

# AIR COOLED HEAT EXCHANGER INSPECTION REPORT

Date: August 15, 2011

Report#: IR110815GMSO

Plant	Tangleflags	Op Unit	HOG - Sask. West	System / LSD:	04-18-051-25W3
Asset #	62048715	Equipment ID	169677	Asset Type	-
Description	Cooler	Prov. Insp. # A	None	SK#?	Serial # 944411.4
Manufacturer	Air Cooled Exchangers	CRN	K-2766.2	SK CRN?	Year Built 1994
MAWP	4516	KPag	@ 148	°C	MDMT -29 °C
Code	ASME U	Fluid Service	Natural Gas	Sweet	PWHT No
Internal Access	No	Insulated	No		Internal Coating No
Operating Pressure	-	KPag		Operating Temp	- °C

## PSV DATA

PSV ID # or Serial #	Location	Size In mm	Size Out mm	Set Press. Kpa	Capacity SCFM	Manufacturer	Model	Last Service mm/yyyy
02093	Cooler inlet Piping	40	50	4378	4856	Taylor	T-8200-2	09/2010

## INSPECTION SUMMARY

This equipment was in service at the time of inspection.  
A thorough inspection to verify the equipment's 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.  
No NCR's were issued at this time.  
There was no internal inspection performed at this time.  
There was no internal NDE performed during this inspection.

## RECOMMENDATIONS

No current licence → applied 2011-10-04 mfg  
No SK CRN → " "

## NONCONFORMANCES / INSPECTION DEFICIENCIES

This equipment does not have a valid CRN for the Province it is being utilized in. See NCR110815GMSO.

## INSPECTION PLANNING

Inspection Strategy	Availability	Inspection Interval
Inspection Date 08/2011	Date of Last Inspection	Date of Next Inspection

## REPORT CERTIFICATION

The signatures below certify that inspections/tests have been completed in accordance with the identified inspection strategy and that the specified equipment is considered fit for service until the date of next inspection.

Inspected by / Certification #	Gareth Stafford / 28144	Date	Aug 15, 2011
Reviewed and Approved by		Date	
Criticality Assessment Rerun	Inspection Planning Rerun		
Assessed Next Inspection Date			

EQ # 78134	NO #
Copied	Scanned
Entered	HDMS Linked

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### DETAILED INSPECTION VISUAL EXTERNAL

ID	Description	Condition	Location	NCR / IDR	Comments
V1	General Other (Please Explain)	-			
V2	General Corrosion	Good			There no corrosion present.
V3	General Leaks	Good			No leaks were detected.
V4	Vibration	-			
V5	Dissimilar Flange Rating	Good			No dissimilar flange ratings noted.
V6	Ladder/Stairway	-			
V7	Heads	Good			No deficiencies noted.
V9	Electrical Ground	Good			The vessel is grounded through the skid package.
V10	Painted Inactive Corrosion	Fair			The vessel is painted with inactive mild corrosion present.
V11	Coating/Painting	Fair			The vessel paint is burnt with chips and scratches.
V12	Expansion Joint or Bellows	-			
V13	Gauge/Site Glass	-			
V14	Shell	Good			Shell is in good condition.
V15	Jacket	-			
V21	Support Other (Please explain)	Good			The cooler is supported by the shroud assembly that is in good condition.
V22	Foundation	-			
V23	Anchor Bolts	-			
V24	Saddle/Skirt	-			
V25	Davit	-			
V26	Fireproofing	-			
V31	Connections Other (Please explain)	-			
V32	Small Branches	-			
V33	Nozzles	Good			The nozzles are satisfactory with no leaks present.
V34	Manways	-			
V35	Reinforcing Pads	-			
V36	Inadequate Thread Engagement	Good			The thread engagement is adequate.
V37	Bolting	Good			The studs and nuts are the correct size and length. B7/2H
V38	Flanges	Good			The flanges are tight with no deficiencies noted.
V39	Leak Clamps	-			
V41	Insulation Other (Please explain)	-			
V42	Damage	-			
V43	Penetrations	-			
V44	Insulation Jacket	-			
V45	Banding	-			
V46	Seals/Joints	-			
V51	Relief Devices Other (Please explain)	-			
V52	Corrosion	Good			No corrosion noted.
V53	Leaks	Good			No leaks were present.
V54	Restricted Inlet/Outlet	Good			The inlet and outlet sizes are correct with no restrictions.
V55	Manual Operation Lever	-			

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### DETAILED INSPECTION VISUAL INTERNAL

ID	Description	Condition	Location	NCR / IDR	Comments
V1	General Other (Please Explain)				
V2	Corrosion (depth, length, width)				
V3	Erosion				
V4	Distortion				
V5	Blisters				
V6	Deposits				
V7	Heads				
V8	Welds				
V9	Nozzles				
V10	Shell				
V11	Gasket Surfaces				
V21	Internals Other (Please explain)				
V22	Demister				
V23	Baffle/Weir				
V24	Sparger				
V25	Thermowells				
V26	Metallic Linings				
V27	Nonmetallic Linings				
V30	Other: Welded Attachments				
V31	Tubes				
V32	Tube sheet				

### DETAILED INSPECTION OTHER TECHNIQUES

ID	Location	Observation/Measurement	Acceptance Criteria	NCR / IDR	Comments
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

### DETAILED INSPECTION TUBE INSPECTION

Tube #	Flaw Type	Flaw Length	Location on Tube	Wall Loss	NCR / IDR	Comments

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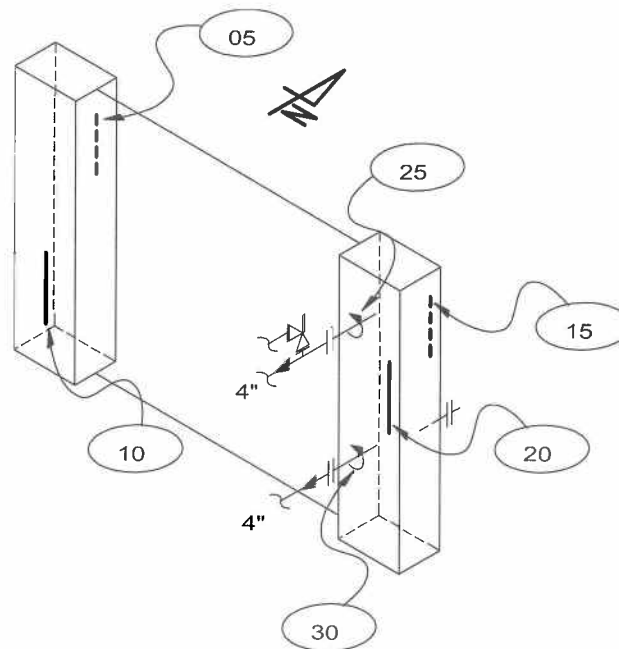
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## DETAILED INSPECTION UT THICKNESS

CML	Nom. Thk	Current Reading	Short Term Corr Rate	Long Term Corr Rate	Remaining Life	Comments
005	N/A	16.6				
010	N/A	16.8				
015	N/A	16.8				
020	N/A	17.1				
025	8.6	9.3				Above nominal – no concerns.
030	8.6	9.6				Above nominal – no concerns.

## UT DRAWING

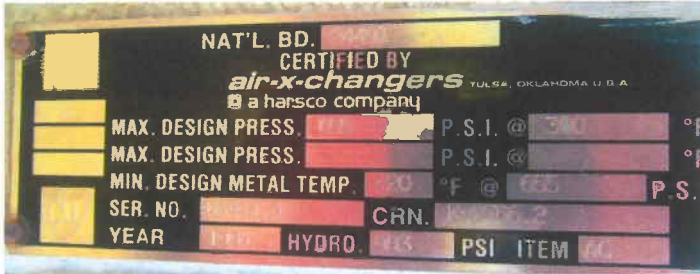


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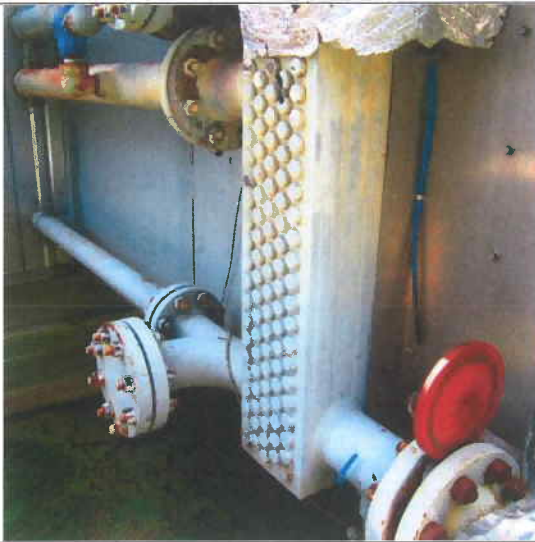
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**PHOTOS**



NAMEPLATE

OVERALL VIEW #1



OVERALL VIEW #2