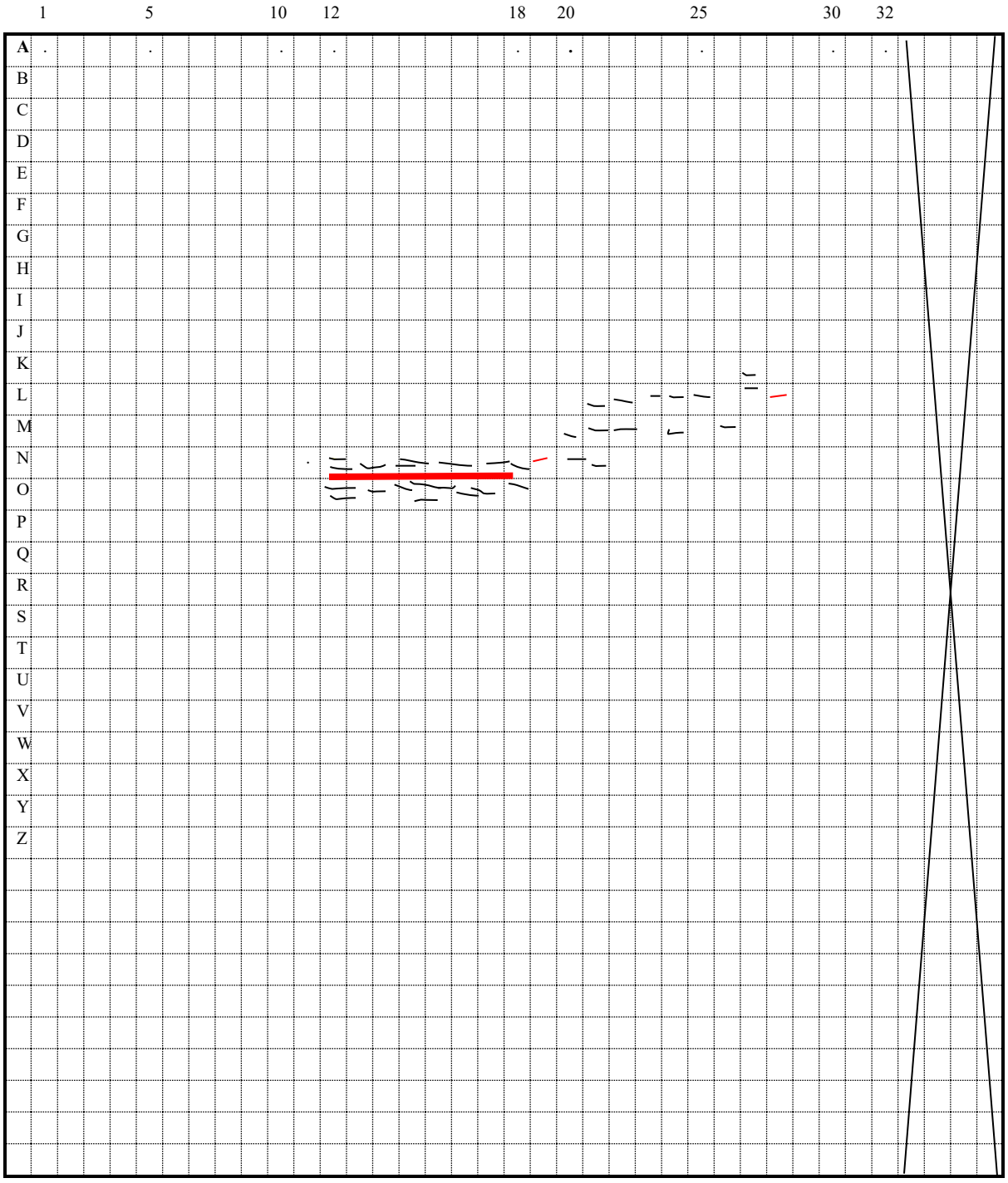
Federal Railroad Administration
Localized Corrosion or Material Degradation Form

Reporting Marks	UTLX 954193	DOT Specification	112J340W
Date when damage first observed:	04/27/24	Location where damaged first observed (City/State):	Manuelito, NM
NDT Method: MT___ PT___ UT___ UTT X VT X	Procedure(s)/Revision(s) Used: N/A	Original thickness of coupon/test area	.608
Equipment used: GE POCKETMIKE 35900	Equip. cal. date (if applicable): BEFORE USE	Cal block ID and Cal. due date (if applicable):	FLAWTECH 26705
Cable type/length (if applicable):	N/A	Scan techniques/plans (if applicable):	POINT
Search Unit(s) (if applicable): PULSE-ECHO/DUAL ELEM	Angle /MHz: N/A 5 MHz	Size: .475	Serial # 5191
Couplant/Penetrant/Particles manufacturer/type (if applicable):	GE REF 0102790	Exam date/time: 5/24/24	Special equip. (if applicable): N/A
Coupon Location - Ring #, B or A Head:	Ring #1	Clock Position Top = 12, Bottom = 6, facing the B head:	1 O'clock
Surface conditions, Surface Temp. and side(s) examined from:	Surface: clean and free of moisture ID___OD X Surface Temp: N/A	Indication(s) (Type/Size/Location):	Thermal tear/8 inches long/Ring 1/1 o'clock

Inspection Results: L=Location/T=Thickness reading

L	T	L	T	L	T	L	T	L	T	L	T	L	T	L	T
E3	606	K15	584	L14	571	M7	581	M27	545	N21	496	O17	490	P20	580
E29	614	K16	580	L15	568	M8	574	M28	545	N22	519	O18	489	P21	580
F17	606	K17	562	L16	567	M9	560	M29	547	N23	539	O19	269	P22	584
I28	566	K18	569	L17	562	M10	548	M30	576	N24	552	O20	506	P23	590
I29	566	K19	563	L18	554	M11	543	M31	561	N25	563	O21	531	Q28	606
J21	564	K20	558	L19	545	M12	539	M32	562	N26	569	O22	546	T5	612
J22	559	K21	549	L20	535	M13	538	N7	585	N27	568	O23	562	V14	623
J23	557	K22	535	L21	521	M14	540	N8	573	N28	576	P7	596	X30	617
J24	550	K23	522	L22	507	M15	534	N9	556	N29	576	P8	593	Z4	619
J25	545	K24	500	L23	494	M16	534	N10	547	N30	559	P9	586		
J26	540	K25	512	L24	481	M17	539	N11	541	O7	585	P10	580		
J27	535	K26	494	L25	486	M18	529	N12	514	O8	577	P11	577		
J28	537	K27	494	L26	487	M19	510	N13	488	O9	565	P12	579		
J29	528	K28	499	L27	494	M20	505	N14	487	O10	543	P13	580		
J30	542	K29	502	L28	274	M21	493	N15	483	O11	533	P14	582		
J31	534	K30	505	L29	515	M22	496	N16	534	O12	515	P15	581		
J32	546	K31	509	L30	529	M23	496	N17	539	O13	509	P16	585		
K12	582	K32	513	L31	533	M24	517	N18	529	O14	488	P17	577		
K13	583	L12	566	L32	535	M25	530	N19	510	O15	484	P18	580		
K14	571	L13	566	M6	591	M26	539	N20	267	O16	506	P19	580		

Federal Railroad Administration
Localized Corrosion or Material Degradation Form



***Readings reported by alphabet vertically A-JJ. Recorded by numeral horizontally 1-36 or however many inches of test area. (Example: A1 upper left/JJ36 lower right.**
***See tank car damage assessment form with corresponding reporting marks for additional info.**

Federal Railroad Administration
Localized Corrosion or Material Degradation Form

Narrative:
Defect is a jagged thermal tear located in the center of a blister at N12 and O12 through N18 and O18. This defect goes completely through the tank and has a ¼" width in some places.
Defect is a ¼" crack located at N19. It is separated approximately 1" from the large tear described above. It is visible from the ID of the tank and has several low UTT readings in adjoining grids.
Defect is a ¼" crack located at L28. The L28 crack is not visible from the ID of the tank but does have a low UTT reading (.274) consistent with the other larger crack.
There are also several stretch cracks as indicated in the diagram that move toward the A-end of the ring that are not visible from the ID of the tank while performing direct visual inspection.

Technician: Vernon L Walker Level: AWS/CWI Cert:N/A

Signature: _____ [redacted] _____

Assisted by: _____

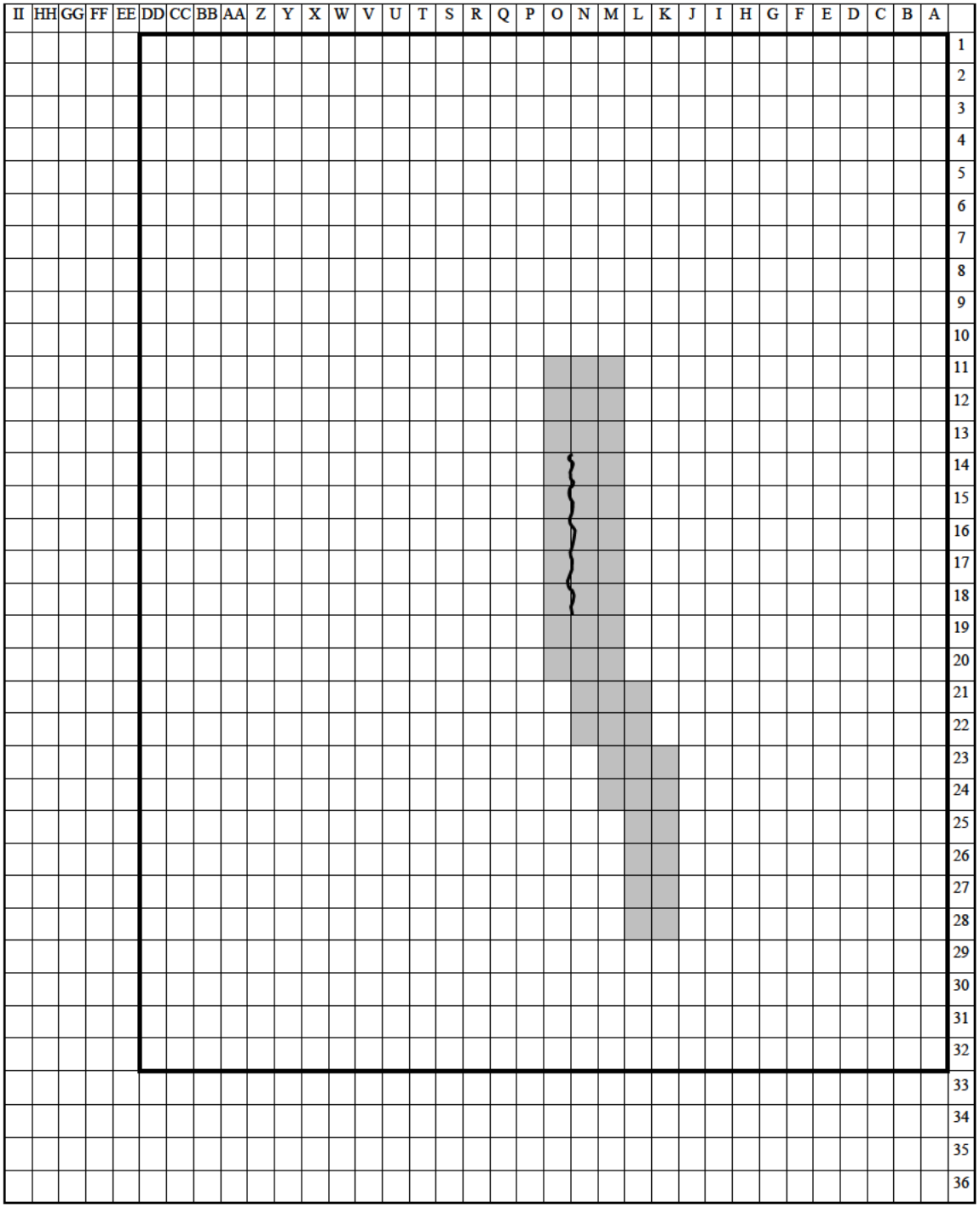
Federal Railroad Administration
Localized Corrosion or Material Degradation Form

Reporting Marks	Gallup Derailment Panel #1	DOT Specification	
Date when damage first observed:	09-JUL-24	Location where damaged first observed (City/State):	Pueblo, CO (TTC)
NDT Method: MT_X_ PT___ UT___ UTT ___ VT___	Procedure(s)/Revision(s) Used: SOP-MT-01 R0		
Equipment used: AC Yoke S/N 29238	Equip. cal. date (if applicable): 09-JUL-24	Cal block ID and Cal. due date (if applicable):	QQI shim
Cable type/length (if applicable):	N/A	Scan techniques/plans (if applicable):	N/A
Search Unit(s) (if applicable):	N/A	Size: N/A	Serial # N/A
Couplant/Penetrant/Particles manufacturer/type (if applicable):	Circle Systems Dry Powder 63 Red	Exam date/time: 07/09/24 08:30 - 14:30 07/10/24 07:30 - 14:30	Special equip. (if applicable): _____
Coupon Location - Ring #, B or A Head:		Clock Position Top = 12, Bottom = 6, facing the B head:	
Surface conditions, Surface Temp. and side(s) examined from:	Surface_____ ID_X__OD_X_ Surface Temp: Ambient Mechanical grooves observed on OD surface, one of which aligns with rupture. Photographs attached.	Indication(s) (Type/Size/Location): Cracking on OD surface surrounding rupture is visually evident without MT. Location of OD cracking denoted as gray cells in attached diagram.	MT detection on inside surface inhibited due to embedded carbon. ID surface exhibited corrosion on areas of cracking (ID surface cracking was detected with PAUT). Photographs attached.

Inspection Results: L=Location/T=Thickness reading

L	T	L	T	L	T	L	T	L	T	L	T	L	T

Federal Railroad Administration
Localized Corrosion or Material Degradation Form



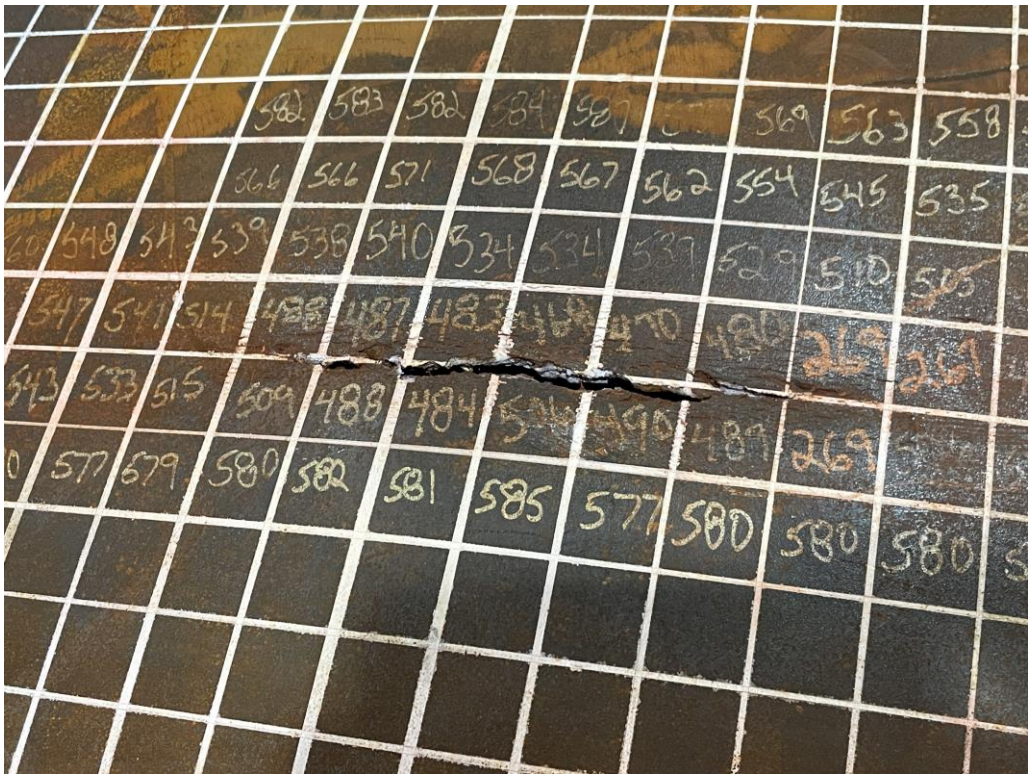
***Readings reported by alphabet vertically A-JJ. Recorded by numeral horizontally 1-36. (Example: A1 upper left/JJ36 lower right.**

***See tank car damage assessment form with corresponding reporting marks for additional info.**

Technician: Brian Wood Level: III Cert 67827

Signature: [redacted]

Assisted by: _____



OD surface prior to MT


OD surface prior to MT

OD surface prior to MT

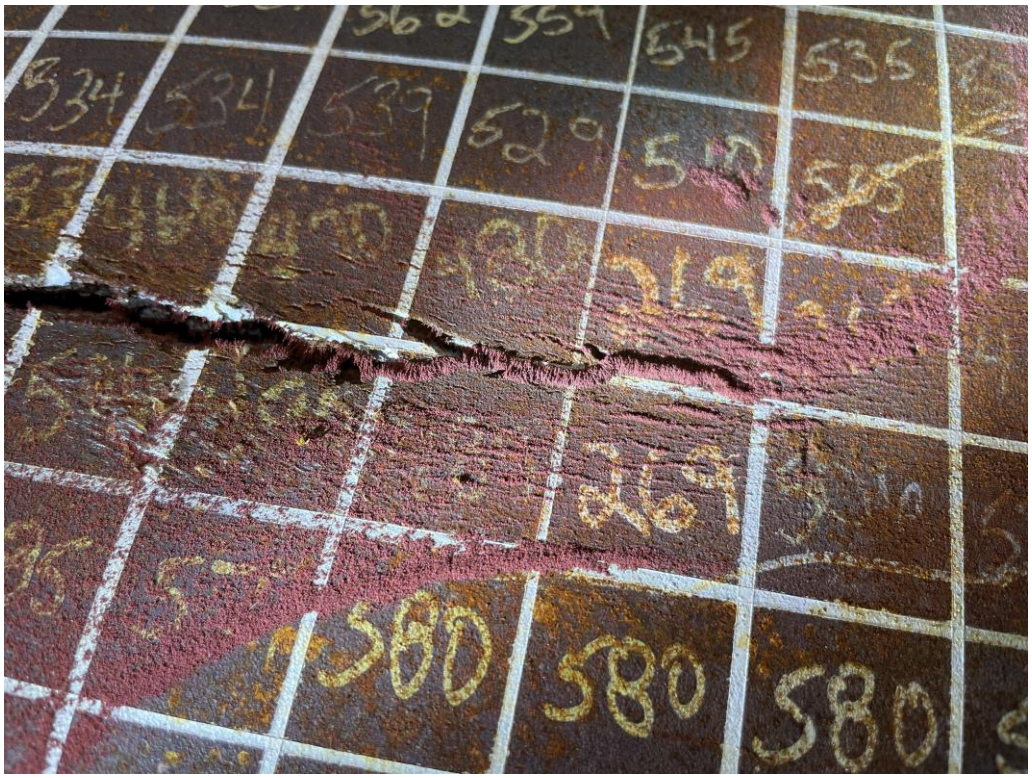
OD surface prior to MT

Mechanical Grooves on OD Surface

Mechanical Grooves on OD Surface

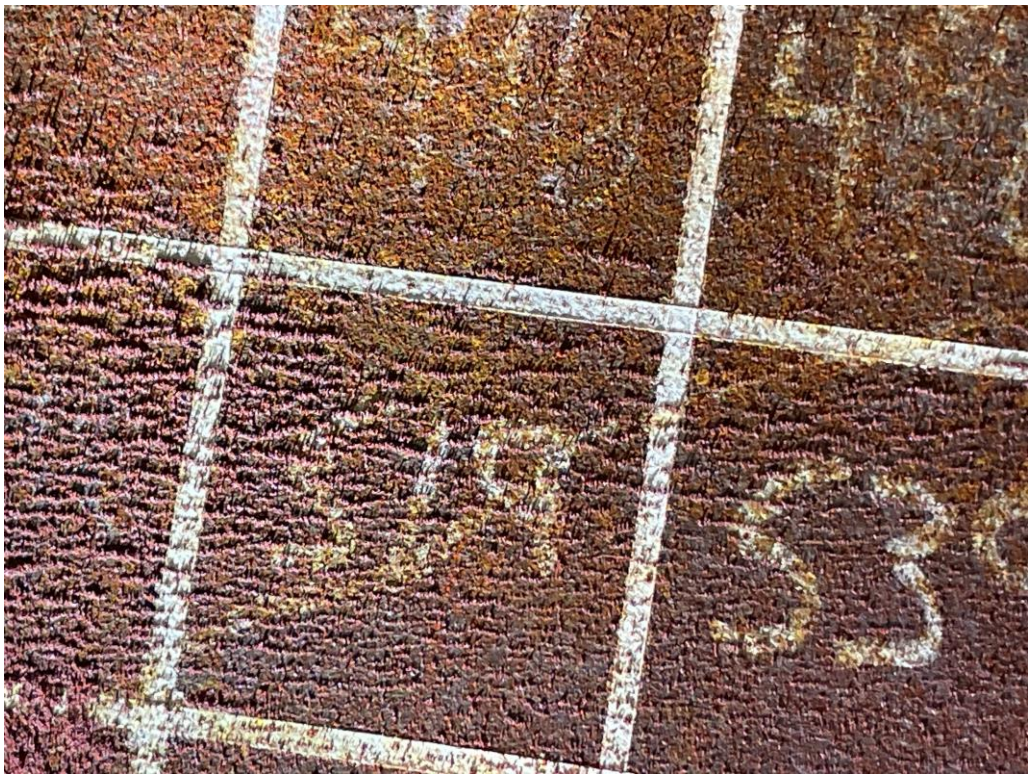
Mechanical Grooves on OD Surface

OD surface prior to MT



OD surface with MT

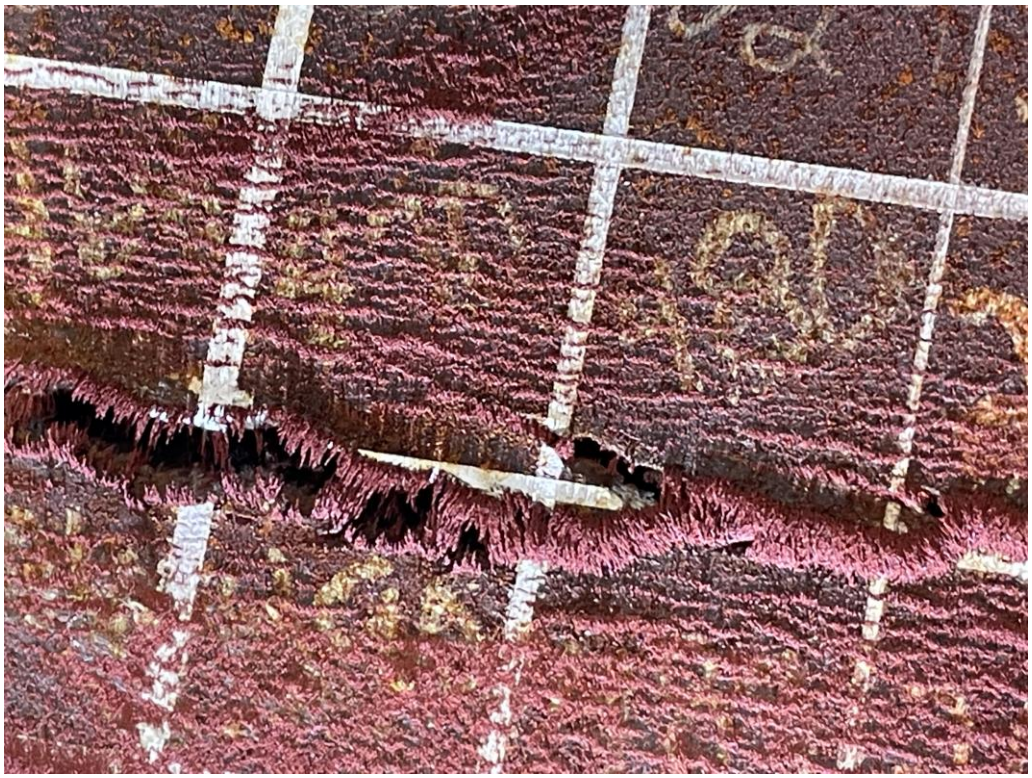
OD surface with MT



OD surface with MT

OD surface with MT

OD surface with MT



OD surface with MT

OD surface with MT

OD surface with MT

Unprepared ID Surface

Unprepared ID Surface

Unprepared ID Surface

Unprepared ID Surface

ID Surface with MT

ID Surface with MT

MT Inspection Report

MT Examination Date	Technician	Certificate No.	Examination Organization / Inspection Authority
10-Jul-24	Brian Wood	67827	Sound Analysis, LLC

Client	Location
ENSCO, Inc.	Transportation Technology Center - Pueblo, CO

Component Description	Component Serial No.	Drawing no. / Rev. No.
Damaged tank car specimen (Gallup derailment)	Panel 1	N/A

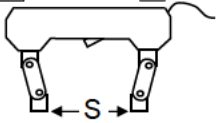
Examination Procedure	Acceptance Criteria
SOP-MT-01	SOP-MT-01

Precleaning

☐ None ☑ Liquid Solvent ☐ Rinsing Bath ☑ Mechanical ☐ Other Other cleaning type:

Magnetizing Source

☑ AC Yoke ☐ DC Yoke



☐ Dead Weight Test

☑ QQI Shim

S max. = 8 in.

Reg. No.: 29238

Inspection Medium

☑ Dry/red

Batch No.: 21511

Background

☐ White

☐ Ground

☑ Non-treated

Lighting

☑ White

Intensity: 100 fc

Magnetized for

☐ Longitudinal indications ☐ Transverse indications ☑ Indications in any direction

Extent of Examination

Coverage area includes area surrounding through-wall rupture on outside and inside surfaces

Results of Examination

1) Surface cracking detected on outside surface surrounding and parallel with rupture and extending toward end of panel.

2) Inside surface inspection impeded by embedded carbon. Indications only detected near rupture where cracks have wide opening.

☐ MT acceptable

☑ MT not acceptable

Page 1 of 1

Technician (Signature/Date) [redacted] 10-Jul-24

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Reporting Marks	Gallup Derailment Panel #1	DOT Specification	
Date when damage first observed:	09-JUL-24	Location where damaged first observed (City/State):	Pueblo, CO (TTC)
NDT Method: MT__ PT__ PAUT_X_ UTT ___ VT___	Procedure(s)/Revision(s) Used: SOP-PAUT-03 R0	PAUT Scan Plans: 10L32 0 Linear 10L32 40-70 Sectorial	
Equipment used: Evident OmniScan X3 64	Equip. cal. date (if applicable): 06-DEC-23	Cal block ID and Cal. due date (if applicable):	MAB Block-1018 Steel S/N 0590-09 Verified 15-Mar-21
Cable type/length (if applicable):	2.5 m	Scan techniques/plans (if applicable):	1) Linear: 32 element, 0 degrees 2)Sectorial: 16 element 40-70 degrees
Search Unit(s) (if applicable): 10L32-A10	Angle /MHz: 0 degrees/40-70 degrees/10 MHz	Size: 5 x 7 mm	Serial # Y3850
Couplant/Penetrant/Particles manufacturer/type (if applicable):	UTX Gel Couplant	Exam date/time: 07/09/24 08:30 - 14:30 07/10/24 07:30 - 14:30	Special equip. (if applicable): _____
Coupon Location - Ring #, B or A Head:		Clock Position Top = 12, Bottom = 6, facing the B head:	
Surface conditions, Surface Temp. and side(s) examined from:	Surface_____ ID_X__OD_X_ Surface Temp: Ambient	Indication(s) (Type/Size/Location): 1) Cracking on OD and ID surface surrounding rupture. Location of OD cracking denoted as gray cells in attached diagram. Scan data images attached.	2) Suspected centerline segregation detected. Locations denoted as outlined cells in attached diagram. Scan data images attached. 3) Thickness readings taken in cells that were originally labeled with depth to internal reflectors

Inspection Results: L=Location/T=Thickness reading

L	T	L	T	L	T	L	T	L	T	L	T	L	T
O19	0.494												
N19	0.478												
N20	0.485												
L28	0.513												

Federal Railroad Administration
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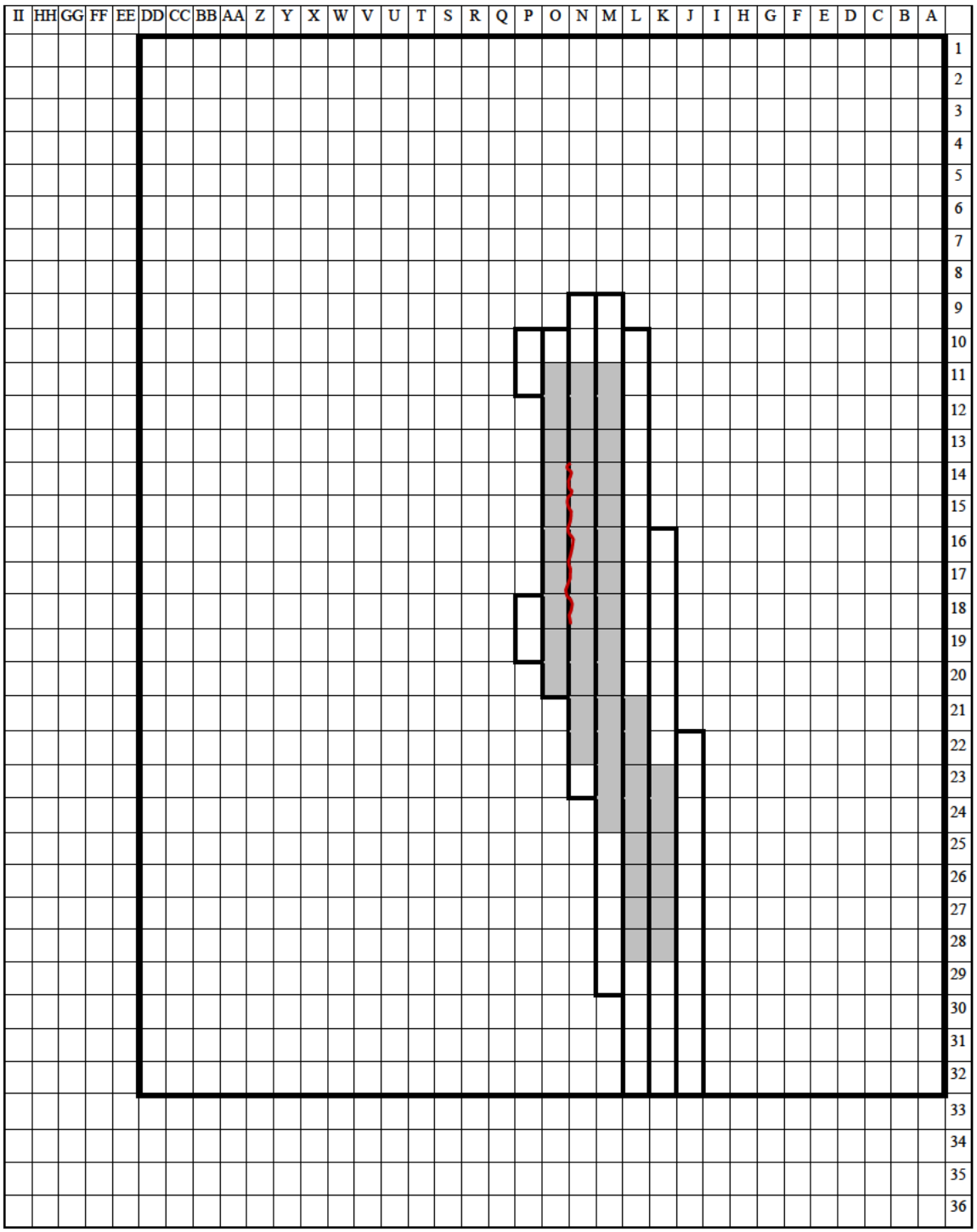

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***See tank car damage assessment form with corresponding reporting marks for additional info.**

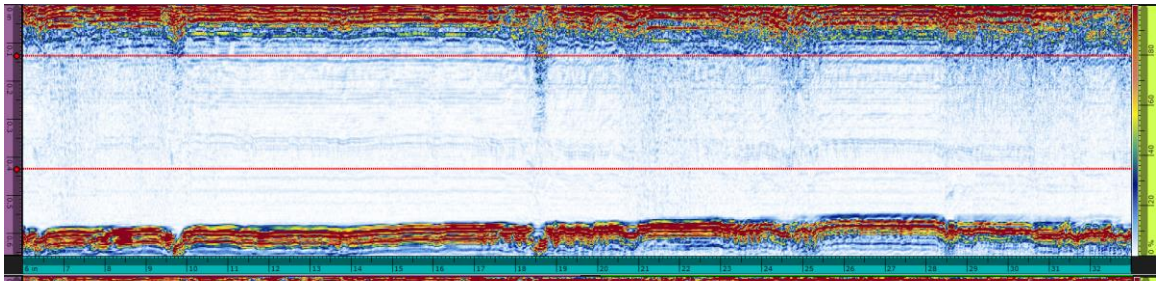
Technician: Brian Wood Level: III Cert 67827

Signature: [redacted]

Assisted by: _____

Straight Beam Scans 6-32 (Rupture located between N and O, 14 through 18)

I



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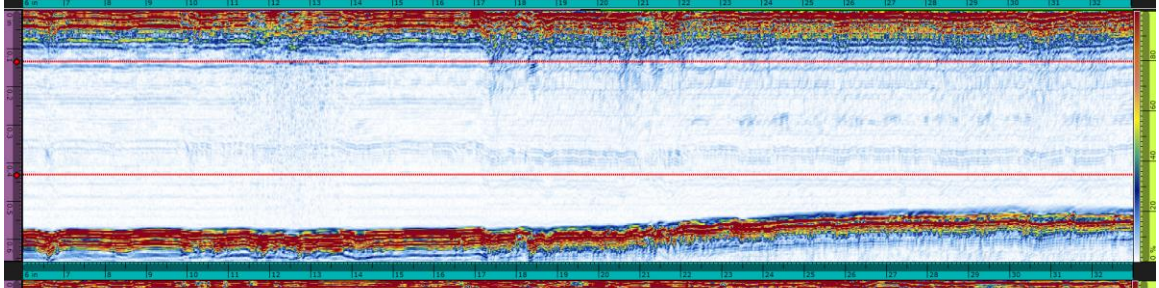

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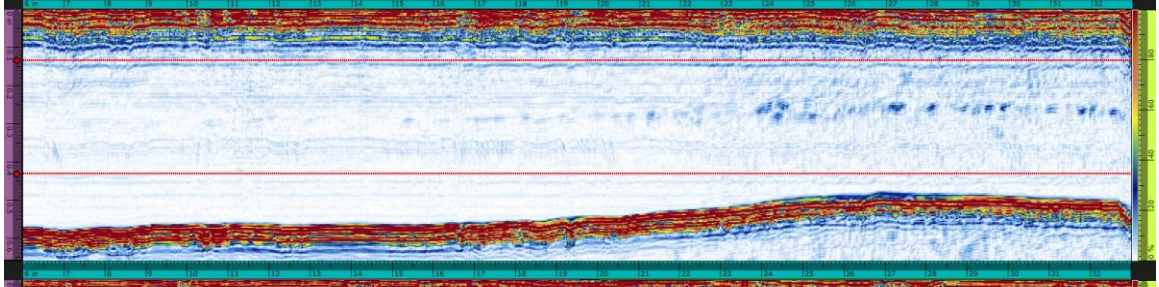
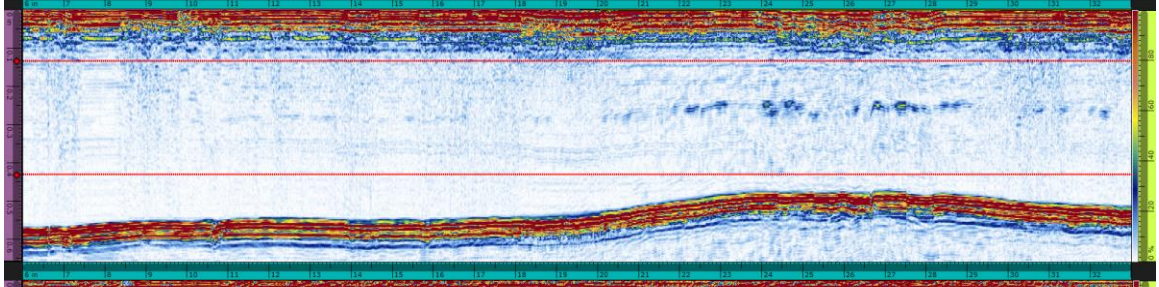


L



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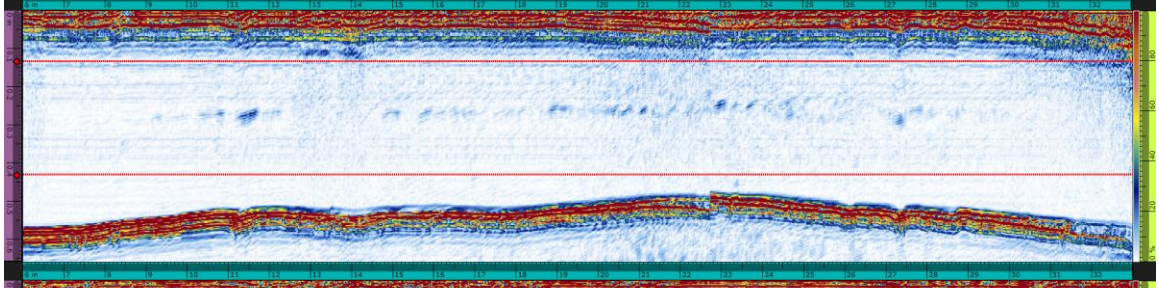

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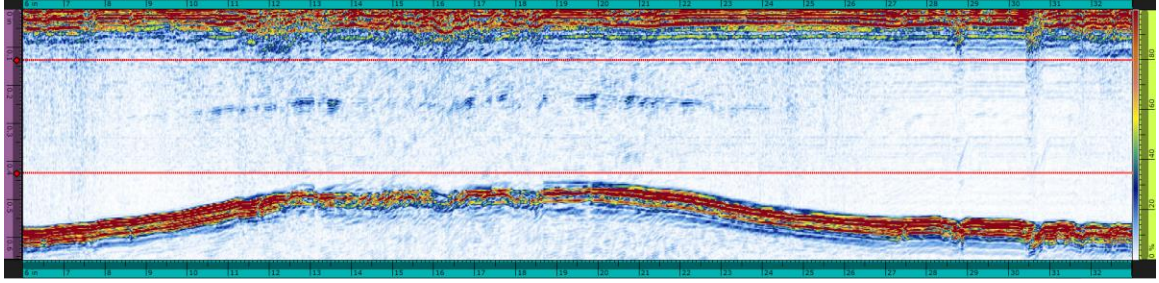
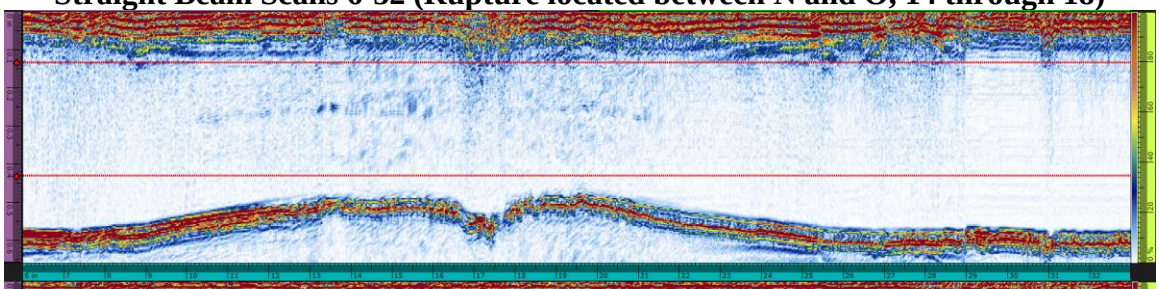


Straight Beam Scans 6-32 (Rupture located between N and O, 14 through 18)

O



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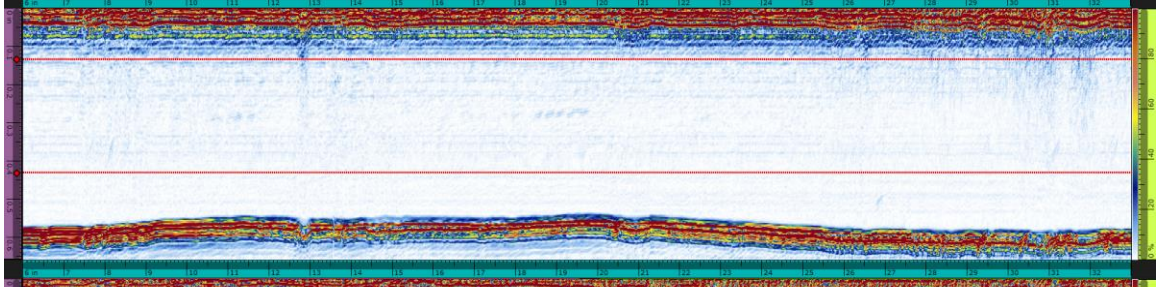

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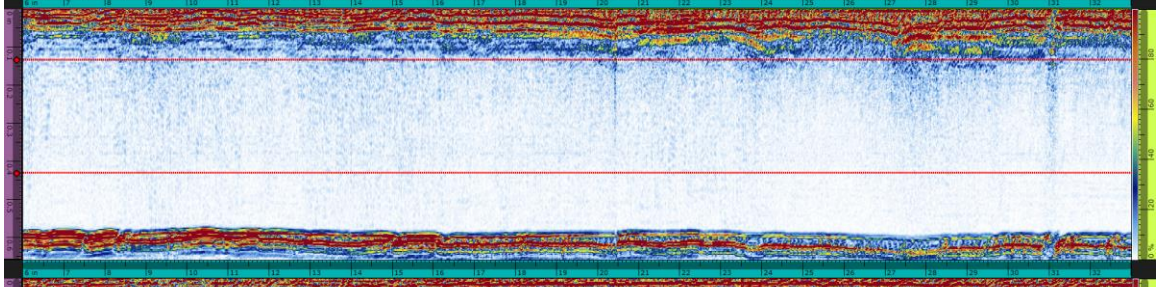

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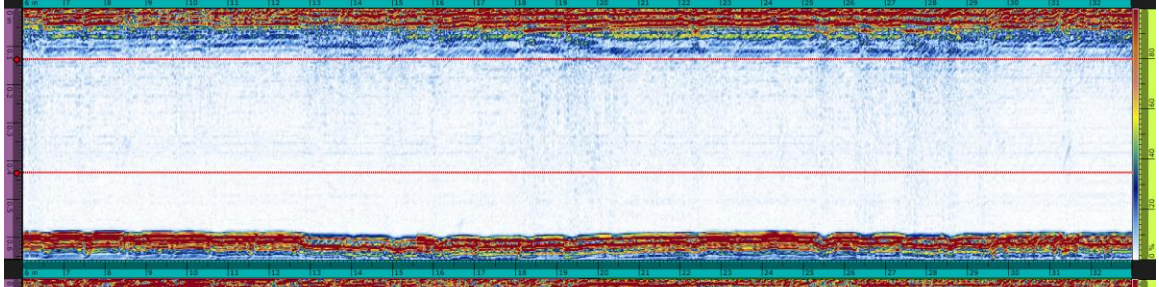

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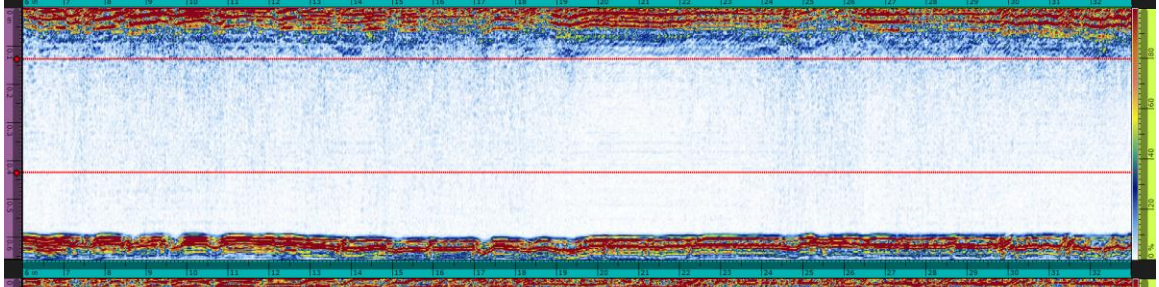

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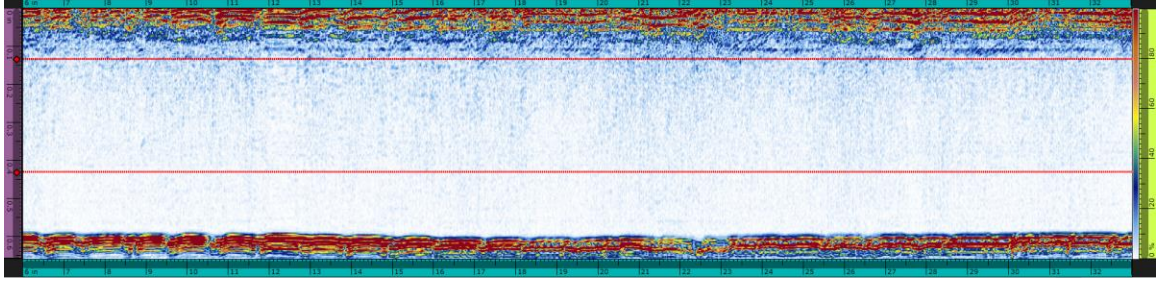
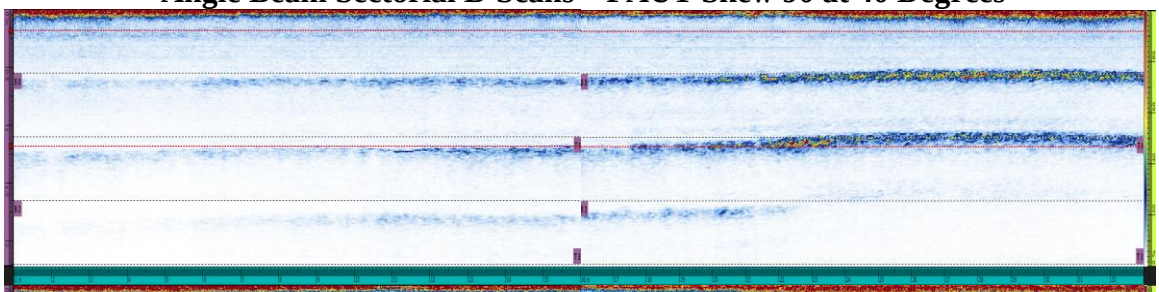


Angle Beam Sectorial B-Scans – PAUT Skew 90 at 40 Degrees

J



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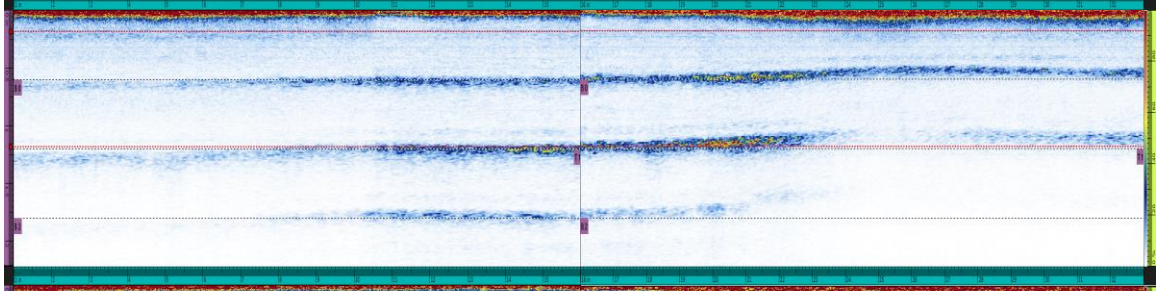

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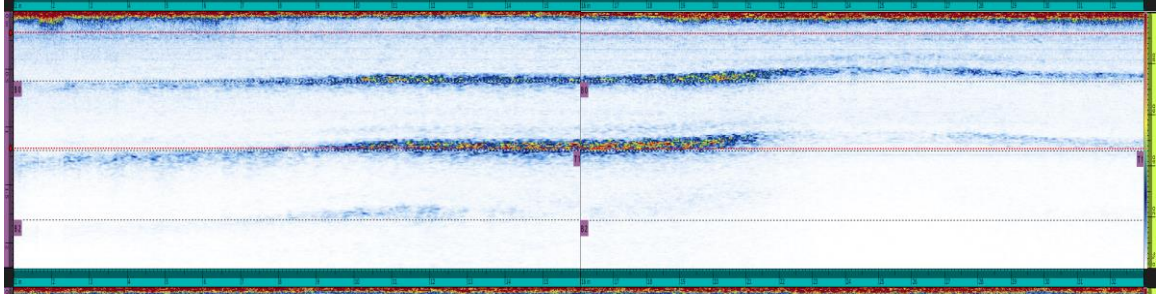

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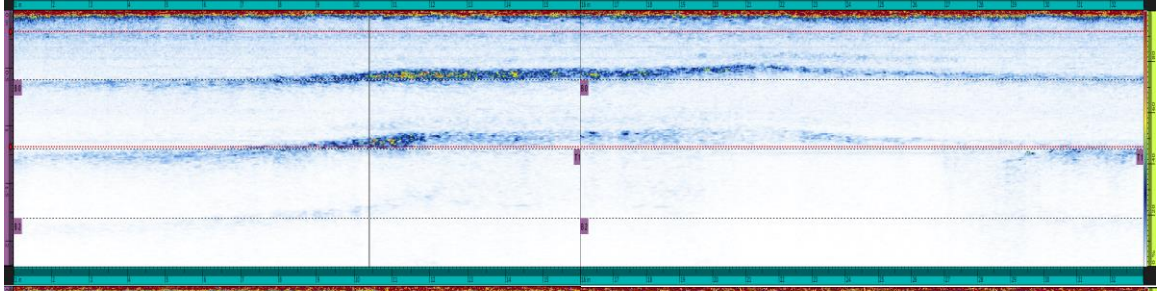

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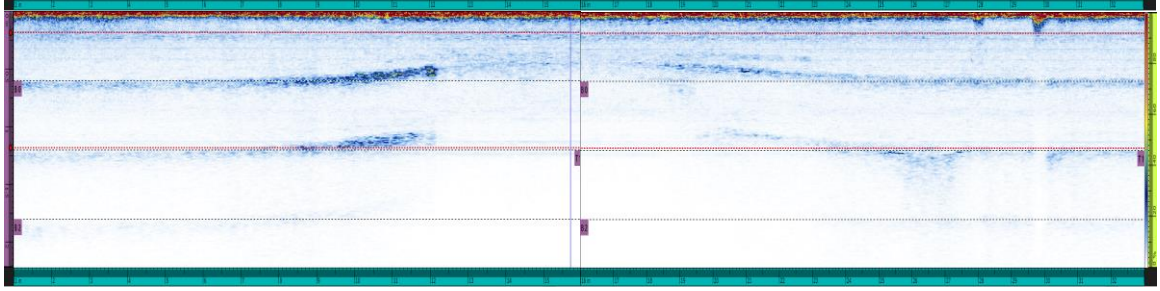
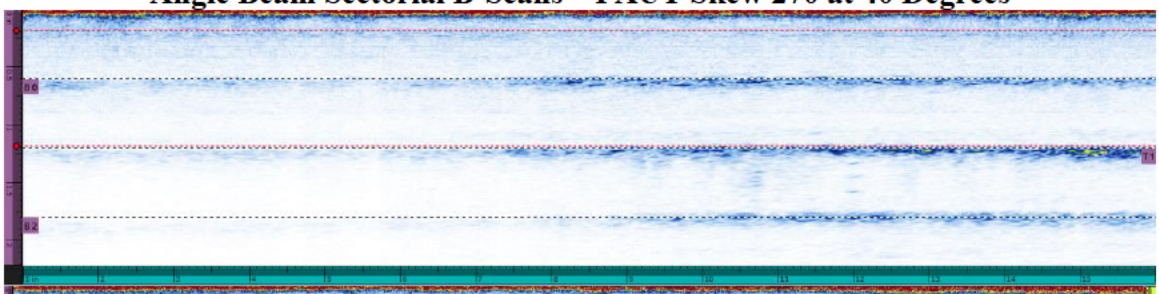


Angle Beam Sectorial B-Scans – PAUT Skew 270 at 40 Degrees

O



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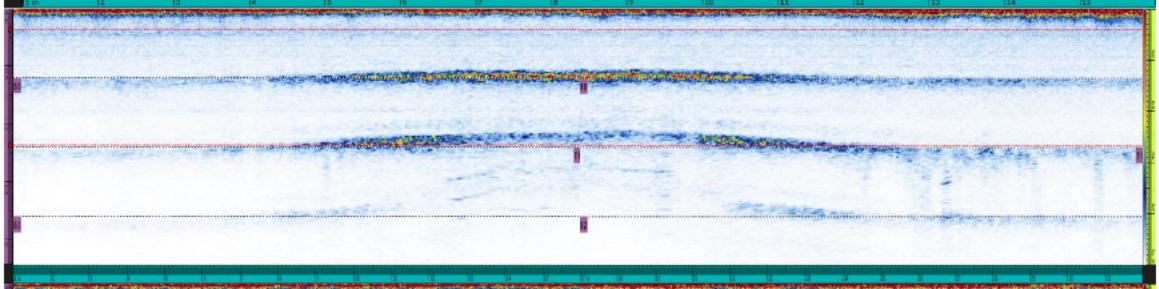

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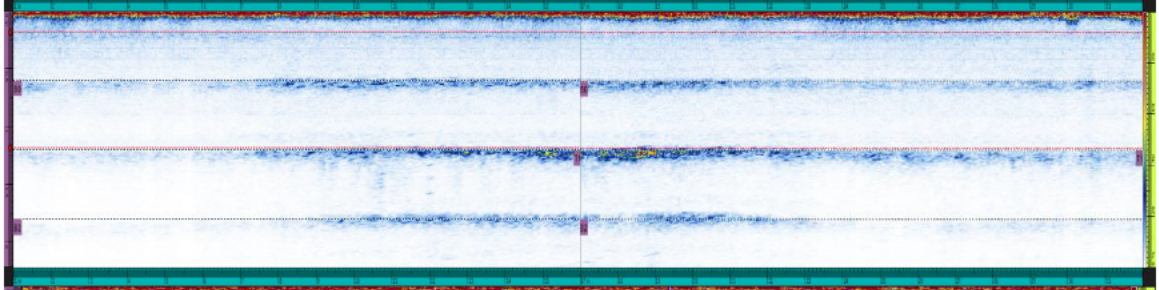

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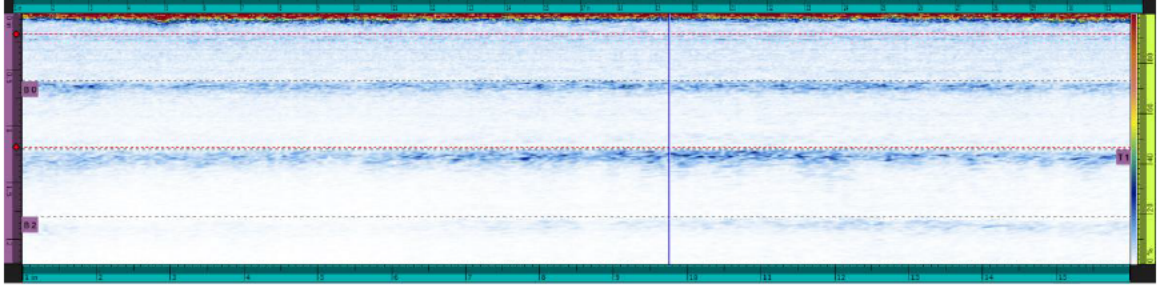

Angle Beam Sectorial Merged B-Scans – PAUT Skew 90 L-M-N & Skew 270 O-P-Q

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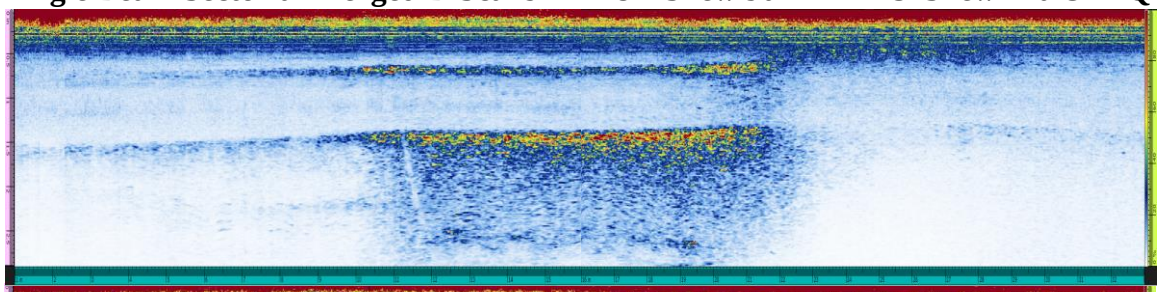

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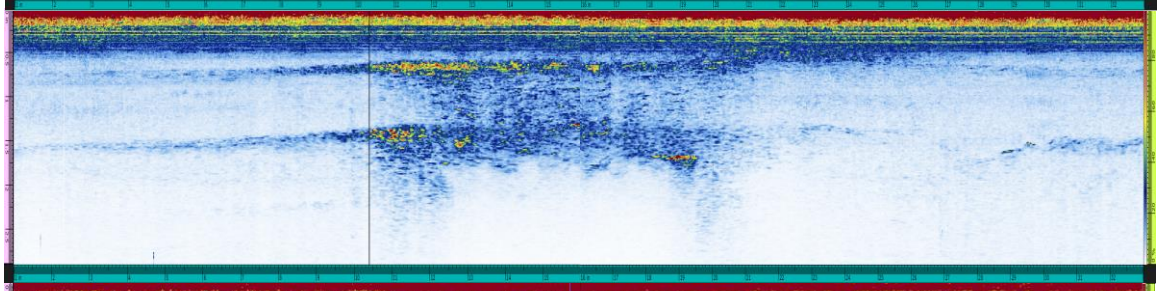

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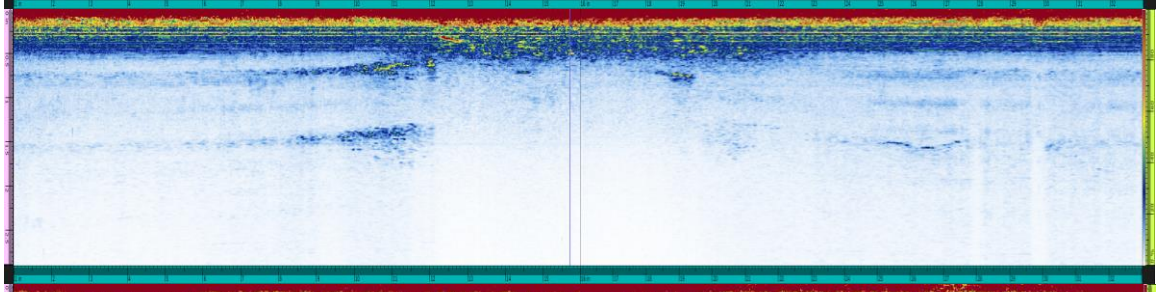

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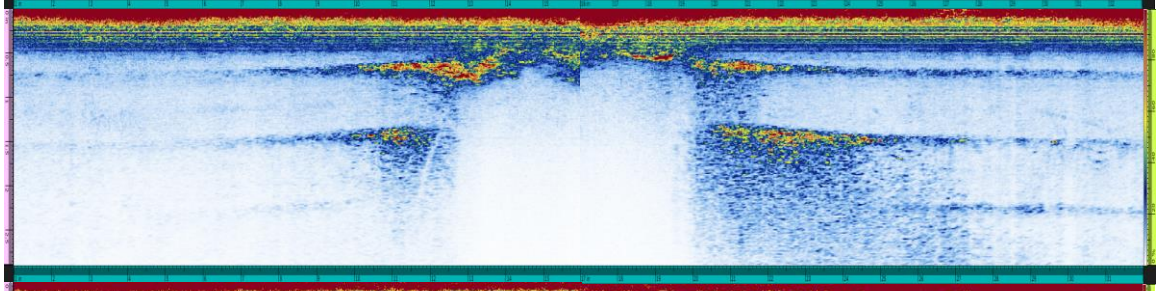

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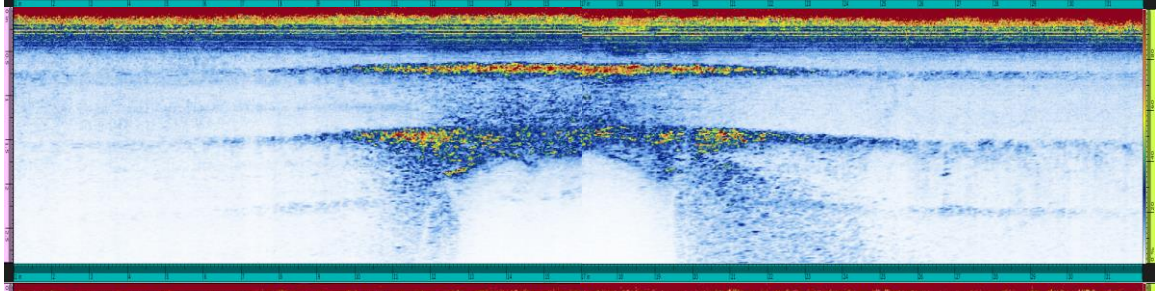

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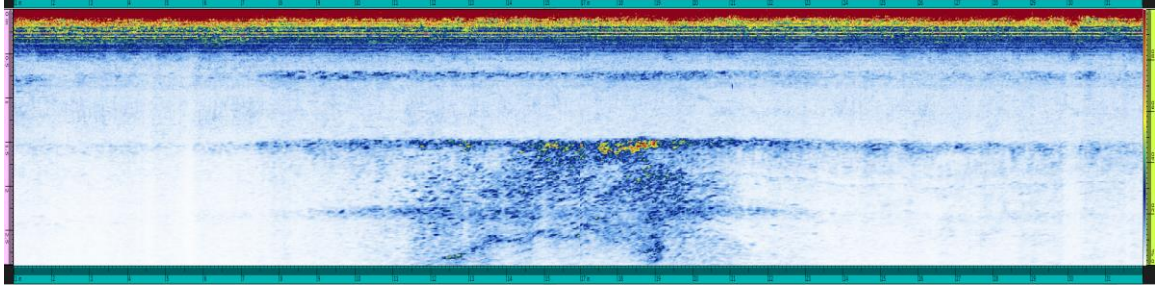


Sound Analysis™
NDT Level III Professional Services

Sound Analysis, LLC
Murfreesboro, TN

PAUT Inspection Report

Project

Client	**ENSCO, Inc,**	Inspection No.	**PAUT 24-0710-01**	Contact	**Sean Woods**
Project	**Gallup Derailment**	Description	**Damaged Tank Car**	Inspector Name	**Brian Wood**
Project No.	**FRA-24-0710**	Location	**TTC - Pueblo, CO**	Inspector License	**67827**

Instrument Specifications

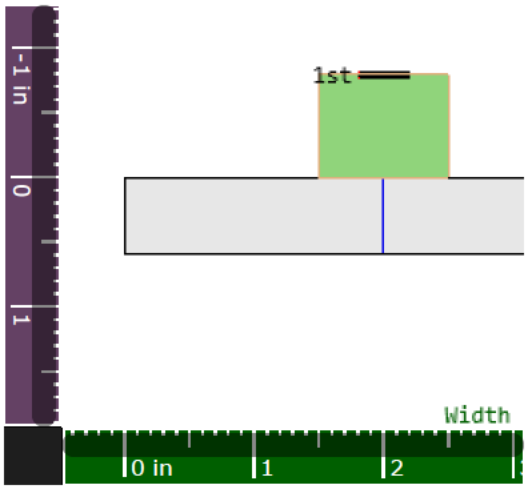
Instrument	**OmniScan X3**	Report Soft. Ver.	**5.17.1**
Instrument Serial	**QC-0090052**	Inspection Soft. Ver.	**MXU 5.17.1**
Model	**OmniScan X3 64 - 64:128PR**		

Inspection Summary

Data File Name	**TTC TK Sample 1 0 I6-32.nde**
Inspection Date	**07/10/2024 10:31**
Report Date	**07/13/2024 13:14**
Procedure / Code	**SOP-PAUT-03 R0 / ASTM E2700**
Remark	**Variations in wall thickness (thinning) and suspected centerline segregation coincide with location of damage and surface cracking.**

Part

Material	**Steel, Mild**	Part Type	**Flat Plate**
Thickness	**0.600 in.**	Length	**11.811 in.**
Width	**11.811 in.**	Angular Opening	**-**
Outside Diameter	**- in.**		
Pri. Axis Reference	**0.000 in.**	Sec. Axis Reference	**0.000 in.**
Pri. Axis Name	**Length**	Sec. Axis Name	**Width**
Weld Type	**-**	Symmetry Type	**-**



Inspector Signature [redacted]

Certified

Scan Parameters

Scanner : **Wire encoder**

Scanning Pattern	**One-Line Encoded**
Scan Start	**6.00 in.**
Scan End	**33.01 in.**
Scan Increment	**0.02 in.**

Scan Encoder

Encoder Type	**Quadrature**
Encoder Resolution	**1257.3007 step/in.**
Polarity	**Normal**
Input	**1**

Notes

B-Scan data images attached.

PA-1

Probe Characteristics

Probe Model	**10L32-A10**	Scan Offset	**0.000 in.**
Serial	**A10**	Index Offset	**2.500 in.**
Frequency	**10.00 MHz**	Probe Skew	**90.0 °**
Probe Aperture	**32**		
Wedge Model	**SA10-0L L32**	Wedge Profiled	**Yes**
Wedge Angle	**0.00 °**	Wedge Diameter	**-**
First Element Height	**0.790 in.**	Wedge Gap	**in.**

Setup

Group: **GR-1**

Calibrations: **-**

Law Config.	**PA**	Averaging Factor	**1**	Gain	**38.0 dB**
Beam Delay	**17.30 µs**	Compression	**1**	Mode	**PE (Pulse-Echo)**
Start True Depth	**0.000 in.**	Effect. Digit. Frequency	**100 MHz**	Video Filter	**Off**
Wave Type	**Longitudinal**	Net Digit. Frequency	**100 MHz**	Range True Depth	**0.659 in.**
Rectification	**Absolute**	Velocity	**0.2319 in./µs**	Acq. Rate	**120.0 Hz**
Filter	**None**	Pulse Width	**50.0 ns**	Voltage	**80 Vpp**

Gates	Start	Width	Threshold	Synchro	Peak Selection
A	**0.133 in.**	**0.298 in.**	**25 %**	**Pulse**	**Highest**

Calculator

Law Configuration	**Linear**	Element Step	**1.0**	Angle Resolution	**-**
Element Qty Used	**32**	Start Angle	**0.0 °**	Focus Depth	**1.969 in.**
First Element	**1**	Stop Angle	**-**	Focusing Type	**True Depth**
Skew Angle	**-**	Last Element	**32**		

Sound Analysis™
NDT Level III Professional Services

Sound Analysis, LLC
Murfreesboro, TN

PAUT Inspection Report

Project

Client	**ENSCO, Inc,**	Inspection No.	**PAUT 24-0710-01**	Contact	**Sean Woods**
Project	**Gallup Derailment**	Description	**Damaged Tank Car**	Inspector Name	**Brian Wood**
Project No.	**FRA-24-0710**	Location	**TTC - Pueblo, CO**	Inspector License	**67827**

Instrument Specifications

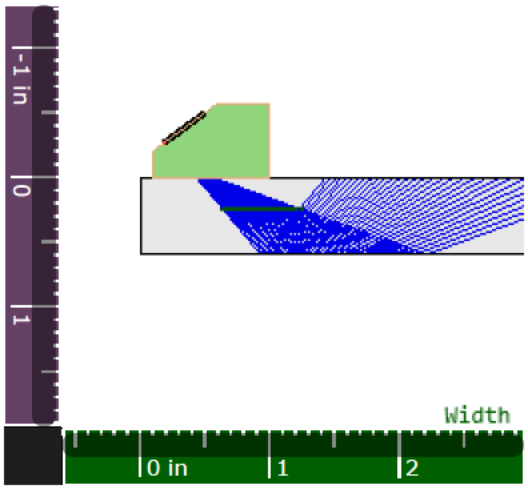
Instrument	**OmniScan X3**	Report Soft. Ver.	**5.17.1**
Instrument Serial	**QC-0090052**	Inspection Soft. Ver.	**MXU 5.17.1**
Model	**OmniScan X3 64 - 64:128PR**		

Inspection Summary

Data File Name	**TTC TK Sample1 H16-H32 90.nde**
Inspection Date	**07/09/2024 15:54**
Report Date	**07/13/2024 13:20**
Procedure / Code	**SOP-PAUT-03 R0 / ASTM E2700**
Remark	**Surface cracking detected on the OD and ID consistent with that detected with the PT method.**

Part

Material	**Steel, Mild**	Part Type	**Flat Plate**
Thickness	**0.600 in.**	Length	**11.811 in.**
Width	**11.811 in.**	Angular Opening	**-**
Outside Diameter	**- in.**		
Pri. Axis Reference	**0.000 in.**	Sec. Axis Reference	**0.000 in.**
Pri. Axis Name	**Length**	Sec. Axis Name	**Width**
Weld Type	**-**	Symmetry Type	**-**



Inspector Signature [redacted]

Certified

Scan Parameters

Scanner : **Wire encoder**

Scanning Pattern	**One-Line Encoded**
Scan Start	**16.00 in.**
Scan End	**33.01 in.**
Scan Increment	**0.02 in.**

Scan Encoder

Encoder Type	**Quadrature**
Encoder Resolution	**1257.3007 step/in.**
Polarity	**Normal**
Input	**1**

Notes

B-Scan data images attached.

PA-1

Probe Characteristics

Probe Model	**10L32-A10**	Scan Offset	**2.000 in.**
Serial	**A10**	Index Offset	**1.000 in.**
Frequency	**10.00 MHz**	Probe Skew	**90.0 °**
Probe Aperture	**32**		
Wedge Model	**SA10-N55S L32**	Wedge Profiled	**Yes**
Wedge Angle	**36.30 °**	Wedge Diameter	**-**
First Element Height	**0.267 in.**	Wedge Gap	**in.**

Setup

Group: **GR-1** | Calibrations: **S**

Law Config.	**PA**	Averaging Factor	**1**	Gain	**35.3 dB**
Beam Delay	**8.30 µs**	Compression	**8**	Mode	**PE (Pulse-Echo)**
Start True Depth	**0.000 in.**	Effect. Digit. Frequency	**100 MHz**	Video Filter	**Off**
Wave Type	**Shear**	Net Digit. Frequency	**12 MHz**	Range True Depth	**1.975 in.**
Rectification	**Absolute**	Velocity	**0.1276 in./µs**	Acq. Rate	**120.0 Hz**
Filter	**None**	Pulse Width	**50.0 ns**	Voltage	**80 Vpp**

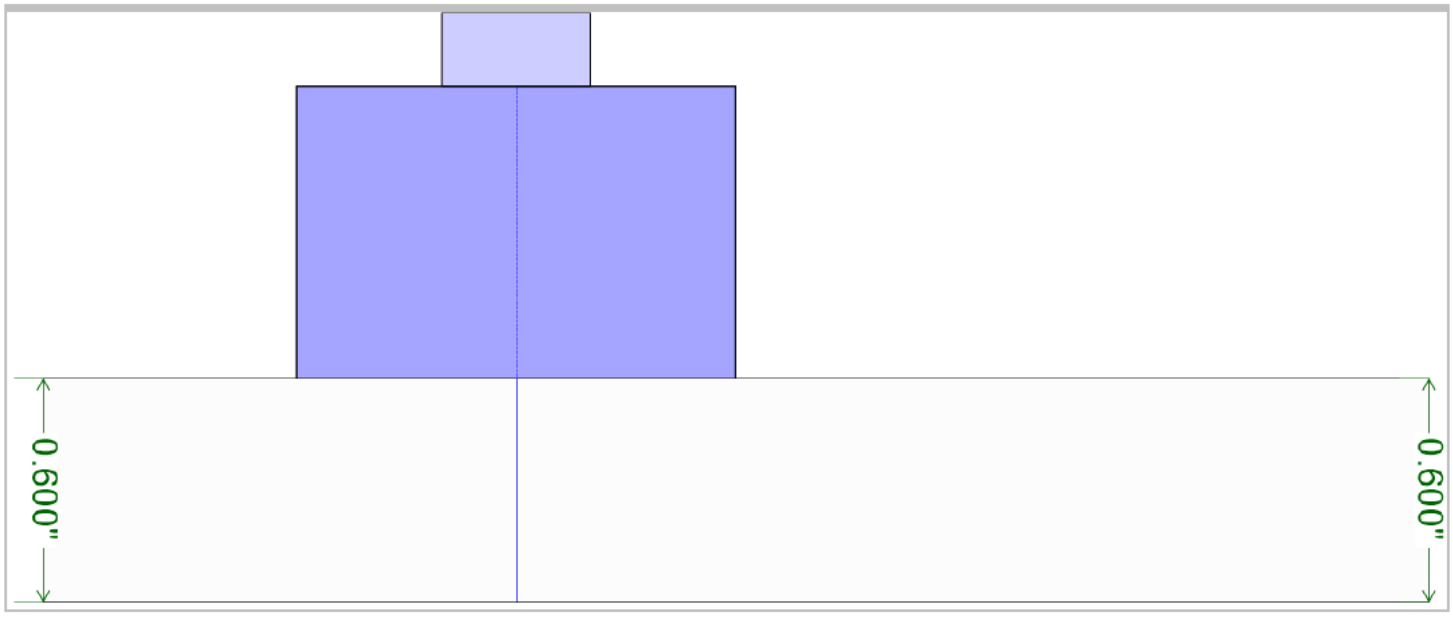
Gates	Start	Width	Threshold	Synchro	Peak Selection
A	**0.183 in.**	**0.998 in.**	**25 %**	**Pulse**	**Highest**

Calculator

Law Configuration	**Sectorial**	Element Step	**-**	Angle Resolution	**1.0 °**
Element Qty Used	**16**	Start Angle	**40.0 °**	Focus Depth	**0.250 in.**
First Element	**1**	Stop Angle	**70.0 °**	Focusing Type	**True Depth**
Skew Angle	**0.0 °**	Last Element	**16**		

Phased Array Scan Plan: 10L32 0° Linear

Part and Coverage



Piece

Material	Thickness	HAZ Width	Shear Velocity	Compression Velocity
Steel 1020	0.600 in.	N/A	0.1276 in./µs	0.2319 in./µs

Phased Array Probe: 10L32-A10

Wedge: SA10-0L

Velocity	Primary Offset	Height 1st Element	Length	Width	Angle
0.0917 in./µs	0.78 in.	0.79 in.	1.18 in.	1.57 in.	0º

Transducer: 5L32-A10

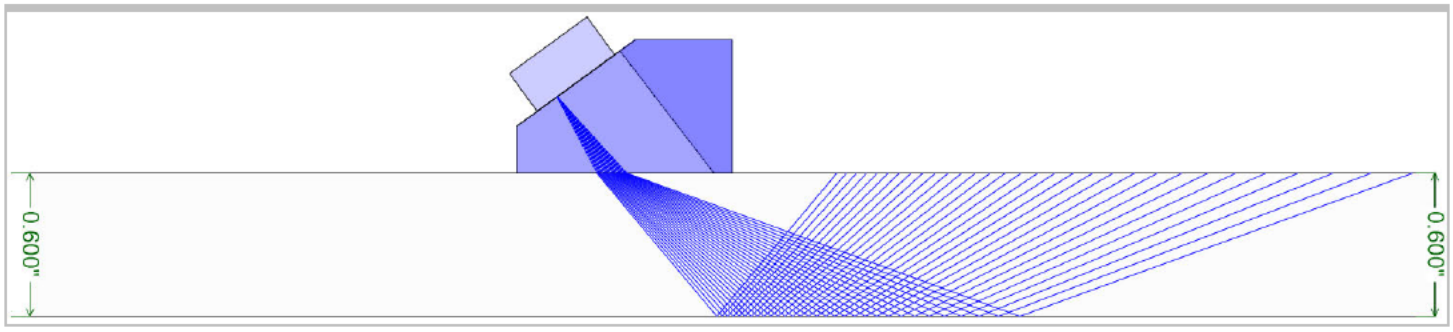
Num. of Elements	Element Pitch	Total Aperture
32	0.0012 in.	0.3906 in.

Linear Beamset

Element Qty	First Element	Last Element	Number of Beams	Refracted Angle	Focus
32	1	32	1	0°	None

Phased Array Scan Plan: 10L32 40-70 Sectorial

Part and Coverage



Piece

Material	Thickness	HAZ Width	Shear Velocity	Compression Velocity
Steel 1020	0.600 in.	N/A	0.1276 in./µs	0.2319 in./µs

Phased Array Probe: 10L32-A10

Wedge: SA10-N55S

Velocity	Primary Offset	Height 1st Element	Length	Width	Angle
0.0917 in./µs	-0.800 in.	0.267 in.	0.905 in.	0.905 in.	36.3°

Transducer: 5L32-A10

Num. of Elements	Element Pitch	Total Aperture
32	0.0012 in.	0.3906 in.

Sectorial Beamset

Law Config.: Sectorial Wave Type: Shear Element Qty	First Element	Last Element	Min. Angle	Max Angle	Angle Steps	Focus Depth
32	1	32	40°	70°	1°	None

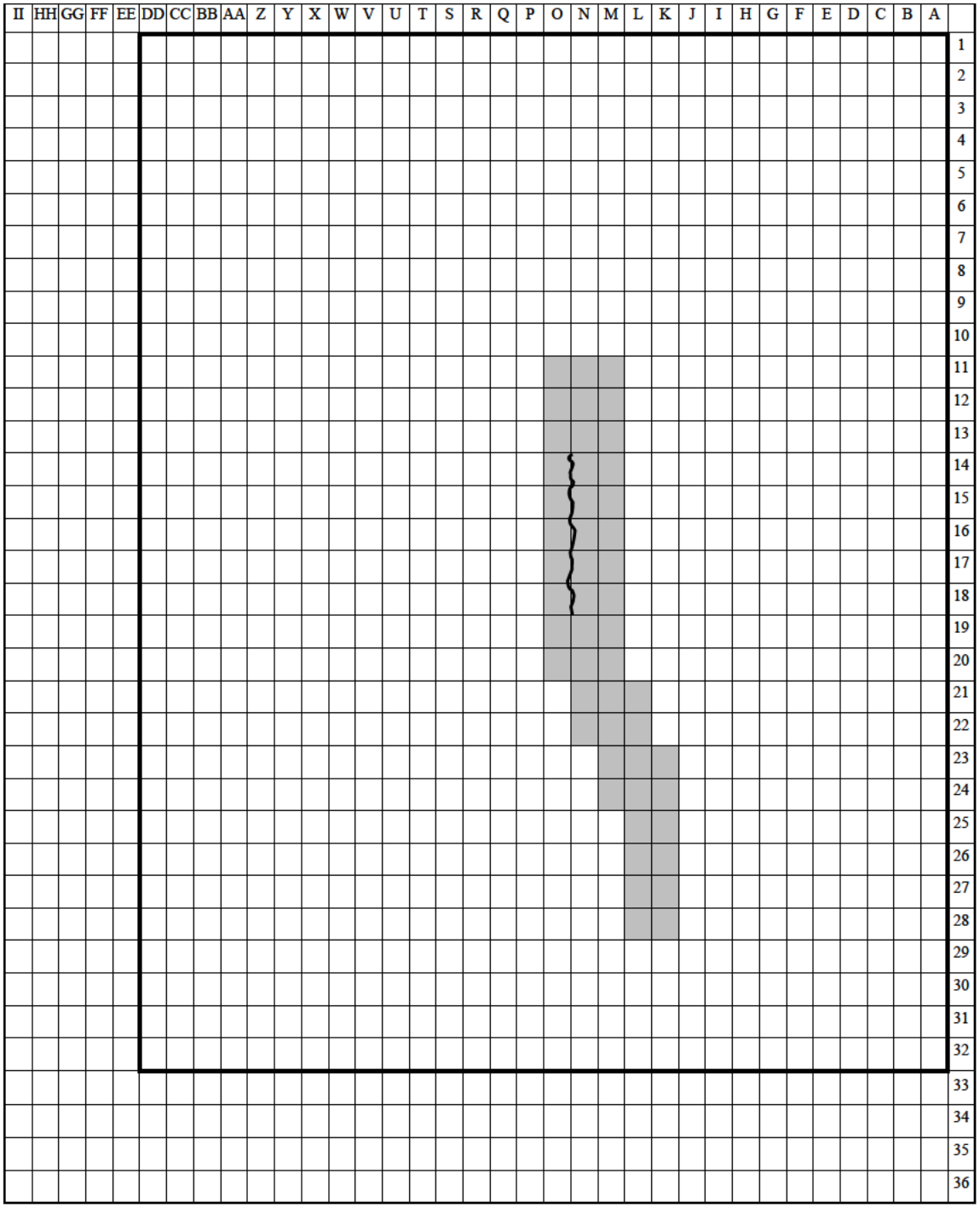
Federal Railroad Administration
Localized Corrosion or Material Degradation Form

Reporting Marks	Gallup Derailment Panel #1	DOT Specification	
Date when damage first observed:	09-JUL-24	Location where damaged first observed (City/State):	Pueblo, CO (TTC)
NDT Method: MT__ PT_X_ UT___ UTT ___ VT___	Procedure(s)/Revision(s) Used: SOP-PT-01 R0		
Equipment used: AC Yoke	Equip. cal. date (if applicable):	Cal block ID and Cal. due date (if applicable):	
Cable type/length (if applicable):	N/A	Scan techniques/plans (if applicable):	N/A
Search Unit(s) (if applicable):	N/A	Size: N/A	Serial # N/A
Couplant/Penetrant/Particles manufacturer/type (if applicable):	Radnor materials: Visible, Solvent removable with nonaqueous developer.	Exam date/time: 07/10/24 07:30 - 14:30	Special equip. (if applicable): _____
Coupon Location - Ring #, B or A Head:		Clock Position Top = 12, Bottom = 6, facing the B head:	
Surface conditions, Surface Temp. and side(s) examined from:	Surface_____ ID_X__OD_X_ Surface Temp: Ambient Mechanical grooves observed on OD surface, one of which aligns with rupture. Photographs attached.	Indication(s) (Type/Size/Location): Cracking on OD surface. Location of OD cracking denoted as gray cells in attached diagram.	PT detection on inside surface inhibited due to embedded carbon. ID surface exhibited corrosion on areas of cracking (ID surface cracking was detected with PAUT). Photographs attached.

Inspection Results: L=Location/T=Thickness reading

L	T	L	T	L	T	L	T	L	T	L	T	L	T

Federal Railroad Administration
Localized Corrosion or Material Degradation Form



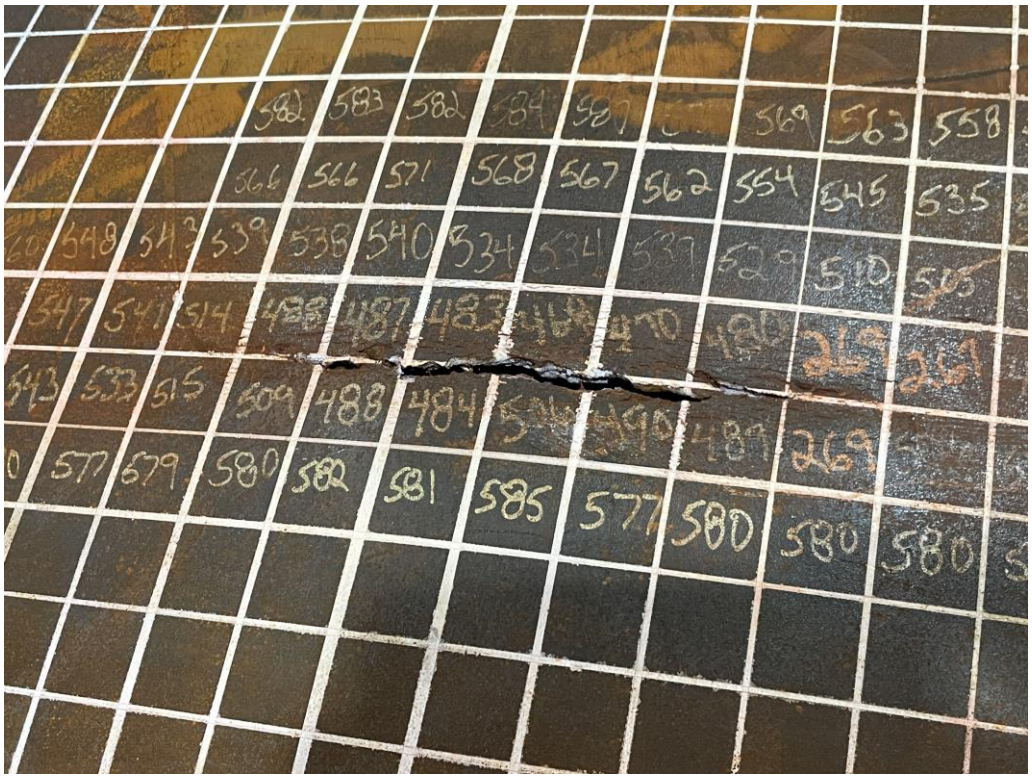
***Readings reported by alphabet vertically A-JJ. Recorded by numeral horizontally 1-36. (Example: A1 upper left/JJ36 lower right.**

***See tank car damage assessment form with corresponding reporting marks for additional info.**

Technician: Brian Wood Level: III Cert 67827

Signature: [redacted]

Assisted by: _____



OD surface prior to MT


OD surface prior to MT

OD surface prior to MT

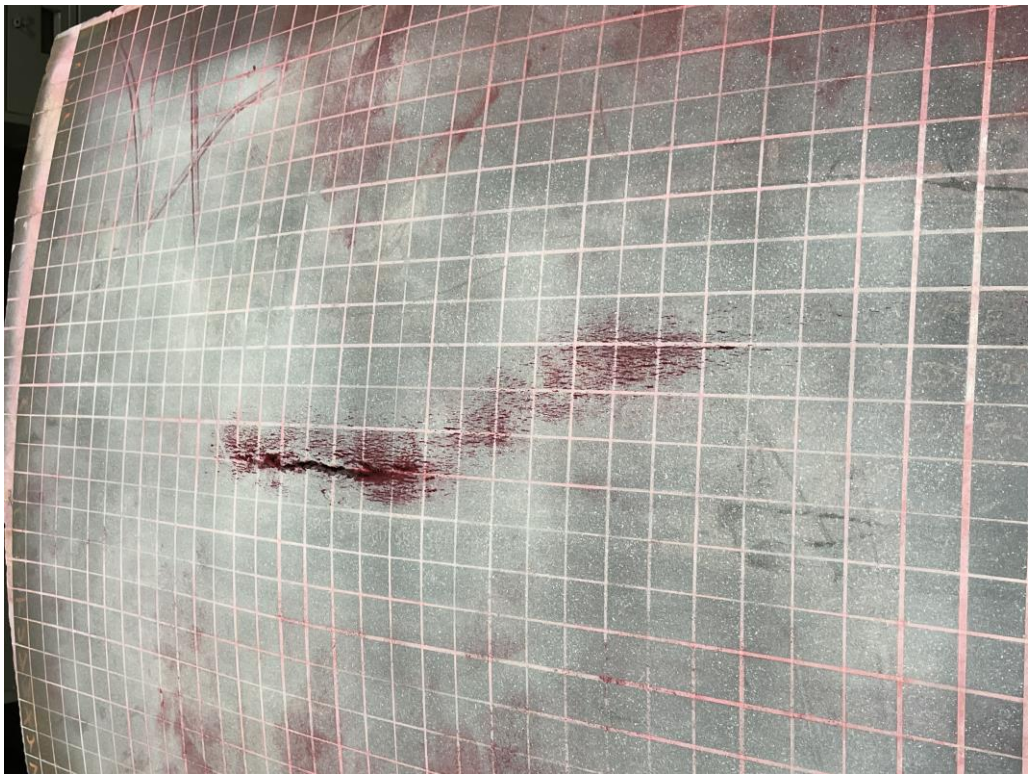
OD surface prior to MT

Mechanical Grooves on OD Surface

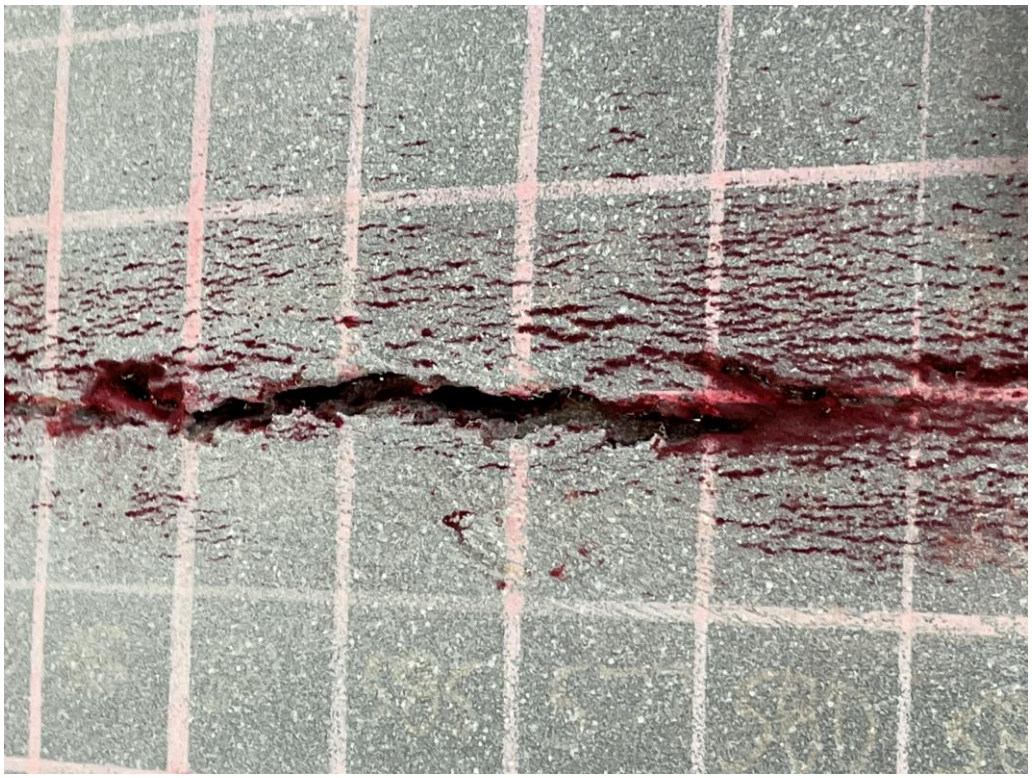
Mechanical Grooves on OD Surface

Mechanical Grooves on OD Surface

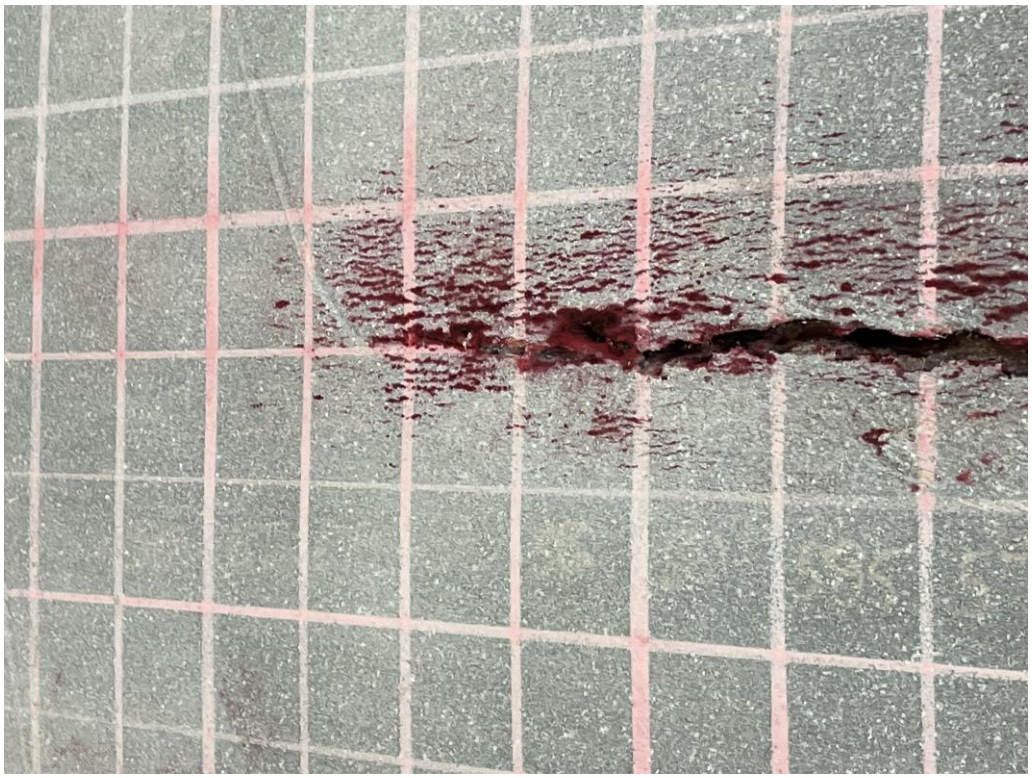
OD surface prior to MT



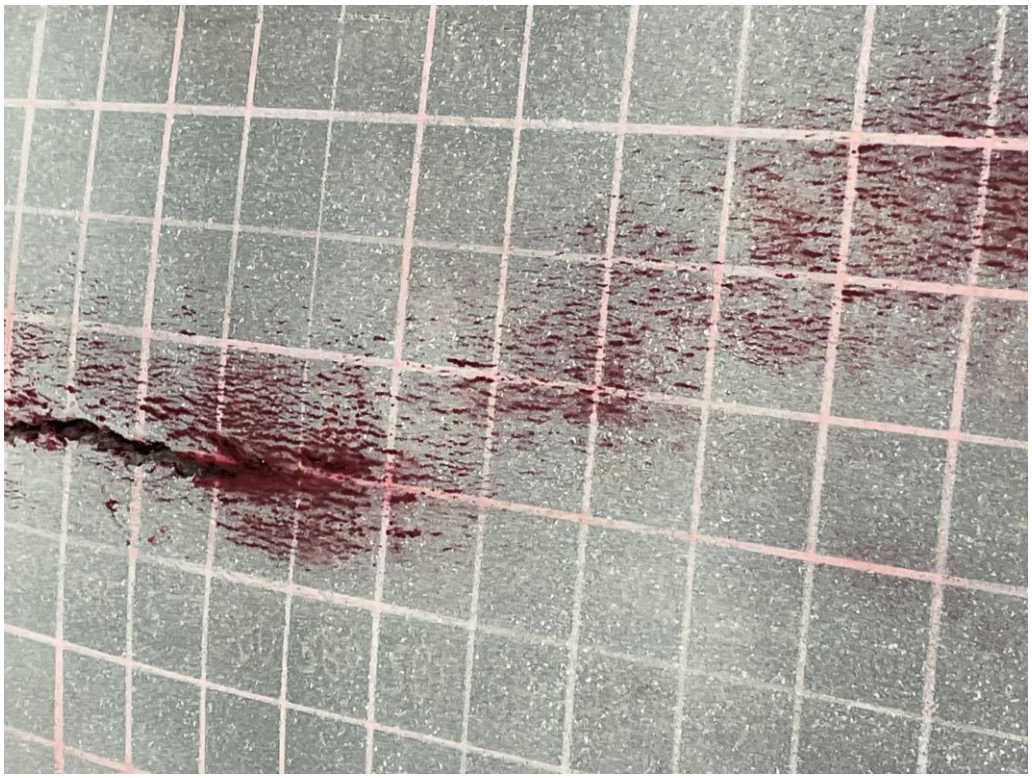
OD surface with PT



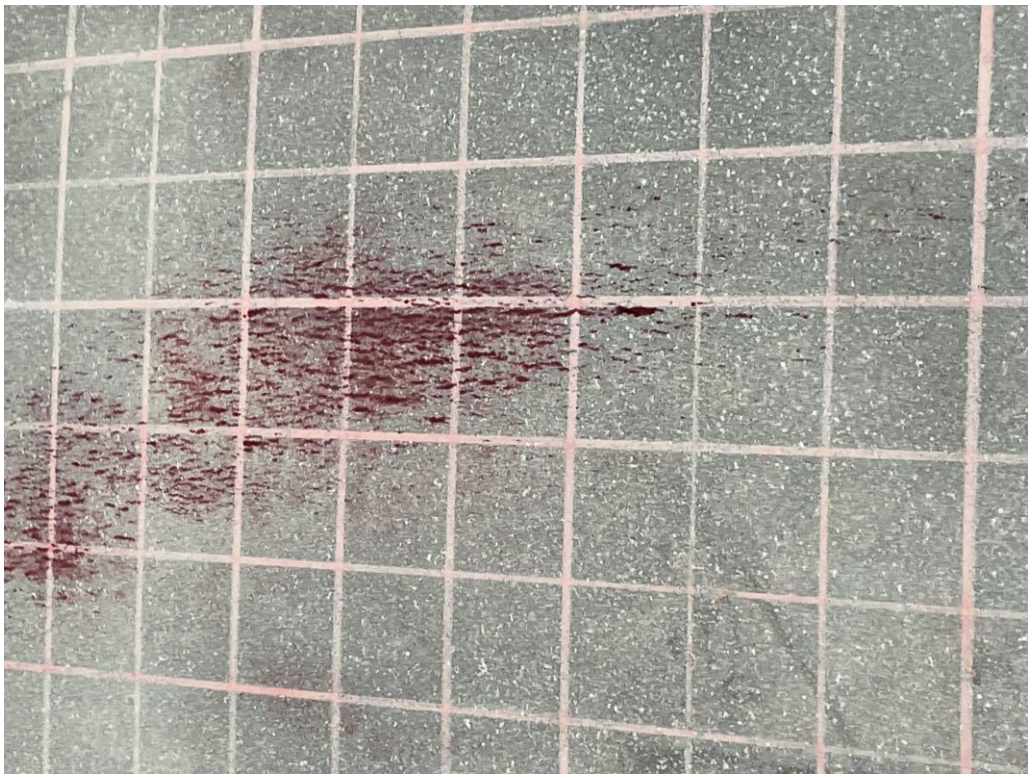
OD surface with PT



OD surface with PT



OD surface with PT



OD surface with PT

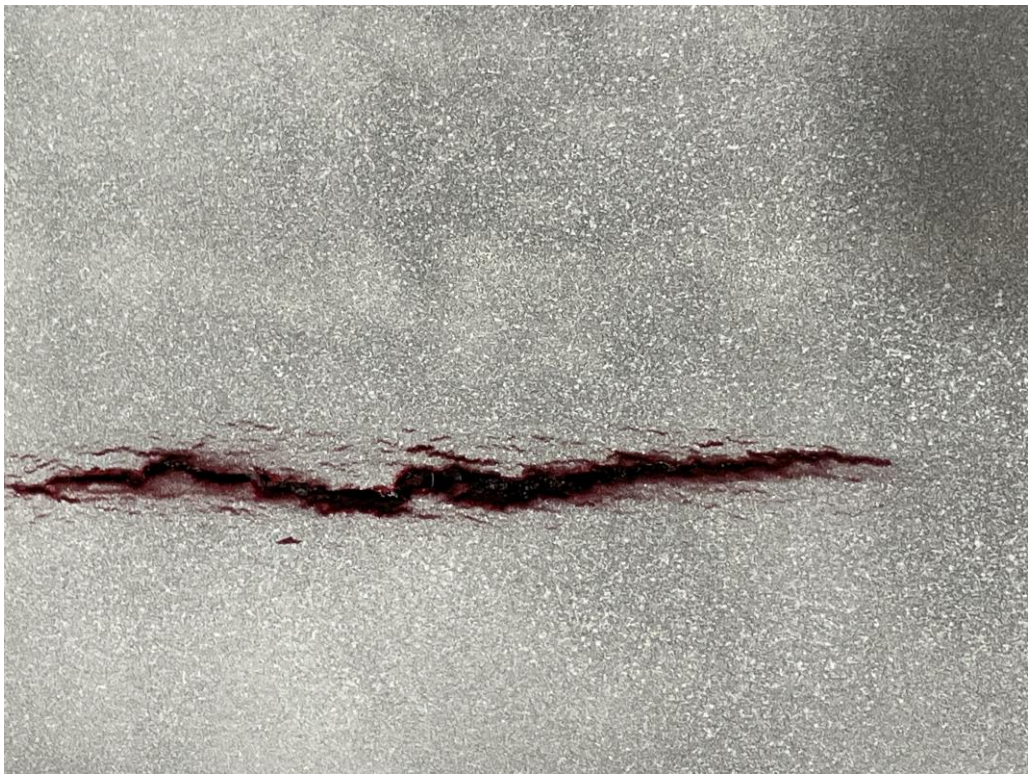
OD surface with PT

Unprepared ID Surface

Unprepared ID Surface

Unprepared ID Surface

Unprepared ID Surface



ID surface with PT

ID surface with PT

PT Inspection Report

PT Examination Date	Technician	Certificate No.	Examination Organization / Inspection Authority
10-Jul-24	Brian Wood	67827	Sound Analysis, LLC

Client	Location
ENSCO, Inc.	Transportation Technology Center - Pueblo, CO

Component Description	Component Serial No.	Drawing no. / Rev. No.
Damaged tank car specimen (Gallup derailment)	Panel 1	N/A

Examination Procedure	Acceptance Criteria
SOP-PT-01	SOP-PT-01

Precleaning

☐ None ☑ Liquid Solvent ☐ Rinsing Bath ☑ Mechanical ☐ Other Other cleaning type:

Penetrant Type	Manufacturer	Product	Batch Numbers
☑ II. Color Contrast	Radnor	Penetrant Solvent Removable	LOT 202250315

Cleaning of Excess Penetrant	Manufacturer	Product	Batch Numbers
☑ C. Solvent	Radnor	Cleaner-Remover	LOT 202250315

Developer	Manufacturer	Product	Batch Numbers
☑ d. Solvent-based	Radnor	Developer Standard Grade	LOT 202250315

Penetrant Dwell Time		Developing Time	Test Piece Temp.
10 minutes		10 minutes	~70 °F

Lighting	Photometer S/N
☑ White Light 100 fc	

Extent of Examination

Coverage area includes area surrounding through-wall rupture on outside and inside surfaces

Results of Examination

1) No relevant MT indications detected other than those detectable with the unaided eye.

2) Inside surface inspection impeded by embedded carbon. Indications only detected near rupture where cracks have wide opening.

☐ PT acceptable

☑ PT not acceptable

Page 1 of 1

Technician (Signature/Date) [redacted] 10-Jul-24