

PRESSURE VESSEL & COLUMN INSPECTION REPORT

LSD 7-27-59-19W5

Date 9-22-17

SAP Equipment ID 66149925

Report # JM22092017B

VESSEL STATIC DATA									
Plant ANSELL					Op Unit		System FLARE		
Prov. Insp. #			NB#		CRN		Equip Tag #		
Equipment Description FLARE STACK							Serial # 7-4674		
Manufacturer TORANADO							Vessel Class		
Internal Access			NO		Description		Year Built N/A		
MAWP @							MDMT		
CODE				RT		PWHT			
Diameter 16"			Length		1572 in				
Shell	Mat'l	SA333		Thickness			Corr Allowance mm		
Head	Mat'l			Thickness			Corr Allowance		
Nozzle	Mat'l			Thickness			Corr Allowance		
Internal Coating:				Internal Clad			Capacity m ³		
Manway				Inspection Port					
Nozzle Rating	150	lb ANSI		Painted YES			Insulated		
PROCESS DATA									
Product Description									
Operating Pressure					Operating Temperature				
PROTECTED BY PRD or OPPSD									
PRD STATIC DATA									
Serial No.	Location		Set Pressure	Capacity	Manufacturer	Model / Type		Last Service Date & Company	
PRD DETAILS									
	Type			ANSI Rating			Size		
PRD Inlet									
PRD Outlet									

INSPECTION SUMMARY

FLARE STACK WAS INSPECTED ON 9-22-17

- BASE IS SET ON PILINGS, SECURED AND APPEAR TO BE IN ACCEPTABLE CONDITION
- ALL GUY WIRES ARE ATTACHED TO PILINGS AND APPEAR TO BE IN ACCEPTABLE CONDITION
- SHELL OF STACK IS PAINTED WITH NO SIGNS OF CORROSION NOTED AT TIME OF INSPECTION
- REGULATORS, VALVES AND PRESSURE GAUGES APPEAR TO BE ALL IN ACCEPTABLE WORKING CONDITION
- A LIMITED INSPECTON COMPLETED TO ABOUT 7' IN HEIGHT

RECOMMENDATIONS

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NONCONFORMANCES / INSPECTION DEFICIENCIES

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INSPECTION PLANNING

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

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	<u>Jerrad Morosoff</u>	Date	<u>2017-09-22</u>
Company	<u>Streamline Inspection Ltd.</u>	PESL #	<u>404</u>
		API #	<u>32933</u>
Reviewed and Approved by		Date	
		PESL #	
		API #	
Criticality Assessment Rerun		Inspection Planning Rerun	
Optional Rule Group Confirmed		Assessed Next Inspection Date	

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DETAILED INSPECTION VISUAL EXTERNAL

ID	Description	Condition	Location	NCR	Comments
V1	General Other (Please Explain)				
V2	General Corrosion	N/A			
V3	General Leaks	ACCEPTABLE			No concerns noted.
V4	Vibration	N/A			
V5	Dissimilar Flange Rating	ACCEPTABLE			No concerns noted.
V6	Ladder/Stairway	N/A			
V7	Heads	N/A			
V8	Guy Wires	ACCEPTABLE			No concerns noted.
V9	Electrical Ground	ACCEPTABLE			No concerns noted.
V10	Painted Inactive Corrosion	ACCEPTABLE			No concerns noted.
V11	Coating/Painting	ACCEPTABLE			No concerns noted.
V12	Expansion Joint or Bellows	N/A			
V13	Gauge/Site Glass	ACCEPTABLE			No concerns noted.
V14	Shell	ACCEPTABLE			No concerns noted.
V15	Jacket	N/A			
V21	Support Other (Please explain)				
V22	Foundation	ACCEPTABLE			No concerns noted.
V23	Anchor Bolts	ACCEPTABLE			No concerns noted.
V24	Saddle/Skirt	ACCEPTABLE			No concerns noted.
V25	Davit	N/A			
V26	Fireproofing	N/A			
V31	Connections Other (Please explain)				
V32	Small Branches	ACCEPTABLE			No concerns noted.
V33	Nozzles	ACCEPTABLE			No concerns noted.
V34	Manways	N/A			
V35	Reinforcing Pads	N/A			
V36	Inadequate Thread Engagement	ACCEPTABLE			No concerns noted.
V37	Bolting	ACCEPTABLE			No concerns noted.
V38	Flanges	ACCEPTABLE			No concerns noted.
V39	Leak Clamps	N/A			
V41	Insulation Other (Please explain)				
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			
V52	Corrosion	ACCEPTABLE			No concerns noted.
V53	Leaks	ACCEPTABLE			No concerns noted.
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/Weir				
V24	Sparger				
V25	Thermowells				
V26	Metallic Linings				
V27	Nonmetallic Linings				
V28	Trays				
V29	Tray Rings				
V30	Other Welded Attachments				

Magnetic Particle Equipment records

Procedure #	Description			
Manufacturer	Model	Serial #	Current Type	Mag Part Type
Lighting	Material + Grade	Thickness	Cal Block SN	Cal Due Date

Liquid Penetrant Equipment records

Procedure #	Description				
Penetrant	Solvent	Developer	Cleaner	Lighting	Material Grade + Thickness

DETAILED INSPECTION OTHER TECHNIQUES

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

Ultrasonic Equipment records

Procedure #	Description			
Test Unit	Instrument Mfr	Model #	Serial #	Cal Due Date
Probe	Frequency	Probe SN	Probe Diameter	Couplant
Cal Block	Cal Block Size	Cal Block SN	Cal Block Mtl	

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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



Dataplate



Overall View lower part of stack



Overall View upper part of stack



Guy Wire supports



Guy Wire turnbuckles and support

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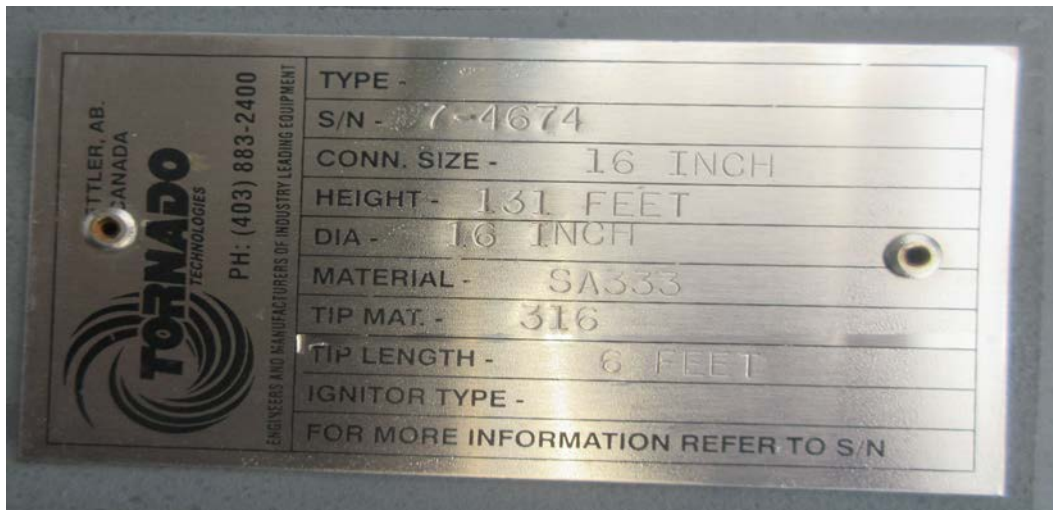
Report # JM22092017B



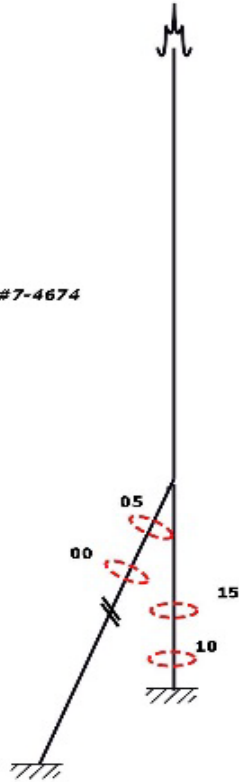
Pressure Gauge



Location Name:	Ansell	LSD:	7-27-51-19 W5
Jur #:		Equipment/Tag No.	
Equipment Description:	Flare stack		
Manufacturer:	Tornado		
Serial Number:	7-4674	CRN:	
Shell MAWP:		PSI	Shell Design Temp: °F
Tube MAWP:		PSI	Tube Design Temp: °F
Shell Material:	SA-333-6	Head Material:	
Shell Thickness:		mm	Head Thickness: mm
Corrosion Allowance:		mm	Date Built:
Size:	406.4	mm	Pipe / Rolled Plate:
RT:			
NOTES:	SAP# 66149925		



FLARE STACK SN#7-4674
PLANT 1





Ultrasonic Corrosion Survey

*All values are in millimeters unless otherwise stated.

Survey Name: Husky Energy

Date: Sep 26, 2017

Inspector: 0

LSD: 7-27-51-19 W5	Area: Ansell	Location: plant
Jur #:	Tag Number:	Vessel Name: Flare stack
CRN:	Year Built:	Serial Number: 7-4674
RT:	Vessel CA: 0.000 mm	Manufacturer: Tornado
	Shell MAWP: PSI	Tube MAWP: PSI
	MAWTF: °F	MAWTF: °F
		Pipe/Plate
<hr/>		
TML Description	Baseline	Flange ANSI: Unknown
00 PIPING	2017	Material: SA-106-B
Shape: 360° Circ	Min 9.15	Flag 8.334
OD: 406.4	Avg 9.56	CA 1.191
Spec: ASME B31.3	Comments: ASSUMED NOMINAL	Nominal 9.525
		T Min
		STCR mm/yr 0.000
		LTCR mm/yr 0.000
		Remaining Life:
		Retirement Date:
<hr/>		
TML Description	Baseline	Flange ANSI: Unknown
05 PIPING	2017	Material: SA-106-B
Shape: 360° Circ	Min 9.20	Flag 8.334
OD: 406.4	Avg 9.62	CA 1.191
Spec: ASME B31.3	Comments: ASSUMED NOMINAL	Nominal 9.525
		T Min
		STCR mm/yr 0.000
		LTCR mm/yr 0.000
		Remaining Life:
		Retirement Date:
<hr/>		
TML Description	Baseline	Flange ANSI: Unknown
10 PIPING	2017	Material: SA-106-B
Shape: 360° Circ	Min 9.18	Flag 8.334
OD: 406.4	Avg 10.20	CA 1.191
Spec: ASME B31.3	Comments: ASSUMED NOMINAL	Nominal 9.525
		T Min
		STCR mm/yr 0.000
		LTCR mm/yr 0.000
		Remaining Life:
		Retirement Date:
<hr/>		
TML Description	Baseline	Flange ANSI: Unknown
15 PIPING	2017	Material: SA-106-B
Shape: 360° Circ	Min 9.25	Flag 8.334
OD: 406.4	Avg 9.63	CA 1.191
Spec: ASME B31.3	Comments: ASSUMED NOMINAL	Nominal 9.525
		T Min
		STCR mm/yr 0.000
		LTCR mm/yr 0.000
		Remaining Life:
		Retirement Date: