

Storage Tank Visual Inspection Report

Equip Id 66121625 **SAP ID** 66121625 **Asset Type** Storage Tank
Plant Lloydminster Production **Unit** Gully Lake/Standard Hill **System** N/A
Description TANK, SURGE
FLOC H1-06-003-00001-100001 **LSD** 03-35-049-22W3

Insp Date Sep 29, 2016 **Inspector** IRIS - LOGAN SKINNER **Insp Type** VIExt
Company **Confidence** Medium

Details

ID	Description	Condition	Location	NCR	Comment
T6	Ladder/Stairway	Good			
T7	Platform	Good			
T8	Electrical Ground	Good			
T11	Coating/Painting	Good			The tank is painted with no coating defect noted.
T12	Level Gauge	Good			
T13	Bottom	Good			TANK SKIRT IS ON A CEMENT PAD IN GOOD CONDITION.
T14	Secondary Containment	Good			
T15	Shell	Good			
T16	Roof	Good			
T32	Foundation	Yes			TANK SKIRT IS ON A CEMENT PAD IN GOOD CONDITION.
T42	Small Branches	Good			
T43	Nozzles	Good			
T46	Manways/Hatches	Good			
T47	Reinforcing Pads	Good			
T50	Flanges	Good			

Summary

VE, VI & UT INSPECTIONS WERE PERFORMED BY IRIS NDT; REFER TO THE EQUIPMENT FILE IN DM TO VIEW THE DETAILED REPORT.

RECOMMENDATIONS:

- COATING FAILURE AT THE ROOF TO SHELL SEAM, RECOMMEND SCAFFOLDING TO THE ROOF FOR A REPAIR.

INSPECTION INTERVAL ASSIGNED IS BASED ON THE ASSUMPTION THAT RECOMMENDATIONS WERE COMPLETED.

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Plant Lloydminster Production **Unit** Gully Lake/Standard Hill **System** N/A
Description TANK, SURGE
FLOC H1-06-003-00001-100001 **LSD** 03-35-049-22W3

Insp Date Sep 29, 2016 **Inspector** IRIS - LOGAN SKINNER **Insp Type** VIInt
Company **Confidence** Medium

Details

ID	Description	Condition	Location	NCR	Comment
V6	Deposits	Poor			TAK IS VERY DIRTY LIMITED VISUAL ON THE INTERNAL. Lots of scale built up was noted on the floor, shell and internals.
V7	Welds	Good			
V8	Nozzles	Good			
V9	Shell	Good			
V10	Roof	Good			
T11	Floor	Good			
V25	Thermowells	Good			
V27	Nonmetallic Linings	Poor			The coating is in poor condition at the roof to shell interface and on the manway cover. Scaffolding will be require at the next scheduled inspection.
V28	Internal steam coil or other piping	Good			The desand rings appeared to be in good working condition.
V29	Level gauge	Good			
V30	Other Welded Attachments	Good			
V21	Internals Other (Please explain)	Poor			Some of the test tap stainless steel tubing has been under some excessive stress due to the cone flexing. 2 1" collar were in need of replacement.

Summary

VE, VI & UT INSPECTIONS WERE PERFORMED BY IRIS NDT; REFER TO THE EQUIPMENT FILE IN DM TO VIEW THE DETAILED REPORT.

RECOMMENDATIONS:

- COATING FAILURE AT THE ROOF TO SHELL SEAM, RECOMMEND SCAFFOLDING TO THE ROOF FOR A REPAIR.

INSPECTION INTERVAL ASSIGNED IS BASED ON THE ASSUMPTION THAT RECOMMENDATIONS WERE COMPLETED.

The corrosion group should review the scale inhibitor injection program as significant amount of built up was noted inside the tank.

Scaffolding should be erected at the next scheduled inspection to repair the failed coating at the roof to shell interface.

Some 1" stainless steel flex hose should be installed on the test tap to avoid future leak / failure. See the attached NDE report for the repairs performed during the 2016 inspection.



Tank Inspection Report

Location: 3-35-49-22w3 Tank Type: Unload Tank. Date: Sept 29-16

Mfg: Universal ind. Year blt: 2006 S/N: 7305-1 CAP: 1500 bbl

Floor Thk: 250" Shell Thk: 250" Roof Thk: 188"

Requisitioned by: Doug Scott Approver: Doug Scott Approver Code: 22-2021170

WO #: 60315092 PO#: 8401088009 CC: SAP #: 66121625

EXTERNAL INSPECTION:

ID	Item	Yes	Good	N/A	See Notes
GENERAL					
T1	Other (Please Explain)				
T2	Corrosion			/	
T3	Leaks			/	
T4	Vibration			/	
T5	Dissimilar Flange Rating			/	
T6	Ladder/Stairway	/	/		
T7	Platform	/	/		
T8	Electrical Ground				
T9	Cathodic Protection			/	
T10	Painted Inactive Corrosion			/	
T11	Coating/Painting	/			1
T12	Level Gauge	/	/		
T13	Bottom	/	/		3
T14	Secondary Containment	/	/		
T15	Shell	/	/		
T16	Roof	/	/		
T17	Agitator/ Mixer			/	
SUPPORTS					
T31	Other (Please Explain)				
T32	Foundation	/	/		3
T33	Anchor Bolts			/	
T34	Windgirders			/	
CONNECTIONS					
T41	Other (Please explain)				
T42	Small Branches	/	/		
T43	Nozzles	/	/		
T44	Pipe Manifolds			/	
T45	Swing Lines			/	
T46	Manways/Hatches	/	/		
T47	Reinforcing Pads	/	/		
T48	Inadequate Thread Engagement			/	
T49	Bolting			/	
T50	Flanges	/	/		
T51	Leak Clamps			/	
INSULATION					
T61	Other (Please explain)			/	
T62	Damage			/	
T63	Penetrations			/	
T64	Jacket			/	
T65	Banding			/	
T66	Seals/Joints			/	
RELIEF DEVICE					
T7t	Other (Please explain)				
T72	Corrosion				
T73	Leaks				
T74	Restricted Inlet/Outlet				
T75	Manual Operation Lever				

INTERNAL INSPECTION:

ID	Item	Yes	Good	N/A	See Notes
	GENERAL				
T1	Other (Please Explain)				
T2	Corrosion			/	
T3	Erosion			/	
T4	Distortion			/	
T5	Blisters			/	
T6	Deposits	/			2
T7	Welds	/	/		
T8	Nozzles	/	/		
T9	Shell	/	/		
T10	Roof	/	/		
T11	Floor	/	/		
	GENERAL				
T21	Other - Firetube			/	
T21	Other - Anodes			/	
T22	Annular Ring			/	
T23	Sump			/	
T24	Roof Supports			/	
T25	Thermowells	/	/		
T26	Metallic Linings			/	
T27	Non Metallic Linings	/	/		1
T28	Internal Steam Coil / other Piping	/	/		
T29	Level Gauge	/	/		
T30	Other Welded Attachments	/	/		
	Backwelding Req'd			/	

[illegible]

BL.



Dirty internals



PHOTOS



FLOOR AND FLOATING SKIMMER



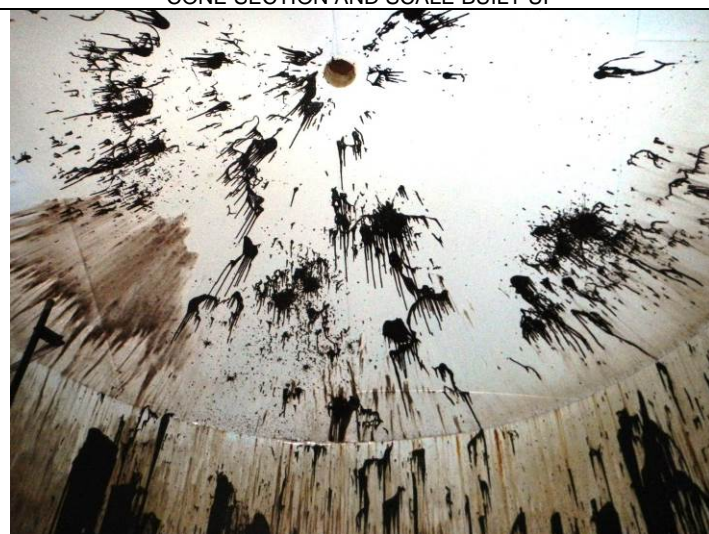
CONE SECTION AND SCALE BUILT UP



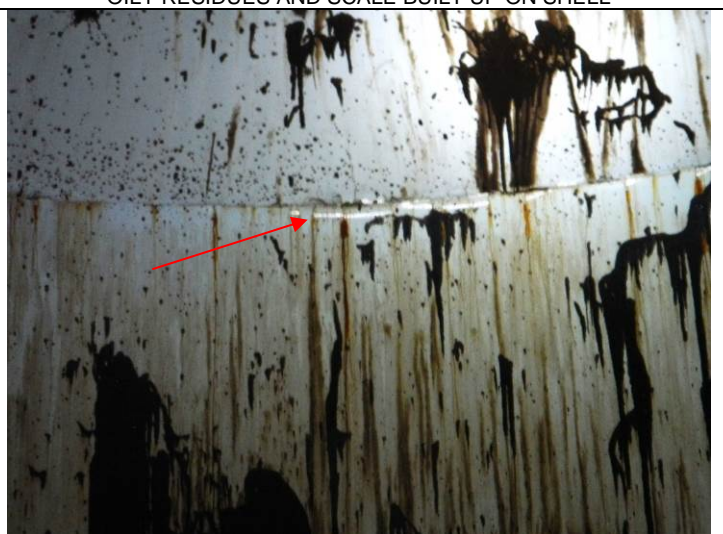
CONE SECTION AND SCALE BUILT UP



OILY RESIDUES AND SCALE BUILT UP ON SHELL



ROOF



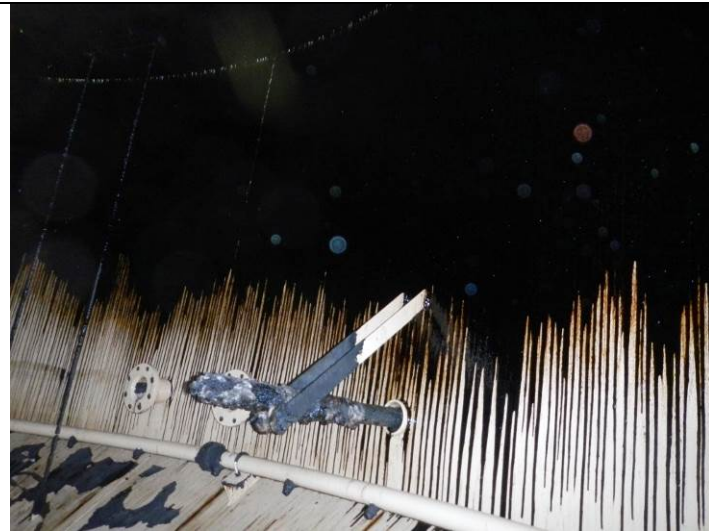
COATING PEELING AT THE ROOF TO SHELL INTERFACE



COATING PEELING AT THE ROOF TO SHELL INTERFACE



COATING PEELING ON UPPER SHELL NOZZLE



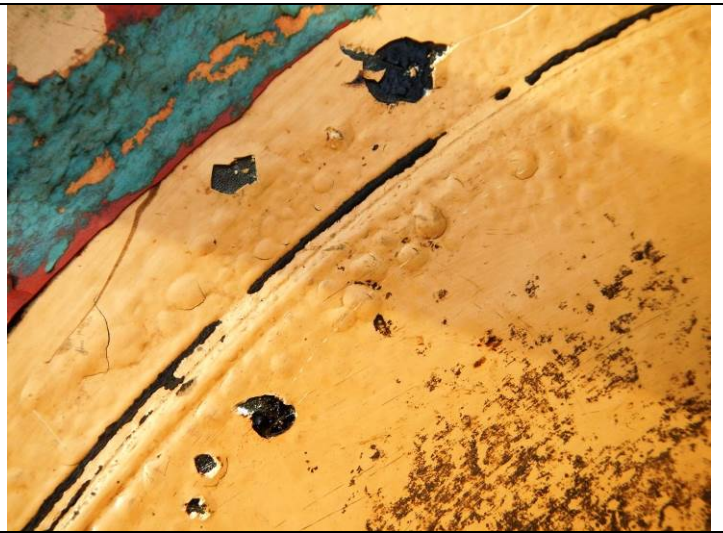
ANODE



SCALE BUILT UP ON RISERS



COATING IN POOR CONDITION ON MANWAY COVER



COATING IN POOR CONDITION ON MANWAY COVER



BOTTOM SIDE OF CONE



UNSUPPORTED CONE FLOOR



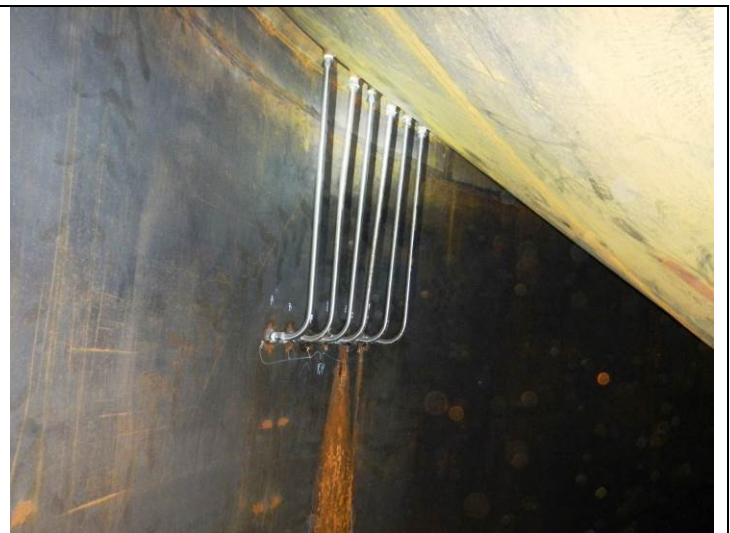
SHELL REINFORCEMENT RING



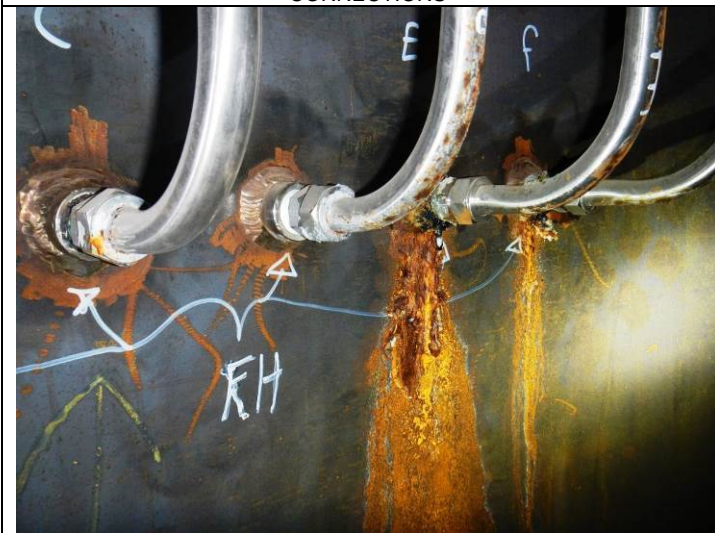
SHELL REINFORCEMENT RING



SIGNS OF LEAKAGE FROM THE TEST TAPS THREADED CONNECTIONS



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SIGNS OF LEAKAGE FROM THE TEST TAPS THREADED CONNECTIONS



LPI INTERPRETATION REPORT

Invoice #: 66-0674

Report #: LT66-0101-A

Report 1 of 2

P.O. Box 25, Kitscoty, AB T0B 2P0

Office (780) 846-2435 Fax (780) 846-2281
Dispatch (780) 846-2437

Procedure #: Cave PT (Rev. 5)

Technique: PT1

Date: 29-Sep-2016

Job # T-101

Client: Husky Energy Inc.

CC #

Location: A3-35-49-22 W3M STANDARD HILL

APPR # 2Z-2021170

Code: API 653
NO CRACKING AS PER CLIENTS REQUEST

W.O. # 60315092

Mnft # UNIVERSAL IND./ YEAR:2006

Serial # 7305-1 / 1500BBL CONE BTM

Specification:

Material Inspected: STAINLESS TO CARBON

Surface Condition: Clean

Lighting Used: LED FLASHLIGHT

Lighting Verified: $\geq 100\text{FC}$ / XDS-1000 (1943735)

Examination: Visible: Type II

Method: A / Water Washable

Penetrant Family: SREM Technologies

Cleaner: Fluxo 5

Penetrant: Fluxo P125

Developer: Fluxo R175

Weld #	Size	SCH	Material	Welder ID	Accept	Reject	Remarks
PT-1	1"	XS	ST	N/A	✓		LOWER "A" COLLAR
PT-2	1"	XS	ST	N/A	✓		UPPER "A" COLLAR
PT-3	1"	XS	ST	N/A	✓		LOWER "B" COLLAR
PT-4	1"	XS	ST	N/A	✓		UPPER "B" COLLAR
PT-5	1"	XS	ST	N/A		✓	LOWER "C" COLLAR / REPLACE DUE TO DAMAGED THREADS
PT-6	1"	XS	ST	N/A	✓		UPPER "C" COLLAR
PT-7	1"	XS	ST	N/A	✓		LOWER "D" COLLAR
PT-8	1"	XS	ST	N/A	✓		UPPER "D" COLLAR
PT-9	1"	XS	ST	N/A		✓	LOWER "E" COLLAR / REPLACE DUE TO DAMAGED THREADS
PT-10	1"	XS	ST	N/A	✓		UPPER "E" COLLAR
PT-11	1"	XS	ST	N/A	✓		LOWER "F" COLLAR
PT-12	1"	XS	ST	N/A	✓		UPPER "F" COLLAR
							-NO CRACKS FOUND AT TIME OF INSPECTION

Assistants: Bradley Andrews

Technician: Terry McCloud

Company Rep.: REMI LACASSE

TERRY MCCLOUD
CGSB RTII-MTII
SNT-TC-1A LEVEL II
CBSB# 10787

Signature:

Signature:

Invoice #: 66-0674

Report #: LT66-0101-B

Report 1 of 2

P.O. Box 25, Kitscoty, AB T0B 2P0

Office (780) 846-2435

Fax (780) 846-2281

Dispatch (780) 846-2437

Procedure #: Cave PT (Rev. 5)

Technique: PT1



TANK NAME PLATE



LOWER COLLARS DURING PROCESSING



UPPER COLLARS DURING PROCESSING



LOWER COLLARS AFTER PROCESSING



UPPER COLLARS AFTER PROCESSING

Assistants: Bradley Andrews

Technician: Terry McCloud

Company Rep.: REMI LACASSE

TERRY MCCLOUD
CGSB RTII-MTII
SNT-TC-1A LEVEL II
CBSB# 10787

Signature:

Signature:

P.O. Box 25, Kitscoty, AB T0B 2P0

Office (780) 846-2435 Fax (780) 846-2281
Dispatch (780) 846-2437

Date: 30-Sep-2016

Client: Husky Energy Inc.

Location: A3-35-49-22 W3M STANDARD HILL

Code:	API 653 NO CRACKING AS PER CLIENT REQUEST
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Surface Condition: Clean

Yoke Model: SENTINEL MP-A-2L

Yoke S/N: MP 3366

Types of Particles: ☐ 2A Red Dry

☒ **Visible Black / White**☐ Visible Fluorescent

Method of Application: ☒ Aerosol

Puffer

MPI INTERPRETATION REPORT

Invoice #: 66-0676

Report #: MT66-0416-A

Report 1 of 2

Procedure #: MT (Rev.10)

Technique: MT2

Job #

CC #

APPR # 2Z-202117

W.O. # 60315092

Mnft # UNIVERSAL IND. / YEAR:2006

Serial # 7305-1 / CONE BOTTOM

Power Source: AC

Magnetizing Current: Continuous

Yoke Calibration: 10 lb - Verified Prior to Use

Yoke Calibration Block: SN:17048 LOT#506

Medium Manufacturer:

FLUXO 4 WHITE CONTRAST PAINT

Batch #: L151002001

FLUXO 3 BLACK PARTICLE

Batch #: L150424001

Batch #:

Lighting Used: LED YOKE LIGHT

Lighting Verified: $\geq 100\text{FC}$ / XDS-1000 (1943735)

[illegible]

Assistants: Kyle Hope

Technician: Terry McCloud

Company Rep.: REMI LACASSE

TERRY MCCLOUD
CGSB RTII-MTII
SNT-TC-1A LEVEL II
CBSB# 10787

Signature:

Signature:

Invoice #: 66-0676

Report #: MT66-0416-B

Report 1 of 2

P.O. Box 25, Kitscoty, AB T0B 2P0

Office (780) 846-2435 Fax (780) 846-2281
Dispatch (780) 846-2437

Procedure #: MT (Rev.10)

Technique: MT2



OUTSIDE TANK WALL

INSIDE TANK WALL

Assistants: Kyle Hope

Technician: Terry McCloud

Company Rep.: REMI LACASSE

TERRY MCCLOUD
CGSB RTII-MTII
SNT-TC-1A LEVEL II
CBSB# 10787

Signature:

Signature:

P.O. Box 25, Kitscoty, AB T0B 2P0

Office (780) 846-2435 Fax (780) 846-2281
Dispatch (780) 846-2437

Date: 30-Sep-2016

Client: Husky Energy Inc.

Location: A3-35-49-22 W3M STANDARD HILL

Code:	API 653 NO CRACKING AS PER CLIENT REQUEST
--------------	--

Specification:

Material Inspected: STAINLESS TO CARBON

Lighting Used: LED FLASHLIGHT

Examination: **Visible:** Type II

Penetrant Family: SREM Technologies

Cleaner: Fluxo 5

Developer: Fluxo R175

LPI INTERPRETATION REPORT

Invoice #: 66-0676

Report #: LT66-0102-A

Report 2 of 2

Procedure #: Cave PT (Rev. 5)

Technique: PT1

Job #

CC #

APPR # 2Z-202117

W.O. # 60315092

Mnft # UNIVERSAL IND. / YEAR:2006

Serial # 7305-1 / CONE BOTTOM

Surface Condition: Clean

Lighting Verified: $\geq 100\text{FC}$ / XDS-1000 (1943735)

Method: A / Water Washable

Penetrant: Fluxo P125

[illegible]

Assistants: Kyle Hope

Technician: Terry McCloud

Company Rep.: REMI LACASSE

TERRY MCCLOUD
CGSB RTII-MTII
SNT-TC-1A LEVEL II
CBSB# 10787

Signature:

Signature:

Invoice #: 66-0676

Report #: LT66-0102-B

Report 2 of 2

P.O. Box 25, Kitscoty, AB T0B 2P0

Office (780) 846-2435

Fax (780) 846-2281

Dispatch (780) 846-2437

Procedure #: Cave PT (Rev. 5)

Technique: PT1



DURING PROCESSING INSIDE

AFTER PROCESSING INSIDE

AFTER PROCESSING OUTSIDE

Assistants: Kyle Hope

Technician: Terry McCloud

Company Rep.: REMI LACASSE

TERRY MCCLOUD
CGSB RTII-MTII
SNT-TC-1A LEVEL II
CBSB# 10787

Signature:

Signature:



66121625 Equipment Detail

Plant	Lloydminster Production	Unit	Gully Lake/Standard Hill	System	N/A
SAP ID	66121625	Equip Id	66121625	Asset Type	Storage Tank
Description	TANK, SURGE				
Manuf.	UNIVERSAL INDUSTRIES	Serial #	7305-1	Year Built	2006
Const Code		Int.Access	Yes	Prov #	[No Value Defined]
Cost Ctr		FLOC	H1-06-003-00001-100001	LSD	03-35-049-22W3
Time Based	Y	Opt RI Grp	AST Cat 1b	CRN	
User Status	ISF	Sys Status	INST	Active	Y

Equipment Protection

Inspections

Insp Type	Method	Insp Date	Inspection	Company	Confidence
VIInt		Sep 29, 2016	IRIS - LOGAN SKINNER		Medium
VIExt		Sep 29, 2016	IRIS - LOGAN SKINNER		Medium
VIInt		Sep 30, 2011	IRIS NDT		Medium
VIExt		Sep 30, 2011	IRIS NDT		Medium

Inspection Plan

Planned By: Remi Lacasse

Planning Date: Oct 04, 2016

Dmg Mech	Method	Due Date	Freq	SAP Not #	SAP W.O. #	PREP
External Deterioration	VI-Ext	Sep 28, 2021	5			
Internal Corrosion	UT	Sep 28, 2021	5			
Internal Corrosion	VI-Int	Sep 28, 2021	5			VE, VI & UT are to be performed during this inspection, see your area inspector for more details. Scaffolding will be require to repair the failed coating at the roof to shell interface.