

### SHELL & TUBE INSPECTION REPORT

LSD: 02-20-050-18W5M

Date: May 7, 2015

SAP Equipment ID: 66038572

SHELL & TUBE STATIC DATA						
Plant Raven Creek Comp Stn		Op Unit		System		
Prov. Insp. # n/a		CRN		Equip Tag #		
Description Glycol Exchanger				Serial # 541870		
Manufacturer				Vessel Class		
Internal Access NO		Description		Year Built		
BOILER PROPER						
MAWP @ °C					MDMT °C	
CODE :		Fluid Service			PWHT :	
Diameter		Length (T/T) mm		OAL mm		Vertical / Horizontal
Shell Mat'l			Thickness mm		Corr Allowance mm	
Head Mat'l			Thickness mm		Corr Allowance mm	
Internal Coating:			Internal Clad :		Capacity m <sup>3</sup>	
Manway :			Inspection Port :		Skirt / Legs / Saddle	
Nozzle Rating lb ANSI		Painted : YES		Insulated NO		
Operating Pressure kPa			Operating Temperature °C			
TUBE/CHANNEL SIDE DATA						
MAWP @ °C					MDMT °C	
CODE :		Fluid Service			PWHT :	
Diameter		Length (T/T) mm		OAL mm		Vertical / Horizontal
Shell Mat'l			Thickness mm		Corr Allowance mm	
Head Mat'l			Thickness mm		Corr Allowance mm	
Internal Coating:			Internal Clad :		Capacity m <sup>3</sup>	
Manway :			Inspection Port :		Skirt / Legs / Saddle	
Nozzle Rating lb ANSI		Painted : YES		Insulated NO		
Operating Pressure kPa			Operating Temperature °C			
PSV STATIC DATA						
Serial No.	Location	Set Pressure	Capacity SCFM	Manufacturer	Model / Type	Service Date / Company
B136607-3-3	glycol contactor shell	1415psi	2800	Consolidated	19357MC-1-DA-FT-GS	Wizard 16-May-14
PSV DETAILS						
	Type (Thread/Flange)		ANSI Rating		Size (inches)	
PRD Inlet	Threaded				1.5"	
PRD Outlet	Threaded				2"	
NDE Equipment Records						
Procedure#	Description	Manufacturer	Model#	Serial#	Due Date	

#### INSPECTION SUMMARY

Unsafe access above roof. Visual inspection done from ground. No access to dataplate. SN supplied on inspection list. Exchanger on train 1 glycol contactor gas outlet piping. Exchanger in good external condition. Paint in good condition. Dataplate present but not accessible. PSV off of contactor shell. PSV service up to date, vents to flare header. No UT inspection done at this time, no access without manlift or scaffolding

#### RECOMMENDATIONS

Check vessel records for MAWP to ensure PSV set at or below.

#### NONCONFORMANCES / INSPECTION DEFICIENCIES

None noted

#### INSPECTION PLANNING

Inspection Strategy _____	Availability _____	Inspection Interval _____
Inspection Date _____	Date of Last Inspect _____	Date of Next Inspect _____

#### REPORT CERTIFICATION


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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	<u>Ed Tymensen</u>		Date	<u>May 7, 2015</u>
Company	<u>Streamline Inspection Ltd</u>	PESL # <u>000711</u>	API #	<u>27479</u>
Reviewed and Approved by	_____	_____	Date	_____
	_____	PESL # _____	API #	_____
Criticality Assessment Rerun	_____	Inspection Planning Rerun	_____	_____
Assessed Next Inspection Date	_____			

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#### DETAILED INSPECTION VISUAL EXTERNAL

ID	Description	Condition	Location	NCR / IDR	Comments
V1	General Other (Please Explain)	Good			Overall no significant concerns observed
V2	General Corrosion	N/A			No corrosion concerns noted
V3	General Leaks	N/A			No active leaks present
V4	Vibration	N/A			
V5	Dissimilar Flange Rating	N/A			no access
V6	Ladder/Stairway	N/A			
V7	Heads	Good			no concerns noted
V9	Electrical Ground	Good			ground cable securely attached to skid
V10	Painted Inactive Corrosion	N/A			
V11	Coating/Painting	Good			no deterioration noted
V12	Expansion Joint or Bellows	N/A			
V13	Gauge/Site Glass	N/A			
V14	Shell	Good			no concerns noted
V15	Jacket	N/A			
V21	Support Other (Please explain)	Good	threaded piping		well supported
V22	Foundation	Good			steel skid on steel piles
V23	Anchor Bolts	N/A			
V24	Saddle/Skirt	N/A			
V25	Davit	N/A			
V26	Fireproofing	N/A			
V31	Connections Other (Please explain)	N/A			
V32	Small Branches	N/A			
V33	Nozzles	Good			no concerns noted
V34	Manways	N/A			
V35	Reinforcing Pads	N/A			
V36	Inadequate Thread Engagement	N/A			
V37	Bolting	N/A			
V38	Flanges	N/A			
V39	Leak Clamps	N/A			
V41	Insulation Other (Please explain)	N/A			
V42	Damage	N/A			
V43	Penetrations	N/A			
V44	Insulation Jacket	N/A			
V45	Banding	N/A			
V46	Seals/Joints	N/A			
V51	Relief Devices Other (Please explain)	N/A			Serviced and sealed
V52	Corrosion	N/A			
V53	Leaks	N/A			
V54	Restricted Inlet/Outlet	N/A			
V55	Manual Operation Lever	N/A			

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**DETAILED INSPECTION VISUAL INTERNAL**

ID	Description	Condition	Location	NCR	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/Wier				
V24	Sparger				
V25	Thermowells				
V26	Metallic Linings				
V27	Nonmetallic Linings				
V30	Other Welded Attachments				
V31	Tubes				
V32	Tube sheet				

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#### DETAILED INSPECTION OTHER TECHNIQUES

ID	Location	Observation/Measurement	Acceptance Criteria	NCR	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

#### DETAILED INSPECTION UT THICKNESS

CML	Nom. Thk	Current Reading	Short Term Corr Rate	Long Term Corr Rate	Remaining Life	Comments

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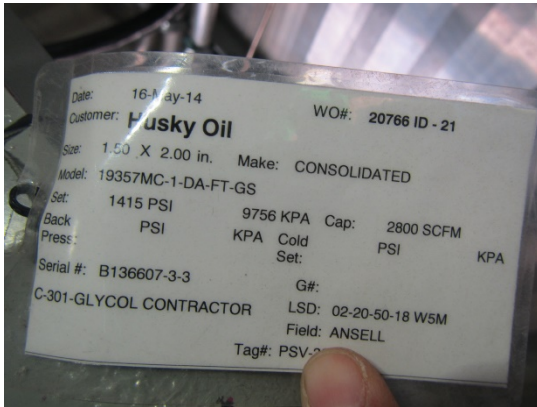
**PHOTOS**



LSD SIGN



VESSEL OVERVIEW



PSV SERVICE TAG



PSV ALTERATION DATAPLATE



PSV DATAPLATE



PSV OVERVIEW