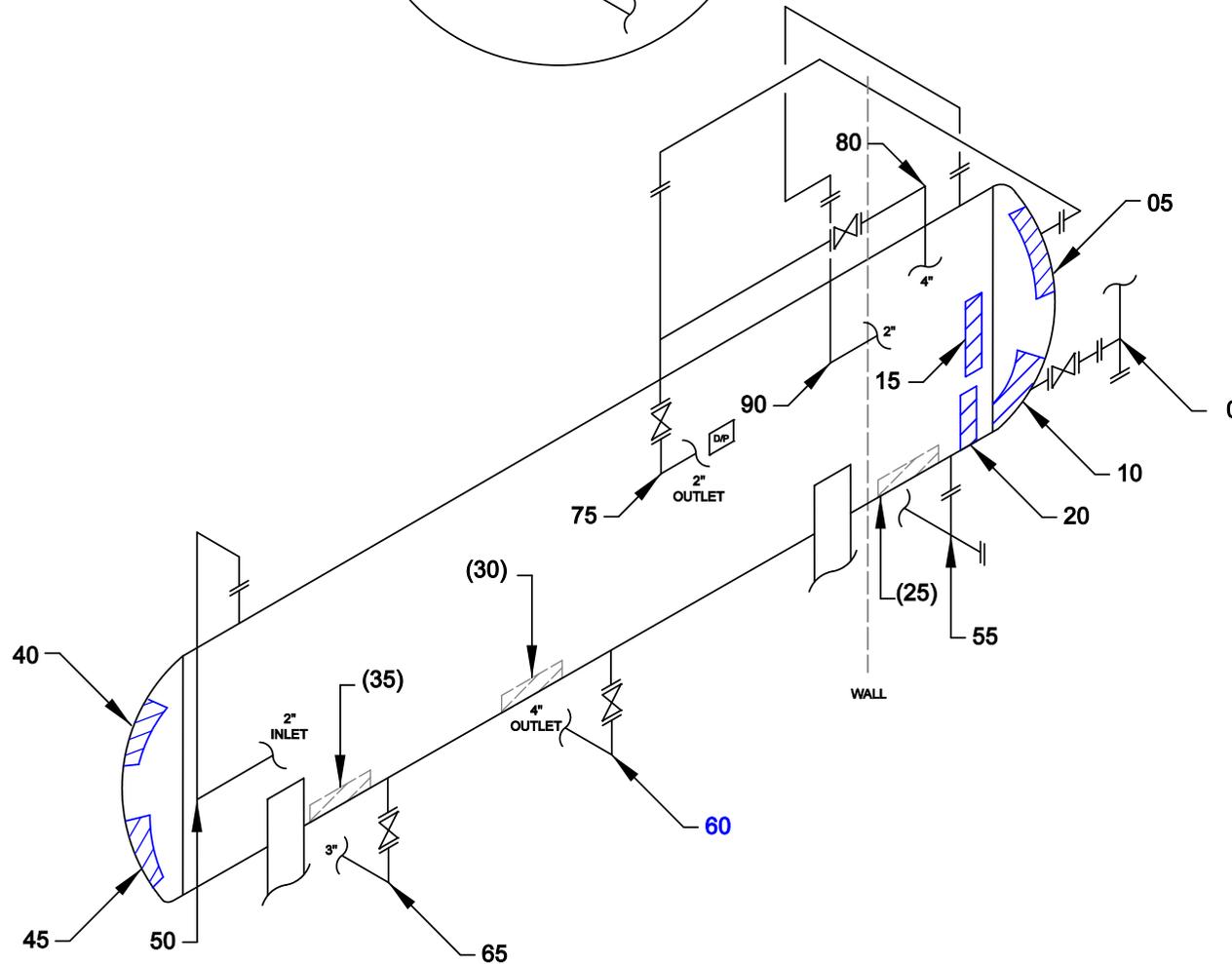
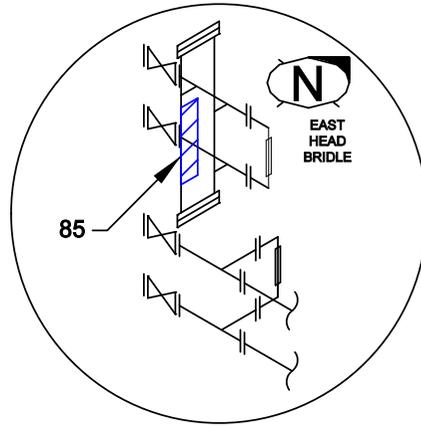


ITEM :

TREATER

640530



MWS
MOUNTAIN WEST SERVICES
SYLVAN LAKE, AB (403) 887-3562
WHITECOURT, AB (780) 778-5584
GRANDE PRAIRIE, AB (780) 518-9757

TECHNICIAN :
DAMIAN BRYNE
SNT LEVEL II
CGSB 48.9712
LEVEL II # 14089

DATE : 04/04/19 CAD UPDATED BY : BR
CLIENT : LONG RUN EXPLORATION
LSD : 02-12-058-23W4M
INSPECTOR : DUANE PAETKAU
LOCATION : REDWATER NORTH
DISTRICT UNIT : CENTRAL AB
BLDG / SKID / LIC : PKG74808
PROCESS : SWEET
CODE : ASME SEC VIII DIV 1
SPECIFICATION : AS PER ASME SE 797
TECHNIQUE : UTT-01 REV. # 01
METHOD : UT CONTINUOUS / A SCAN
SURFACE COND : PAINTED
SURFACE TEMP : AMBIENT

VESSEL INFORMATION

VESSEL # :	640530
CRN # :	W3705.213
SERIAL # :	NWP-09284-001-A
MANUFACTURER :	NWP INDUSTRIES
DATE BUILT :	2015
CLIENT ID / TAG :	-
M.A.W.P. :	75 PSI
M.A.W.T. :	300°F
JOINT EFFICIENCY/RT :	RT 2
STRESS RELIEVED :	N/S
INSULATED :	YES
MANWAY :	YES

VESSEL SPECIFICATIONS

	OD	NOMINAL	MATERIAL	CA
VESSEL HEAD	120"	.410"/.625"	SA 516-70	.063"
VESSEL SHELL	120"	.375"	SA 516-70	.063"
BOOT HEAD	-	-	-	-
BOOT SHELL	-	-	-	-

PIPING INFORMATION

PIPING ID	SIZE	SCH	NOM	M.A.W.P. (VESSEL)	M.A.W.T. (VESSEL)	FLANGE RATING
50	6.625"	STD	.280"	75 PSI	300°F	150
55	3.500"	STD	.216"	"	"	"
60	4.500"	STD	.237"	"	"	"
65	3.500"	STD	.216"	"	"	"
70	4.500"	STD	.237"	"	"	"
75-80	"	"	"	"	"	"
85	"	"	"	"	"	"
90	2.375"	XS	.218"	"	"	"

COMMENTS :

PROJECT :
C61880



ULTRASONIC CORROSION SURVEY: LONG RUN EXPLORATION

LSD: 02-12-058-23W4	Vessel Number: 640530	Manufacturer: NWP INDUSTRIES	Survey Date: 4/04/19
District Unit: CENTRAL - AB	Vessel Name: TREATER	Serial Number: NWP-09284-001-A	Inspector: DUANE PAETKAU
Location: REDWATER NORTH	Year Built: 2015	Shell MAWP PSI: 75 MAWT F: 300	Process: SWEET
PKG/Skid: PKG74808	Tag Number: -	Tube MAWP PSI: 0 MAWT F: 0	Project #: C61860
Pipeline: 12345-678	CRN: W3705.213	Vessel CA: 0.0630	Report Number: 56159

Band	Description	Year	Avg Inches	Min Inches	Scanning surface operational status during UT survey	Nominal	CA	TMIN	Recommended Retirement Date	
05	Head	Baseline 4/04/19	0.553	0.529	External (Online)	0.4100	0.0630	0.2235	2039	
Shape	Ellipsoidal	Shell Side	Previous			Comments-->		OK		
OD	120	Current 4/04/19	0.553	0.529	External (Online)	CA, NOM & MATERIAL ASSUMED				
Spec.	VIII Div 1	ST Loss MPY								
Material	SA 516 - 70	LT Loss MPY		0						
10	Head	Baseline 4/04/19	0.531	0.519	External (Online)	0.4100	0.0630	0.2235	2039	
Shape	Ellipsoidal	Shell Side	Previous			Comments-->		OK		
OD	120	Current 4/04/19	0.531	0.519	External (Online)	CA, NOM & MATERIAL ASSUMED				
Spec.	VIII Div 1	ST Loss MPY								
Material	SA 516 - 70	LT Loss MPY		0						
15	Shell	Baseline 4/04/19	0.417	0.382	External (Online)	0.3750	0.0630	0.2241	2039	
Shape	Cylindrical	Shell Side	Previous			Comments-->		OK		
OD	120	Current 4/04/19	0.417	0.382	External (Online)	CA, NOM & MATERIAL ASSUMED				
Spec.	VIII Div 1	ST Loss MPY								
Material	SA 516 - 70	LT Loss MPY		0						
20	Shell	Baseline 4/04/19	0.410	0.405	External (Online)	0.3750	0.0630	0.2241	2039	
Shape	Cylindrical	Shell Side	Previous			Comments-->		OK		
OD	120	Current 4/04/19	0.410	0.405	External (Online)	CA, NOM & MATERIAL ASSUMED				
Spec.	VIII Div 1	ST Loss MPY								
Material	SA 516 - 70	LT Loss MPY		0						



ULTRASONIC CORROSION SURVEY: LONG RUN EXPLORATION

LSD: 02-12-058-23W4	Vessel Number: 640530	Manufacturer: NWP INDUSTRIES	Survey Date: 4/04/19
District Unit: CENTRAL - AB	Vessel Name: TREATER	Serial Number: NWP-09284-001-A	Inspector: DUANE PAETKAU
Location: REDWATER NORTH	Year Built: 2015	Shell MAWP PSI: 75 MAWT F: 300	Process: SWEET
PKG/Skid: PKG74808	Tag Number: -	Tube MAWP PSI: 0 MAWT F: 0	Project #: C61860
Pipeline: 12345-678	CRN: W3705.213	Vessel CA: 0.0630	Report Number: 56159

Band	Description	Year	Avg Inches	Min Inches	Scanning surface operational status during UT survey	Nominal	CA	TMIN	Recommended Retirement Date
25	Shell	Baseline 4/04/19	0.421	0.401	External (Online)	0.3750	0.0630	0.2241	2039
Shape	Cylindrical	Shell Side Previous				Comments--> OK			
OD	120	Current 4/04/19	0.421	0.401	External (Online)	CA, NOM & MATERIAL ASSUMED			
Spec.	VIII Div 1	ST Loss MPY							
Material	SA 516 - 70	LT Loss MPY		0					
30	Shell	Baseline 4/04/19	0.406	0.400	External (Online)	0.3750	0.0630	0.2241	2039
Shape	Cylindrical	Shell Side Previous				Comments--> OK			
OD	120	Current 4/04/19	0.406	0.400	External (Online)	CA, NOM & MATERIAL ASSUMED			
Spec.	VIII Div 1	ST Loss MPY							
Material	SA 516 - 70	LT Loss MPY		0					
35	Shell	Baseline 4/04/19	0.397	0.390	External (Online)	0.3750	0.0630	0.2241	2039
Shape	Cylindrical	Shell Side Previous				Comments--> OK			
OD	120	Current 4/04/19	0.397	0.390	External (Online)	CA, NOM & MATERIAL ASSUMED			
Spec.	VIII Div 1	ST Loss MPY							
Material	SA 516 - 70	LT Loss MPY		0					
40	Head	Baseline 4/04/19	0.773	0.768	External (Online)	0.6250	0.0630	0.2227	2039
Shape	Ellipsoidal	Shell Side Previous				Comments--> OK			
OD	120	Current 4/04/19	0.773	0.768	External (Online)	CA, NOM & MATERIAL ASSUMED			
Spec.	VIII Div 1	ST Loss MPY							
Material	SA 516 - 70	LT Loss MPY		0					



ULTRASONIC CORROSION SURVEY: LONG RUN EXPLORATION

LSD: 02-12-058-23W4	Vessel Number: 640530	Manufacturer: NWP INDUSTRIES	Survey Date: 4/04/19
District Unit: CENTRAL - AB	Vessel Name: TREATER	Serial Number: NWP-09284-001-A	Inspector: DUANE PAETKAU
Location: REDWATER NORTH	Year Built: 2015	Shell MAWP PSI: 75 MAWT F: 300	Process: SWEET
PKG/Skid: PKG74808	Tag Number: -	Tube MAWP PSI: 0 MAWT F: 0	Project #: C61860
Pipeline: 12345-678	CRN: W3705.213	Vessel CA: 0.0630	Report Number: 56159

Band	Description	Year	Avg Inches	Min Inches	Scanning surface operational status during UT survey	Nominal	CA	TMIN	Recommended Retirement Date	
45	Head	Baseline 4/04/19	0.761	0.759	External (Online)	0.6250	0.0630	0.2227	2039	
Shape	Ellipsoidal	Shell Side Previous				Comments-->		OK		
OD	120	Current 4/04/19	0.761	0.759	External (Online)	CA, NOM & MATERIAL ASSUMED				
Spec.	VIII Div 1	ST Loss MPY								
Material	SA 516 - 70	LT Loss MPY								
			0							
50	Piping	Baseline 4/04/19	0.285	0.278	External (Online)	0.2800	0.0350	0.0124	2039	
Shape	90° Elbow	Shell Side Previous				Comments-->		OK		
OD	6.625	Current 4/04/19	0.285	0.278	External (Online)					
Spec.	B31.3	ST Loss MPY								
Material	A 234 - WPB	LT Loss MPY								
			1							
55	Piping	Baseline 4/04/19	0.360	0.297	External (Online)	0.2160	0.0270	0.0066	2039	
Shape	Tee	Shell Side Previous				Comments-->		OK		
OD	3.5	Current 4/04/19	0.360	0.297	External (Online)					
Spec.	B31.3	ST Loss MPY								
Material	A 234 - WPB	LT Loss MPY								
			0							
60	Piping	Baseline 4/04/19	0.204	0.199	External (Online)	0.2370	0.0296	0.0084	2039	
Shape	90° Elbow	Shell Side Previous				Comments-->		Caution		
OD	4.5	Current 4/04/19	0.204	0.199	External (Online)					
Spec.	B31.3	ST Loss MPY								
Material	A 234 - WPB	LT Loss MPY								
			10							



ULTRASONIC CORROSION SURVEY: LONG RUN EXPLORATION

LSD: 02-12-058-23W4	Vessel Number: 640530	Manufacturer: NWP INDUSTRIES	Survey Date: 4/04/19
District Unit: CENTRAL - AB	Vessel Name: TREATER	Serial Number: NWP-09284-001-A	Inspector: DUANE PAETKAU
Location: REDWATER NORTH	Year Built: 2015	Shell MAWP PSI: 75 MAWT F: 300	Process: SWEET
PKG/Skid: PKG74808	Tag Number: -	Tube MAWP PSI: 0 MAWT F: 0	Project #: C61860
Pipeline: 12345-678	CRN: W3705.213	Vessel CA: 0.0630	Report Number: 56159

Band	Description	Year	Avg Inches	Min Inches	Scanning surface operational status during UT survey	Nominal	CA	TMIN	Recommended Retirement Date
65	Piping	Baseline 4/04/19	0.211	0.198	External (Online)	0.2160	0.0270	0.0066	2039
Shape	90° Elbow	Shell Side Previous				Comments-->		OK	
OD	3.5	Current 4/04/19	0.211	0.198	External (Online)				
Spec.	B31.3	ST Loss MPY							
Material	A 234 - WPB	LT Loss MPY		5					
70	Piping	Baseline 4/04/19	0.417	0.373	External (Online)	0.2370	0.0296	0.0084	2039
Shape	Tee	Shell Side Previous				Comments-->		OK	
OD	4.5	Current 4/04/19	0.417	0.373	External (Online)				
Spec.	B31.3	ST Loss MPY							
Material	A 234 - WPB	LT Loss MPY		0					
75	Piping	Baseline 4/04/19	0.248	0.229	External (Online)	0.2370	0.0296	0.0084	2039
Shape	90° Elbow	Shell Side Previous				Comments-->		OK	
OD	4.5	Current 4/04/19	0.248	0.229	External (Online)				
Spec.	B31.3	ST Loss MPY							
Material	A 234 - WPB	LT Loss MPY		2					
80	Piping	Baseline 4/04/19	0.231	0.228	External (Online)	0.2370	0.0296	0.0084	2039
Shape	90° Elbow	Shell Side Previous				Comments-->		OK	
OD	4.5	Current 4/04/19	0.231	0.228	External (Online)				
Spec.	B31.3	ST Loss MPY							
Material	A 234 - WPB	LT Loss MPY		2					



ULTRASONIC CORROSION SURVEY: LONG RUN EXPLORATION

LSD: 02-12-058-23W4	Vessel Number: 640530	Manufacturer: NWP INDUSTRIES	Survey Date: 4/04/19
District Unit: CENTRAL - AB	Vessel Name: TREATER	Serial Number: NWP-09284-001-A	Inspector: DUANE PAETKAU
Location: REDWATER NORTH	Year Built: 2015	Shell MAWP PSI: 75 MAWT F: 300	Process: SWEET
PKG/Skid: PKG74808	Tag Number: -	Tube MAWP PSI: 0 MAWT F: 0	Project #: C61860
Pipeline: 12345-678	CRN: W3705.213	Vessel CA: 0.0630	Report Number: 56159

Band	Description	Year	Avg Inches	Min Inches	Scanning surface operational status during UT survey	Nominal	CA	TMIN	Recommended Retirement Date
85	Piping	Baseline 4/04/19	0.241	0.234	External (Online)	0.2370	0.0296	0.0084	2039
Shape	Cylindrical	Shell Side			Previous	Comments-->		OK	
OD	4.5	Current 4/04/19	0.241	0.234	External (Online)				
Spec.	B31.3	ST Loss MPY							
Material	A 106 - B	LT Loss MPY		1					
90	Piping	Baseline 4/04/19	0.227	0.216	External (Online)	0.2180	0.0272	0.0044	2039
Shape	90° Elbow	Shell Side			Previous	Comments-->		OK	
OD	2.375	Current 4/04/19	0.227	0.216	External (Online)				
Spec.	B31.3	ST Loss MPY							
Material	A 234 - WPB	LT Loss MPY		1					