WO# 6011113

N# 6011063

SB.

Page 1 of 5 Rev. 8-06-08



## STORAGE TANK INSPECTION REPORT

(Metric)

Facility: MCMILLAN BOOSTER Date: February 3, 2009 Report #: IR090203GENa

**GORD IVERSON** 6011113 Area Supervisor: W.O. / C.C.# STATIC DATA Alberta Reg. #: CRN: National Board #: 66060546 6011063 **Equipment Number:** Notification #: Classification: GLM TANKS & EQUIPMENT LTD. Serial Number: F-97-298-2 Manufacturer: Equip. Description: PRODUCED WATER TANK Location (LSD): 12-24-076-04W5 1997 Equipment Tag #: Year Built: Company I.D.#: BC-053922 ALBERTA Skid / Building #: Province Installed: Registration #: YES NO Nameplate Attached: YES Legible: U1A Available: MAWP: Diameter: NO 8 4648 mm Radiography: Efficiency:: oz MAWT: °C Height: 7315 Stress Relief: NO Code Stamp: 12 F mm VERTICAL MDMT: °C Tank Test Pressure: Ext. Coating: NO Position: 120.00 m3 Coil Test Pressure: Insulated: YES Tank Base: **PLANKS** Capacity: Internal Coating: YES Type: Thickness: mm Man door: YES Size: 610 mm Is Tank Heated: YES **FIRETUBE** Double Wall: NO Is Tank Portable: NO Type: Sec. Containment: YES Type: #1 STEEL #2 **PLASTIC** Thickness Corrosion Allowance Material 2.24 Roof: **SA-36** 4.78 **SA-36** 3.81 Floor: 6.35 mm mm Shell #1: (Bottom) **SA-36** 6.35 3.81 mm Shell #2 **SA-36** 4.78 2.24 mm mm Shell #3 **SA-36** 4.78 2.24 mm mm Shell #4 **SA-36** 4.78 mm 2.24 mm I.D. # **Nozzle Description NPS** Flange Type Material **Thickness** Length Rating 150 **RFSO SA-106B** Inlet 76 # **RFSO** 76 150 **SA-106B** Outlet FIRETUBE or HEAT COIL NON CODE Diameter: O.D. 168 Length: Radiography: NO Code: Diameter: I.D. 154 Stress Relief: NO # of Passes: Thickness Corrosion Allowance Material 4.57 **SA-106B** Tube 7.11 mm mm SA-234WPB 7.11 4.57 Return Bend mm mm PROCESS DATA **Product Description:** PRODUCED WATER Service: **SWEET** °C Operating Pressure: Kpa Operating Temperature: PRD STATIC DATA Tag Number: Manufacturer: NON-CODE Company I.D. #: Model # / Type: Equipment #: Serial Number: CRN: Code Stamp: -Inlet Size: Rating: # Set Pressure: Kpa Back Pressure: Kpa Outlet Size: Rating: Capacity: Service Date: Location of PSV: INSPECTION DETAILS Inspection Reason: CODE INSPECTION Inspections Required: VE VI UT MT Inspection Test Plan: VI UT MT Inspection Type Used: VE Next Inspection Type: VE VI UT MT Last Inspection Date: 2014 NO RBI Category: В D Next Inspection Due: Outstanding Repairs: A VESSEL STATUS SUITABLE FOR CONTINUED SERVICE Inventory Status: Integrity Status: Partial inspection; do not reschedule. This IR completes a thorough inspection; reschedule as indicated. YES INSPECTION SUMMARY

A thorough inspection to verify the equipments integrity was done by UT, VI, VE and MT.

There were no rejectable defects observed at this time; the vessel can be recommended fit for service.

No NCR's were issued at this time.

No IDR's were issued at this time.

There was no external NDE performed during this inspection.



(Metric)

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Facility:

MCMILLAN BOOSTER

Date:

February 3, 2009

Report #:

IR090203GENa

#### RECOMMENDATIONS

At the next opportunity the two risers inside the tank should be cut off to allow proper operation of the tank's intended purpose.

#### REPAIRS COMPLETED

The firetube to flange plate fillet welds had some indications noted that required weld repairs. The defects were removed by grinding and rewelded. MT was then performed with no indications noted.

#### INSPECTION OBSERVATIONS

NON COMPLIANCES ISSUED

#### INSPECTION DEFICIENCIES ISSUED

#### EXTERNAL VISUAL INSPECTION

The nameplate is in tact and legible.

The tank base is sound with no evidence settling.

The tank's ground connection is through a ground wire and ground rod.

The piping and piping attachments are in fair condition with no detectable leaks.

The piping bolt up grading is B7 and 2H.

There is no visual access to the bottom side of the floor.

The spray foam insulation is in fair condition.

The tank is open to atmosphere and does not require a PRD.

The tank has secondary containment that is in fair condition and free of leakage.

#### EXTERNAL NDE

#### INTERNAL VISUAL INSPECTION

The tank was cleaned prior to inspection; however, there was still some oil remaining on the shell above the 5 foot mark.

The tank roof, shell and floor show no evidence of pitting or corrosion.

There were some minor mechanical defects on the internal coating that was repaired using Devoe 243 patch kit.

The internal condition of the tank is satisfactory.

The fire tube was removed and sandblasted for inspection.

MT revealed some indications that could and some that could not be removed by grinding. Upon further inspection slag was detected and removed with a grinder, weld repairs ware performed and reinspected with no defects noted.

There was some isolated pitting noted on the firetube that measured 0.020" in one area and 0.045" in another.

#### INTERNAL NDE

UT inspections on the shell and tank floor were performed by Silvertip Inspection Services Ltd.

MT examination on the firetube was performed by Silvertip Inspection Services Ltd.

The UT readings on the tank shell and floor are above nominal.

The UT readings on the firetube are below nominal; however, they are of no concern at this time.

See the NDE reports for more detailed information.

PRESSURE TE
-------------

Test Completed: - Test Pressure: - Kpa Test Acceptable: - Test Report #:

INSPECTOR CERTIFICATION AND ACCEPTANCE

I, the undersigned, certify that the equipment stated above has been inspected in accordance with the assigned task list

11	and that the stater	ments within this report are correct and	represent m	inspection finding	IS.
	External Inspector's Name:	Inspector's Certification:	Inspect	r's Signature:	Date:
	GUY NORMAND C.E.T.	API 510, 653, ABSA, CGSB II	AUR.		FEBRUARY 3, 2009
	Internal Inspector's Name:	Inspector's Certification:	Inspecto	or's Signature:	Date:
	GUY NORMAND C.E.T.	API 510, 653, ABSA, CGSB II		H/	FEBRUARY 3, 2009



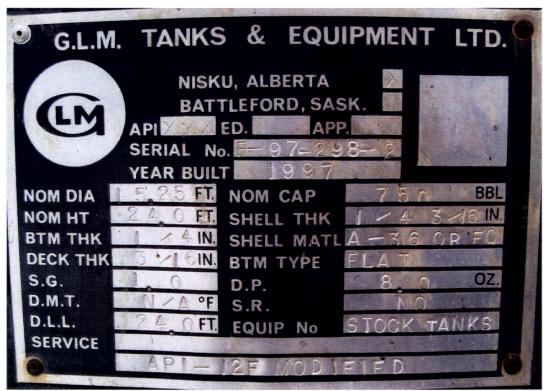
(Metric)

Page 3 of 5 Rev. 8-06-08

Facility: MCMILLAN BOOSTER Date: February 3, 2009 Report #: IR090203GENa

	CH	HEF OR LEAD	INSPECTOR'S ACCEPTA	NCE AND	SCHEDULE CO	NFIRMATION	
1	nspector's Name:		Inspector's Certifica	tion:	Inspector's	Signature:	Date:
7	DALE MARTIN		-		10 M		FEB 24,09
Vessel Insp	ection Interval:	Leave "As Is":	Change to:	PSV Inspe	ection Interval:	Leave "As Is":	Change to:
5	Years		Years		Years		Years
Office Use	Report Entered	to SEQA Datab	pase by:	,		Date:	

ffice Use Report Entered to SEQA Database by:
Only: Static Data Verified by:
Date:



NAMEPLATE



(Metric)

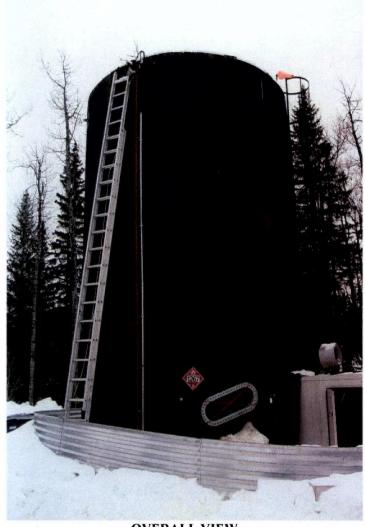
Page 4 of 5 Rev. 8-06-08

MCMILLAN BOOSTER

Date:

February 3, 2009

Report #:



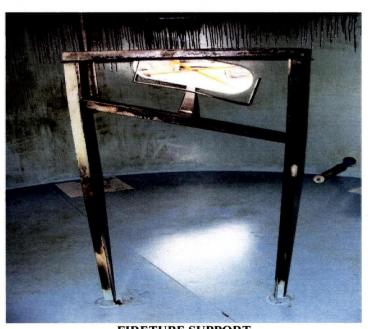
**OVERALL VIEW** 



TANK FLOOR



TANK FLOOR



FIRETUBE SUPPORT



(Metric)

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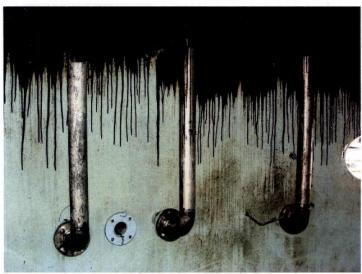
Facility:

MCMILLAN BOOSTER

Date:

February 3, 2009

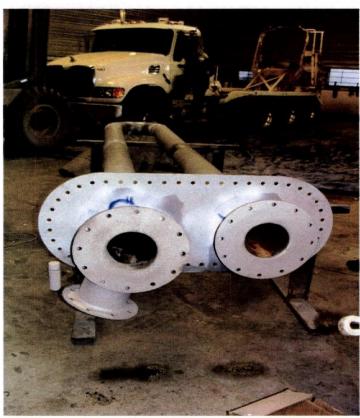
Report #:



INTERNAL PIPING



PITTING ON FIRETUBE



FIRETUBE

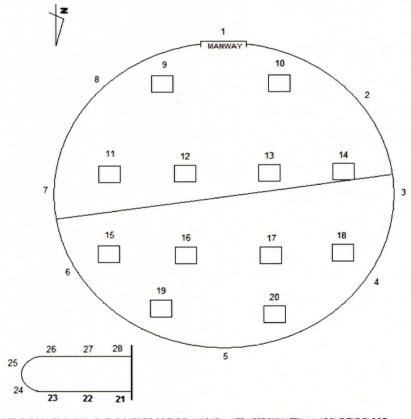


PITTING ON FIRETUBE



## STORAGE TANK UT REPORT

FACILITY:	MCMIL	LAN BOOSTER				DATE:	EBRUARY (	03, 2009	REPORT #	#: IR090203	GENa
AREA SUPERVISOR:	GORD	IVERSON							W.O. / C.C	C.# 6011113	
	Walled He	and a somewhat the latest and the			STATIC	DATA					
Alberta Reg. #:				CRN:				National Bo	oard #:	•	
Equipment Number:	660605	46		Notification #	6011	063		Vessel Clas	SS:		
Manufacturer:	GLM T	ANKS & EQUIP	MENT LTD.					Serial Num	ber:	F-97-298-2	
Equip. Description:	PRODU	JCED WATER T	ANK				11	Location (L	SD):	12-24-076-04W5	5
Equipment Tag #:	-			Year Built:	1997			Company I.	D.#:	BC-053922	
Province Installed:	ALBER	TA		Registration	#: -			Skid / Build	ling #:		
MAWP: 3	Кра	Diameter:		4648 mm	Radiograph	ny: NO	Noz	zle Rating:	#	Internal Coati	ing: YES
MAWT:	°C	Height:		7315 mm	Stress Relie		Cod	e Stamp: 12	2 F	Tank Heated:	YES
MDMT:	°C				External Co	oating: NO	Posi	tion: VI	ERTICAL	Double Wall:	NO
Capacity: 120.00	m3				Insulated:	YES	Tani	k Base:		Tank Portable	e: NO
			Material			Th	ickness	THE RESERVE		Corrosion Allo	wance
Roof / Deck:			SA-36			4.78		mm		2.24	mm
Floor:			SA-36			6.35		mm		3.81	mm
Shell Course #1: (Bottom	)		SA-36			6.35		mm		3.81	mm
Shell Course #2:			SA-36			4.78		mm		2.24	mm
Shell Course #3:			SA-36			4.78		mm		2.24	mm
Shell Course #4:			SA-36	5.		4.78		mm		2.24	mm
Nozzle Description	The Trible	I.D.#	NPS		ge Rating	Туре		Material		Thickness	Length
Inlet		-	76	mm 15	0 #	RFSO		SA-105N		mm	mm
Outlet		-	76	mm 15	0 #	RFSO		SA-105N		mm	mm
SHEDIT TO SET	Tay Will				PROCESS	S DATA			4.4		
Product Description:				PRODU	CED WATER			Servi	ice: S	WEET	
Operating Pressure:				Kpa	Oper	ating Tempera	ture:				°C



NOTE: THE POINTS SHOWN ON THE OUTSIDE OF THE TANK SHELL ARE APPROXIMATELY 4" ABOVE THE FLOOR. THE FLOOR SCAN POINTS ARE 12"  $\times$  12". ONLY THE LOWEST READING PER SQUARE HAS BEEN RECORDED.

#### ALL VALUES ARE IN METRIC UNITS

POINT	NOMINAL	LOW	BELOW	POINT	NOMINAL	LOW	BELOW	POINT	NOMINAL	LOW	BELOW
1 0	mm	POINT	NOMINAL		mm	POINT	NOMINAL		mm	POINT	NOMINAL
LOC001	6.4	6.9		LOC010	6.4	6.8		LOC019	6.4	6.8	
LOC002	6.4	7.1		LOC011	6.4	6.8		LOC020	6.4	6.8	
LOC003	6.4	7.0		LOC012	6.4	7.0		LOC021	7.1	6.6	0.6
LOC004	6.4	7.0		LOC013	6.4	6.7		LOC022	7.1	6.3	0.8
LOC005	6.4	6.9		LOC014	6.4	6.4		LOC023	7.1	6.1	1.0
LOC006	6.4	6.9		LOC015	6.4	6.8		LOC024	7.1	6.5	0.7
LOC007	6.4	7.1		LOC016	6.4	6.8		LOC025	7.1	6.9	0.3
LOC008	6.4	6.9		LOC017	6.4	6.9		LOC026	7.1	6.4	0.7
LOC009	6.4	6.8		LOC018	6.4	6.9		LOC027	7.1	6.1	1.0



## **MT EXAMINATION REPORT**

CLIENT NAME:	HIJERY ENER	CV	JOB NO.:	2009 - 032
CLIENT NAME:	HUSKY ENERG		-	
FACILITY:	McMILLAN BOOS		- DATE:	February 3 2009
WORK LOCATION:	PRO-BLAST SHO		COST	6011063
EXAMINATION STANDAR			CENTER	
ACCEPTANCE STANDAR	D: ASME VIII DIV.	1 APPENDIX 6	_ W.O.#	
EXAMINATION OF:	-		-	
			PAGE:	1 OF2
VESSEL DATA: Prov.	No.: (A) Se	rial No.: CRN No.:	Nat. Bd.	. No.:
SURFACE: As Found	Machined	Shot Blasted Base Metal	Painted	As Welded
Testing Equipment		_ Shot blasted		
Equipment	Serial No.	Technique	Te	st Medium
	1	1	_	
Hand Yoke CONT	OUR 15878	1	✓ Wet	Circle Safe #820AX
Perm Magnet		AC Water Washable	_ Dry	MICLOWING
			Color Contrast	MI-GLOW-WC
Blacklight		Continuous Solvent Removable	Fluorescent	-
Hardness Tester		Residual	Penetrant Dye	
Alloy Analyzer		Dwell Time: min	Other	
Other		Developer Time: min Ba	tch No.:	BLK-07275G WHT-15504
	he two attachment fillet v y grinding. The defects w	ted on various welds. Most indications were rem welds on the outside of the flange plate to the fire were slag inclusions that required removal to the weld repairs with no indications noted.	etube had defec	
CONCLUSION: T	he areas above were ac	ceptable to the above acceptance standard,	ASME VIII DIV. 1	APPENDIX 6.
TECHNICIAN(S)				. ^
Interpretation is in accordance with the above me	ntioned standards, to the best of my profession	onal ability	A	<b>Y</b>
Print:	CGSB Level:	Reg. No.:	Sign:	
Print: Guy Norman	d CGSB Level:	II Reg. No.: 13310	Sign:	V
Control (1994)		e client. I have reviewed and am in full agreement with the contents of this report.		
2010 ropi occinatori io a protocolorial opinio		and an		
Client Representative: (Prin	nt) D.MacIW	Sign: Mt	Date:	FEB ZYLOG

REPORT NO.: MT BC-053922



McMILLAN BOOSTER

## MT EXAMINATION REPORT

CLIENT NAME: **HUSKY ENERGY** 

**EXAMINATION OF:** 

FACILITY:

JOB NO.: DATE:

2009 - 032

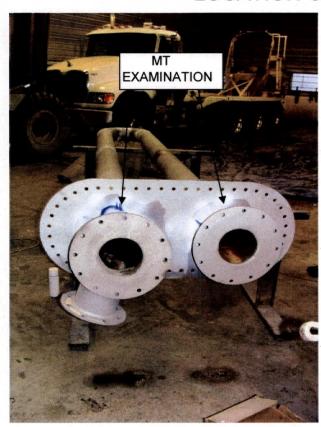
MT BC-053922

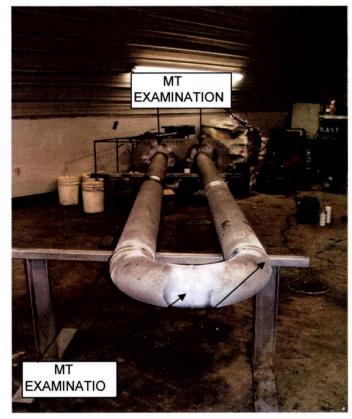
PAGE:

REPORT NO.:

February 3 2009 2 OF 2

## LOCATION OF MPI EXAMINATION







#### **TECHNICIAN(S)**

Interpretation is in accordance with the above mentioned standards, to the best of my professional ability

Print: \_\_\_\_ Guy Normand \_\_\_ CGSB Level:

II Reg. No.: \_\_13310\_\_

Sign:

The above representation is a professional opinion, final interpretation is the responsibility of the client. I have reviewed and am in full agreement with the contents of this report.

Login Hom	e Qı	uality A	ssuranc	e   1	Help	Exit		De	tend 6
TANK INS	PECTIO	N R	EPOR	Τ.					tured by Sus; 8 wo
Inspection Rep	ort					Print	Back	Cancel	, , , , <sub>C</sub>
Notification Number	6011063		Wor	k Order	60111	13			7009
Notification Desc Tasklist Operation	Tank Water S			itenance Plar Code Inspect		ANK2133	bbl,		
Equipment Stat									
Equipment Number	66060546			pment	TANK, STOR	AST,750	bl , WATI	ER	
Class	TANK			cription Number	SIUK	AGE			
Serial Number Manufacturer	F-97-298-2 GLM			Built	2001				
Location	NW-NA-013- 0018	00001-	Loca	tion Descript	tion 100/1	2-24-076-	04W5/00		
Provincial Number			PM A	Activity	Code				
Status Codes	NOPR ORAS		Equi	pment Statu	s In Ser	rvice - Full	y Utilized		
Design Max Temp		D	esign Min	Temp	Desig	n Standar	d		
Enviro Vault Exists		Fa	abrication	Type SH	OP Firetu	be Exists		Y	
Fluid Description	WATER		uid Servi		EET Insula			Υ	
Internal Coating Ex	rists		umber of		NGLE Secon	AV CALL OF THE STATE OF THE STA	tainment	CURTAGE	
Skidded Flag Volume	750.00		ank Servi	ce Date	Tank	туре		SURFACE	
		DUL							
PRD Static Data	Size	Set				Serial M	odel Ne	ext Service	
Equip ID Location	Inlet Outle	Press	ure Capa	acity Manuf	acturer	umber Nu	Marie Allegania de la Carte de	Date	
Process Data									
Product Description	n PPOD	UCED \	NATED	Fluid Ser	rvice •	Sweet O	Sour	PPM	
Operating Pressur		S KPA	WAILK		g Tempera		Sour	°C	
Pressure Test		O KI K		Орегиен	g rempere	acure .			
Test Completed	○Yes ●	No	Test Ac	ceptable	Oyes	No	Test Repo	ort #	
PSV Data	- 1.65				O TES				
		S	ize	Set				Service	
Tag/Serial No.	Location		Outlet	Pressure	Capacity	Mode	I / Type	Date	
Inspection Hist	NOT THE SECOND STREET, SECOND STREET								
Inspected By	GUY NO	RMANI	)	Inspecti	on Date		2009.02.	.03	
Inspection Sun -A THOROUGH INSP	TO STATE OF STATE AND STATE OF	ERFY T	HE EQUIF	PMENTS INTE	EGRITY WAS	S DONE BY			

OFF TO ALLOW PROPER OPERA	THE TWO RISERS INSIDE ATION OF THE TANK'S INT			
Repairs Completed -THE FIRETUBE TO FLANGE PL THAT REQUIRED WELD REPAIR -THE DEFECTS WERE REMOVE PERFORMED WITH NO INDICA	RS. D BY GRINDING AND REW			
Equipment Status				
Integrity Status   Suitable	e for Continued Service		diate Repairs Require Repairs Required	ed OReplace
Inventory Status  In Servi	ice - Fully Utilized	Oldle	Surplus	Scrap
QA Activities				
✓ Leave As-Is  Equipment Replaced	Weld Overlayed Grind Dressed Coating - Cleaned	I &	Part / Compone Patch Installed Coating - Remo	
MAWP Derated	Patched		Replaced	
Defect Removed & Rewelded Epoxy Patched	Part Cleaned		Lapped & Dress	sed
Noncompliances or Insp	pection Deficiencies	Issued		
External Visual Inspecti	ion			
THE BOLT UP GRADING IS B7		ONDITION	O.P.	
-THE BOLT UP GRADING IS B7 -THERE IS NO VISUAL ACCESS -THE SPRAY FOAM INSULATION -THE TANK IS OPEN TO ATMOS -THE TANK HAS SECONDARY OF LEAKAGE.	TO THE BOTTOM SIDE ON IS IN FAIR CONDITION. SPHERE AND DOES NOT R CONTAINMENT THAT IS IN	F THE FLO	PRD.	
DETECTABLE LEAKS  -THE BOLT UP GRADING IS B7  -THERE IS NO VISUAL ACCESS  -THE SPRAY FOAM INSULATION  -THE TANK IS OPEN TO ATMOST  -THE TANK HAS SECONDARY OF LEAKAGE.  External NDE Examination	TO THE BOTTOM SIDE ON IS IN FAIR CONDITION. SPHERE AND DOES NOT R CONTAINMENT THAT IS IN	F THE FLO	PRD.	
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-THE BOLT UP GRADING IS B7 -THERE IS NO VISUAL ACCESS -THE SPRAY FOAM INSULATION -THE TANK IS OPEN TO ATMOS -THE TANK HAS SECONDARY OF LEAKAGE.	ON IS IN FAIR CONDITION. SPHERE AND DOES NOT RECONTAINMENT THAT IS IN  ON  ON  ON  ON  ON  ON  ON  ON  ON	EVER THE EVE	PRD. NDITION AND FREE  RE WAS STILL SOME NG OR CORROSION. RNAL COATING THAT  TION. COULD NOT BE DETECTED AND ND REINSPECTED WIT THAT MEASURED  RMED BY SILVERTIP RTIP INSP. NOMINAL.	TH

Damages	
Inspector Certification	
assigned task list and that statements findings.	ove equipment has been inspected in accordance with the swithin this report are correct and represent inspection
Inspector GUY NORMAND Inspection	Signature Horan Wyny For Gay Wornand
Inspection SILVERTIP INSPECTION SE	
Lead Inspector's Acceptance &	
Lead Inspector Dave Nuversel Inspection	Date Alux8,09.
Interval	Leave as-is / Change to:
PSV Inspection Interval	Leave as-is / Change to:
	Тор

# Silvertin Services LTD.

## STORAGE TANK INSPECTION REPORT

(Metric)

Page 1 of 5 Rev. 8-06-08

Date: Report #: IR090203GENa MCMILLAN BOOSTER February 3, 2009 Facility: Area Supervisor: **GORD IVERSON** W.O. / C.C.# 6011113 STATIC DATA CRN: National Board #: Alberta Reg. #: 66060546 6011063 Classification: Equipment Number: Notification #: **GLM TANKS & EQUIPMENT LTD.** Serial Number: F-97-298-2 Manufacturer: Equip. Description: PRODUCED WATER TANK Location (LSD): 12-24-076-04W5 Year Built: 1997 BC-053922 Equipment Tag #: Company I.D.#: ALBERTA Skid / Building #: Province Installed: Registration #: YES NO Nameplate Attached: YES Legible: U1A Available: MAWP: NO Efficiency:: 4648 8 Diameter: Radiography: oz mm 12 F MAWT: °C Height: 7315 mm Stress Relief: NO Code Stamp: MDMT: °C Tank Test Pressure: Ext. Coating: NO Position: VERTICAL 120.00 Coil Test Pressure: Insulated: YES Tank Base: **PLANKS** Capacity: m3 mm Man door: YES Size: 610 Internal Coating: YES Type: Thickness: Is Tank Heated: YES Type: **FIRETUBE** Double Wall: NO Is Tank Portable: NO Type: #1 Sec. Containment: STEEL **PLASTIC** YES #2 Corrosion Allowance Material Thickness 2.24 **SA-36** Roof: 4.78 mm mm **SA-36** Floor: 6.35 3.81 mm mm **SA-36** 3.81 Shell #1: (Bottom) 6.35 mm mm Shell #2 **SA-36** 4.78 2.24 mm mm Shell #3 **SA-36** 4.78 mm 2.24 mm Shell #4 **SA-36** 4.78 mm 2.24 mm I.D. # **NPS Thickness Nozzle Description** Flange Type Material Length Rating Inlet 76 150 # **RFSO SA-106B** # **RFSO SA-106B** Outlet 76 150 FIRETUBE or HEAT COIL Diameter: O.D. 168 mm Length: NO Code: NON CODE Radiography: Diameter: I.D. 154 mm Stress Relief: NO # of Passes: Thickness Corrosion Allowance Material Tube **SA-106B** 7.11 4.57 mm mm SA-234WPB Return Bend 7.11 mm 4.57 mm PROCESS DATA PRODUCED WATER SWEET Product Description: Service: Operating Temperature: °C Operating Pressure: PRD STATIC DATA Tag Number: Manufacturer: Company I.D. # **NON-CODE** Model # / Type: Equipment # Serial Number: CRN: Code Stamp: Inlet Size: Rating: Set Pressure: Кра Back Pressure: Kpa mm Outlet Size: Rating Capacity: Service Date: Location of PSV: INSPECTION DETAILS Inspection Reason: **CODE INSPECTION** Inspections Required: VΕ VI UT MT Inspection Test Plan: Inspection Type Used: VΕ VI UT MT Last Inspection Date: VΕ VI UT MT Next Inspection Type: 2014 NO RBI Category: В C D Next Inspection Due: Outstanding Repairs: Α **VESSEL STATUS** SUITABLE FOR CONTINUED SERVICE Inventory Status: Integrity Status: This IR completes a thorough inspection; reschedule as indicated. YES Partial inspection; do not reschedule.

INSPECTION SUMMARY

A thorough inspection to verify the equipments integrity was done by UT, VI, VE and MT.

There were no rejectable defects observed at this time; the vessel can be recommended fit for service.

No NCR's were issued at this time.

No IDR's were issued at this time.

There was no external NDE performed during this inspection.



(Metric)

Page 2 of 5 Rev. 8-06-08

Facility:

MCMILLAN BOOSTER

Date:

February 3, 2009

Report #:

IR090203GENa

#### RECOMMENDATIONS

At the next opportunity the two risers inside the tank should be cut off to allow proper operation of the tank's intended purpose.

#### REPAIRS COMPLETED

The firetube to flange plate fillet welds had some indications noted that required weld repairs. The defects were removed by grinding and rewelded. MT was then performed with no indications noted.

#### INSPECTION OBSERVATIONS

NON COMPLIANCES ISSUED

#### INSPECTION DEFICIENCIES ISSUED

#### EXTERNAL VISUAL INSPECTION

The nameplate is in tact and legible.

The tank base is sound with no evidence settling.

The tank's ground connection is through a ground wire and ground rod.

The piping and piping attachments are in fair condition with no detectable leaks.

The piping bolt up grading is B7 and 2H.

There is no visual access to the bottom side of the floor.

The spray foam insulation is in fair condition.

The tank is open to atmosphere and does not require a PRD.

The tank has secondary containment that is in fair condition and free of leakage.

#### EXTERNAL NDE

#### INTERNAL VISUAL INSPECTION

The tank was cleaned prior to inspection; however, there was still some oil remaining on the shell above the 5 foot mark.

The tank roof, shell and floor show no evidence of pitting or corrosion.

There were some minor mechanical defects on the internal coating that was repaired using Devoe 243 patch kit.

The internal condition of the tank is satisfactory.

The fire tube was removed and sandblasted for inspection.

MT revealed some indications that could and some that could not be removed by grinding. Upon further inspection slag was detected and removed with a grinder, weld repairs ware performed and reinspected with no defects noted.

There was some isolated pitting noted on the firetube that measured 0.020" in one area and 0.045" in another.

#### INTERNAL NDE

UT inspections on the shell and tank floor were performed by Silvertip Inspection Services Ltd.

MT examination on the firetube was performed by Silvertip Inspection Services Ltd.

The UT readings on the tank shell and floor are above nominal.

The UT readings on the firetube are below nominal; however, they are of no concern at this time.

See the NDE reports for more detailed information.

DD	EC	SUR	E T	EC	rc
					APRIL T

Test Completed: Test Pressure: Test Report #: Kpa Test Acceptable:

#### INSPECTOR CERTIFICATION AND ACCEPTANCE

I, the undersigned, certify that the equipment stated above has been inspected in accordance with the assigned task list and that the statements within this report are correct and represent my inspection findings.

External Inspector's Name:	Inspector's Certification:	Inspector's Signature:	Date:
GUY NORMAND C.E.T.	API 510, 653, ABSA, CGSB II		<b>FEBRUARY 3, 2009</b>
Internal Inspector's Name:	Inspector's Certification:	Inspector's Signature:	Date:
GUY NORMAND C.E.T.	API 510, 653, ABSA, CGSB II		FEBRUARY 3, 2009

## Silvertin

## STORAGE TANK INSPECTION REPORT

Page 3 of 5 Rev. 8-06-08

(Metric)

Facility:

**MCMILLAN BOOSTER** 

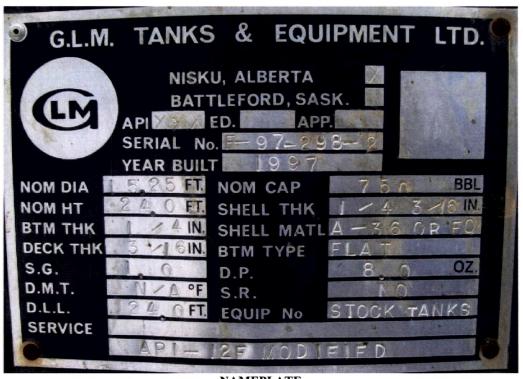
Date:

February 3, 2009

Report #:

IR090203GENa

CHIEF OR LEAD INSPECTOR'S ACCEPTANCE AND SCHEDULE CONFIRMATION Inspector's Name: Inspector's Certification: Inspector's Signature: Date: **DALE MARTIN** Change to: PSV Inspection Interval: Leave "As Is": Change to: Vessel Inspection Interval: Leave "As Is": Years Years Years Years Report Entered to SEQA Database by: Peb23/09 Office Use Date: Lynn y Date: Feb 2 3/69 Only: Static Data Verified by: Konsen



NAMEPLATE



(Metric)

(Metric

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Page 4 of 5 Rev. 8-06-08

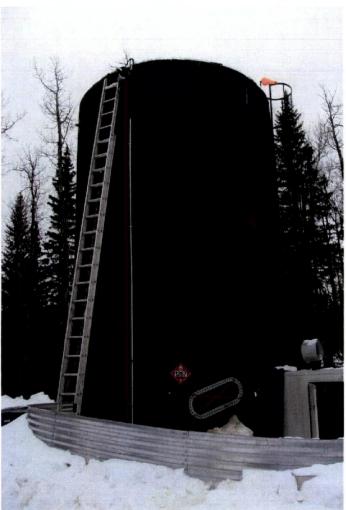
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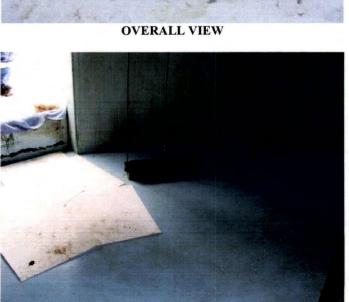
MCMILLAN BOOSTER

Date:

February 3, 2009

Report #:





TANK FLOOR



TANK FLOOR



FIRETUBE SUPPORT



(Metric)

Page 5 of 5 Rev. 8-06-08

Facility:

MCMILLAN BOOSTER

Date:

February 3, 2009

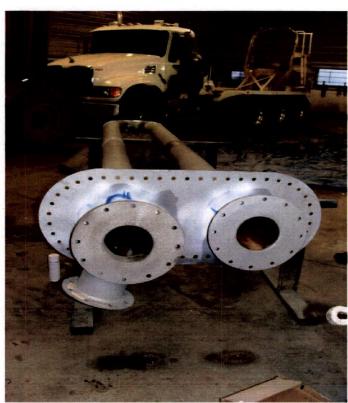
Report #:



INTERNAL PIPING



PITTING ON FIRETUBE



**FIRETUBE** 



PITTING ON FIRETUBE



## MT EXAMINATION REPORT

CLIENT NAME:		HUSKY ENERG	GY			JOB NO.:	2009 - 032
FACILITY:		McMILLAN BOOS		DATE:	February 3 2009		
WORK LOCATION:		PRO-BLAST SHOP		COST	6011063		
EXAMINATION STAN	NDARD:	ASME V, ARTIC				CENTER	
ACCEPTANCE STAN			1 APPENDIX 6			W.O.#	
EXAMINATION OF:						-	
						PAGE:	1 OF 2
VESSEL DATA:	Prov. No.:	Δ Sα	rial No.:	CRN No	o .	- L Nat. Bd	No :
OLIDEA OF	Found	Machined		<del></del> -		<del></del> -	As Welded
Testing Equipment	round	маспіпец	Shot Blas	ed <u></u> base Me	etai [	] Palliteu/	as weided
Equipme	ent	Serial No.	T	echnique		Te	st Medium
1	CONTOUR	15878		,	Ιπ	☑ Wet	Circle Safe #820AX
Perm Magnet			☑ AC	Water Washab		] Dry	
Coil			□DC	Post Emulsifie		Color Contrast	MI-GLOW-WC
Blacklight			✓ Continuous	Solvent Remov	-	Fluorescent	02011110
Hardness Tester			1	Solvent Remov	l		
Alloy Analyzer			Residual	Dwell Time:		☐ Penetrant Dye	
Other			,	Developer Time:	-	_l Other tch No.:	BLK-07275G WHT-15504
Other			<u> </u>	eveloper Time.	mm   Da	territo	BEIX-072730 WITT-13304
SCOPE:	Magne	itic Particle inspectio	on was performed o	on the firetube liqui	id retainnai	ng fillet welds.	
RESULTS:	Minor i	ndications were not	ed on various weld	s. Most indications	were remo	oved by grinding	
	The tw	o attachment fillet w	elds on the outside	e of the flange plate	e to the fire	etube had defect	s that were removed
	by grin	ding. The defects we	ere slag inclusions	that required remo	oval to the	parent material.	ı
	MT wa	s performed on the	weld repairs with n	o indications noted	d		
		*					
CONCLUSION:	The ar	eas above were acc	eptable to the abo	ve acceptance sta	ndard, A	SME VIII DIV. 1	APPENDIX 6.
TECHNICIAN(S)							
Interpretation is in accordance with the a	above mentioned sta	andards, to the best of my profession	al ability				
Print:		CGSB Level:	,	Reg. No.:		Sign:	
Print: Guy No	ormand	CGSB Level:			3310	Sign:	
The above representation is a profession						J	<del></del>
				.a agroomer will the combine t	iopoit.		
Client Representative	: (Print)		Sign:			Date:	

REPORT NO.: MT BC-053922



#### MT EXAMINATION REPORT

CLIENT NAME:

**HUSKY ENERGY** 

McMILLAN BOOSTER

**EXAMINATION OF:** 

FACILITY:

REPORT NO.:

MT BC-053922

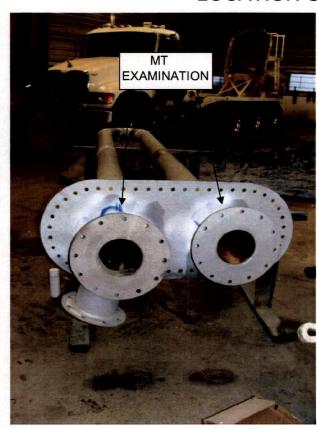
JOB NO.: DATE:

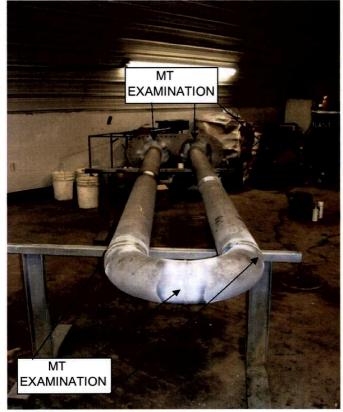
2009 - 032 February 3 2009

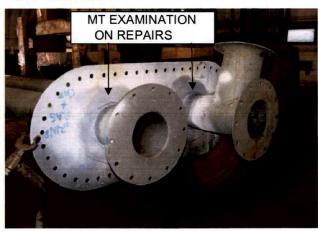
PAGE:

2 OF 2

## LOCATION OF MPI EXAMINATION







#### TECHNICIAN(S)

Interpretation is in accordance with the above mentioned standards, to the best of my professional ability

Print: Guy Normand CGSB Level:

\_\_II\_\_\_

Reg. No.: \_\_13310\_\_

Sign:



## **Inspection Project Summary**

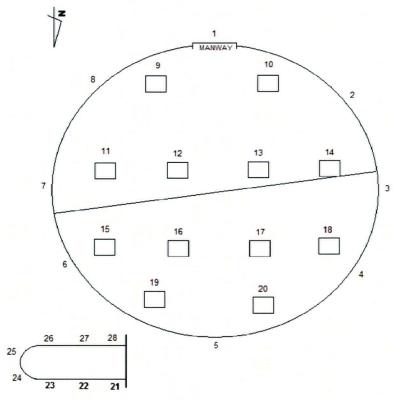
Page 1 of 1

Facility / Area :	McMILLAN BOO	OSTER										
Scope of Project:	VE, VI & UT TANK INSPECTIONS											
Form to be used	to summarize finding	gs of a group of inspections / wo	ork scope at a	single facility o	r in a general area / field.							
Originator / Inspector:	GUY NOR	MAND		Date:	February 13, 2009							
Company Name:		INSPECTION SERVICES	OTIS	Phone:	780-826-1596							
Field Operations Conta		DIVERSON	JEID.	Phone:	780-849-8161							
Number of Inspection	Reports (IR's	) in This Package:	1									
Approval by Husky Are	ea Inspector:	DALE M	ARTIN	Signature:								
Thickness Survey:	PCMS ☐ Other ⊠:	Individual UT	By: By: S	ilvertip Ins	spection Services Ltd.							
Summary of Inspection Findings												
There are no significant finding	ngs to be reported	d.										
Summary of Non-Compliance(s) Identified												
	S	Summary of Deficiencie	es Identific	ed								
Any deficiencies have been r	noted as recomm	endations.										
		Recommendation	ons									
McMILLAN BOOST NW-NA-013-00001-001												
Company ID: Equipment Description: Serial Number: LSD:	BC-053922 PRODUCED F-97-298-2 12-24-076-04	WATER TANK										
At the next opportunity the tv purpose.	vo risers inside th	e tank should be cut off to	allow prop	er operation	of the tank's intended							
		For Office Use	Only:									
Package Sent To: (Business	Unit Contact)		. 10 -		Date:							
Forward to Facility Office:				H - H	Date:							
Facility Contact:	<u> </u>		n n									
Sent By:				Date:								



## STORAGE TANK UT REPORT

FACILITY:	MCMIL	CMILLAN BOOSTER					FEBR	RUARY 03	, 2009	REPORT #: IR090203GENa				
AREA SUPERVISOR:	GORD	IVERSON		W.O. / C.					# 6011113					
	Will the Maria				STATIC	DATA				and the second second				
Alberta Reg. #:	CRN:					National Board #: -								
Equipment Number:	660605	Notification #:				6011063 Vessel CI					ass:			
Manufacturer:	GLM T	M TANKS & EQUIPMENT LTD.							nber:	r: F-97-298-2				
Equip. Description:	PRODU	JCED WATER TA	ANK			Location				LSD):	12-24-076-04W5			
Equipment Tag #:				Year Built: 1997			Company I.D.#: BC-053922							
Province Installed:	ALBER	TA		Registration #: -					Skid / Building #: -					
MAWP: 3	Kpa	Diameter:		4648 mm	Radiograph	ny:	NO	Nozzle	Rating:	#	Internal Coating	: YES		
MAWT:	°C	Height:		7315 mm	Stress Reli		NO	Code	Stamp: 1:	2 F	Tank Heated:	YES		
MDMT:	°C		External Co		ating: NO		Position: VE		RTICAL Double Wall:		NO			
Capacity: 120.00	m3				Insulated:		YES	Tank	Base:		Tank Portable:	NO		
	Material	1 Mary 2012   1815 - 1845		Thickness				A RECEIVED	Corrosion Allowa	nce				
Roof / Deck: SA-36					4.78			mm		2.24	mm			
Floor: SA-36					6.35			mm		3.81	mm			
Shell Course #1: (Bottom) SA-36					6.35			mm		3.81	mm			
Shell Course #2: SA-36					4.78				mm		2.24	mm		
Shell Course #3: SA-36					4.78				mm		2.24	mm		
Shell Course #4: SA-36					4.78				mm		2.24	mm		
Nozzle Description		I.D. #	NPS		ge Rating		pe		Material	I	hickness	Length		
nlet				nm 15	0 #	RF:	SO		SA-105N	•	mm	m		
Outlet		-	76 m	nm 15		RF	SO		SA-105N		mm	m		
					PROCES	S DATA						SAUTO CONTRACTOR		
Product Description:					CED WATER				Serv	rice: SV	VEET			
Operating Pressure:				Kpa	Oper	ating Tem	perature	:				°C		



NOTE: THE POINTS SHOWN ON THE OUTSIDE OF THE TANK SHELL ARE APPROXIMATELY 4" ABOVE THE FLOOR. \* THE FLOOR SCAN POINTS ARE 12" x 12". ONLY THE LOWEST READING PER SQUARE HAS BEEN RECORDED.

#### ALL VALUES ARE IN METRIC UNITS

POINT	NOMINAL	LOW	BELOW	POINT	NOMINAL	LOW	BELOW	POINT	NOMINAL	LOW	BELOW
	mm	POINT	NOMINAL		mm	POINT	NOMINAL		mm	POINT	NOMINAL
LOC001	6.4	6.9		LOC010	6.4	6.8		LOC019	6.4	6.8	
LOC002	6.4	7.1		LOC011	6.4	6.8		LOC020	6.4	6.8	
LOC003	6.4	7.0		LOC012	6.4	7.0		LOC021	7.1	6.6	0.6
LOC004	6.4	7.0		LOC013	6.4	6.7		LOC022	7.1	6.3	0.8
LOC005	6.4	6.9		LOC014	6.4	6.4		LOC023	7.1	6.1	1.0
LOC006	6.4	6.9		LOC015	6.4	6.8		LOC024	7.1	6.5	0.7
LOC007	6.4	7.1		LOC016	6.4	6.8	and the second	LOC025	7.1	6.9	0.3
LOC008	6.4	6.9		LOC017	6.4	6.9		LOC026	7.1	6.4	0.7
LOC009	6.4	6.8	_ ===	LOC018	6.4	6.9		LOC027	7.1	6.1	1.0