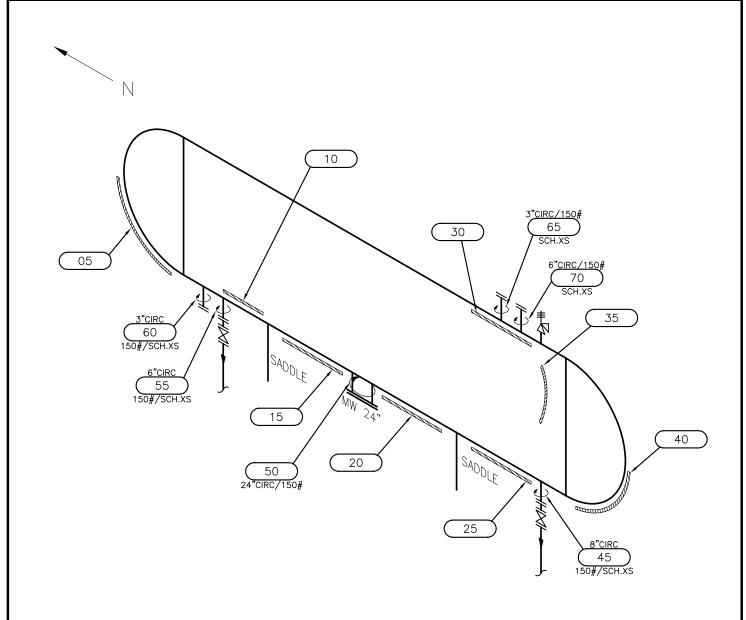
Enerplus Resources Visual External Inspection Report – Pressure Vessels

Installation		ion	✓ Exte	ernal								_			•						AI FR 023	
Date	e :			August '	15, 20	12		Des	cript	ion:	✓	Ve	ssel		Excha	nger		Boiler	E#	2305	52	
Insp	ecto	r:		Mark To	mko			Equ	ipme	ent Na	me:	LP	G Bul						CRI	\#	F398.2	
_	nt Co			Integrity	Test	ing	Services			tion#		A0	13899	7					Seri	ial#	28319A	
Owi				Enerplus					ufac	turer:	W	ester	n Roc	k Bit	Co. Lt	d.		Yea	ır Bu	ilt:	1987	
	rict:							Field	d:	J	oarca							LSD:			-03-049-2	21W4M
Serv			✓	Sweet		Sour													MDI		N/S	
Zone		MA	WP	MAWT		Set	PSV Tag E#	PSV	/ Man	nufactur	er	PS\	/ S/N#		PSV Inlet size	0	PSV utlet size	PSV Serv. Co	PSV	PSV Serv. PSV Date CSO? Y/N		PSV Capacity
Shel Side		250	PSI	115°F	N/S	S	N/S		N	/S		١	V/S		3" 600		x2"	Powell	1-M	ay-07	N/A	N/S
Tube	,			-																		
Othe	r	-	-	-																		
	Shell Head						Head			Chann	el		Tu	ıbe					Cor	nment		
Mate	rial			SA-516-70)		SA-516-70)														
	inal T			0.8415"			0.836"															
CA				0.0625"			0.0625"															
	ntatio	n	V	Hor	Ver F	Foun	dation:		Cond	rete		Gra	lovel		Timbers	. 🗀	Stee	l Con	dition	Goo	4	
Offici	itatioi	''	7	Saddle			Welded			to Mov			ndition	_				ts for bol		000	<u>u</u>	
			H	Skirt			Of Debris	Ш	1166	to Mov	<u> </u>	_	ndition	_	140 exp	ansı	011 310	101 001	13			
S	uppo	rt	H		=							_										
			\dashv	Hangers		Secu	re						ndition									
_				Other:		ī		Condition				naition										
Ove			General Condition: Good						Electrical Gro						Grounding							
	Surfa		Н	Painted		nsul			e-proc			added		onditio								
	Fixtur		$ \checkmark $	Ladder		Platfo		Othe				latforr	n are i	n goo	d condit	_				11 .1		
	ection		zles		Manw	<i>ı</i> ay	一一	ort	Siz	ze: 22			_		Ľ	J	Reinfo	rcement F	ad		Weep	Hole Present
Davi	t Arm				Prese	ent	Grea	sed	Ш	Dou	ble nu	tted	Co	onditio	n:				No da	avit arı	n	
		PSV			Щ	Su	pported	Щ	Joi	ined per	r code		Dra	ains p	roperly	Щ	We	ell Coated	Com	ment:	Top of ve	ssel
_	=	Inlet				Su	pported		Joi	ined per	r code		Fre	e fror	n leaks		We	ell Coated	Com	ment:	disconne	cted
Piping	✓ Outlet		et			Su	pported		Joi	ined per	r code		Fre	e fror	n leaks		We	ell Coated	Com	ment:	disconne	cted
Pip	$oxedsymbol{\checkmark}$	✓ Drain		Supported		Joined per cod			r code	ode Free		e fror	n leaks		We	ell Coated	Com	ment:	disconne	cted		
	>	Instru	umer	ntation		Su	pported					>	_ Tree from leaks we			ell Coated	Com	ment:	condition			
		Proc	ess f	luid identifi	ed			Flow direction mark				ked				G Gas	S					
			✓	Manual Is	olation	ı Val	ve	✓ Free from leaks				ıks										
١	/alve	s		Automate	d Cont	trol V	/alve			Free fro	om lea	aks	Com	ment:	:							
				Vents and	d Drain	s Plu	ugged		Co	mment	:											
		_	✓	Pressure			Readin	ıg:	0		Co	nditio	n:	Good condition 0-200 kPa								
	auge	es .		Temperat	ure		Readin				Co	nditio	n:	SSS CONGRESS OF LOOK U								
	Sight	Glas	s		Fluid L	evel	ı						N/A									
Su	pecti mma	ary	No	ep holes concerns				ads.	Sou	ıth sac	ddle b	oolts	need	exp	ansion	slot	s and	d washe	S.		luce	
Re	comi	menc	atio	ns:																	NCR	<u> </u>
Insta	Install expansion slots for bolts on South saddle sup									rt.												
Integrity Status Suitable for continued Service									√ Ye	es	No	\Box	lmr	nedia	te repair	s ren	uired	Futi	ire rer	airs re	equired	
-	ntory				ervice	. J. 101		of ser			_	ock	, <u>.</u>	. iouid	.s ropan	J 154	anou				- quirou	
Inspection Interval						Out	5 Ye				JOIC	<u>I</u>	Year	s or Ch	ange	d to						
off	PSV	Inter	val					5 Ye	ears					Years or Changed to								
Sign	Insp	Inspector Signature			Mare for			Jurisdictional Inspector #				API 510# 38634										
Chief/Senior Signature (if needed)									Jurisdictional Inspector #													
	Form Last Revised xxxx																					

Enerplus Resources Visual Internal Inspection Report – Pressure Vessels AI FR 024

Date:		15-Aug-12	2		Des	cription	:	✓ Vess	/essel ☐ Exchanger ☐ Boiler E# 23052				<u> </u>	
Inspector:		Mark Ton	nko		Εqι	iipment	Name:	LPG Bul	llet			CRN# F39	8.2	
Agent Co:		Integrity ⁻	Testing S	Services	Jur	isdictio	n # <mark>A01</mark> 3	38997				Serial# 2	8319A	
Owner:		Enerplus	Resourc	es	Mar	nufactur	er: W	estern Roc	k Bit Co.	Ltd.	Υ	ear Built: 1	987	
District:		North Cei	ntral Plai	ns:Joarcan	Fiel	d:	Joarcam	Unit 2		LSD:	11-03-04	19-21W4M		
Scope:	A vis					II accessib	le shell a	nd head surf	aces, nozzl	les, welds etc.	<u>. </u>			
Access	✓ N	∕lanway 🔽	Inspectio	n nozzle										
Opening	Gas	sket surface	es 🗸	Compliant w	ith code	Commer	nt Smooth	and clean						
Opening	No	zzle tube	\square N	lo pitting, eros	sion etc.	Commer	nt							
		Jniform												
	С	orrosion	└ Insig	gnificant amo	unt	Commer	nt Vessel v	welds and no	ozzles are ir	n very good con	dition			
Shell and	Dittin	g corrosion	✓ No	ne noted		Comment No pitting								
Head														
Surfaces		Erosion	Ŭ Noi	ne noted		Commer	nt Vortex b	oreaker box i	s in good c	ondition. Nozzle	es are good.			
	Inter	nal Coating	□Full [Partial 💆	None	Commer	nt							
		echanical damage	✓ None noted			Commer								
		Jniform				Comment								
	corrosion		Insignificant amount			Commer	nent More rust noted on top shell but insignificant around							
	Ditting correction													
	Pitting corrosion		on None noted			Comment								
Welds	Weld	ding defects	✓ No	ne noted		Commer	nt Welding	g is very good	d					
				by Mark Tom	ıko			, , g		00% of nozzle, lo	ng seam cire	c welds.		
	Т	ype	MPI	(WF	B&∖	V	Ory)	LPI U	IT R	T U Othe	er:			
	Re	sults: No	linear indic	cation noted.										
	Ohst	ructions	√ Non	ne noted	Comm	ent None								
Nozzles	Corre		+	ne noted		ent very li	aht rust							
								s as new cor	ndition					
		✓ Vortex	breaker	✓ Secu	ıre 🗹	Good co	ndition	Comment	as new co	ndition				
		Impinge	ement plate	Secu	ıre	Good co	ndition	Comment						
		Suction	tube	Secu	ıre	Good co	ndition	Comment						
Attachme	nts	Demist	er	Secu	ıre	Good co	ndition	Comment						
		Heating	g coil	☐ Secu	ıre	Good condi		Comment						
		Fire tub	е	☐ Secu	ıre	Good condition Co		Comment	t					
				☐ Secu	ıre	Good co	ndition	Comment	t					
Inspection	n	Nia atautiti			N.4			-1						
Summar	у	NO SIGNING	Jani areas	s or concern	. Mariw	ay and n	lozzie se	ai suriaces	are in goo	od condition.				
Recommend	ation	s:										NCF	₹	
None. PSV	is goi	ng in for s	ervice and	d is set at 25	0 PSI	and is the	e same a	is the vesse	el MAWP.					
	1												1	
Integrity Sta Inventory Sta		Suitable for	or continue	ed service Cut of servi	′ Yes	Stock	o[∐ In	nmediate rep	pairs require	ed Futur	e repairs rec	uıred	Replace	
mivernory St	aเนร	iii serv		Out of SerV		SIUCK			<u> </u>					
	Insp	ection Inter	rval			!	5 Years		Years or C	Changed to				
#														
0 u	PSV	Interval					5 Years		Years or Changed to					
Sign Off	l	O'	.4						Jurisdictional Inspector# ADI 540# 20024			2.4		
	msp	Inspector Signature			+	Marc force J			Jurisdictional Inspector# API 510# 38634)4		
	Chie	Chief/Senior Signature (if needed)								nal Inspector#				





P.E. No.: <u>E#23052</u>	Code/Div.: N/S
Serial No.: _28319A P.R.N. (a)0138997 C.R.N.: _F398.2 Manufacturer:WESTERN ROCK BIT (c)	Yr. Bit.: 1987 Manway: YES
CLIENT ENERPLUS	RESOURCES
JOARCA	AINS — JOARCAM FIELD AM UNIT 2 3-049-21W4M
ITEM LPG	BULLET

DATE: 2012/08 | DWG.#: 006

BY: M.T.

	Size: N/S	Radiography:RT-1	
	Service: N/S	Insulated: NO	
	PWHT: N/S	N.B. No.: <u>N/S</u>	
	Design & Materials	Data	
	HEAD: Material: <u>SA-516-70</u>	Nom.: <u>0.8415</u> "	C.A.: 0.625"
	Material:	Nom.:	_ C.A.:
	SHELL Material: SA-516-70	Nom.: 0.8415"	C.A.: 0.625"
	Material:	Nom.:	_ C.A.:
	BOOT Head Mat'l.:	_ Nom.:	C.A.:
/ FIELD	Shell Mat'l.:	Nom.:	_ C.A.:
	CHANNEL Material:	_ Nom:	C.A.:
	MAWP Shell Side: 250 PSI	@ Temp.:	115°F
	MAWP Tube Side:	@ Temp.:	
000	Comments:	· ·	



Unit: S-053

FACILITY: JOARCAM FIELD MANUFACTURER: WESTERN ROCKBIT CO. LTD. LSD: 11-03-049-21W4M DESIGN PRESSURE: 1724 kPa / 250 psi
ITEM DESC:: LPG BULLET DESIGN TEMP.: 46 C / 115 F

EQUIP / OIP#: E23052

PROV. REG. #: A0138997 VESSEL CORROSION ALLOWANCE: 1.58 mm

SERIAL #: 28319A

CRN.: F398.2 TOTAL CAUTION / ACTION TML: 0

Item # 006

TML No.: 5 NORTH HEAD T-B

AVERAGE THICKNESS MEASURED: 01/1987 DATE BUILT: 25.28 mm. MINIMUM THICKNESS MEASURED: MATERIAL: 25.00 mm. SA516-70 Pts. Nom CA +Nom. B/L Prev. Last Short Long Rem Future UT Action/Caution Thick. Steel -CA Survey Survey Survey Term Term Half Reading Mfg.Tol. -Toll. Thick. Required Item Thick. Thick. CR CR Life mm/yy mm mm mm/yr mm/yr mm mm mm mm yr 01/1987 08/2012 21.23 25.40 5.01 21.23 1.58 19.65 N/A 0.0000 0.0000 100.00 NO 21.23 21.23 0.0000 5.02 1.58 19.65 N/A 25.20 0.0000100.00 NO 5.03 21.23 19.65 21.23 25.10 0.0000 0.0000 100.00 1.58 N/A NO 21.23 21.23 25.00 5.04 1.58 19.65 N/A 0.00000.0000100.00 NO 21.23 21.23 26.00 0.0000 0.0000 100.00 5.05 1.58 19.65 N/A NO 5.06 21.23 1.58 21.23 25.00 0.0000 0.0000 19.65 N/A 100.00 NO

TML No.: 10 N.BTM SHELL N-S

		01/1987 SA516-70				AGE THICK IUM THICK			22.45 22.30		
Pts.	Nom. Thick. mm	CA + Steel Mfg.Tol. mm	Nom. -CA -Toll. mm	B/L Survey Thick. mm	Prev. Survey Thick. mm	Last Survey Thick. mm	Short Term CR mm/yr	Long Term CR mm/yr	Rem. Half Life yr	Future UT Reading mm/yy	Action/Caution Required Item
				01/1987		08/2012					
10.01	21.37	1.58	19.79	21.37	N/A	22.30	0.0000	0.0000	100.00		NO
10.02	21.37	1.58	19.79	21.37	N/A	22.40	0.0000	0.0000	100.00		NO
10.03	21.37	1.58	19.79	21.37	N/A	22.70	0.0000	0.0000	100.00		NO
10.04	21.37	1.58	19.79	21.37	N/A	22.40	0.0000	0.0000	100.00		NO
10.05	21.37	1.58	19.79	21.37	N/A	22.40	0.0000	0.0000	100.00		NO
10.06	21.37	1.58	19.79	21.37	N/A	22.50	0.0000	0.0000	100.00		NO

If Baseline (B/L) Survey Thickness Measurement was not taken at the time of Manufacture, then Nominal Thickness is used as Baseline Thickness. Minimum Thickness is calculated

Design Minimum Thickness = Nom. Thick. - CA - Manufacturing Steel Tolerance.

Manufacturing Tolerance of pipe and forged fittings is + or -12.5% (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

Manufacturing Tolerance of plate is + or - 0.25mm (0.010") (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

(*) and GREEN Represent 25% of the last thickness readings, which have the shortest remaining half life.

BLUE (Caution TML Point) - if Corrosion Rate exceed a 0.250mm / 0.009 in. per yr. or Half Life is less than 15 years.



Unit: S-053

NO

FACILITY: JOARCAM FIELD MANUFACTURER: WESTERN ROCKBIT CO. LTD. LSD: 11-03-049-21W4M DESIGN PRESSURE: 1724 kPa / 250 psi
ITEM DESC.: LPG BULLET DESIGN TEMP.: 46 C / 115 F

EQUIP / OIP#: E23052

PROV. REG. #: A0138997 VESSEL CORROSION ALLOWANCE: 1.58 mm

SERIAL #: 28319A

CRN.: F398.2 TOTAL CAUTION / ACTION TML: 0

Item # 006

15.06

21.37

TML No.: 15 MID N.BTM SH N-S

AVERAGE THICKNESS MEASURED: DATE BUILT: 01/1987 21.90 mm. MATERIAL: MINIMUM THICKNESS MEASURED: 21.70 mm. SA516-70 Pts. Nom CA +Nom B/L Prev. Last Short Long Rem Future UT Survey Thick. Steel -CA Survey Survey Term Term Half Reading Action/Caution Thick. Mfg.Tol. -Toll. Thick. Required Item Thick. CR CR Life mm/yy mm mm mm mm/yr mm/yr mm mm mm yr 01/1987 08/2012 19.79 21.70 15.01 21.37 1.58 21.37 N/A 0.0000 0.0000 100.00 NO 15.02 21.37 1.58 19.79 21.37 21.80 0.0000 0.0000100.00 NO N/A 15.03 21.37 19.79 21.37 21.90 0.0000 0.0000 100.00 1.58 N/A NO 15.04 21.37 1.58 21.37 22.00 19.79 N/A 0.0000 0.0000100.00 NO 15.05 21.37 19.79 21.37 22.00 0.0000100.00 1.58 N/A 0.0000 NO

22.00

0.0000

0.0000

100.00

TML No.: 20 S.MID BTM SH N-S

1.58

19.79

DATE BUILT: 01/1987 AVERAGE THICKNESS MEASURED: 22.22 mm. MATERIAL: MINIMUM THICKNESS MEASURED: 22.10 mm. SA516-70 CA+ Future UT Pts. Nom. Nom. B/L Prev. Last Short Long Rem. Thick. Steel -CA Survey Survey Survey Term Term Half Reading Action/Caution mm Mfg.Tol. -Toll. Thick. Thick. Thick. CR CR Life mm/yy Required Item mm mm mm mm mm mm/yr mm/yr 01/1987 08/2012 20.01 21.37 1.58 19.79 21.37 22.20 0.0000 0.0000 100.00 N/A NO 20.02 21.37 19.79 21.37 22.30 0.0000 0.0000 100.00 1.58 N/A NO 20.03 21.37 1.58 19.79 21.37 N/A 22.20 0.0000 0.0000 100.00 NO 20.04 21.37 1.58 19.79 21.37 N/A 22.10 0.0000 0.0000 100.00 NO 20.05 21.37 1.58 19.79 21.37 N/A 22.40 0.0000 0.0000 100.00 NO 20.06 21.37 1.58 19.79 21.37 N/A 22.10 0.0000 0.0000 100.00 NO

If Baseline (B/L) Survey Thickness Measurement was not taken at the time of Manufacture, then Nominal Thickness is used as Baseline Thickness. Minimum Thickness is calculated

Manufacturing Tolerance of plate is + or - 0.25mm (0.010") (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

(*) and GREEN Represent 25% of the last thickness readings, which have the shortest remaining half life.

BLUE (Caution TML Point) - if Corrosion Rate exceed a 0.250mm / 0.009 in. per yr. or Half Life is less than 15 years.

21.37

N/A

Design Minimum Thickness = Nom. Thick. - CA - Manufacturing Steel Tolerance.

Manufacturing Tolerance of pipe and forged fittings is + or -12.5% (May or may not apply dependent upon the Client's Owner-User Integrity Management System).



Unit: S-053

FACILITY: JOARCAM FIELD MANUFACTURER: WESTERN ROCKBIT CO. LTD. LSD: 11-03-049-21W4M DESIGN PRESSURE: 1724 kPa / 250 psi
ITEM DESC.: LPG BULLET DESIGN TEMP.: 46 C / 115 F

EQUIP / OIP#: E23052

PROV. REG. #: A0138997 VESSEL CORROSION ALLOWANCE: 1.58 mm

SERIAL #: 28319A

CRN.: F398.2 TOTAL CAUTION / ACTION TML: 0

Item # 006

TML No.: 25 S.BTM SHELL N-S

AVERAGE THICKNESS MEASURED: DATE BUILT: 01/1987 21.82 mm. MATERIAL: MINIMUM THICKNESS MEASURED: 21.80 mm. SA516-70 Pts. Nom CA +Nom B/L Prev. Last Short Long Rem Future UT Thick. Steel -CA Survey Survey Survey Term Term Half Reading Action/Caution Thick. Mfg.Tol. -Toll. Thick. Thick. CR CR Life mm/yy Required Item mm mm/yr mm mm/yr mm mm mm mm yr 01/1987 08/2012 25.01 19.79 21.37 21.90 21.37 1.58 N/A 0.0000 0.0000 100.00 NO 21.37 25.02 21.37 1.58 19.79 N/A 21.80 0.0000 0.0000100.00 NO 25.03 21.37 19.79 21.37 21.80 0.0000 100.00 1.58 N/A 0.0000 NO 25.04 21.37 1.58 21.37 21.80 19.79 N/A 0.0000 0.0000100.00 NO 25.05 21.37 19.79 21.37 21.80 0.00001.58 N/A 0.0000 100.00 NO 25.06 21.37 19.79 21.37 21.80 0.0000 NO 1.58 N/A 0.0000 100.00

TML No.: 30 UPR N.SHELL N-S

DATE BUILT: 01/1987 AVERAGE THICKNESS MEASURED: 21.67 mm. MATERIAL: MINIMUM THICKNESS MEASURED: 21.50 mm. SA516-70 CA+ Future UT Pts. Nom. Nom. B/L Prev. Last Short Long Rem. Thick. Steel -CA Survey Survey Survey Term Term Half Reading Action/Caution mm Mfg.Tol. -Toll. Thick. Thick. Thick. CR CR Life mm/yy Required Item mm mm mm mm mm mm/yr mm/yr 01/1987 08/2012 30.01 21.37 1.58 19.79 21.37 21.70 0.0000 0.0000 100.00 N/A NO 30.02 21.37 19.79 21.37 21.70 0.0000 0.0000 100.00 1.58 N/A NO * 30.03 21.37 1.58 19.79 21.37 N/A 21.50 0.0000 0.0000 100.00 NO 30.04 21.37 1.58 19.79 21.37 N/A 21.70 0.0000 0.0000 100.00 NO * 30.05 21.37 1.58 19.79 21.37 N/A 21.70 0.0000 0.0000 100.00 NO * 30.06 21.37 1.58 19.79 21.37 N/A 21.70 0.0000 0.0000 100.00 NO *

If Baseline (B/L) Survey Thickness Measurement was not taken at the time of Manufacture, then Nominal Thickness is used as Baseline Thickness. Minimum Thickness is calculated

Manufacturing Tolerance of plate is + or - 0.25mm (0.010") (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

(*) and GREEN Represent 25% of the last thickness readings, which have the shortest remaining half life.

BLUE (Caution TML Point) - if Corrosion Rate exceed a 0.250mm / 0.009 in. per yr. or Half Life is less than 15 years.

Design Minimum Thickness = Nom. Thick. - CA - Manufacturing Steel Tolerance.

Manufacturing Tolerance of pipe and forged fittings is + or -12.5% (May or may not apply dependent upon the Client's Owner-User Integrity Management System).



Unit: S-053

NO

FACILITY: JOARCAM FIELD MANUFACTURER: WESTERN ROCKBIT CO. LTD. LSD: 11-03-049-21W4M DESIGN PRESSURE: 1724 kPa / 250 psi
ITEM DESC.: LPG BULLET DESIGN TEMP.: 46 C / 115 F

EQUIP / OIP#: E23052

PROV. REG. #: A0138997 VESSEL CORROSION ALLOWANCE: 1.58 mm

SERIAL #: 28319A

CRN.: F398.2 TOTAL CAUTION / ACTION TML: 0

Item # 006

35.06

21.37

TML No.: 35 S.SIDE SHELL T-B

AVERAGE THICKNESS MEASURED: DATE BUILT: 01/1987 21.70 mm. MINIMUM THICKNESS MEASURED: MATERIAL: 21.70 mm. SA516-70 Pts. Nom CA +Nom. B/L Prev. Last Short Long Rem Future UT Action/Caution Thick. Steel -CA Survey Survey Survey Term Term Half Reading Mfg.Tol. -Toll. Thick. Thick. Thick. Required Item CR CR Life mm/yy mm mm mm mm/yr mm/yr mm mm mm yr 01/1987 08/2012 19.79 21.70 35.01 21.37 1.58 21.37 N/A 0.0000 0.0000 100.00 NO 35.02 21.37 1.58 19.79 21.37 21.70 0.0000 0.0000 100.00 NO N/A 35.03 21.37 19.79 21.37 21.70 0.0000 0.0000 100.00 1.58 N/A NO 21.37 21.37 21.70 35.04 1.58 19.79 N/A 0.0000 0.0000 100.00 NO 35.05 21.37 1.58 19.79 21.37 21.70 0.0000 0.0000 100.00 N/A NO

21.70

0.0000

0.0000

100.00

TML No.: 40 SOUTH HEAD T-B

1.58

19.79

21.37

N/A

DATE BUILT: 01/1987 MATERIAL: SA516-70			AVERAGE THICKNESS MEASURED: 25.38 mm. MINIMUM THICKNESS MEASURED: 25.00 mm.								
Pts.	Nom. Thick. mm	CA + Steel Mfg.Tol. mm	Nom. -CA -Toll. mm	B/L Survey Thick. mm	Prev. Survey Thick. mm	Last Survey Thick. mm	Short Term CR mm/yr	Long Term CR mm/yr	Rem. Half Life yr	Future UT Reading mm/yy	Action/Caution Required Item
				01/1987		08/2012					
40.01	21.23	1.58	19.65	21.23	N/A	25.70	0.0000	0.0000	100.00		NO
40.02	21.23	1.58	19.65	21.23	N/A	25.60	0.0000	0.0000	100.00		NO
40.03	21.23	1.58	19.65	21.23	N/A	25.30	0.0000	0.0000	100.00		NO
40.04	21.23	1.58	19.65	21.23	N/A	25.00	0.0000	0.0000	100.00	•	NO
40.05	21.23	1.58	19.65	21.23	N/A	25.60	0.0000	0.0000	100.00	•	NO
40.06	21.23	1.58	19.65	21.23	N/A	25.10	0.0000	0.0000	100.00		NO

If Baseline (B/L) Survey Thickness Measurement was not taken at the time of Manufacture, then Nominal Thickness is used as Baseline Thickness. Minimum Thickness is calculated

Manufacturing Tolerance of plate is + or - 0.25mm (0.010") (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

(*) and GREEN Represent 25% of the last thickness readings, which have the shortest remaining half life.

BLUE (Caution TML Point) - if Corrosion Rate exceed a 0.250mm / 0.009 in. per yr. or Half Life is less than 15 years.

Design Minimum Thickness = Nom. Thick. - CA - Manufacturing Steel Tolerance.

Manufacturing Tolerance of pipe and forged fittings is + or -12.5% (May or may not apply dependent upon the Client's Owner-User Integrity Management System).



Unit: S-053

FACILITY: JOARCAM FIELD MANUFACTURER: WESTERN ROCKBIT CO. LTD.

LSD: 11-03-049-21W4M DESIGN PRESSURE: 1724 kPa / 250 psi ITEM DESC .: LPG BULLET DESIGN TEMP .: 46 C 115 F

EOUIP / OIP#: E23052

PROV. REG. #: A0138997 VESSEL CORROSION ALLOWANCE: 1.58 mm

SERIAL #: 28319A

CRN.: TOTAL CAUTION / ACTION TML: 0 F398.2

Item # 006

TML No.: 45 8"CIRC NOZ 150#

AVERAGE THICKNESS MEASURED: DATE BUILT: 01/1987 13.13 mm. MATERIAL: MINIMUM THICKNESS MEASURED: 12.90 mm.

Pts. Nom CA +Nom. B/L Prev. Last Short Long Rem Future UT Action/Caution Thick. Steel -CA Survey Survey Survey Term Term Half Reading Thick. Mfg.Tol. -Toll. Thick. Thick. Required Item CR CR Life mm/yy mm mm mm mm/yr mm/yr mm mm mm

01/1987 08/2012 45.01 12.70 12.70 1.58 11.12 N/A 13.40 0.0000 0.0000 100.00 NO 45.02 12.70 12.70 0.0000 1.58 11.12 N/A 13.10 0.0000100.00 NO 45.03 12.70 12.70 12.90 0.0000 0.0000 100.00 1.58 11.12 N/A NO 12.70 12.70 45.04 1.58 11.12 N/A 13.10 0.0000 0.0000 100.00 NO

yr

TML No.: 50 24"CIRC NOZ 150#

DATE BUILT: 01/1987 AVERAGE THICKNESS MEASURED: 13.63 mm. 12.30 mm. MATERIAL: MINIMUM THICKNESS MEASURED:

Pts. Nom. CA +Nom. B/L Prev. Last Short Long Rem. Future UT Thick. Steel -CA Survey Survey Survey Term Term Half Reading Action/Caution mm Mfg.Tol. -Toll. Thick. Thick. Thick. CR CR Life mm/yy Required Item mm mm mm mm mm mm/yr mm/yr 01/1987 08/2012 50.01 12.70 1.58 11.12 12.70 N/A 15.10 0.0000 0.0000 100.00 NO 50.02 12.70 1.58 11.12 12.70 N/A 13.70 0.0000 0.0000 100.00 NO 50.03 12.70 1.58 11.12 12.70 12.30 0.0000 38.72 N/A 0.0152 NO 50.04 12.70 1.58 11.12 12.70 N/A 13.40 0.0000 0.0000 100.00 NO

If Baseline (B/L) Survey Thickness Measurement was not taken at the time of Manufacture, then Nominal Thickness is used as Baseline Thickness. Minimum Thickness is calculated

Design Minimum Thickness = Nom. Thick. - CA - Manufacturing Steel Tolerance.

Manufacturing Tolerance of pipe and forged fittings is + or -12.5% (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

Manufacturing Tolerance of plate is + or - 0.25mm (0.010") (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

(*) and GREEN Represent 25% of the last thickness readings, which have the shortest remaining half life.

BLUE (Caution TML Point) - if Corrosion Rate exceed a 0.250mm / 0.009 in. per yr. or Half Life is less than 15 years.



Unit: S-053

FACILITY: MANUFACTURER: WESTERN ROCKBIT CO. LTD. JOARCAM FIELD 1724 kPa / LSD: 11-03-049-21W4M DESIGN PRESSURE: 250 psi

ITEM DESC .: LPG BULLET DESIGN TEMP.: 46 C 115 F EOUIP / OIP#:

E23052 PROV. REG. #: A0138997 VESSEL CORROSION ALLOWANCE: 1.58 mm

SERIAL #: 28319A CRN.: TOTAL CAUTION / ACTION TML: 0 F398.2

Item # 006

TML No.: 55 6"CIRC NOZ 150#

AVERAGE THICKNESS MEASURED: DATE BUILT: 11.35 mm. MINIMUM THICKNESS MEASURED: MATERIAL: 11.10 mm.

Pts. Nom. CA +Nom. B/L Prev. Last Short Long Rem Future UT Action/Caution Thick. Steel -CA Survey Survey Survey Term Term Half Reading Mfg.Tol. -Toll. Thick. Thick. Thick. Required Item CR CR Life mm/yy mm mm mm/yr mm/yr mm mm mm mm yr 01/1987 08/2012 55.01 10.97 9.39 10.97 100.00 1.58 N/A 11.10 0.0000 0.0000 NO 10.97 55.02 1.58 9.39 10.97 N/A 11.40 0.0000 0.0000100.00 NO 55.03 10.97 9.39 10.97 11.50 0.0000 0.0000 100.00 1.58 N/A NO 10.97 55.04 10.97 1.58 9.39 N/A 11.40 0.0000 0.0000 100.00 NO

TML No.: 60 3"CIRC NOZ 150#

DATE BUILT: 01/1987 AVERAGE THICKNESS MEASURED: 8.23 mm. MINIMUM THICKNESS MEASURED: 7.90 mm. MATERIAL:

Pts.	Nom. Thick. mm	CA + Steel Mfg.Tol. mm	Nom. -CA -Toll. mm	B/L Survey Thick. mm	Prev. Survey Thick. mm	Last Survey Thick. mm	Short Term CR mm/yr	Long Term CR mm/yr	Rem. Half Life yr	Future UT Reading mm/yy	Action/Caution Required Iter	
				01/1987		08/2012						
60.01	7.62	1.58	6.04	7.62	N/A	8.40	0.0000	0.0000	100.00		NO	,
60.02	7.62	1.58	6.04	7.62	N/A	7.90	0.0000	0.0000	100.00		NO	*
60.03	7.62	1.58	6.04	7.62	N/A	8.10	0.0000	0.0000	100.00		NO	
60.04	7.62	1.58	6.04	7.62	N/A	8.50	0.0000	0.0000	100.00		NO	

If Baseline (B/L) Survey Thickness Measurement was not taken at the time of Manufacture, then Nominal Thickness is used as Baseline Thickness. Minimum Thickness is calculated

Design Minimum Thickness = Nom. Thick. - CA - Manufacturing Steel Tolerance.

Manufacturing Tolerance of pipe and forged fittings is + or -12.5% (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

Manufacturing Tolerance of plate is + or - 0.25mm (0.010") (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

(*) and GREEN Represent 25% of the last thickness readings, which have the shortest remaining half life.

BLUE (Caution TML Point) - if Corrosion Rate exceed a 0.250mm / 0.009 in. per yr. or Half Life is less than 15 years.



Future LIT

Unit: S-053

FACILITY: JOARCAM FIELD MANUFACTURER: WESTERN ROCKBIT CO. LTD. LSD: 11-03-049-21W4M DESIGN PRESSURE: 1724 kPa / 250 psi
ITEM DESC.: LPG BULLET DESIGN TEMP.: 46 C / 115 F

EQUIP / OIP#: E23052

PROV. REG. #: A0138997 VESSEL CORROSION ALLOWANCE: 1.58 mm

SERIAL #: 28319A

CRN.: F398.2 TOTAL CAUTION / ACTION TML: 0

Item # 006

TML No.: 65 3"CIRC NOZ 150#

DATE BUILT: 01/1987 AVERAGE THICKNESS MEASURED: 8.00 mm. MATERIAL: MINIMUM THICKNESS MEASURED: 7.90 mm.

Pts.	Nom. Thick. mm	CA + Steel Mfg.Tol. mm	Nom. -CA -Toll. mm	B/L Survey Thick. mm	Prev. Survey Thick. mm	Last Survey Thick. mm	Short Term CR mm/yr	Long Term CR mm/yr	Rem. Half Life yr	Future UT Reading mm/yy	Action/Caution Required Item	
65.01	7.62	1.58	6.04	7.62	N/A	8.00	0.0000	0.0000	100.00		NO	
65.02	7.62	1.58	6.04	7.62	N/A	7.90	0.0000	0.0000	100.00		NO	*
65.03	7.62	1.58	6.04	7.62	N/A	8.00	0.0000	0.0000	100.00	•	NO	
65.04	7.62	1.58	6.04	7.62	N/A	8.10	0.0000	0.0000	100.00		NO	

TML No.: 70 6"CIRC NOZ 150#

 $C\Lambda \perp$

Nom

Nom

DATE BUILT: 01/1987 AVERAGE THICKNESS MEASURED: 11.18 mm.
MATERIAL: MINIMUM THICKNESS MEASURED: 11.00 mm.

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T ts.	Thick.	Steel Mfg.Tol. mm	-CA -Toll.	Survey Thick. mm	Survey Thick. mm	Survey Thick. mm	Term CR mm/yr	Term CR mm/yr	Half Life yr	Reading mm/yy	Action/Caution Required Iter	
				01/1987		08/2012						
70.01	10.97	1.58	9.39	10.97	N/A	11.20	0.0000	0.0000	100.00	•	NO	*
70.02	10.97	1.58	9.39	10.97	N/A	11.50	0.0000	0.0000	100.00	•	NO	
70.03	10.97	1.58	9.39	10.97	N/A	11.00	0.0000	0.0000	100.00		NO	*
70.04	10.97	1.58	9.39	10.97	N/A	11.00	0.0000	0.0000	100.00		NO	*

Short

Long

Pem

If Baseline (B/L) Survey Thickness Measurement was not taken at the time of Manufacture, then Nominal Thickness is used as Baseline Thickness. Minimum Thickness is calculated

Design Minimum Thickness = Nom. Thick. - CA - Manufacturing Steel Tolerance.

Manufacturing Tolerance of pipe and forged fittings is + or -12.5% (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

Manufacturing Tolerance of plate is + or - 0.25mm (0.010") (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

(*) and GREEN Represent 25% of the last thickness readings, which have the shortest remaining half life.

BLUE (Caution TML Point) - if Corrosion Rate exceed a 0.250mm / 0.009 in. per yr. or Half Life is less than 15 years.



MAGNETIC F	PARTIC	CLE EXAMINATI	ON REPOR	RT			REPORT No.: MT - 1874 - 01 - Page: 1 of			
Client:	Enerplus F	Resources					ITS Job No.:		ž. <u> </u>	of 2
District:		ns Central: Joarcam		LSD: 11-03	3-049-2	1W4M	_	15-Aug-12		
Facility:	Joarcam L			- 1100	3 043 2	1 4 4 4 141	_	4:00 PM		
Item(s) Examined:	LPG Bulle						- W.O. No.:			
item(3) Examined.	LI O Dulle	7.					P.O. No.:			
Acceptance Criteria:	ACME SEC	NULDIV 1		Rev. / Date:	2010		Cost Code:			
				Rev. / Date:		/ Oct 2011	_	AF120256		
Procedure No.:		Wet Fluorescent		-			_			
Technique No.:	3			Rev. / Date:	Rev 1	/ Oct 2011	Other:	N/A		
Equipment Data:										
PRN: (A) A	0138997	Serial No.:	28319A	Equip. N	_	E23052	CRN:		F398.2	
Material:	C	Carbon Stell	Thickness:		N/S	<u> </u>	Other:	N	/A	
Surface Condition:										
■ Base Metal □	Machined	☐ Shot Blasted ■	Wire Wheeled	As Groun	nd 🗌	As Welded	Painted Co	ated 🗌 Othe	r:	
☐ < -20°C (-5°F)		■ -20°C (-5°F) to 54°C	(130°F)	☐ 55°C	C (131°F	F) to 315°C (600°	F)	> 315°((600°F)	
Equipment:										
		Equipment	Serial No.	Cal. Due Da	te	MT T	echnique and Ex	amination Me	dium:	
■ Hand Yoke:		Contour Probe	17167	26-Jan-13		AC 🔲	DC 	Continuous	Resi	dual
Perm. Magnet:						Wet	Dry	Fluorescent	☐ Visib	ole
Coil:					-	Manufacturer:	Circle Syste			ch No.:
■ Blacklight:	Sr	pectoline BIB-150P	1664302	19-Mar-12		Cleaner:			-	
Light Meter:		Model DSE-100X	1706820	2-Mar-13	-					
☐ Visible Light:		vioder BOL 100/	>	Footcandles		Particles:	Miglow	810		 5856
_	- Disabiliaht Is	tensity Check; Pre: 4840	. —	-			Ivligiow	010		
Fluorescent Examinatio	III BIACKIIGIII III	tensity check, Fie. 4640	μW/cm ² Post:	3560 µW/c	1112	Other:				
SCOPE:		rescent magnetic particle e ds and heat affected zone o		carried out on	all LPG	bullets internal v	velds to ensure th	nat there is no	o in service	edefects
RESULTS:	No indicati	ions noted.								
CONCLUSION:	Welds are	acceptable to above code								
Client Representative	e:			Sign:				Date:		
Technician(s):										
76		#								
	W/C- for	H-								
Print:		rk Tomko			Andrew		Repo	rt Review:	47	
Le Certification N	CGSE vel: 2		NT Certifi	Level:	echnician SSB	SNT AC	CP/ASNT		#nitial	

Scope of Scoreses
The agreement of the trappstyl Testing Services bir. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested inspection of specific equipment provided for in writing and the preparation of reports or similar documents reflecting the inspection data obtained or the opinion or described in services and the services or services are representations or warranties as to the actual circumstances. ITS is not assuring any responsibilities of the counterioperator, and the owner/operator retarns complete responsibility for the engineering, repair and use decisions as a respirate of the respective deviced by ITS. In ord assuring any responsibilities of the counterioperator, and the owner/operator retarns complete responsibility for the engineering, repair and use decisions as a respirate or final report to the respective or former than ITSs liability respected to be respective date with ITSs liability respect of the services in the same or dependent or device provided, Integrity Testing Services inc. uses the degree, care and skill ordinarily exercised under similar ricumstances by others performing such services provided, Integrity Testing Services inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by ITS.



Client:

Item(s) Examined:

CONTINUATION EXAMINATION REPORT

Enerplus Resources

LPG Bullet

REPORT No.: MT - 1874 - 01 - MT

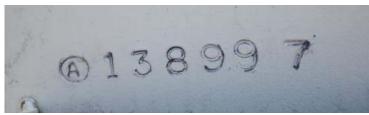
Page: 2

ITS Job No.: 1874

Date: August 15, 2012

PHOTOS







NAME PLATE



OVERALL VIEW

1st Technician:

Print: Mark Tomko Sign:

Mark Jode