FOUND @ 9:00 POSITION.														
095	BAND 4 XS	4.00	XS	0.3370	0.0421	0.2949	Apr 26/19	0.336	0.340	0.008	0.0000	0.0000	12,884.1	NO COMMENTS
100	BAND 4 XS	4.00	XS	0.3370	0.0421	0.2949	Apr 26/19	0.336	0.340	0.008	0.0000	0.0000	12,884.1	NO COMMENTS
105	BAND 4 XS	4.00	XS	0.3370	0.0421	0.2949	Apr 26/19	0.323	0.330	0.008	0.0004	0.0004	883.8	NO COMMENTS
110	90L 3 XS	3.00	XS	0.3000	0.0375	0.2625	Apr 26/19	0.308	0.315	0.007	0.0000	0.0000	198.0	NO COMMENTS



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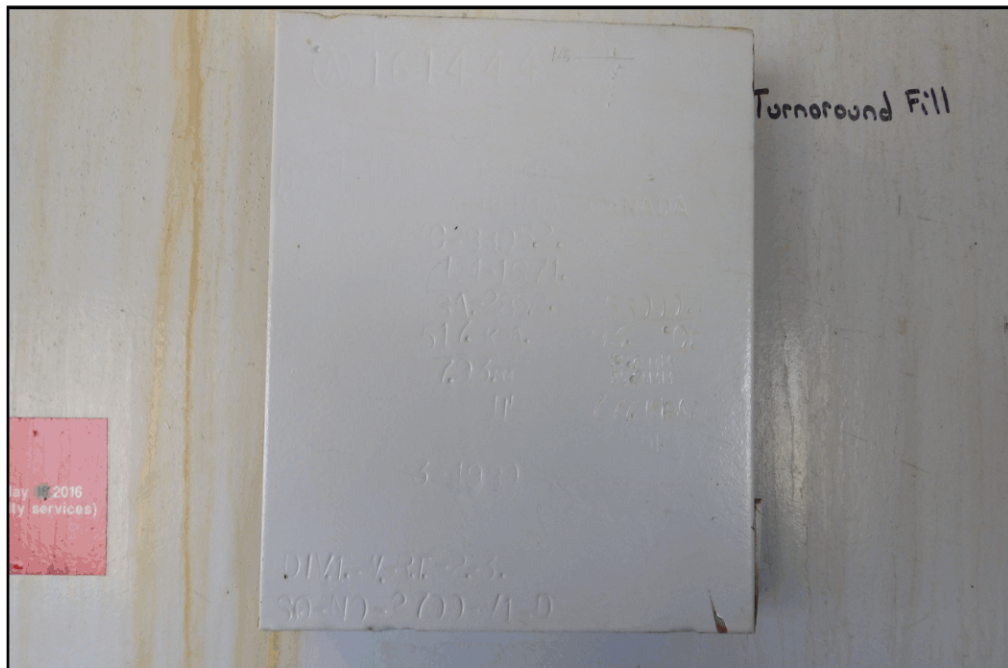
INSPECTOR-EQUIPMENT DATA

Inspected By	Signature	CGSB Level	CGSB No.	Survey Dat	UT Equipment	Due Date OF Calibration	NDE Procedure #
Lawrence Hoffort		SNT LV 2		04/26/2019	106_61457706_EPOCH 4	04/30/2019	WQS UT-001

PHOTOGRAPHS



LSD



FADED NAMEPLATE