

AERIAL COOLER INSPECTION REPORT

(Metric)

Page 1 of 3
Rev. 8-06-08

Facility: **MARIE LAKE BOOSTER** Date: **September 3, 2008** Report #: **IR080903GENd**

Area Supervisor: **ROGER BUREAU** W.O. / C.C.#: **70975**

STATIC DATA

Alberta Reg. #:	CRN:	L-5167.213	National Board #:	34607
Equipment Number: 66031151	Notification #:	6068802	Classification:	-
Manufacturer: AIR-X-CHANGERS	Serial Number:	991703.4	Location (LSD):	15-15-065-02W4
Equip. Description: 1ST STAGE GAS COOLER	Year Built:	1999	Company I.D.#:	BC-034750 34749 on
Equipment Tag #:	-	Registration #:	-	Skid / Building #: - SAP
Province Installed: ALBERTA	Legible:	YES	U1A Available:	NO

MAWP: 2758 Kpa	Capacity: - m ³	Radiography: NO	Insulated: NO
MAWT: 177 °C	Efficiency: -	Stress Relief: NO	Position: VERTICAL
MDMT: -23 °C	Code Stamp: U	Ext. Coating: YES	Support: STRUCTURAL

Header Box Size:	Depth: 191 mm	Width: 140 mm	Height: 686 mm	Overall Length: 4064 mm
Tube Size:	O.D. - mm	I.D. - mm	No. of Tubes -	Test Pressure: 4137 kpa

	Material	Thickness	Corrosion Allowance
Wrapper plates	SA-516-70	- mm	- mm
End plates	SA-516-70	- mm	- mm
Tubes	N/A	- mm	- mm
Tube Fins	N/A	- mm	- mm

Nozzle Description	I.D. #	NPS	Flange Rating	Type	Material	Thickness	Length
Inlet	-	152 mm	600 #	RFWN	SA-106B	11.0 mm	178 mm
Outlet	-	152 mm	600 #	RFWN	SA-106B	11.0 mm	305 mm

PROCESS DATA

Product Description: NATURAL GAS	Service: SWEET
Operating Pressure: - Kpa	Operating Temperature: - °C

PSV STATIC DATA

Tag Number: -	Manufacturer: MERCER
Company I.D. #: -	Model # / Type: 9143H511780
Serial Number: 64998	CRN: OG2606.5C
Inlet Size: 51 mm	Rating: - #
Outlet Size: 51 mm	Rating: - #
Set Pressure: 1379 Kpa	Capacity: 3046 SCFM
Code Stamp: UV NB	Service Date: 09/2006
Location of PSV: TOP OF SEPARATOR	

INSPECTION DETAILS

Inspection Reason: CODE INSPECTION	Inspections Required: VE UT
Inspection Test Plan: -	Inspection Type Used: VE UT
Last Inspection Date: -	Next Inspection Type: VE UT
Next Inspection Due: 2013	Outstanding Repairs: NO
	RBI Category: A B C D

VESSEL STATUS

Integrity Status: SUITABLE FOR CONTINUED SERVICE	Inventory Status: ISF
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 VE and UT.
There were no rejectable defects observed at this time; the vessel can be recommended fit for service.
There are no recommendations to be made at this time.
There were no repairs performed that were related to this inspection.
No NCR's were issued at this time.
No IDR's were issued at this time.
There was no internal inspection performed at this time.
There was no internal NDE performed during this inspection.

WO# 6071562

EQ # 66031151 NO # 6068802

Copied _____ Scanned _____ Entered _____ HDMS Linked _____

RECOMMENDATIONS

REPAIRS COMPLETED

Facility: **MARIE LAKE BOOSTER** Date: **September 3, 2008** Report #: **IR080903GENd**

INSPECTION OBSERVATIONS

NON COMPLIANCES ISSUED

INSPECTION DEFICIENCIES ISSUED

EXTERNAL VISUAL INSPECTION

The nameplate is in tact and legible.
The pressure retaining welds are in tact with no evidence of deterioration or visible cracking.
The cooler's ground connection is through the skid's ground rod.
The cooler fins are reasonably clean and in fair condition.
The plugs are tight and free of leaks.
The cooler is protected by a PSV that is in fair condition.
The cooler is painted with no notable coating defects.
The piping and piping attachments are in fair condition with no detectable leaks.
The piping bolt up grading is B7m and 2Hm.
The attached piping is painted with no notable defects.

EXTERNAL NDE

UT inspections were performed by Silvertip Inspection Services Ltd.
The nominal thicknesses are not available.
See the attached NDE reports for more detailed information.

INTERNAL VISUAL INSPECTION


INTERNAL NDE

PRESSURE TESTS

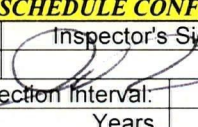
Test Completed: - Test Pressure: - Kpa Test Acceptable: - Test Report #: -

INSPECTOR CERTIFICATION AND ACCEPTANCE

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

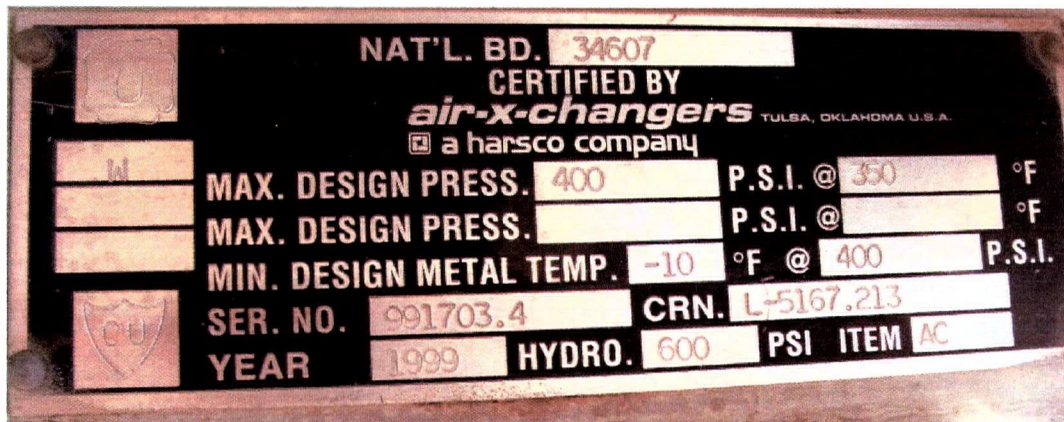
External Inspector's Name:	Inspector's Certification:	Inspector's Signature:	Date:
GUY NORMAND C.E.T.	API 510, 653, ABSA PESL, NACE		SEPTEMBER 3, 2008
Internal Inspector's Name:	Inspector's Certification:	Inspector's Signature:	Date:
-	-	-	-

CHIEF OR LEAD INSPECTOR'S ACCEPTANCE AND SCHEDULE CONFIRMATION

Inspector's Name:	Inspector's Certification:	Inspector's Signature:	Date:
JIM RICE			sept 29, 08
Vessel Inspection Interval:	Leave "As Is":	Change to:	PSV Inspection Interval:
5 Years			5 Years
			Leave "As Is":
			Change to:

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

Facility:	MARIE LAKE BOOSTER	Date:	September 3, 2008	Report #:	IR080903GENd
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NAMEPLATE



OVERALL VIEW



OVERALL VIEW

Exploded view diagram of the EFW Cooler assembly. The diagram shows three main components: 3-010 (EJW COOLER), 3-005 (1ST STAGE COOLANT), and 3-006 (LUBE OIL COOLANT). Dimensions are indicated for various parts: 3 inches for the top section of 3-010 and 3-005, 6 inches for the bottom section of 3-010 and the top section of 3-005, and 2 inches for the bottom section of 3-006. The diagram also shows the connection points for the coolants.

S.O.B. = START OF BAND
E.O.B. = END OF BAND
LOW POINT= LOWEST READING IN THE BAND

BELOW
MINIMUM
-
-

Login	Home	Equipment	Transfers	Help	Exit
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Display Equipment

Equipment Detail

[Support Docs](#)[Back](#)

Equipment Number	66031151
Equipment Text	Heat Exchanger 1st Stage Cooler
Status	In Service - Fully Utilized
Equipment Condition	B
Functional Location	EC-NO-004-00008

General Information

Technical Object Type	PRESSVES
Class	HEAT EXCHANGER - AIR COOLED
Tag Number	NB 34607: 15-15-065-20W4
Technical ID Number	
Manufacturer	Air-X-Changer
Model Number	
Manufacturer Serial Number	991703.4
Maintenance Plant	EC01
Inventory Number	34749
Size/Dimension	
Weight	
Weight Units	
Acquisition Date	
Acquisition Value	
Currency Key	CAD
Manufacturing Country	
Manufacturer Drawing Number	
Construction Year	1999
Construction Month	
Task List Exists	
Serial Number	
Plant	
Market Value	0.74
Replacement Cost	0.99
Equipment Owner	
Saskatchewan PST Indicator	
British Columbia PST Indicator	
Manitoba PST Indicator	
History Equipment	
Internal Equipment Status	1
Maintenance Planning Plant	EC01
Manufacturer Part Number	
Superior Equipment	000000000066026350
Equipment Position (at Install)	
Planner Group	EC
Technical Description	Heat Exchanger 1st Stage Cooler
Long Text Indicator	
AB Registration Number	
BC Registration Number	
SK Registration Number	

Characteristics

Tube Side Fluid Service	SWEET
Tube Side Fluid	NATURAL GAS
Tube MDMT	-10 DEGF

Tube Max Temp	350 DEGF
Tube design MAWP	400 PSI
Number of Banks	1 EACH
Stress Relief	NONE
MDMT - Min. Design Metal Temp	-10 DEGF
Nozzle Type	"6"" R/F FLANGE"
Nozzle ANSI Rating	300
Fluid Service	SWEET
Fluid Description	GAS
Design Max Temp	350 DEGF
CRN Number	L-5167.213
Code Stamp	U - Unfired Pressure Vessel
Packaged Flag	Yes

TOP



HEATER EXCHANGER INSPECTION REPORT

PAGE : 1 of 2

FACILITY	Jackfish Creek CS	DATE	August 22, 2002	REPORT #	IR_020822_MKY- 15
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EXCHANGER STATIC DATA

Prov. Insp. #		N/A		CRN		L-5167.213		Equip Tag #		N.B. # 34607			
Equipment Location (LSD)		15-15-65-02 W4M “Marie Lake South” Booster						Serial #		991703.4			
Equipment Description		Gas Cooler						Exchanger Class		A.C.H.E.			
Manufacturer		Air-X-Changer (model 93 VI)						Year Built		1999			
Shell MAWP		psig		@		°F		MDMT		°F			
Tube MAWP		655		psig		@ 300		°F		MDMT -10F @ 400psi			
CODE : UM <input type="checkbox"/> U <input checked="" type="checkbox"/> U2 <input type="checkbox"/> W				RT : 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>				PWHT : YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>					
Tube Diameter		Mm/in		Tube Length		Mm/in		OAL		Mm/in			
Tube Sheet		Mat'l		SA-516-70		Mm/ in		Thickness		unknown			
Head		Mat'l		SA-516-70		Mm/ in		Thickness		unknown			
Channel		Mat'l				Mm/ in		Thickness		Mm/ in			
Nozzle		Mat'l				Mm/ in		Thickness		Mm/ in			
Tube		Mat'l		unknown		Mm/ in		Thickness		unknown			
Internal Coating : YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>				Internal Clad : YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>				Capacity				m³/ ft³	
Nozzle Rating		300		lb ANSI		Manway :		YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		Inspection Port : YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>			
Painted :		YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		Insulated		: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		Skirt <input type="checkbox"/> Legs <input type="checkbox"/> Saddle <input type="checkbox"/>					

PROCESS DATA

Shell Product Description	Sweet <input type="checkbox"/> Sour <input type="checkbox"/> PPM		
Tube Product Description	Gas		
Shell Operating Pressure	psig	Operating Temperature	°F
Tube Operating Pressure	95	psig	Operating Temperature 200 °F

PSV STATIC DATA

Tag / Serial No	Location	Size Inlet	Size Outlet	Set Pressure	Capacity SCFM / Lbs/Hr / GPM	Manufacturer	Model / Type	Service Date
64998	Stage 1 discharge	2"	2"	200 psi	3046 scfm	Mercer	9143H511780	2-07-2002
								new

INSPECTION HISTORY

RBI Category	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	Last Inspection Date	W.O. #
Inspection Task List #		Inspection Type	Inspection Reason
Inspection Techniques Required		Next Inspection Type	Due Date
VE <input checked="" type="checkbox"/>	VI <input type="checkbox"/>	RT <input type="checkbox"/>	UT <input type="checkbox"/>
MT <input type="checkbox"/>	PT <input type="checkbox"/>	PT <input type="checkbox"/>	TT <input type="checkbox"/>
Outstanding Repairs			

INSPECTION SUMMARY

Vessel is in very good condition and is suitable for continued service.

RECOMMENDATIONS

Clean out debris from between cooling fins.

REPAIRS COMPLETED

Object Name	Cause	Damage	Repair Activity
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EXCHANGER STATUS

Integrity Status	<input checked="" type="checkbox"/> Suitable for Continued Service	<input type="checkbox"/> Immediate Repairs Required	<input type="checkbox"/> Replace
		<input type="checkbox"/> Future Repairs Required	
Inventory Status	<input checked="" type="checkbox"/> Inservice Fully Utilized	<input type="checkbox"/> Idle	<input type="checkbox"/> Surplus
			<input type="checkbox"/> Scrap
This IR completes a thorough inspection. Reschedule as indicated		<input checked="" type="checkbox"/>	Partial IR only. Do not reschedule <input type="checkbox"/>

FACILITY	Jackfish Creek CS	DATE	August 22, 2002	REPORT #	IR_020822_MKY- 15
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INSPECTION OBSERVATIONS**NONCOMPLIANCES OR INSPECTION DEFICIENCIES ISSUED****EXTERNAL VISUAL INSPECTION**

The vessel has very good external appearance. The paint is intact and is in good condition. No visible corrosion. Cooling fins have no mechanical damage. Some build up of debris between cooling fins. No signs of leakage.

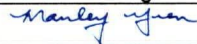
Piping is in good condition.

EXTERNAL NDE EXAMINATION**INTERNAL VISUAL INSPECTION****INTERNAL NDE EXAMINATION****PRESSURE TEST**

Test Completed	<input type="checkbox"/> Yes <input type="checkbox"/> No	Test Acceptable	<input type="checkbox"/> Yes <input type="checkbox"/> No	Test Report #
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INSPECTOR CERTIFICATION

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

Inspectors Name	Manley Yuen	Inspector's Signature	
Inspection Company	Ramtech Consulting Inc.	Date	August 22, 2002

LEAD INSPECTOR'S ACCEPTANCE & SCHEDULE CONFIRMATION

Lead Inspector	Signature	Date
Vessel Inspection Interval	5 years	Leave "as-is" <input type="checkbox"/> Change to
PSV Inspection Interval	5 years	Leave "as-is" <input type="checkbox"/> Change to

Office Use Only Report Entered to SEQA Database by
Static Data Verified by

Date
Date

Jackfish Creek CS "Marie Lake South" Booster
 100/ 15-15-65-02 W4M
 Collicutt Hanover compressor package FH 107



Gas cooler 991703



Engine glycol cooler 991703.1/2



Gas cooler 991703.4



Engine oil cooler 991703.3



Clow