Federal Railroad Administration
Localized Corrosion or Material Degradation Form

Reporting Marks	NATX 400688	DOT Specification	112J340W
Date when damage first observed:	04/27/24	Location where damaged first observed (City/State):	Gallup, NM
NDT Method: MT___ PT___ UT___ UTT X VT X	Procedure(s)/Revision(s) Used: N/A	Original thickness of test coupon	.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):	Angle /MHz: N/A 5MHz	Size: .475	Serial # 5191
Couplant/Penetrant/Particles manufacturer/type (if applicable):	GE REF 0102790	Exam date/time: 05/24/24	Special equip. (if applicable): N/A
Coupon Location - Ring #, B or A Head:	B-HEAD	Clock Position Top = 12, Bottom = 6, facing the B head:	N/A
Surface conditions, Surface Temp. and side(s) examined from:	Surface CLEAN ID___OD X Surface Temp: N/A	Indication(s) (Type/Size/Location):	Thermal tear 18” long Undercut in two places @ jacket standoff welds 1” each

Inspection Results: L=Location/T=Thickness reading

L	T	L	T	L	T	L	T	L	T	L	T	L	T
B15	413	F32	486	J21	404	L19	419	M27	412	O25	347	Q21	306
B16	406	G8	557	J22	410	L20	411	M28	421	O26	370	Q22	254
C17	436	G20	411	J23	402	L21	393	M31	488	O27	393	Q23	255
C18	424	G21	410	J24	409	L22	387	M32	458	O28	435	Q24	292
C19	422	G22	420	J25	419	L23	382	N19	412	O30	506	Q25	329
C20	413	G23	420	J33	477	L24	387	N20	405	P13	510	Q26	361
C21	426	H16	441	J34	595	L25	392	N21	376	P18	415	Q27	392
D18	424	H20	414	J35	486	L26	410	N22	363	P19	401	Q28	423
D19	419	H21	414	K19	424	L27	438	N23	342	P20	378	R17	427
D20	415	H22	414	K20	414	L32	458	N24	330	P21	347	R18	406
D21	425	H23	415	K21	398	L33	471	N25	363	P22	279	R19	369
E1	599	H36	491	K22	397	M7	609	N26	395	P23	242	R20	308
E6	507	I20	415	K23	406	M19	414	N27	402	P24	306	R21	XXX
E20	418	I21	411	K24	393	M20	405	N28	416	P25	332	R22	254
E21	416	I22	413	K25	408	M21	386	O19	404	P26	364	R23	241
F12	481	I23	414	K27	434	M22	373	O20	399	P27	391	R24	294
F20	416	I24	419	K32	459	M23	359	O21	367	P28	412	R25	323
F21	416	I33	472	K33	491	M24	345	O22	336	Q18	414	R26	367
F22	423	I34	482	K34	485	M25	379	O23	301	Q19	391	R27	412
F23	428	J20	415	L1	654	M26	410	O24	320	Q20	350	R33	543

Federal Railroad Administration
Localized Corrosion or Material Degradation Form

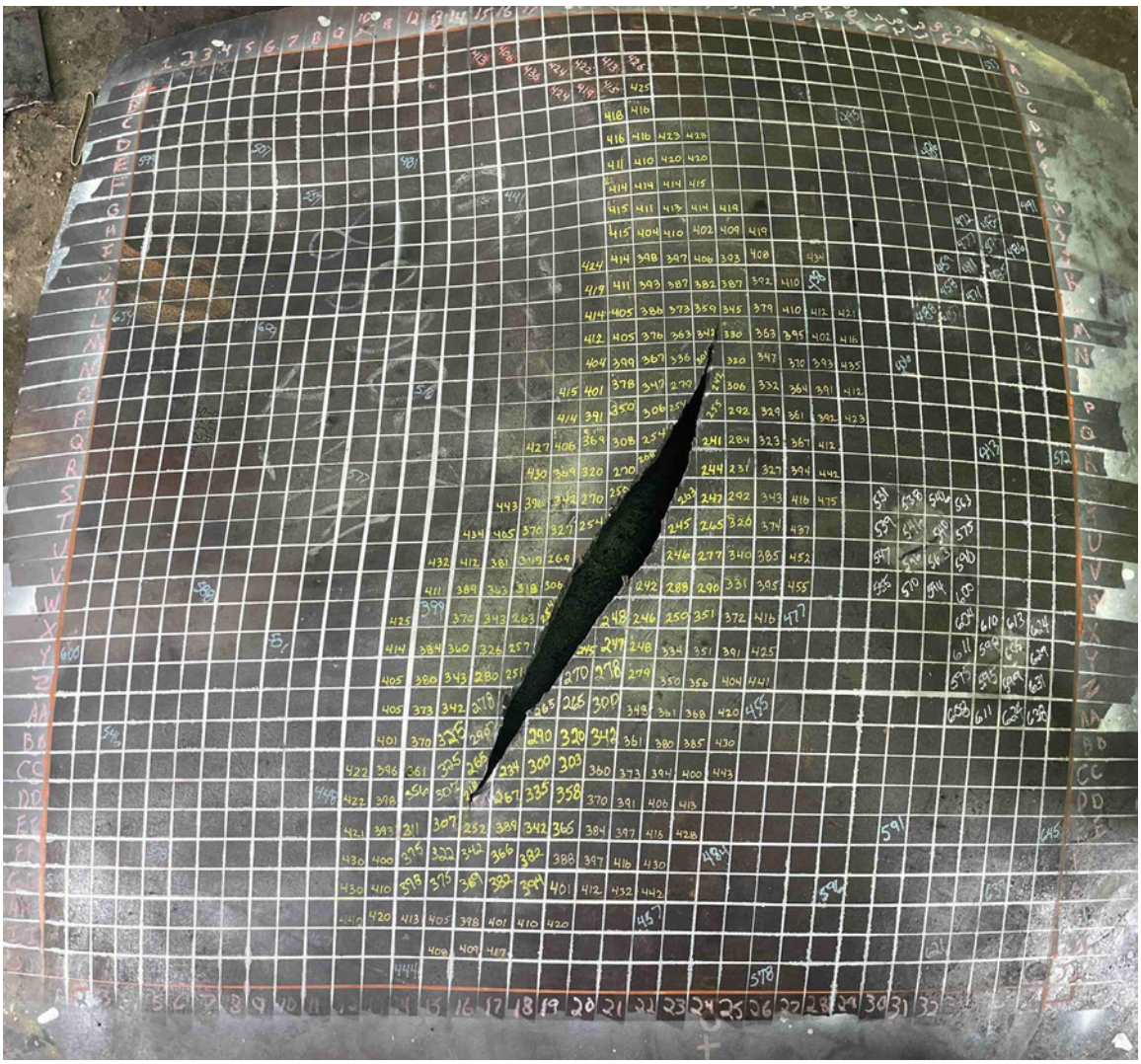
L	T	L	T	L	T	L	T	L	T	L	T	L	T
R36	572	V19	XXX	Y13	414	AA35	638	EE22	416				
S11	577	V20	XXX	Y14	384	BB3	546	EE23	428				
S17	430	V21	XXX	Y15	360	BB13	401	EE30	591				
S18	369	V22	296	Y16	326	BB14	370	EE36	645				
S19	320	V23	247	Y17	257	BB15	325	FF5	508				
S20	370	V24	340	Y18	XXX	BB16	290	FF12	430				
S21	268	V25	385	Y19	245	BB17	XXX	FF13	400				
S22	XXX	V26	452	Y20	247	BB18	290	FF14	375				
S23	244	V29	547	Y21	248	BB19	320	FF15	322				
S24	231	V30	546	Y22	334	BB20	342	FF16	342				
S25	327	V31	563	Y23	351	BB21	361	FF17	366				
S26	394	V32	590	Y24	391	BB22	380	FF18	382				
S27	442	W6	588	Y25	425	BB23	385	FF19	388				
T16	443	W14	411	Y32	611	BB24	430	FF20	397				
T17	396	W15	389	Y33	598	CC12	422	FF21	416				
T18	242	W16	363	Y34	605	CC13	396	FF22	430				
T19	270	W17	318	Y35	629	CC14	361	FF24	484				
T20	250	W18	306	Z13	405	CC15	325	GG1	514				
T21	XXX	W19	XXX	Z14	380	CC16	265	GG12	430				
T22	263	W20	XXX	Z15	343	CC17	234	GG13	410				
T23	247	W21	242	Z16	280	CC18	300	GG14	398				
T24	292	W22	288	Z17	251	CC19	303	GG15	375				
T25	343	W23	290	Z18	XXX	CC20	360	GG16	369				
T26	416	W24	331	Z19	270	CC21	373	GG17	382				
T27	475	W25	395	Z20	278	CC22	394	GG18	394				
T29	531	W26	455	Z21	279	CC23	400	GG19	401				
T30	538	W29	555	Z22	250	CC24	443	GG20	412				
T31	546	W30	570	Z23	356	DD11	448	GG21	432				
T32	563	W31	594	Z24	404	DD12	442	GG22	442				
U15	434	W32	600	Z25	441	DD13	398	GG28	596				
U16	405	X13	425	Z32	595	DD14	356	GG34	639				
U17	370	X14	399	Z33	595	DD15	307	HH12	440				
U18	327	X15	370	Z34	599	DD16	219	HH13	420				
U19	254	X16	343	Z35	631	DD17	267	HH14	413				
U20	XXX	X17	263	AA13	405	DD18	335	HH15	405				
U21	XXX	X18	254	AA14	373	DD19	358	HH16	398				
U22	245	X19	XXX	AA15	342	DD20	370	HH17	401				
U23	265	X20	248	AA16	278	DD21	391	HH18	410				
U24	320	X21	246	AA17	XXX	DD22	406	HH19	420				
U25	374	X22	250	AA18	265	DD23	413	HH22	457				
U26	437	X23	351	AA19	265	EE12	421	II11	467				
U29	539	X24	372	AA20	300	EE13	393	II15	408				
U30	546	X25	416	AA21	348	EE14	311	II16	409				
U31	540	X26	477	AA22	361	EE15	307	II17	417				
U32	575	X32	604	AA23	368	EE16	252	II32	621				
V14	432	X33	610	AA24	420	EE17	389	JJ14	444				
V15	412	X34	613	AA25	455	EE18	342	JJ26	578				
V16	381	X35	624	AA32	608	EE19	365						
V17	349	Y1	600	AA33	611	EE20	384						
V18	269	Y9	501	AA34	624	EE21	397						

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.**

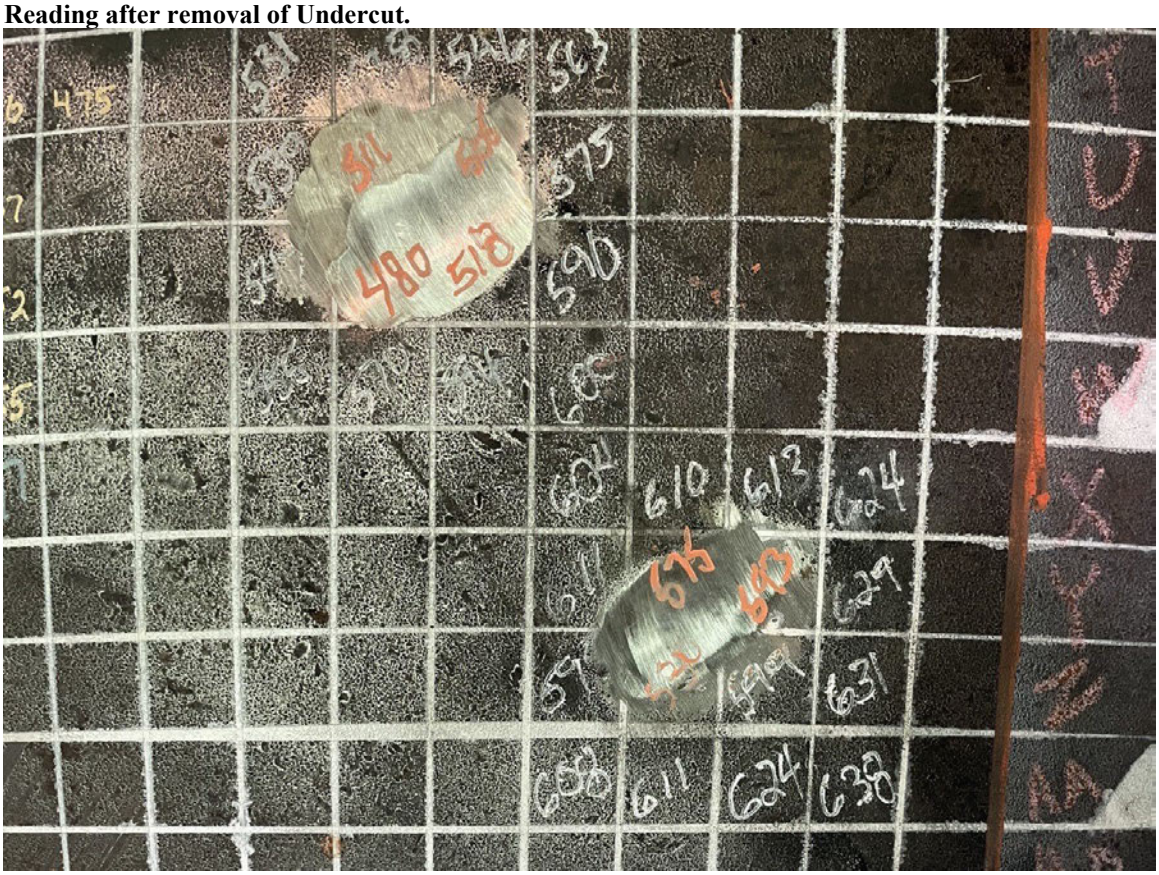
COMMENTS: Defect is consistent with a thermal tear approximately 18" long and 3" wide at some points. Head shield was still in place when first observed but was severely melted from commodity (LPG) having been ignited and leaking. Material thinning was also observed throughout the large coupon several inches from the breach.

There were also two additional defects created at the time of manufacturing from undercut created by the welds attaching the jacket standoff to the tank located in the T30-U31 area and Y34 to Z33.



Federal Railroad Administration
Localized Corrosion or Material Degradation Form

Reading after removal of Undercut.



Technician: Vernon L Walker Cert AWS/CWI

Signature: [redacted]

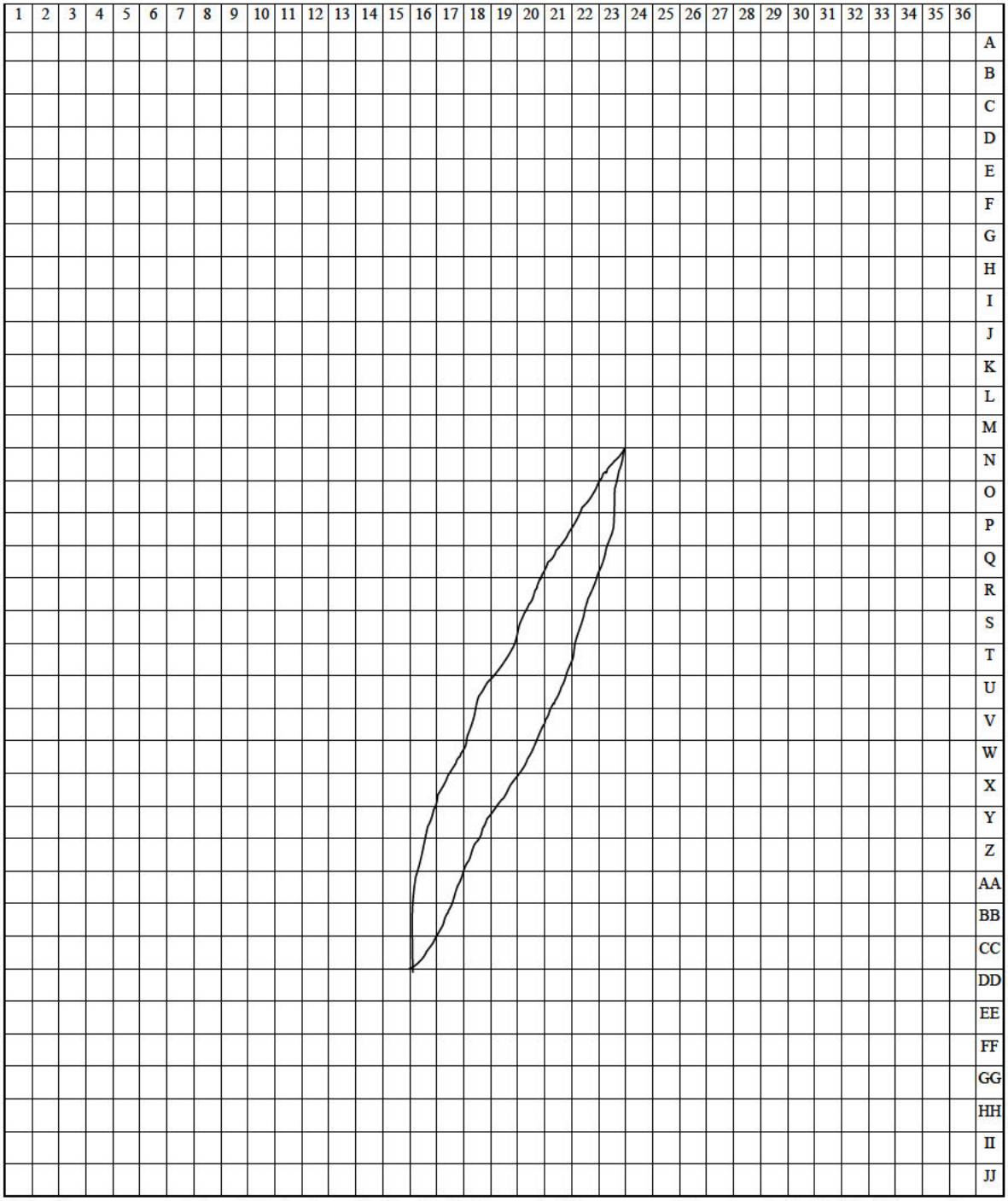
Federal Railroad Administration
Localized Corrosion or Material Degradation Form

Reporting Marks	Gallup Derailment Panel #2	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	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 As-Rolled OD surface. ID surface embedded with carbon.	Indication(s) (Type/Size/Location): No relevant MT indications detected other than those detectable with the unaided eye.	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



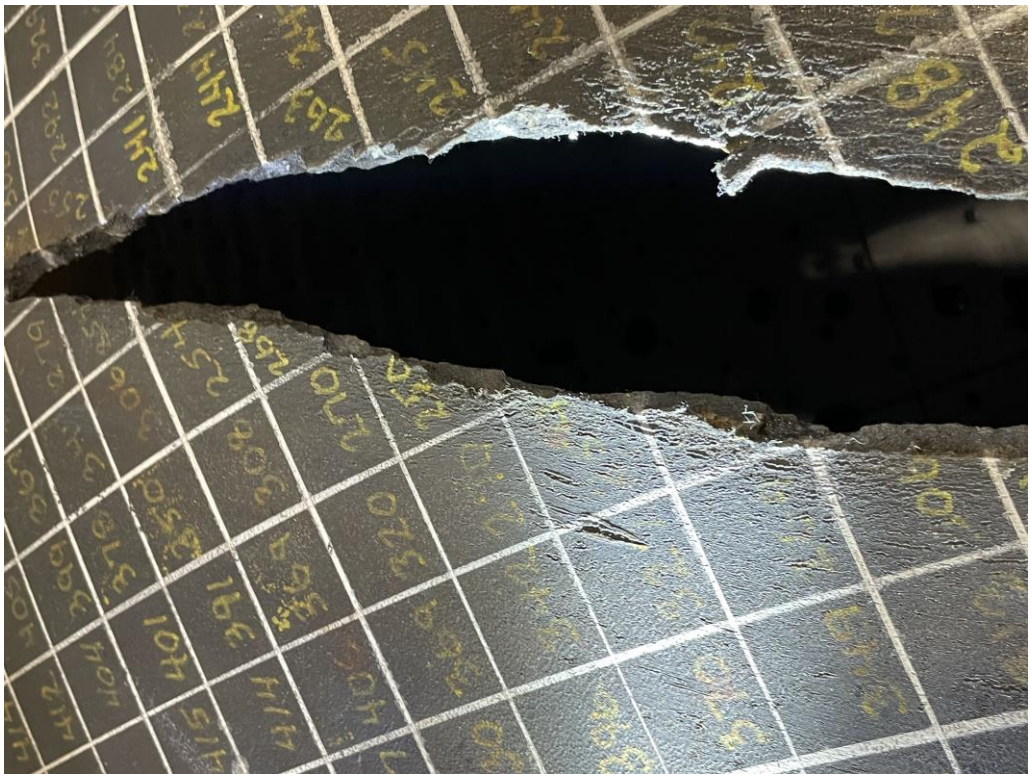
***Readings reported by alphabet vertically A-JJ. Recorded by numeral horizontally 1-36. (Example: A1 upper left/JJ36 lower right.**

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

Technician: Brian Wood Level: III Cert 67827

Signature: [redacted]

Assisted by: _____

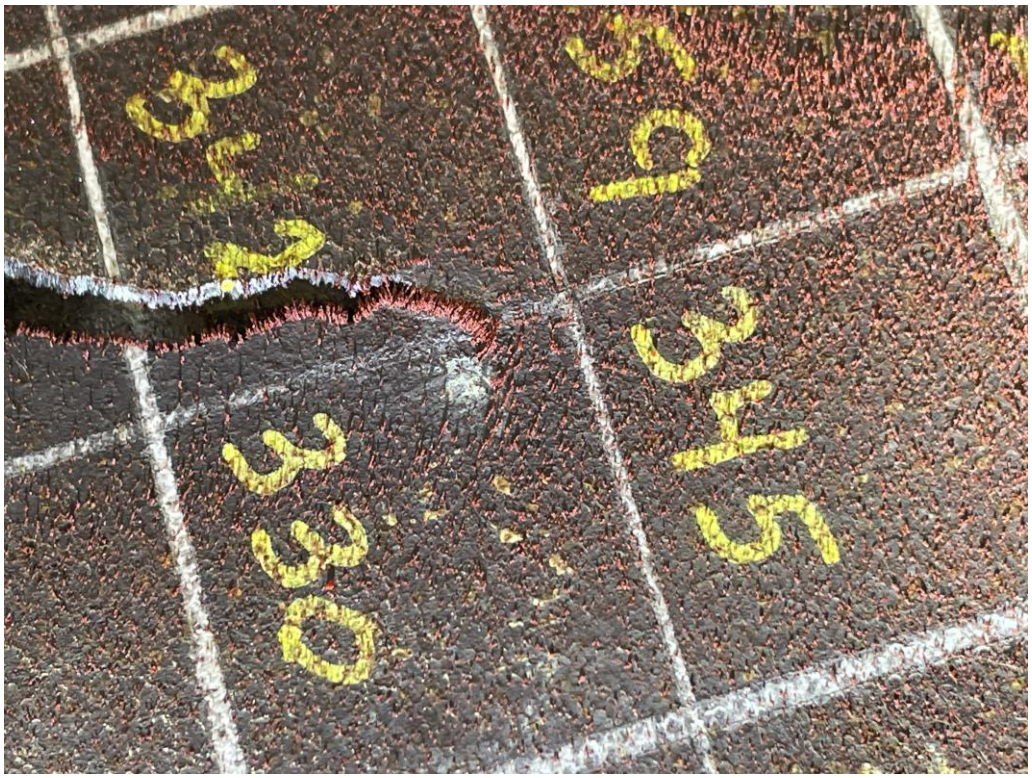


OD surface prior to MT

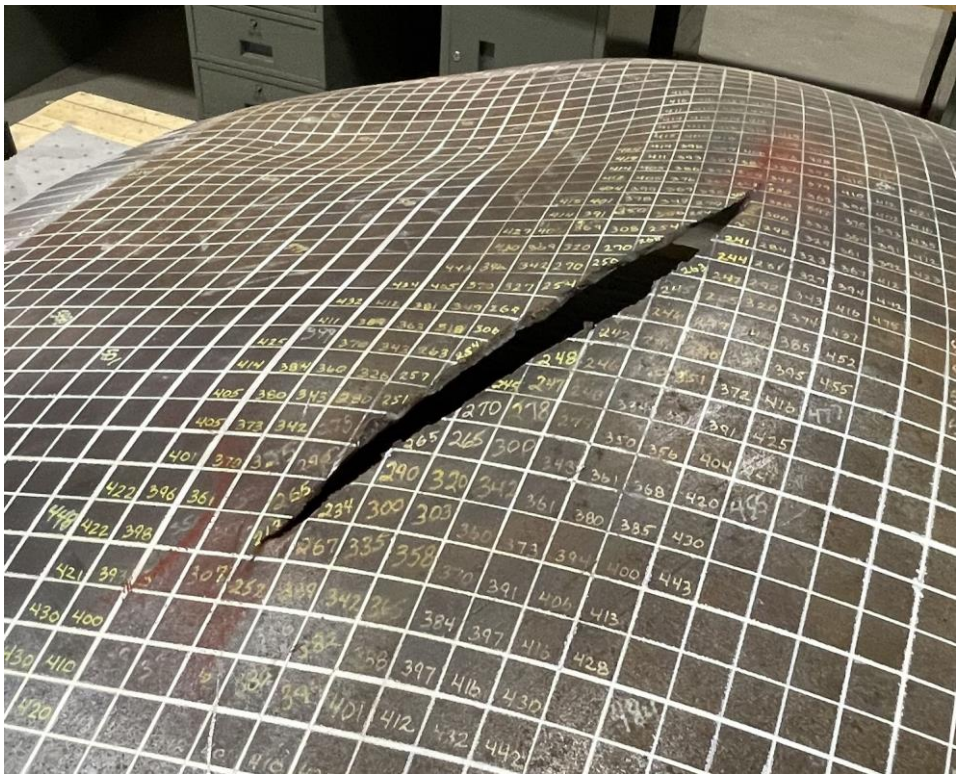
OD surface prior to MT

OD surface prior to MT

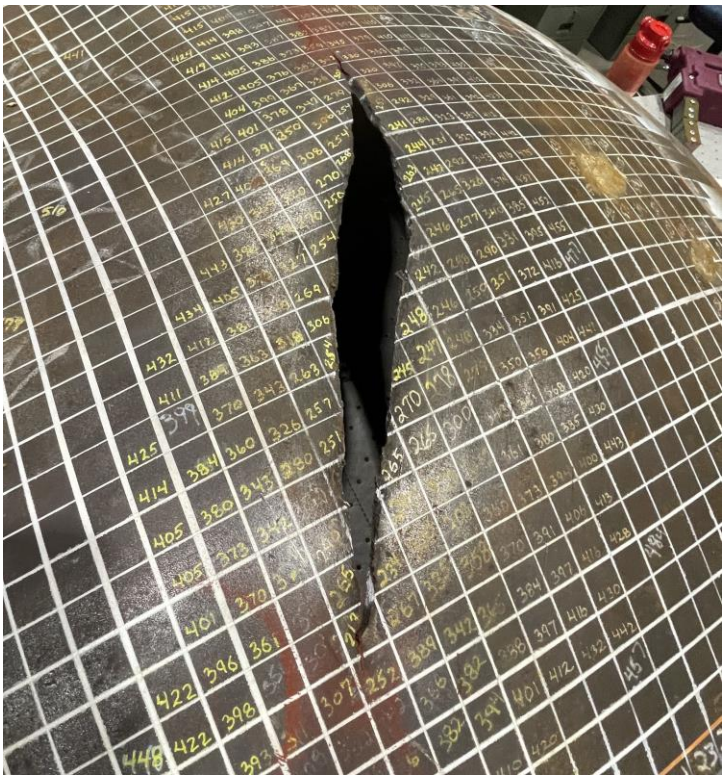
OD Surface with MT



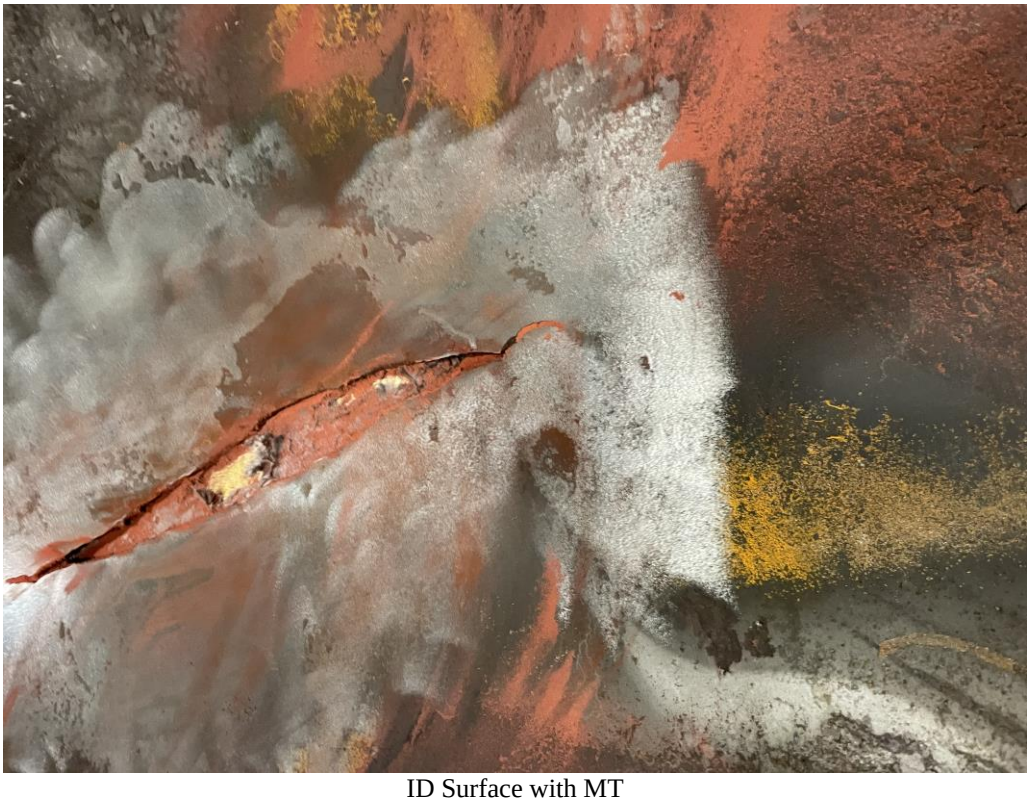
OD Surface with MT



OD Surface with MT

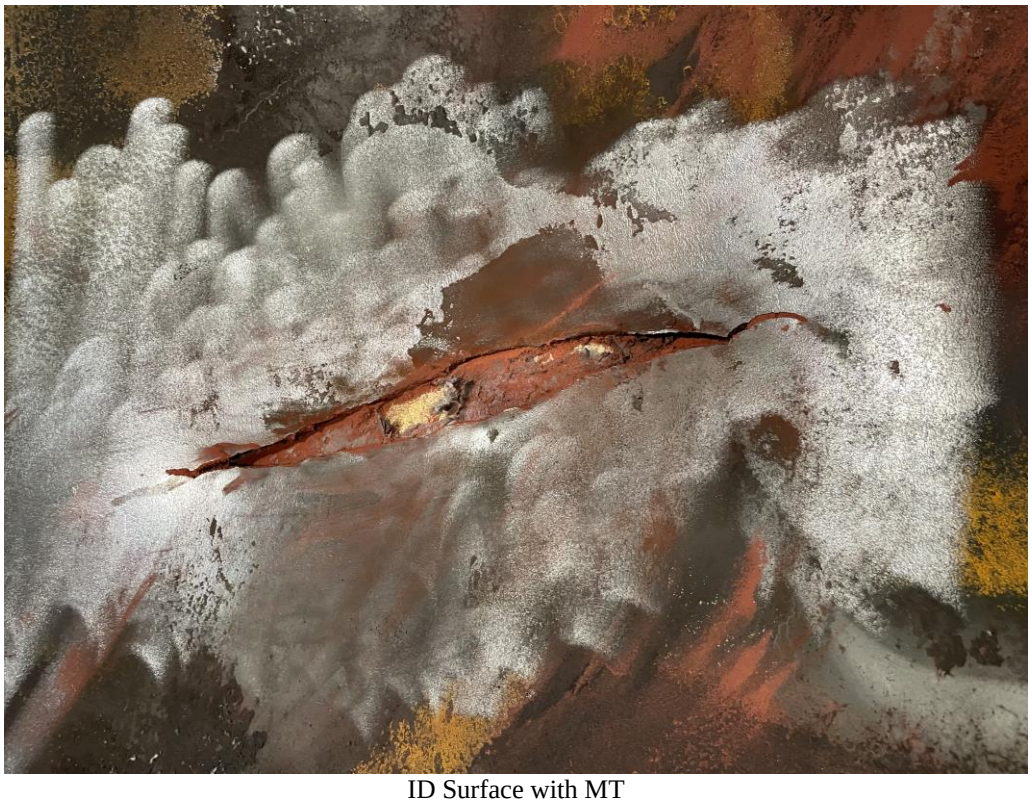


OD Surface with MT



ID Surface with MT

ID Surface with MT



ID Surface with MT

ID Surface with MT

ID Surface with MT

Sound Analysis™

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 2	N/A

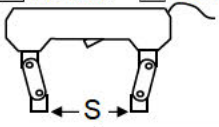
Examination Procedure	Acceptance Criteria
SOP-MT-01	SOP-MT-01

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) 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.

☐ MT acceptable

☑ MT not acceptable

Page 1 of 1

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

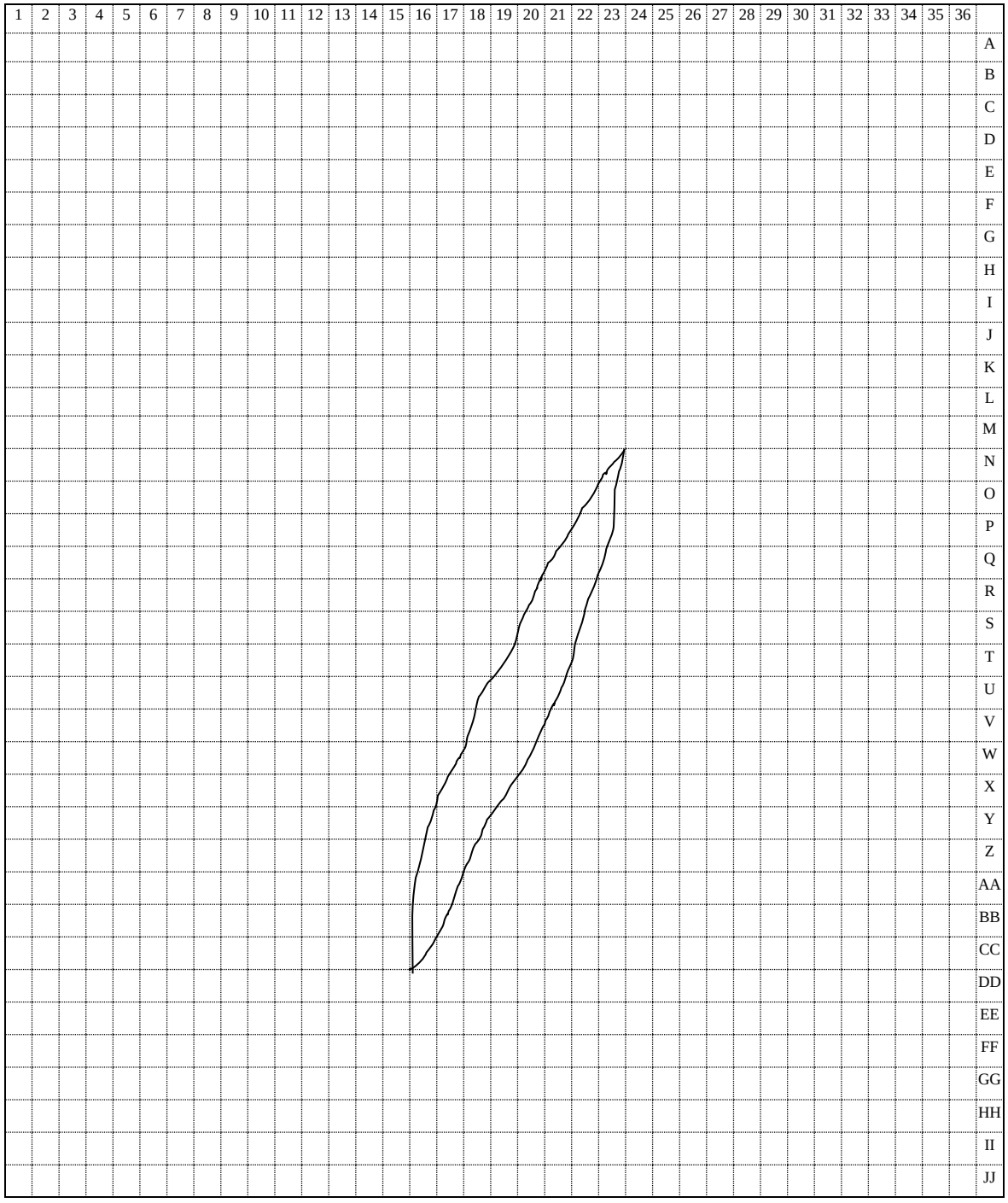
Federal Railroad Administration
Localized Corrosion or Material Degradation Form

Reporting Marks	Gallup Derailment Panel #2	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: Evidernt OmniScan X3 64	Equip. cal. date (if applicable): Manufacturer calibration in place 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___OD_X_ Surface Temp: Ambient As-rolled surface	Indication(s) (Type/Size/Location):	1) No relevant surface indications detected outside of visually evident rupture. 2) No evidence of internal reflectors. 3) Scan data imaged 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.**

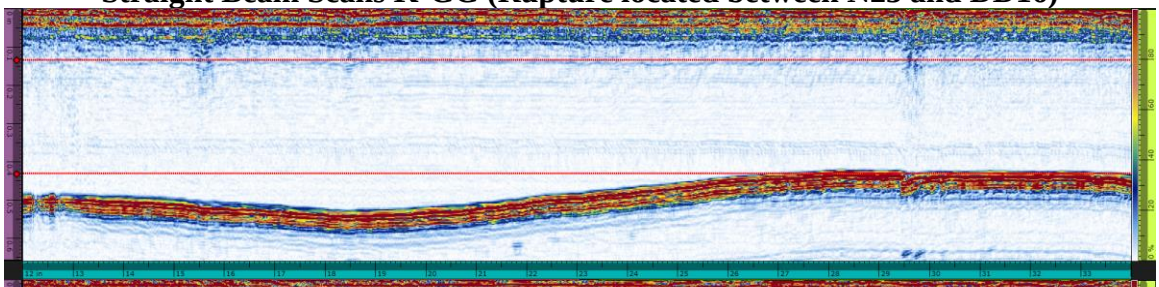
Technician: Brian Wood Level: III Cert 67827

Signature: [redacted]

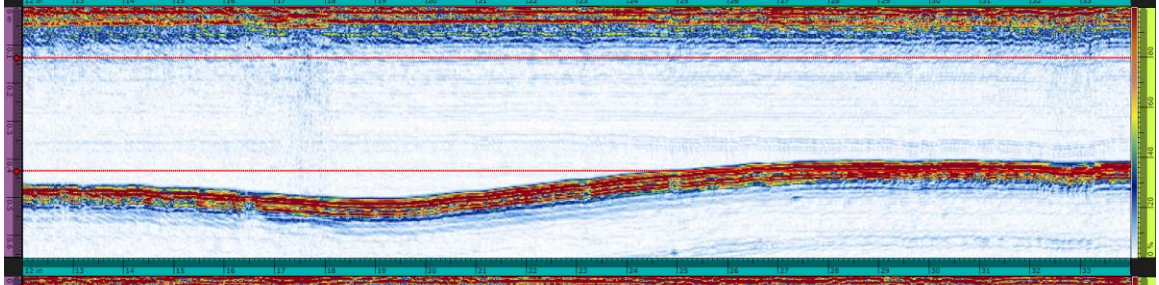
Assisted by: _____

Straight Beam Scans K-GG (Rupture located between N23 and DD16)

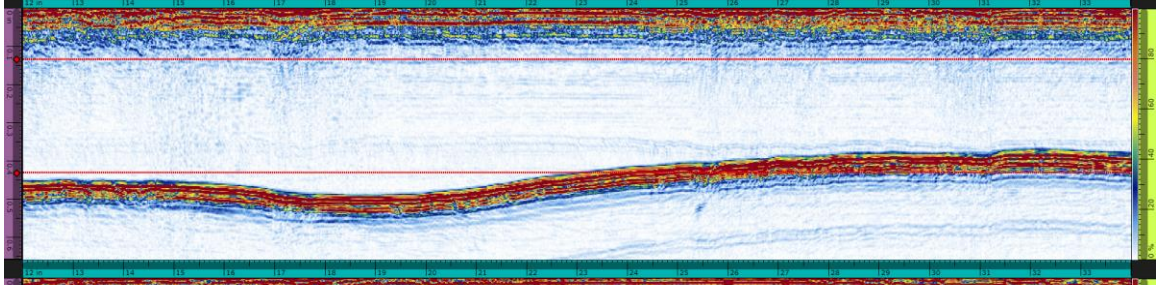
11



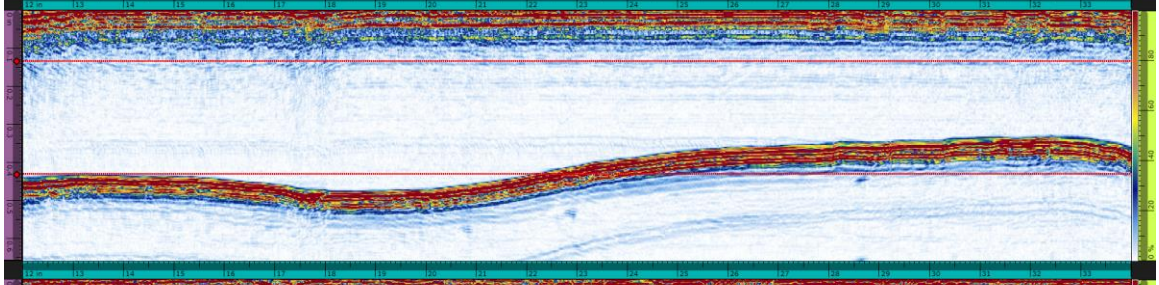
12



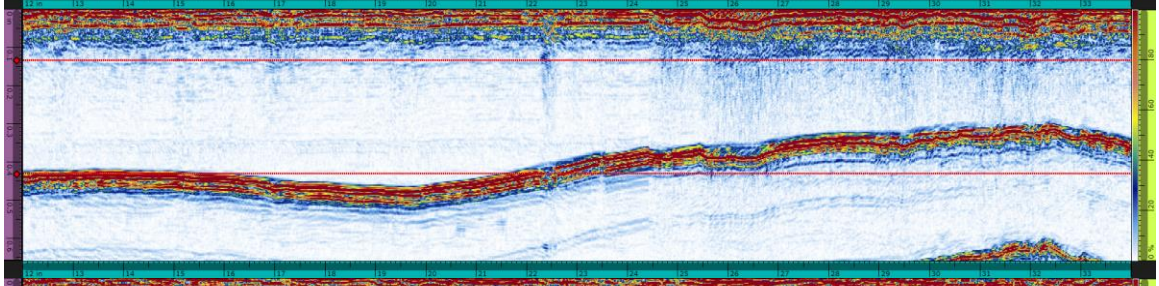
13



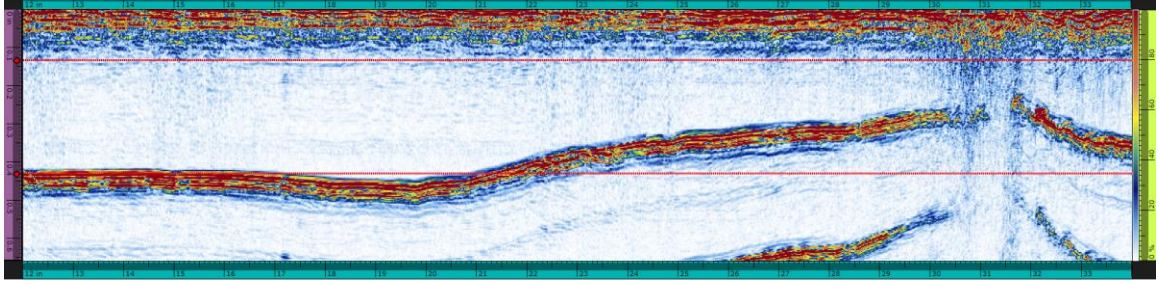
14



15

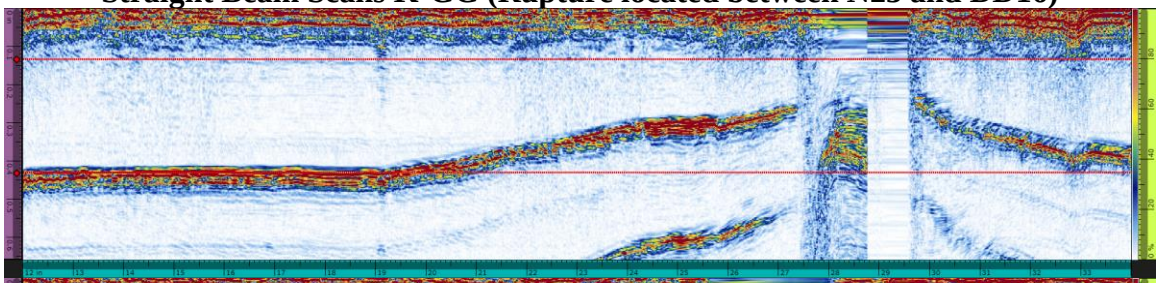


16

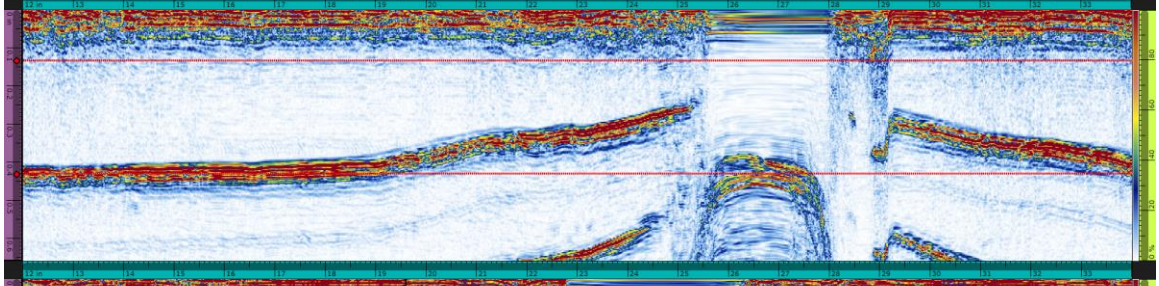


Straight Beam Scans K-GG (Rupture located between N23 and DD16)

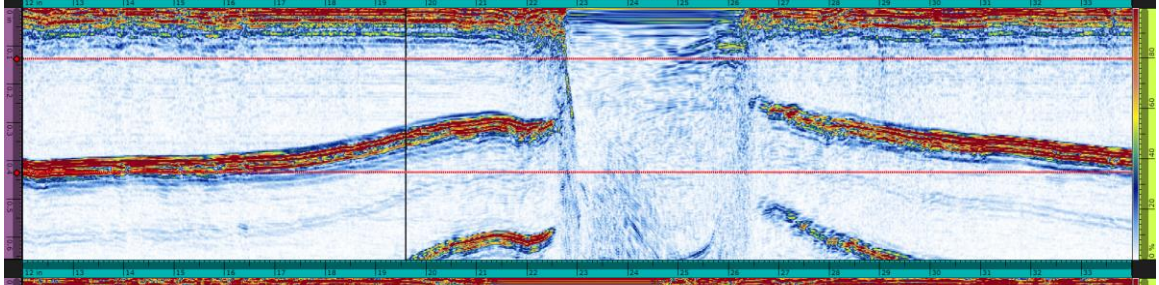
17



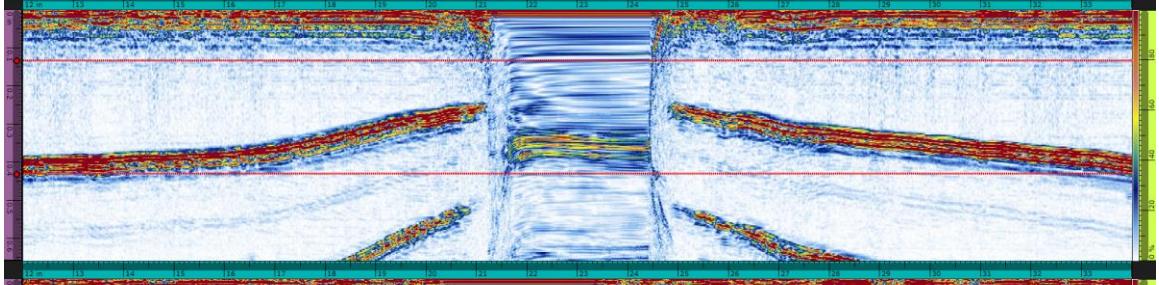
18



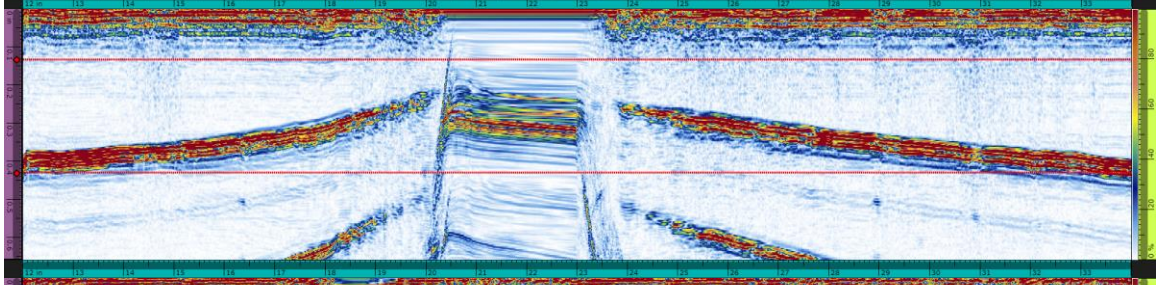
19



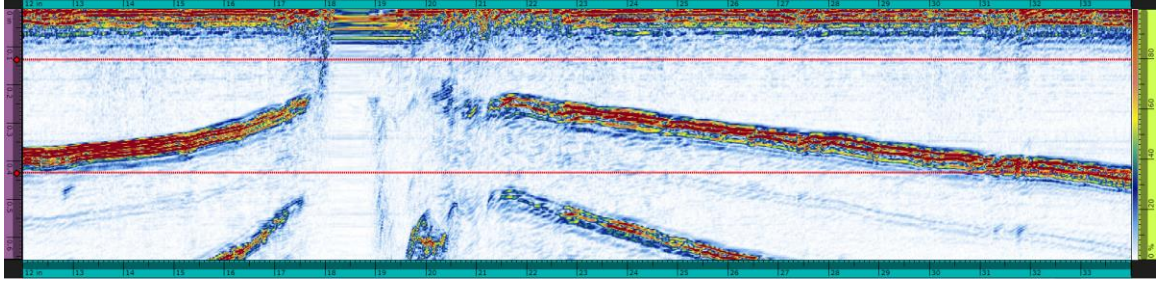
20



21

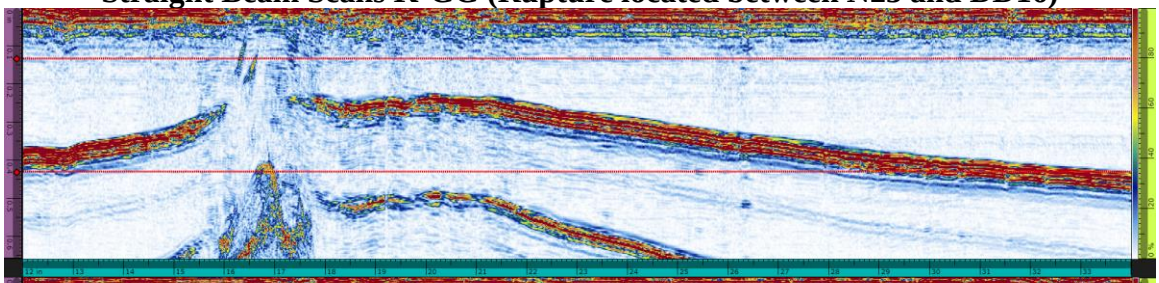


22

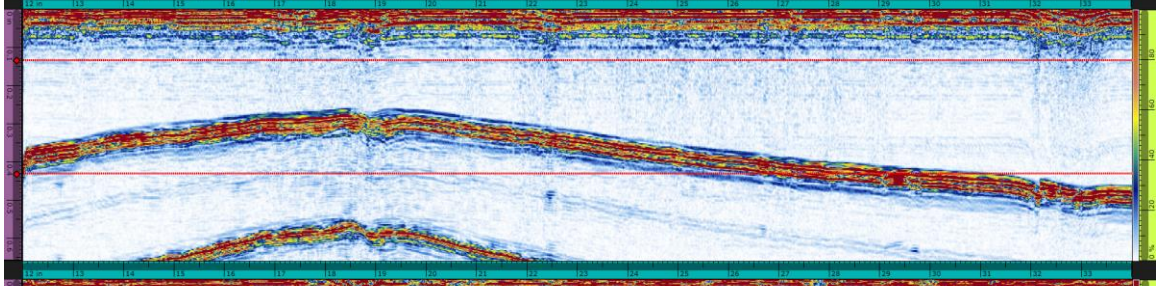


Straight Beam Scans K-GG (Rupture located between N23 and DD16)

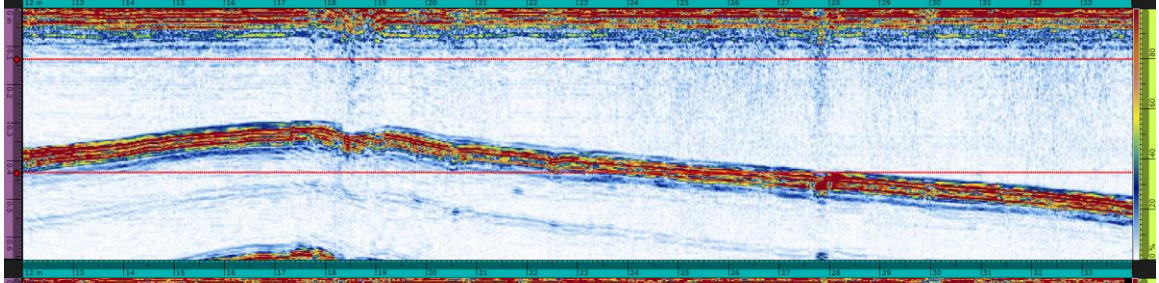
23



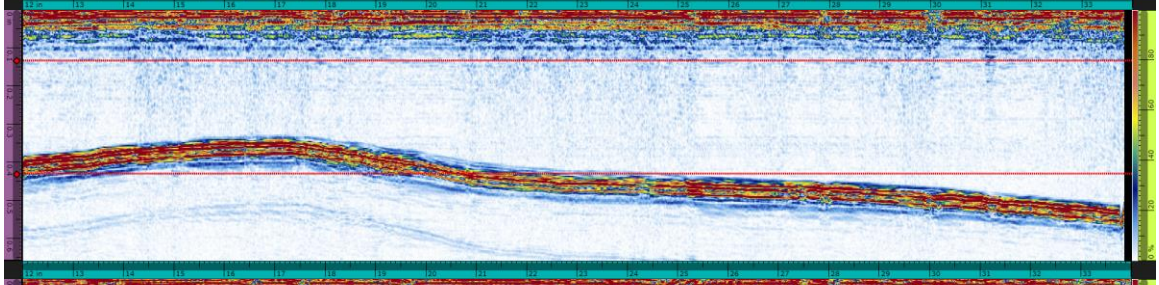
24



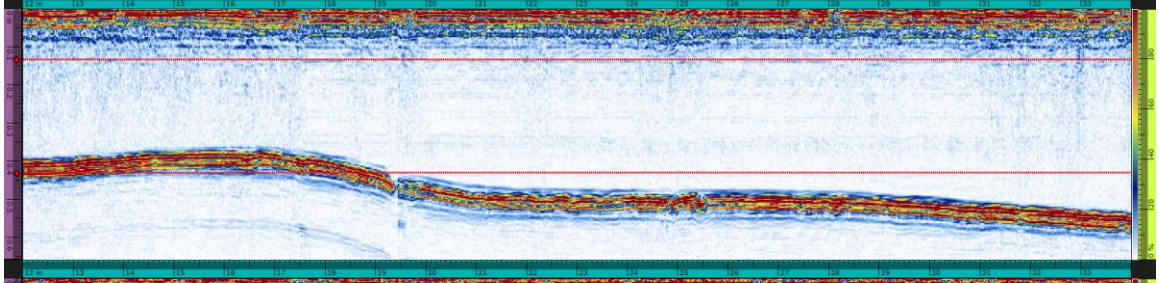
25



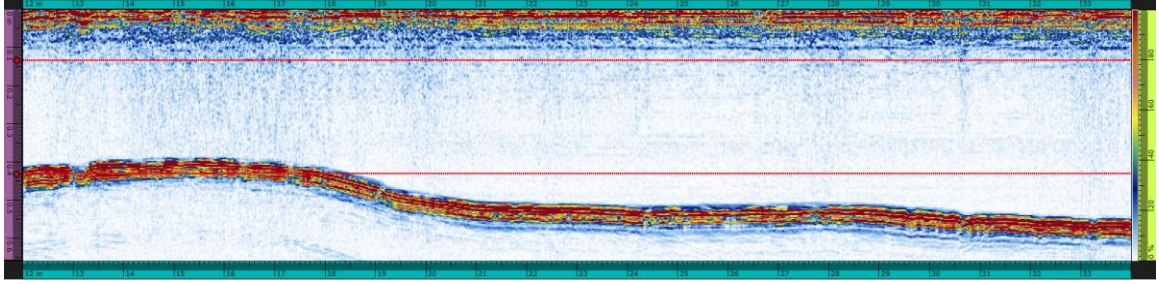
26



27

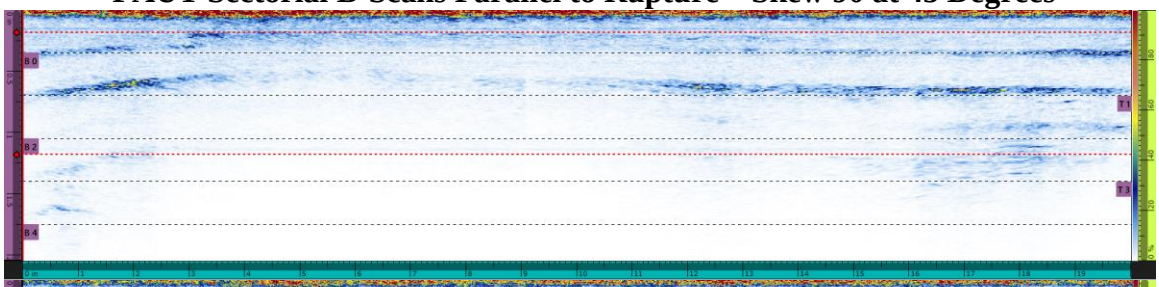


28

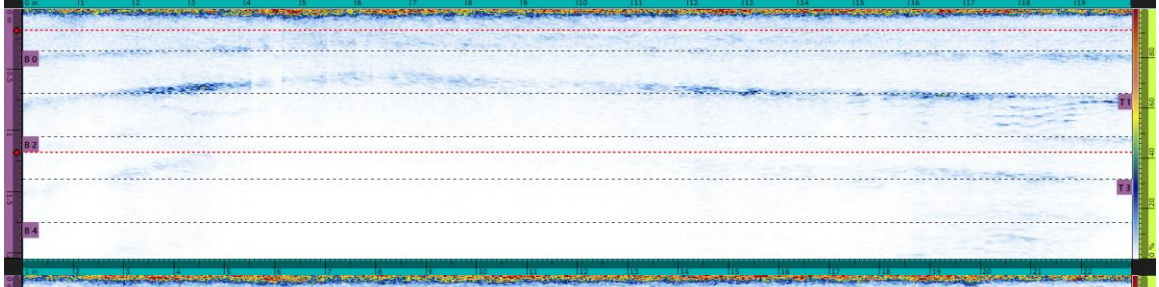


PAUT Sectorial B-Scans Parallel to Rupture – Skew 90 at 45 Degrees

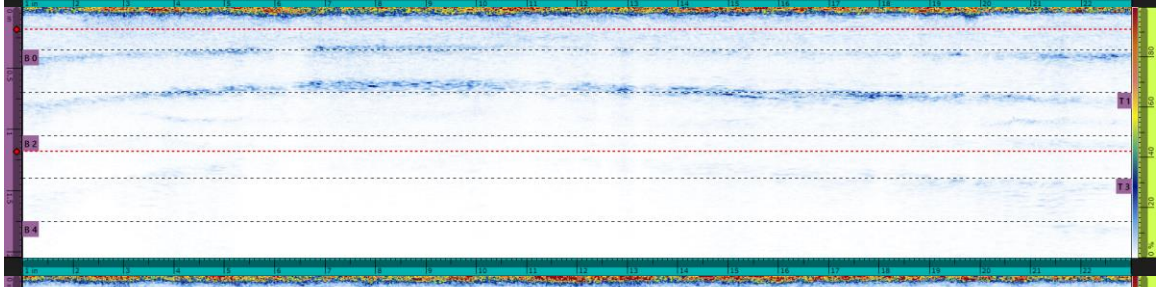
O25-FF16



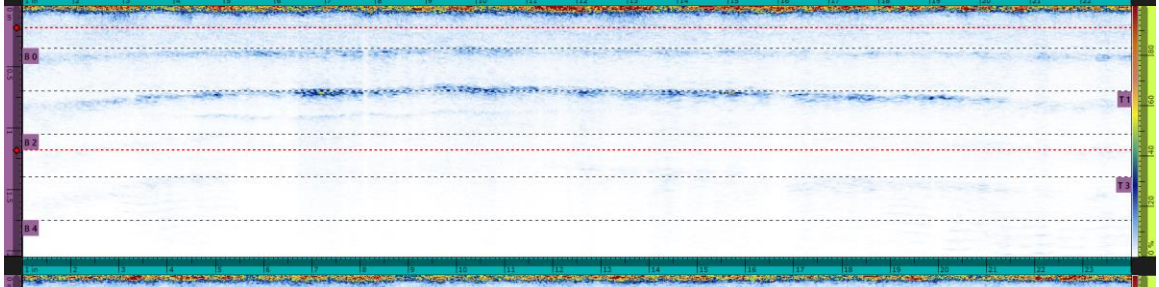
N26-GG17



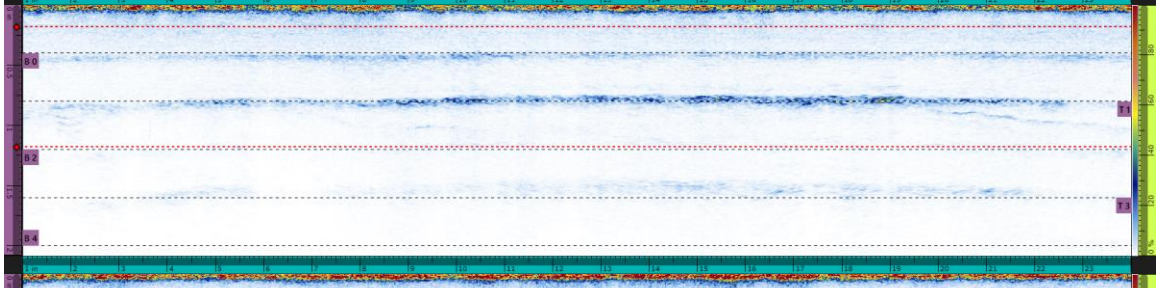
N27-HH17



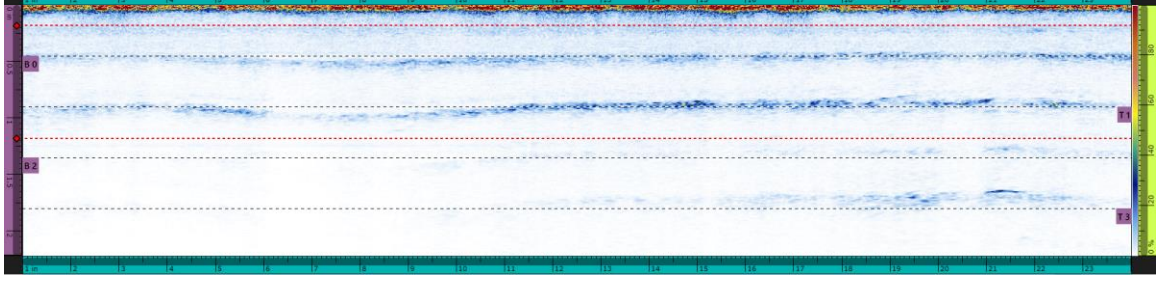
N28-HH18



N29-HH19

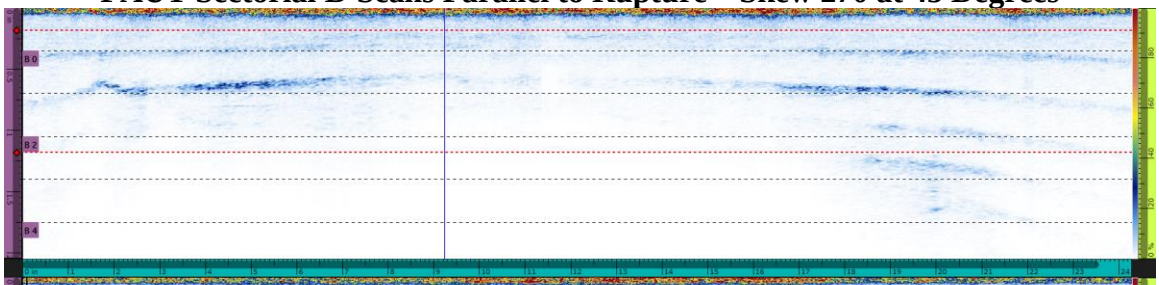


N30-HH20

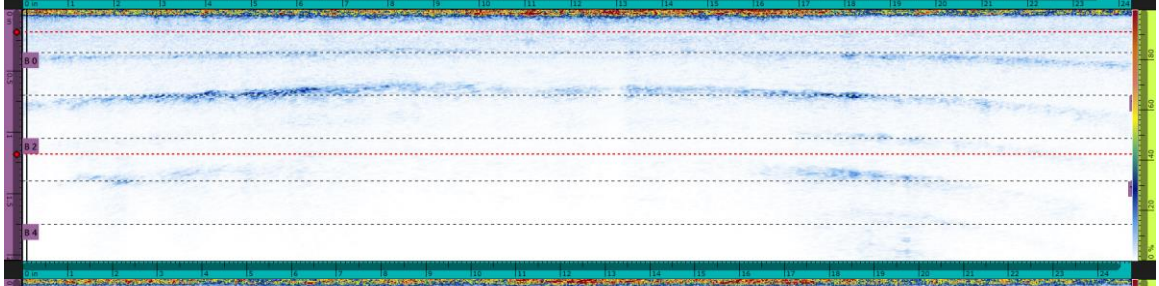


PAUT Sectorial B-Scans Parallel to Rupture – Skew 270 at 45 Degrees

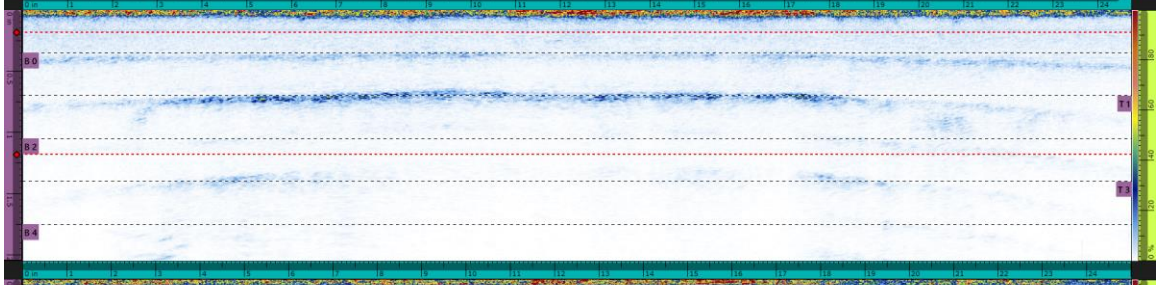
L24-FF13



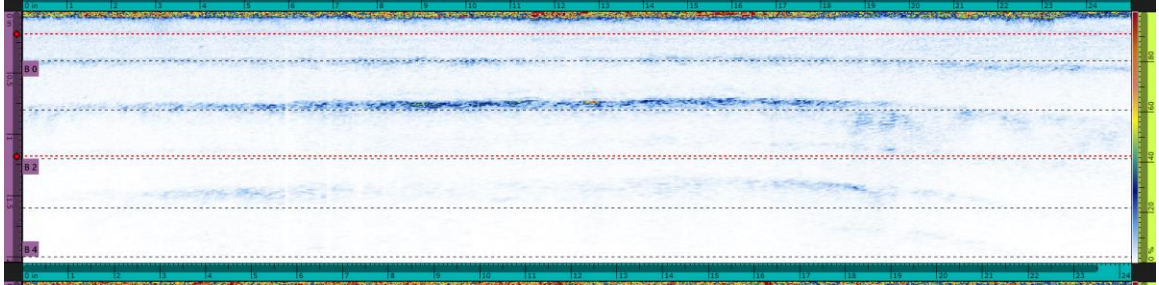
L23-FF12



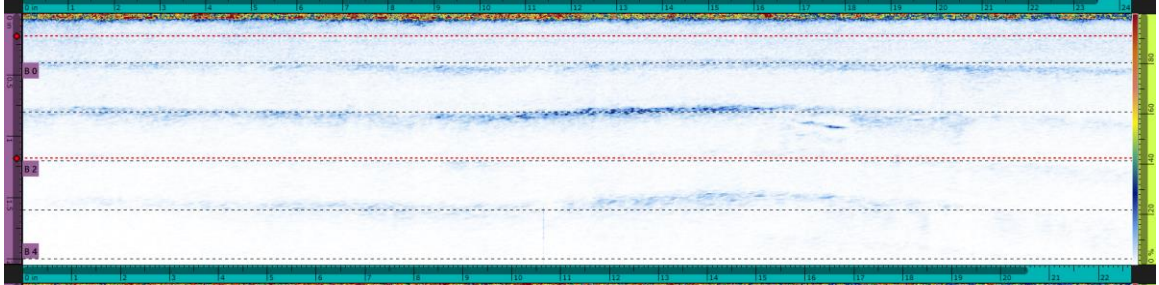
K23-FF11



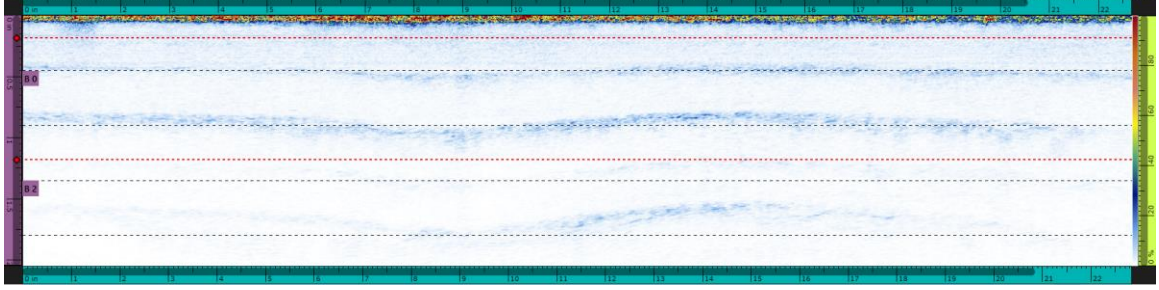
K22-EE11



K21-DD11

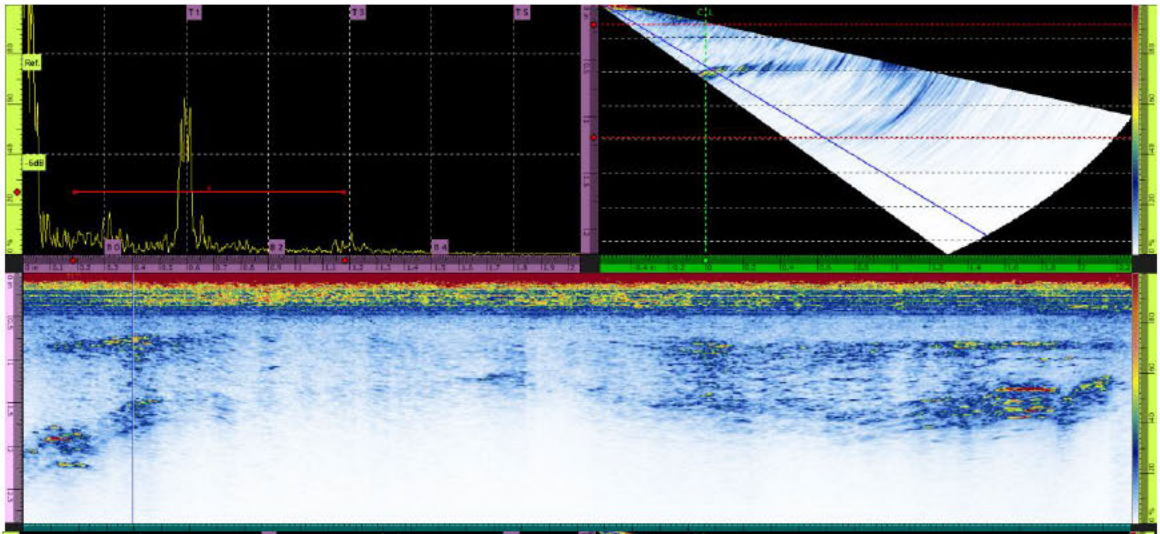


K20-DD10

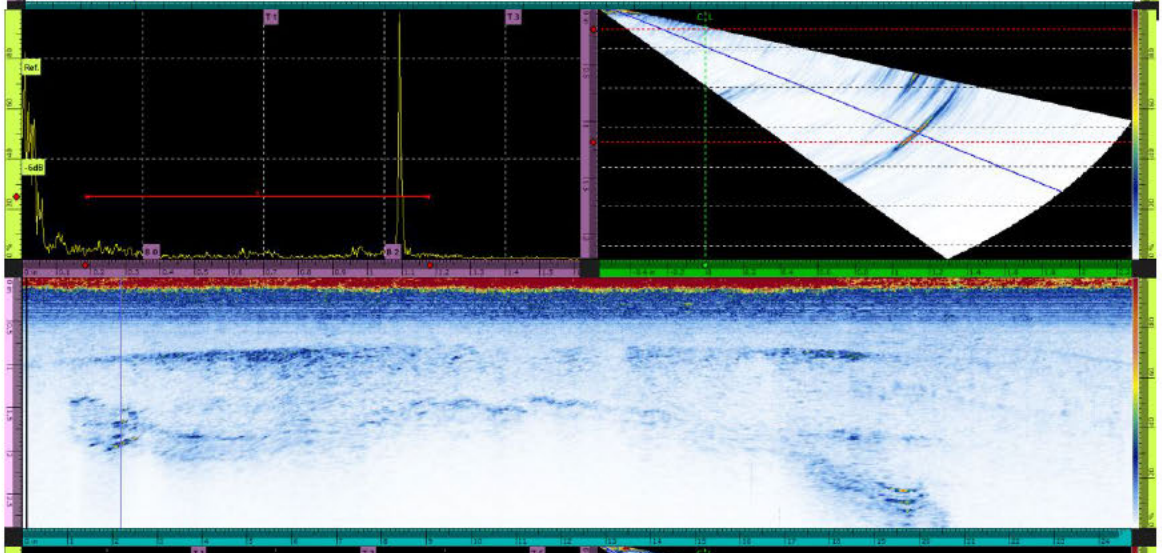


PAUT Angle Beam Merged B-Scans –Skew 90 O25-FF16, N26-GG17, N27-HH17

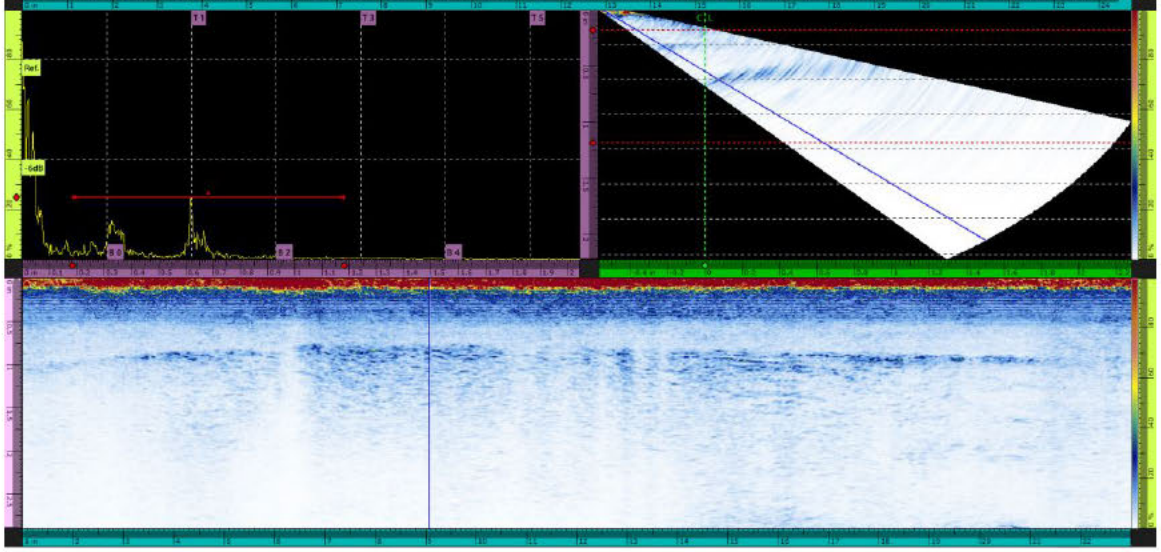
O25-FF16



N26-GG17

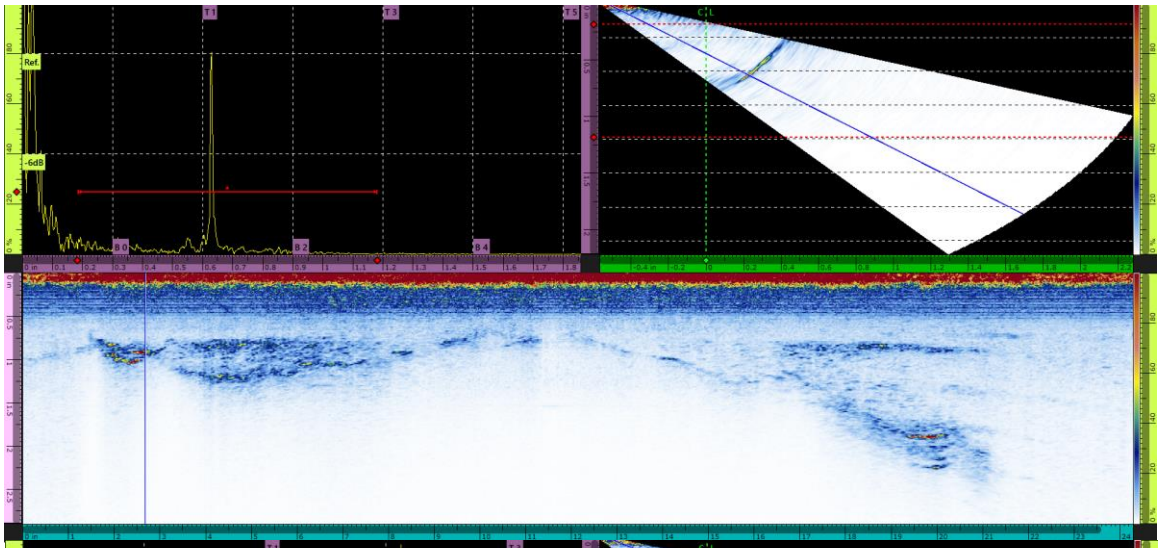


N27-HH17

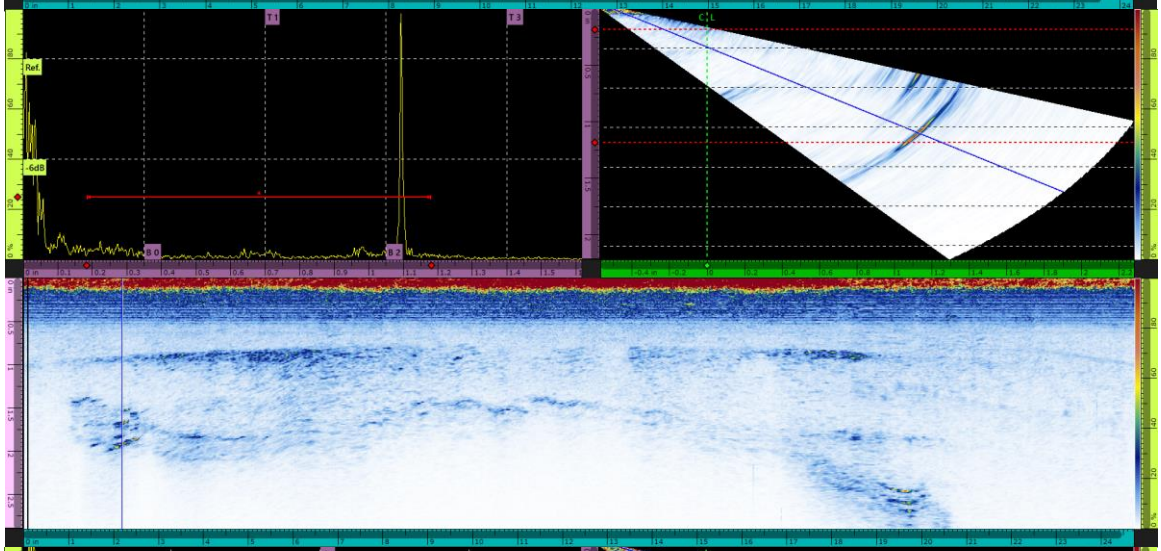


PAUT Angle Beam Merged B-Scans –Skew 270 L24-FF13, L23-FF12, K23-FF11

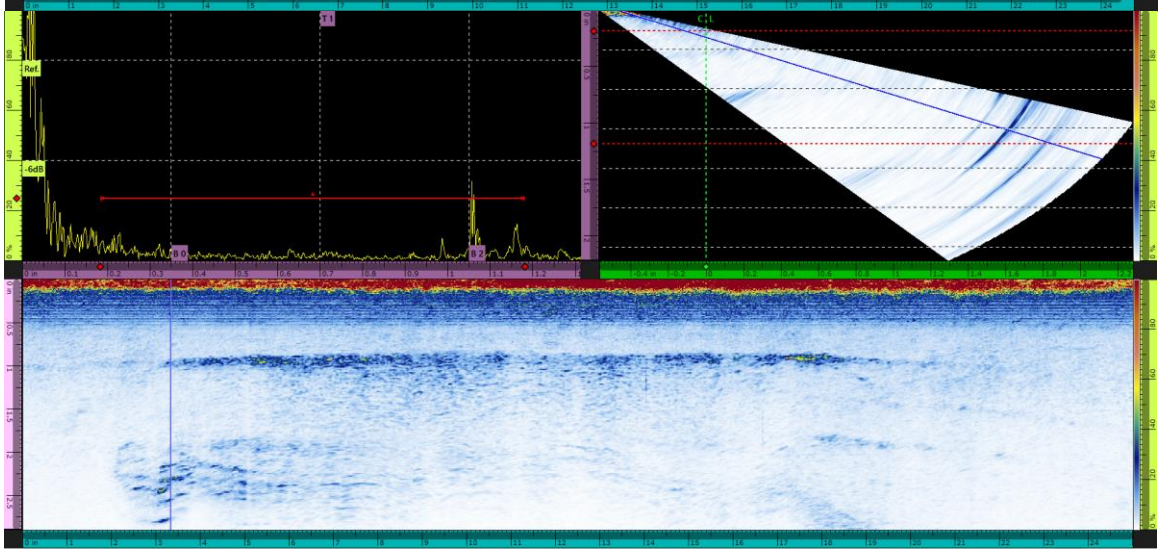
L24-FF13



L23-FF12



K23-FF11



Sound Analysis™
NDT Level III Professional Services

Sound Analysis, LLC
Murfreesboro, TN

PAUT Inspection Report

Project

Client	**ENSCO, Inc,**	Inspection No.	**PAUT 24-0710-02**	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

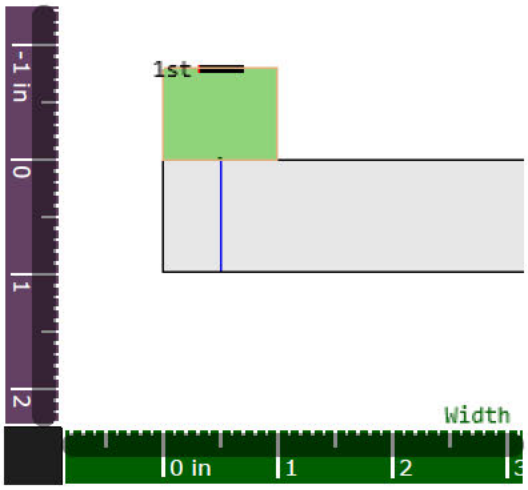
Instrument	**OmniScan X3**	Report Soft. Ver.	**5.17.1**
Instrument Serial	**QC-0090052**	Inspection Soft. Ver.	**MXU 5.17.1**
Model	**OmniScan X3 64 - 64:128PR**		

Inspection Summary

Data File Name	**TTC TK Sample 2 0 K11-GG11.nde**
Inspection Date	**07/10/2024 11:44**
Report Date	**07/17/2024 17:10**
Procedure / Code	**SOP-PAUT-03 R0 / ASTM E2700**
Remark	**Variations in wall thickness (thinning) coincide with location of rupture.**

Part & Weld

Material	**Steel, Mild**	Part Type	**Flat Plate**
Thickness	**0.984 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	**12.00 in.**
Scan End	**34.01 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	**1.000 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 24-0710-02**	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

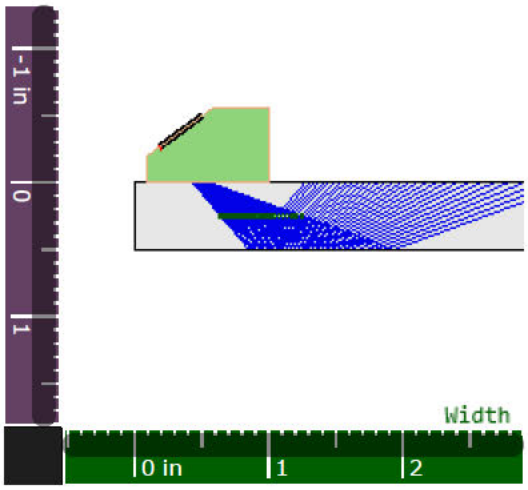
Instrument	**OmniScan X3**	Report Soft. Ver.	**5.17.1**
Instrument Serial	**QC-0090052**	Inspection Soft. Ver.	**MXU 5.17.1**
Model	**OmniScan X3 64 - 64:128PR**		

Inspection Summary

Data File Name	**TTC TK Sample2 AA19-JJ19 90.nde**
Inspection Date	**07/09/2024 16:18**
Report Date	**07/17/2024 17:14**
Procedure / Code	**SOP-PAUT-03 R0 / ASTM E2700**
Remark	**No significant surface or interior indications detected other than that from rupture.**

Part & Weld

Material	**Steel, Mild**	Part Type	**Flat Plate**
Thickness	**0.500 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	**27.00 in.**
Scan End	**37.02 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	**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**

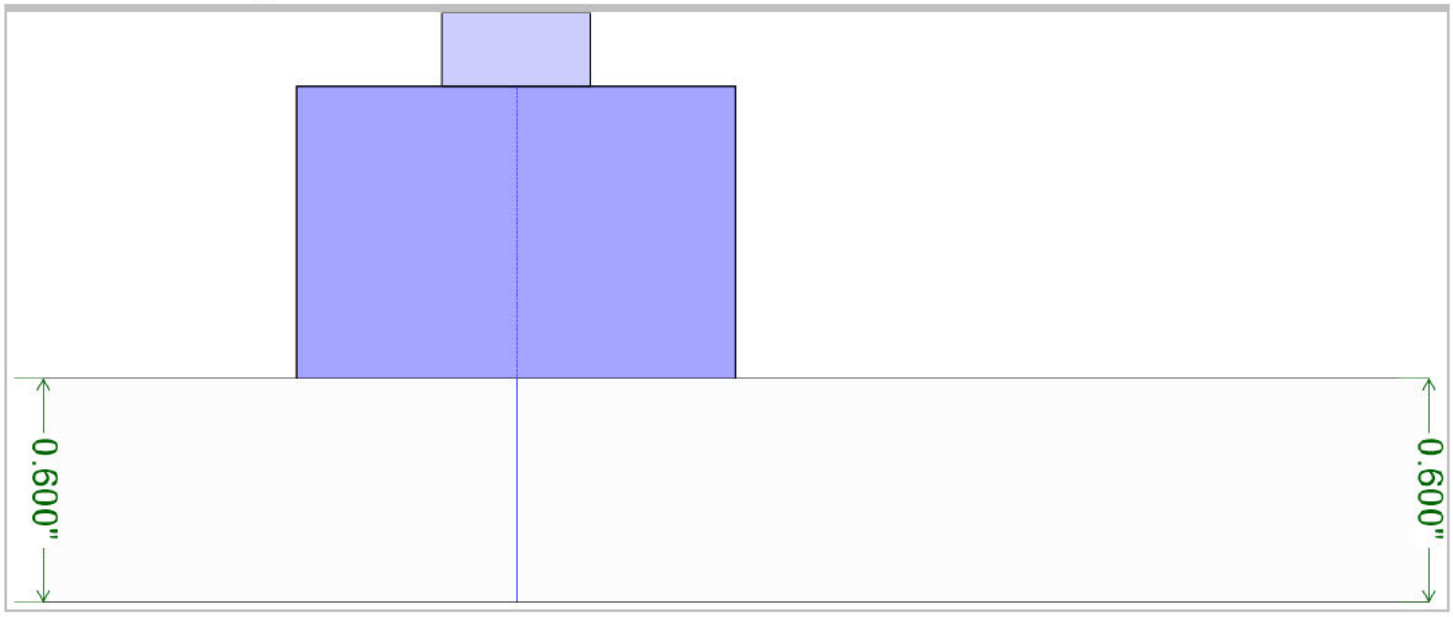
Calculator

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**		

Sound Analysis™

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

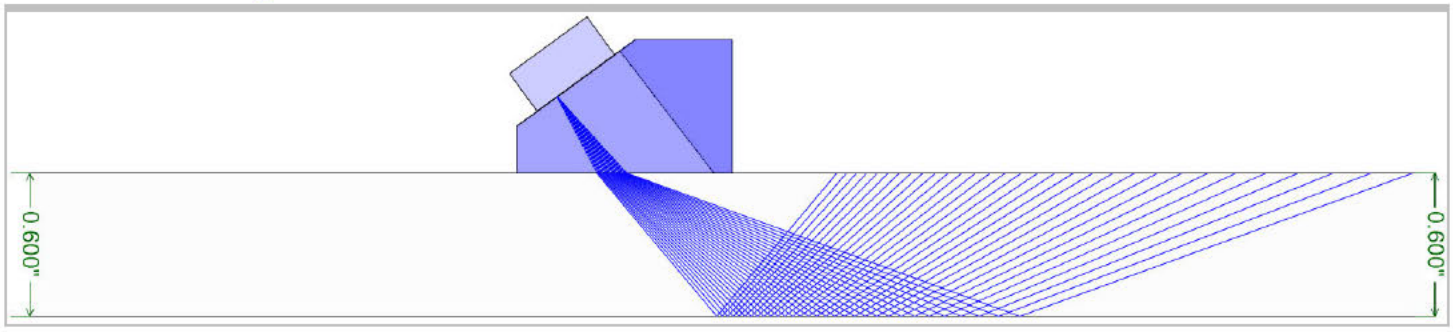
Num. of Elements	Element Pitch	Total Aperture
32	0.0012 in.	0.3906 in.

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

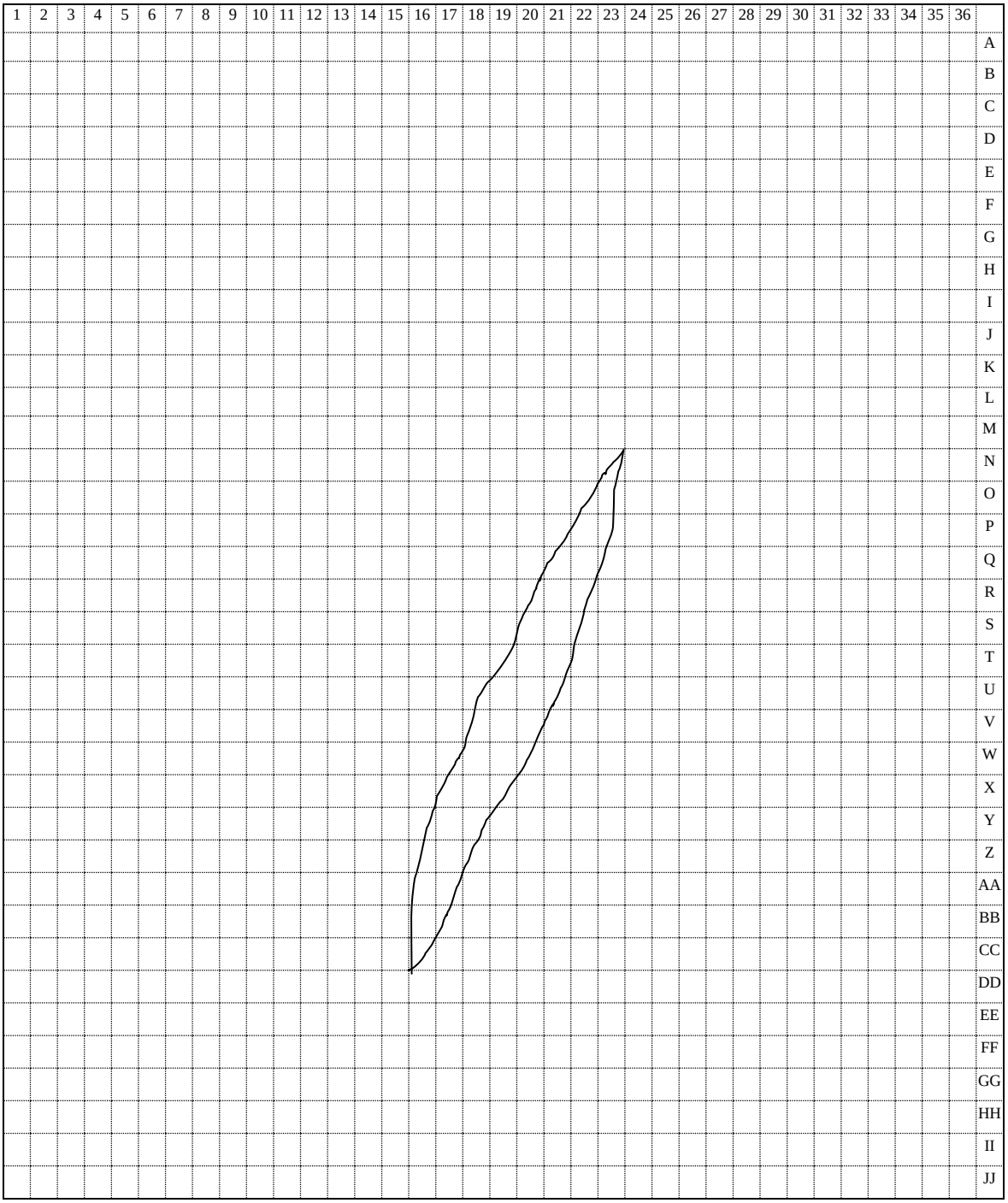
Federal Railroad Administration
Localized Corrosion or Material Degradation Form

Reporting Marks	Gallup Derailment Panel #2	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	Indication(s) (Type/Size/Location): No relevant indications other than those visually evident.	PT of inside surface not performed due to presence of embedded carbon. 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



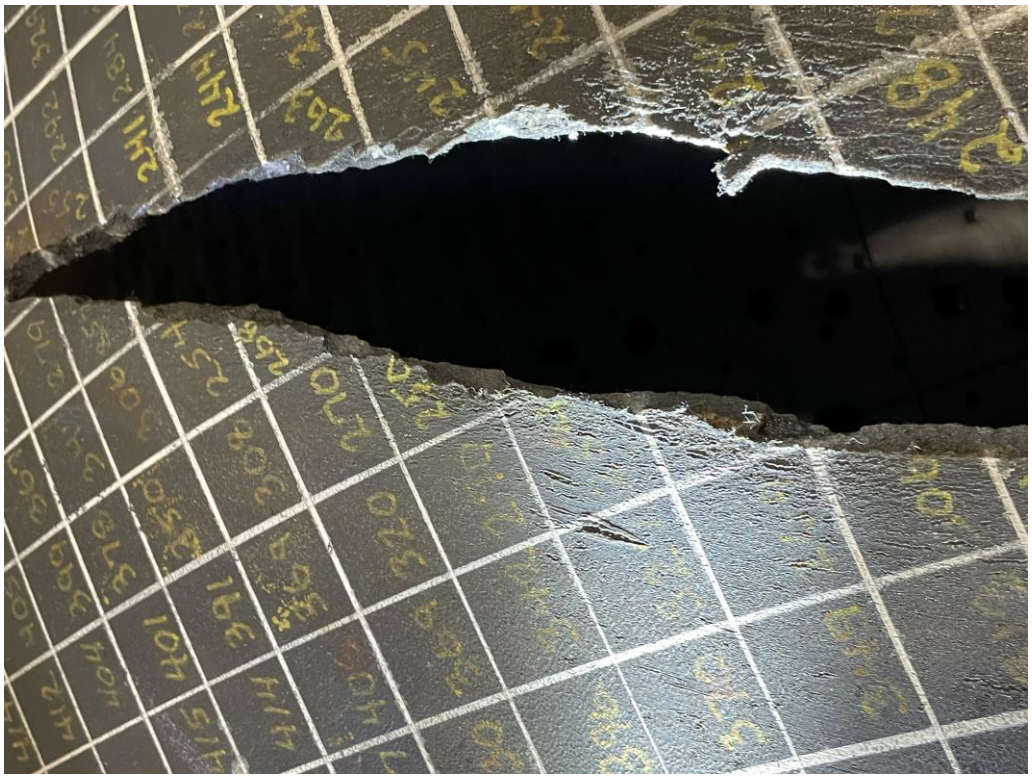
***Readings reported by alphabet vertically A-JJ. Recorded by numeral horizontally 1-36. (Example: A1 upper left/JJ36 lower right.**

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

Technician: Brian Wood Level: III Cert 67827

Signature: [redacted]

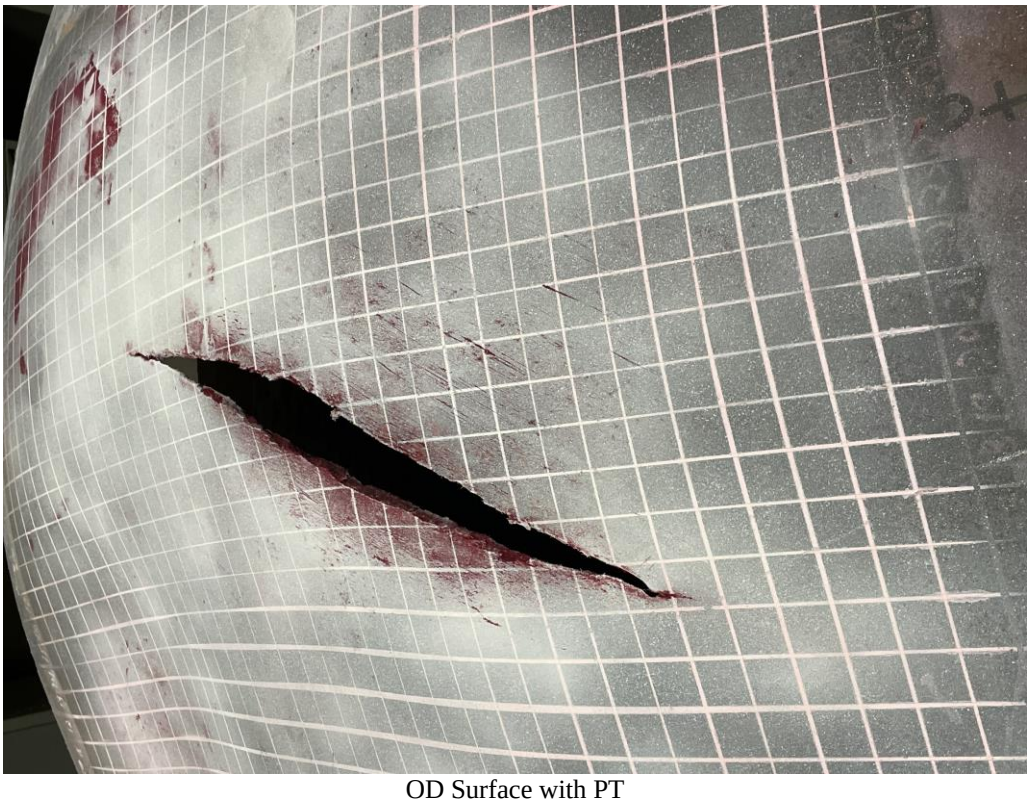
Assisted by: _____



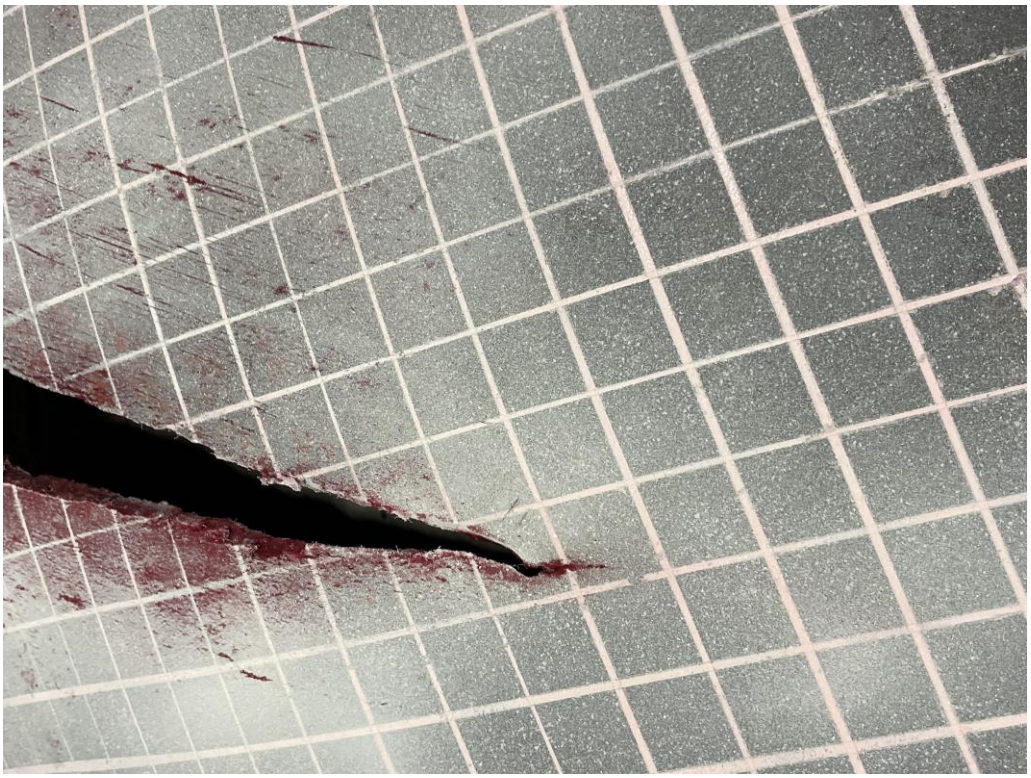
OD surface prior to PT

OD surface prior to PT

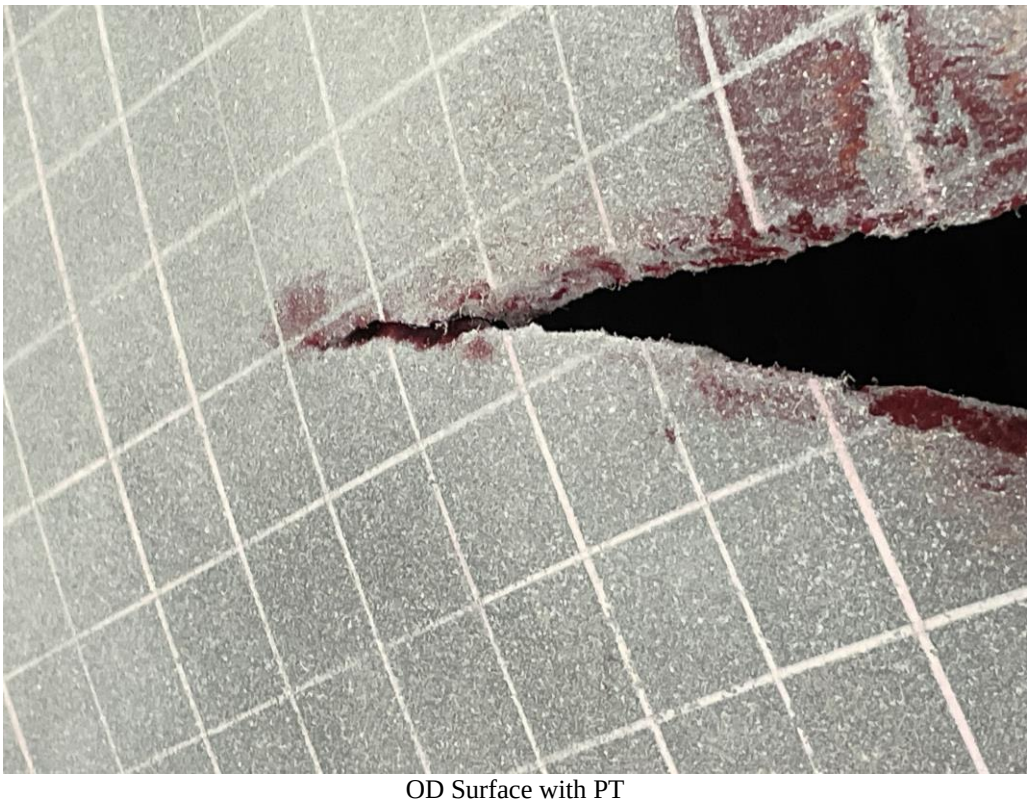
OD surface prior to PT



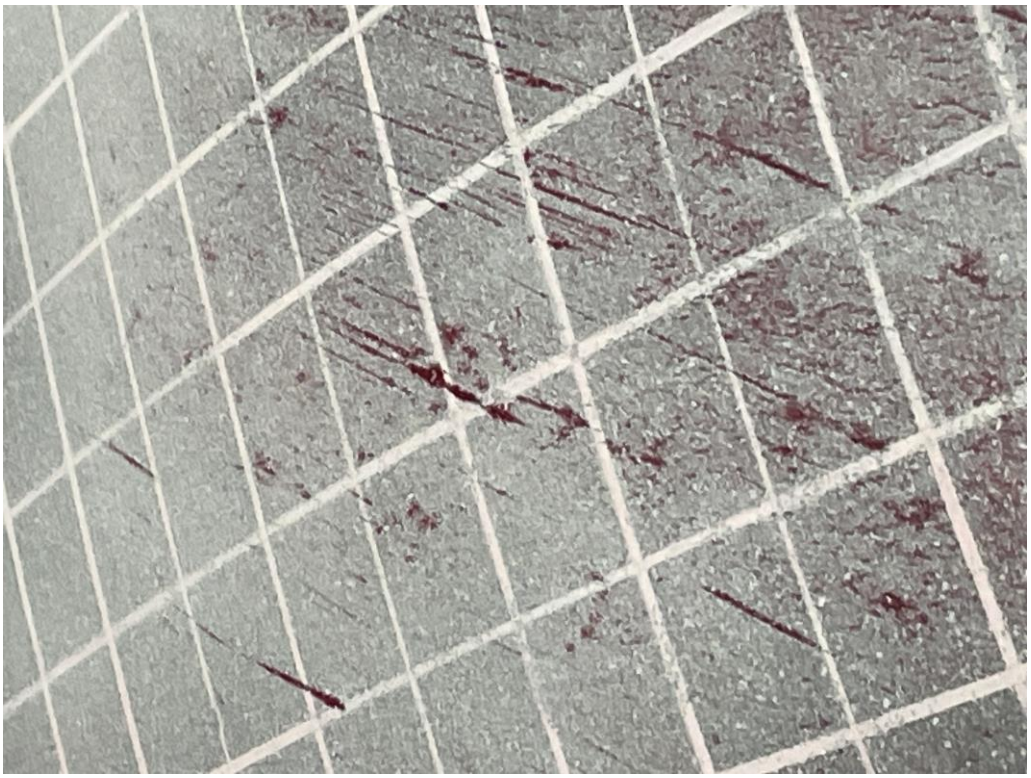
OD Surface with PT



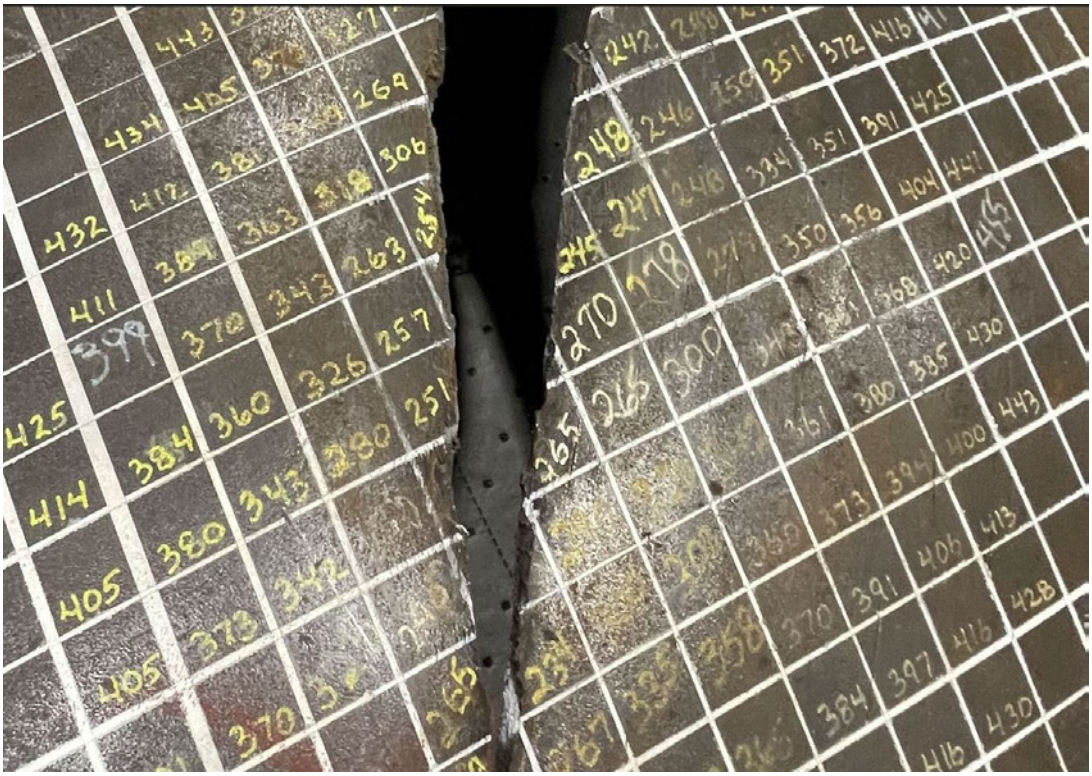
OD surface with PT



OD Surface with PT



OD surface with PT – Mechanical Scratches



OD Surface Prior to PT – Mechanical Scratched Visible

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 2	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 surface. Inside surface not PT inspected due to embedded carbon.

Results of Examination

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

☐ PT acceptable
☑ PT not acceptable

Page 1 of 1

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