EXPRO

WELL FLOW MANAGEMENT™

Multifinger Caliper Analysis Report

Client:	NAM
Well No.:	ROSSUM-WEERSELO-5
Field:	ROSSUM-WEERSELO
Country:	Netherlands
Survey Date:	26th June 2021
Survey Type:	Extended 24-Arm Caliper
Job ID:	DAC712

www.exprogroup.com

Pass no.	Survey Interval (m)	Data Quality	Notes
1	1352 to 0	Good	

Rev	Description	Author	Checked by
0	Report		

The Expro Group Data Analysis Centre

Carnegie Building, Howe Moss Avenue, Dyce, Aberdeen, AB21 0GP

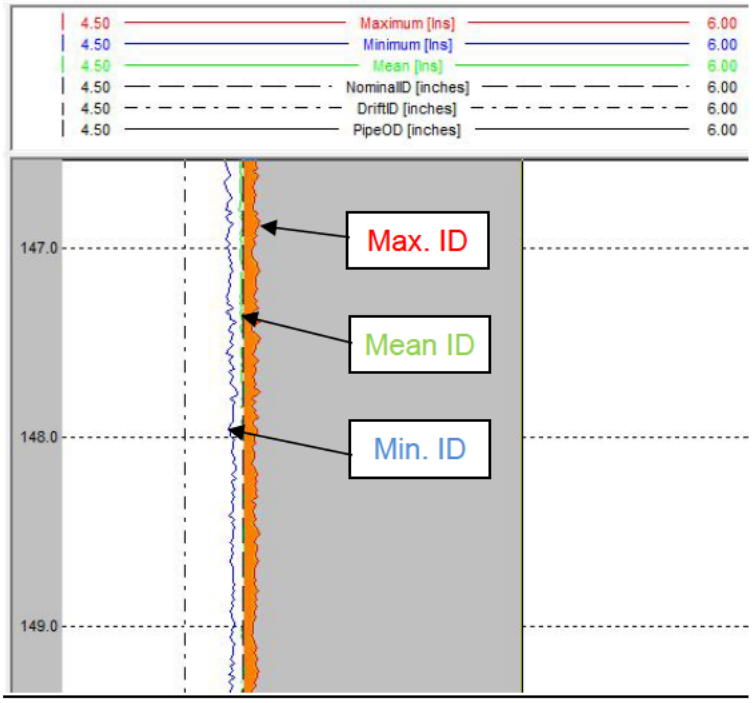
Tel: +44 (0)1224 225700

Website: www.exprogroup.com

Definitions

Measured IDs

- Each caliper finger records a radius value at each depth sample. For the purposes of calculating metal loss, this value is multiplied by 2, creating an ID value which can be referenced against the nominal ID and OD of the tubular (all ID values quoted are 2* radius values unless otherwise indicated).
- When calculating restrictions within the tubular caused by features such as deposition or deformation, opposite arm radius values are combined to create an ID value.
- At each depth sample the Maximum ID, Minimum ID and Mean ID is recorded. These can then be plotted against the Drift ID and Nominal ID and OD.



Maximum Percentage Penetration

- The maximum percentage penetration is the maximum recorded radius x 2 value referenced against nominal ID and OD
- $Maximum\ percentage\ penetration = 100 * \frac{Max.ID - Nom.ID}{OD - NomID}$

Maximum Percentage Circumferential Wall Loss

- The maximum percentage circumferential wall loss is the sum of the areal metal loss at each depth sample with reference to nominal ID and OD
- $(\frac{100}{N}) * \sum_{i=1}^{i=N}(Si^2 - Nom.ID^2) \div (OD^2 - Nom.ID^2)$
- N: is the number of caliper sensors on the tool, 24, 40, 60.
- Si: is the measured radius value x 2 for each arm.

Report Contents

1. Survey Objectives and Interpretation Summary

Survey Objectives

An extended 24-arm memory multifinger caliper was run to determine the general condition of the tubing within the ROSSUM-WEERSELO-5 well.

Data Analysis

This report highlights the main findings of the analysis. However, for a more detailed view of the tubing condition, the accompanying deliverables (which include the tool data and the MIPS client viewer) can be used to inspect the completion on a joint by joint basis.

Processing:

- Centralised
- Depth corrected – to well completion depths, MD in metres
- Statistical analysis applied

Interpretation Summary

- Both the 5″, 15 lb/ft tubing and the 4″, 10.9 lb/ft tubing appears to be in good condition overall, with no clear evidence of any significant metal loss or damage.
- The surveyed interval of 7″ casing appears to be in good to moderate condition with some mild pitting and deposition recorded.
- Time-lapse analysis shows only minor change between surveys.

Statistical Data Summary	2021	2020	2019	2018	2017	T.L. Max Difference
Maximum % Penetration	29.2 %	26.7 %	20.2 %	17.7 %	24.4 %	11.5 %
Maximum Penetration Depth	1134.81 m	1134.76 m	1128.54 m	825.22 m	1117.28 m	-
Average Maximum % Penetration	10.8 %	14.9 %	12.9 %	12.1 %	12.9 %	4.1 %
Maximum % Circumferential Wall Loss	16.1 %	16.9 %	13.7 %	8.4 %	-	3.1 %
Maximum % Circumferential Wall Loss Depth	1134.81 m	1134.76 m	1128.54 m	1117.28 m	-	-
Average Recorded Mean ID	4.548 inches	4.383 inches	4.380 inches	4.374 inches	4.377 inches	0.174 inches
Average Maximum % Circumferential Wall Loss	3.4 %	7.2 %	5.3 %	4.3 %	-	3.8 %
Survey Interval	1352 to surface	1151 to surface	1136 to surface	1142 to surface	1135 to surface	-

Note: All values from statistical analysis are based on the maximum, minimum and mean IDs per tubing or casing joint
Note: Caliper measurement tolerance is 0.03"
Note: Circumferential wall loss calculations were not an output of the processing software prior to 2018

2. Data Interpretation

5″, 15 lb/ft Tubing Condition

- The 5″, 15 lb/ft tubing appears to be in good condition overall, with all 89 joints logged found to contain maximum recorded percentage penetration values below 16% of the nominal wall thickness, while averaging 10.4% (see Figure 1, Section 3 & Max. Percentage Penetration per Joint vs. Depth Plot, Section 4).
- There is no clear evidence of any significant metal loss or damage within the 5″, 15 lb/ft tubing. Furthermore, the average mean recorded ID of 4.414″ remains close the manufacturer specified nominal ID of 4.408″ (see Measured ID per Joint vs. Depth Plot, Section 4).
- The minimum recorded ID within the 5″, 15 lb/ft tubing was 4.209″ at 9.53 m. This relates to what appears to be a localised area of deposition within the first pup joint below the tubing hanger (see Figures 2 & 3, Section 3).

4″, 10.9 lb/ft Tubing Condition

- The 4″, 10.9 lb/ft tubing appears to be in good condition overall, with all 5 joints logged found to contain maximum recorded percentage penetration values below 30% of the nominal wall thickness, while averaging 18.3% (see Figure 4, Section 3 & Max. Percentage Penetration per Joint vs. Depth Plot, Section 4).
- There is no clear evidence of any significant metal loss or damage within the 4″, 10.9 lb/ft tubing, with toolstring decentralisation effects above and below SPMs responsible for most slightly higher than expected IDs. Furthermore, the average mean recorded ID of 3.496″ remains close the manufacturer specified nominal ID of 3.476″ (see Measured ID per Joint vs. Depth Plot, Section 4).
- There are no clear signs of any significant deposition or restrictions within the 4″, 10.9 lb/ft tubing, and none of the recorded IDs fall below the manufacturer specified drift ID of 3.351″.

7″, 32 lb/ft Casing Condition

- The surveyed interval of 7″, 32 lb/ft casing appears to be in good to moderate condition overall, with all 11 joints logged found to contain maximum recorded percentage penetration values below 19% of the nominal wall thickness, while averaging 10.7% (see Figure 5, Section 3 & Max. Percentage Penetration per Joint vs. Depth Plot, Section 4).
- The maximum recorded ID within the surveyed interval of 7″ casing was 6.258″ (equivalent to an 18.1% penetration) at 1182.77 m. This relates to a joint with a significantly higher overall ID throughout than any other surrounding joints. It is possible that this may simply be a joint of a lower weight, such as 29 lb/ft (see Figures 6 & 7, Section 3).
- A small cluster of pits was recorded between approximately 1340 – 1347 m. The maximum recorded ID related to this was 6.232″ (equivalent to a 15.2% penetration) at 1342.55 m (see Figures 8 & 9, Section 3).
- The average mean recorded ID within the surveyed interval of 7″ casing was 6.111″, which remains close the manufacturer specified nominal ID of 6.094″ (see Measured ID per Joint vs. Depth Plot, Section 4).
- The minimum recorded ID within the surveyed interval of 7″ casing was 5.967″ at 1343.29 m. This relates to what appears to be one of many areas of scattered loose well debris or isolated deposition. Furthermore, it appears that the much of the surveyed 7″ casing may have been affected by a mild circumferential coating of deposition (see Figure 10 & 11, Section 3).

Time-lapse Analysis

- 24-arm caliper surveys have been performed previously within this well by Expro. Time-lapse analysis has been performed by comparing data from surveys conducted on the 15th of June 2017, 4th of October 2018, 14th November 2019 and 12th of November 2020 with data from the current 2021 survey to give a 5-survey overview (see Time-lapse Plots, Section 4).
- The 7″ casing condition cannot be compared between surveys as this was not surveyed in previous years.
- It appears that there may have been a gradual and relatively subtle trend of increasing metal loss between 2018 to 2020. However, it appears that the overall recorded IDs in the current 2021 survey are actually slightly lower. It is possible that this may be the result of a build-up of circumferential deposition, but some variation could also likely accounted for by minor differences in tool calibration and the rotational path taken throughout the survey. Nevertheless, there are no clear signs of any severe metal loss present in any of the surveys and the overall well picture has remained similar since 2017.

3. Caliper Graphics

Client:	NAM	Well No.:	ROSSUM-WEERSELO-5	Field:	ROSSUM-WEERSELO
Survey Date:	26/06/2021	Survey	MFC-24 Extended	Job ID:	DAC712

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Figure 1: 5", 15 lb/ft Tubing Overview

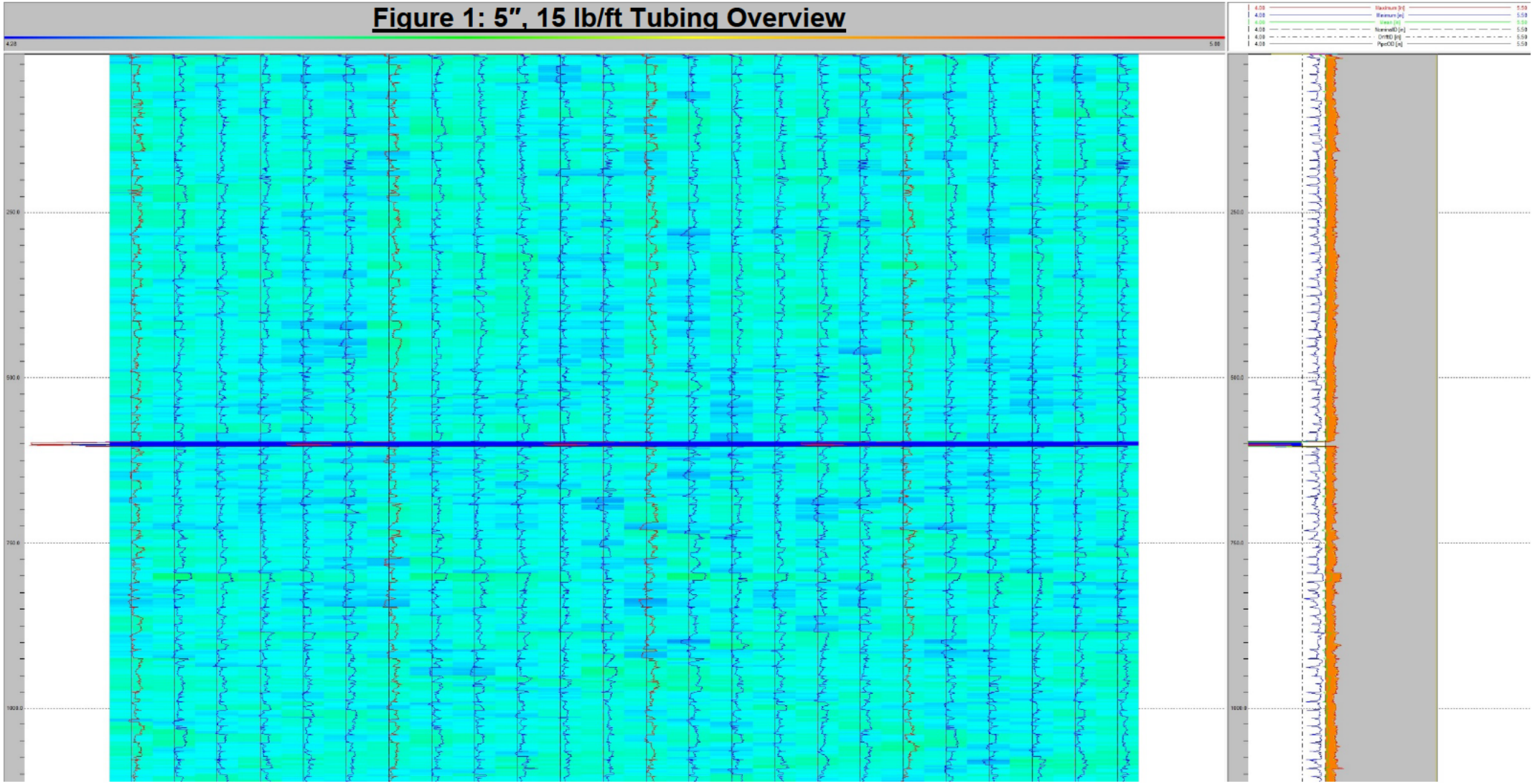

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Figure 2: Minimum Recorded ID Within 5", 15 lb/ft Tubing

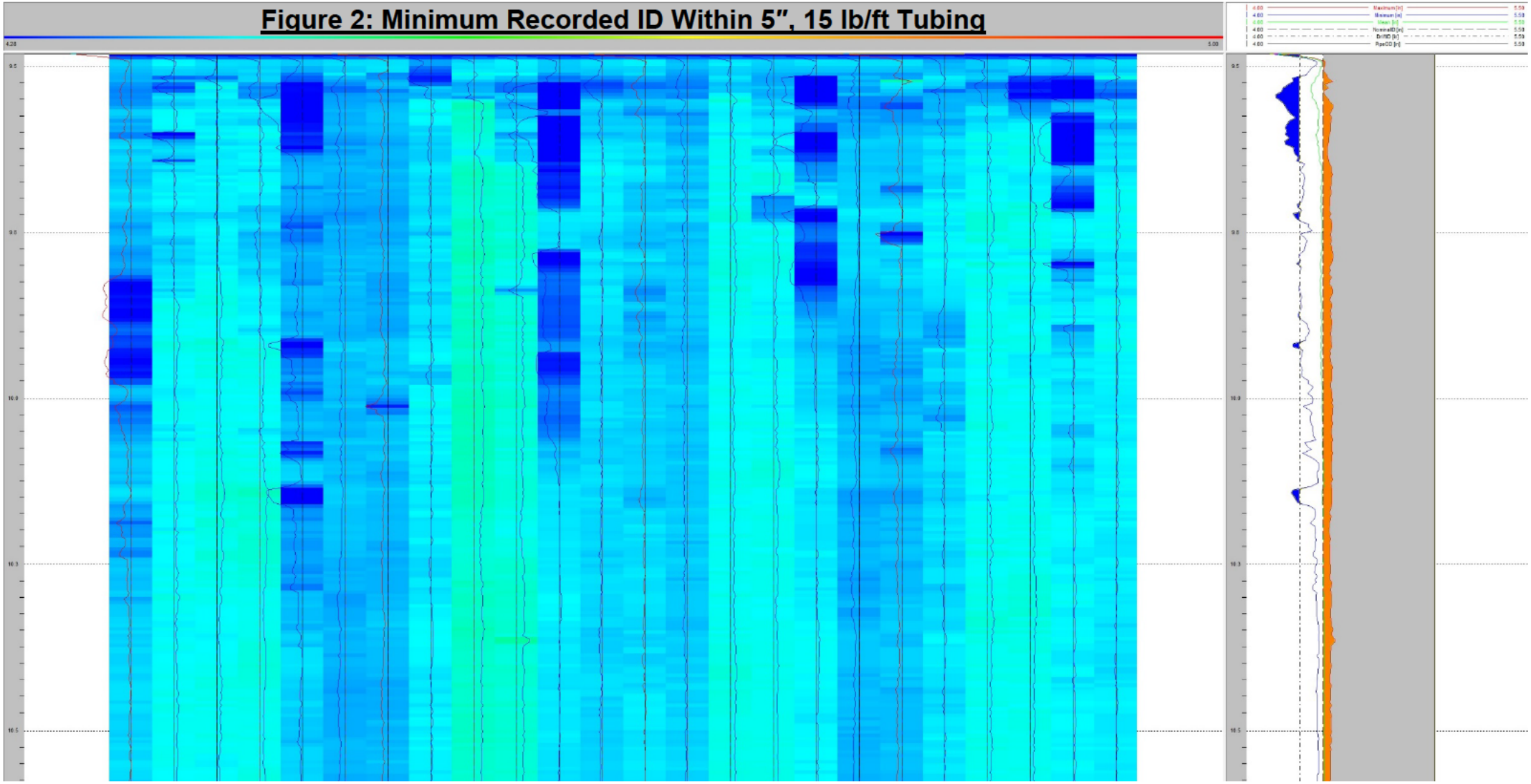

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Figure 3: Minimum Recorded ID Within 5", 15 lb/ft Tubing (Cross-Section)

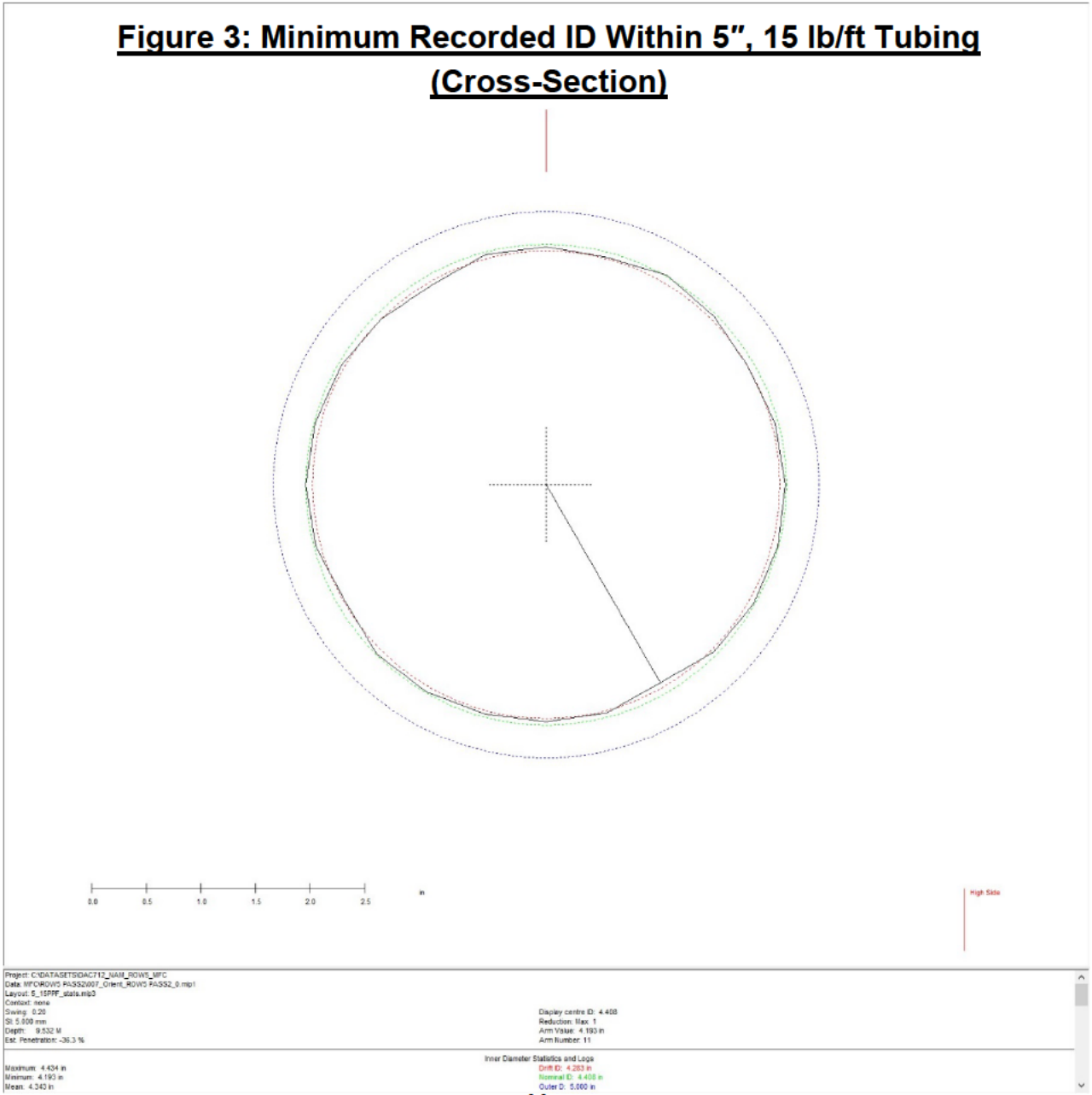

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Figure 4: 4", 10.9 lb/ft Tubing Overview

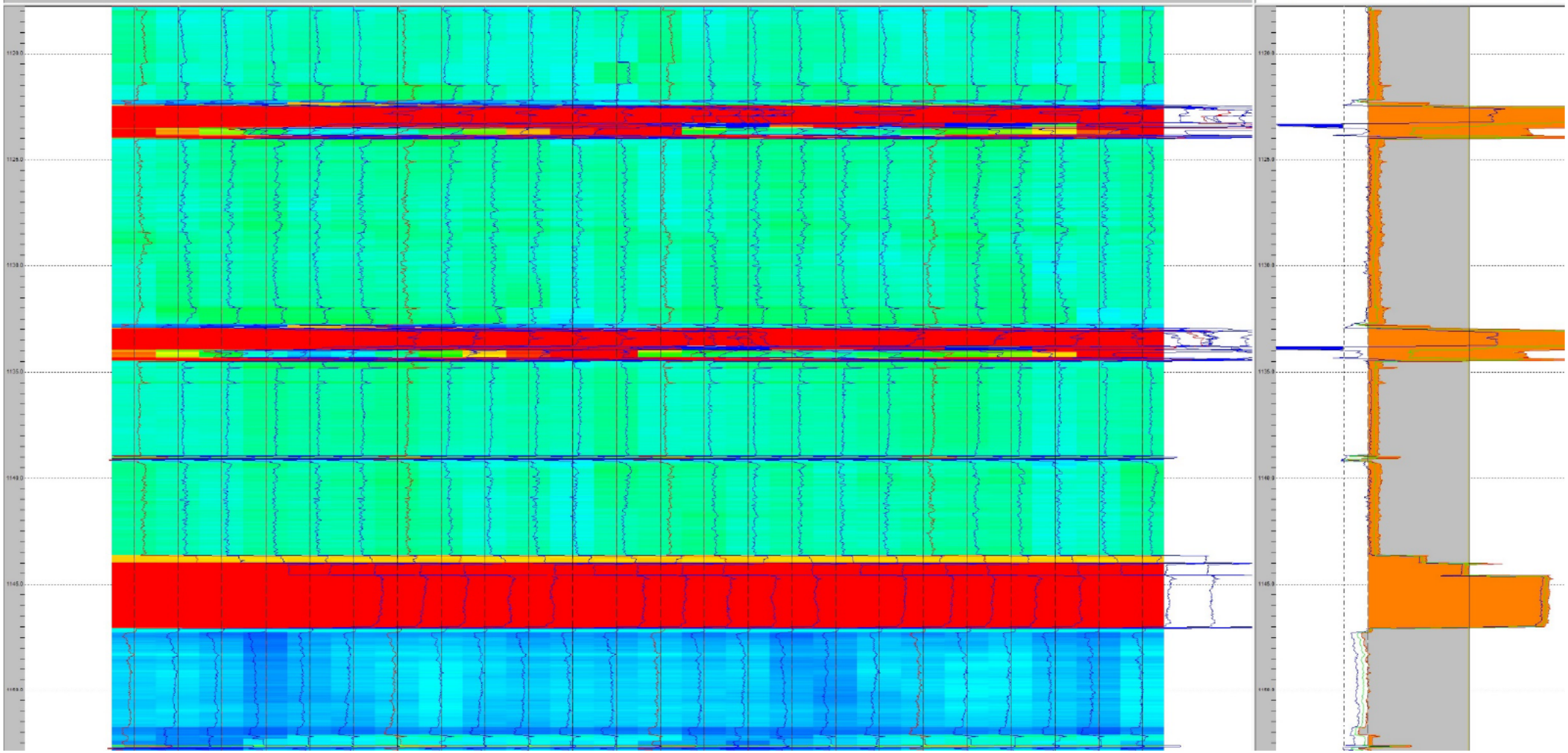

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Figure 5: 7", 32 lb/ft Casing Overview

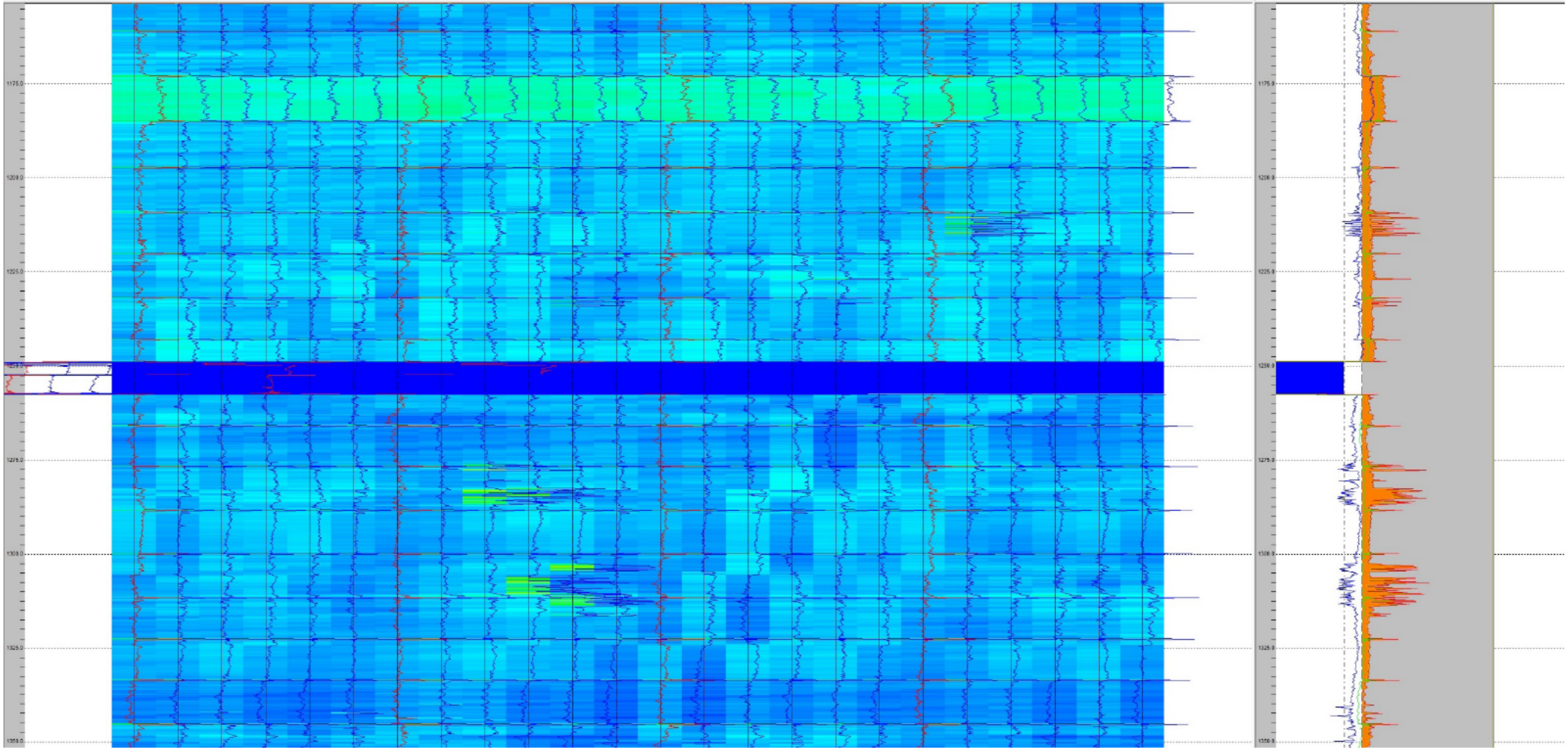

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Figure 6: Maximum Recorded ID Within 7", 32 lb/ft Casing

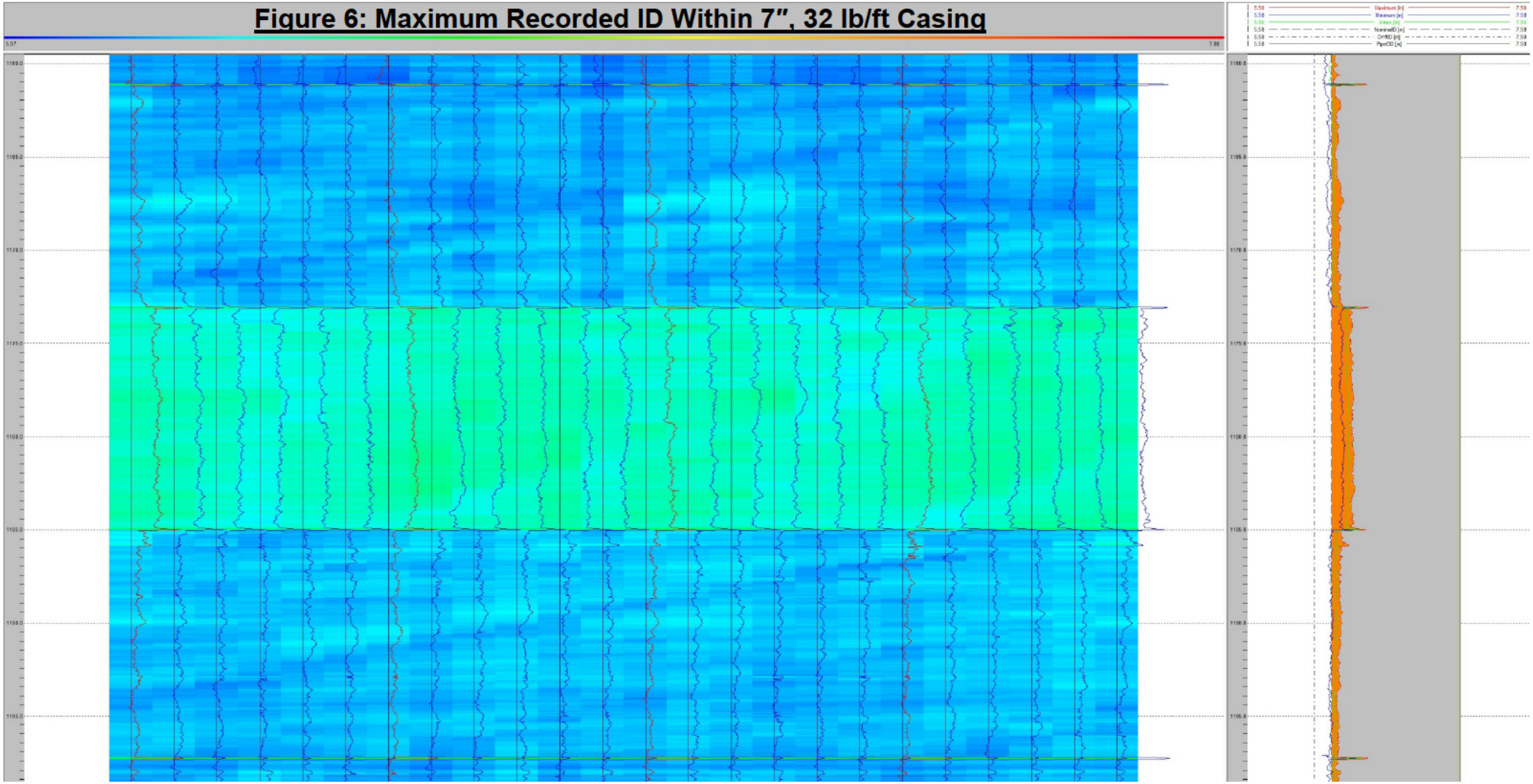

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Figure 7: Maximum Recorded ID Within 7″, 32 lb/ft Casing (Cross-Section)

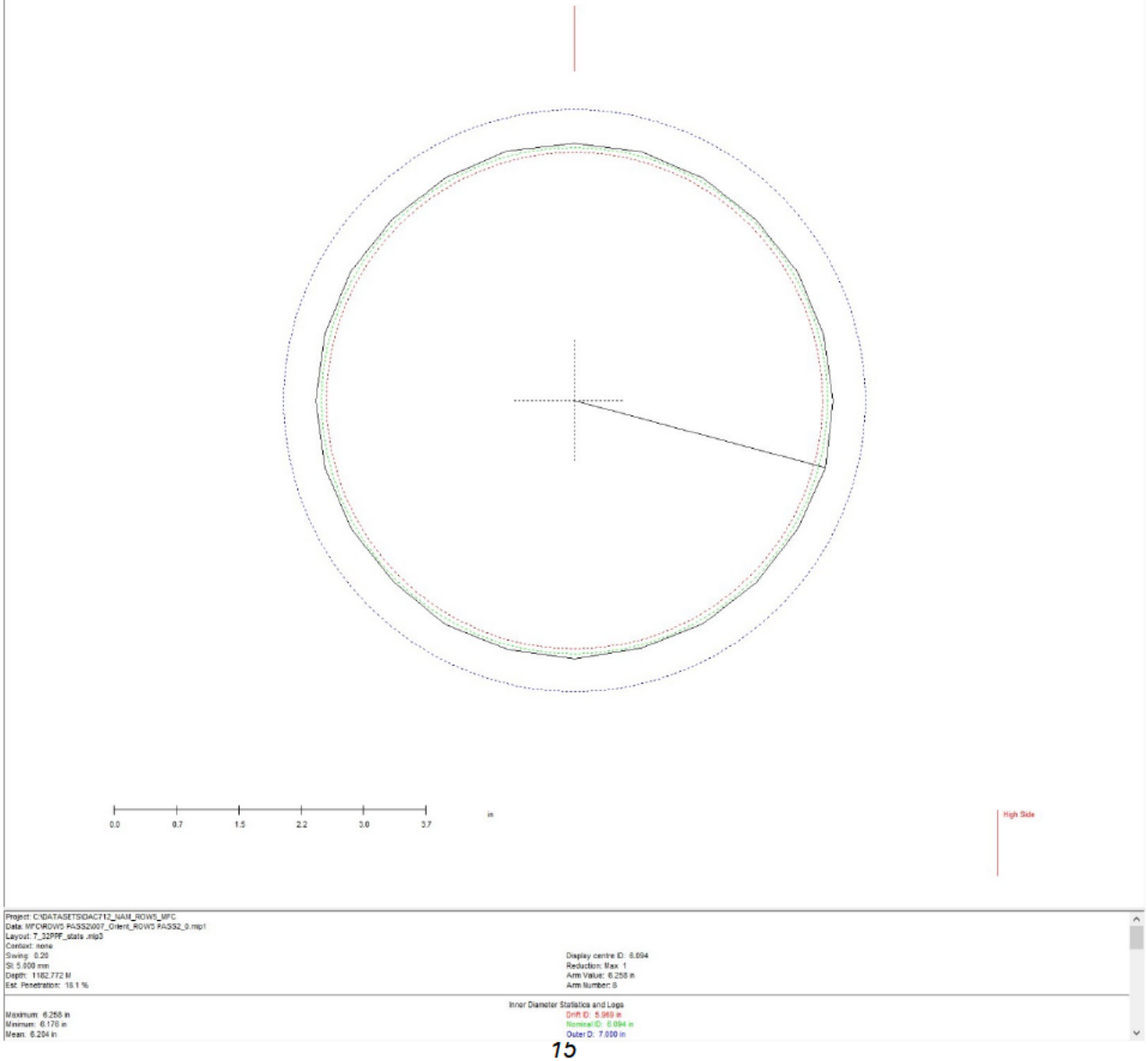

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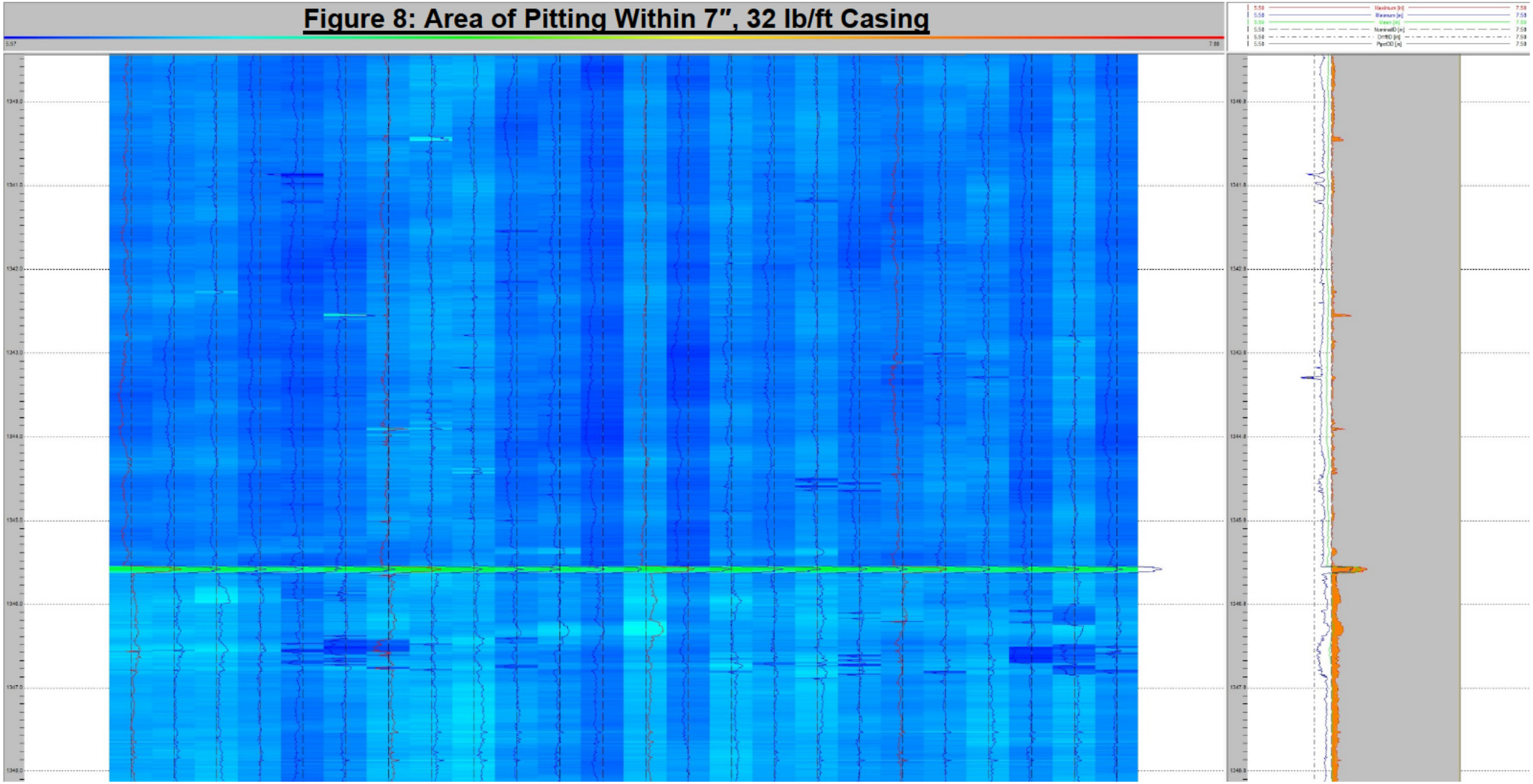
Figure 8: Area of Pitting Within 7", 32 lb/ft Casing



Client:	NAM	Well No.:	ROSSUM-WEERSELO-5	Field:	ROSSUM-WEERSELO
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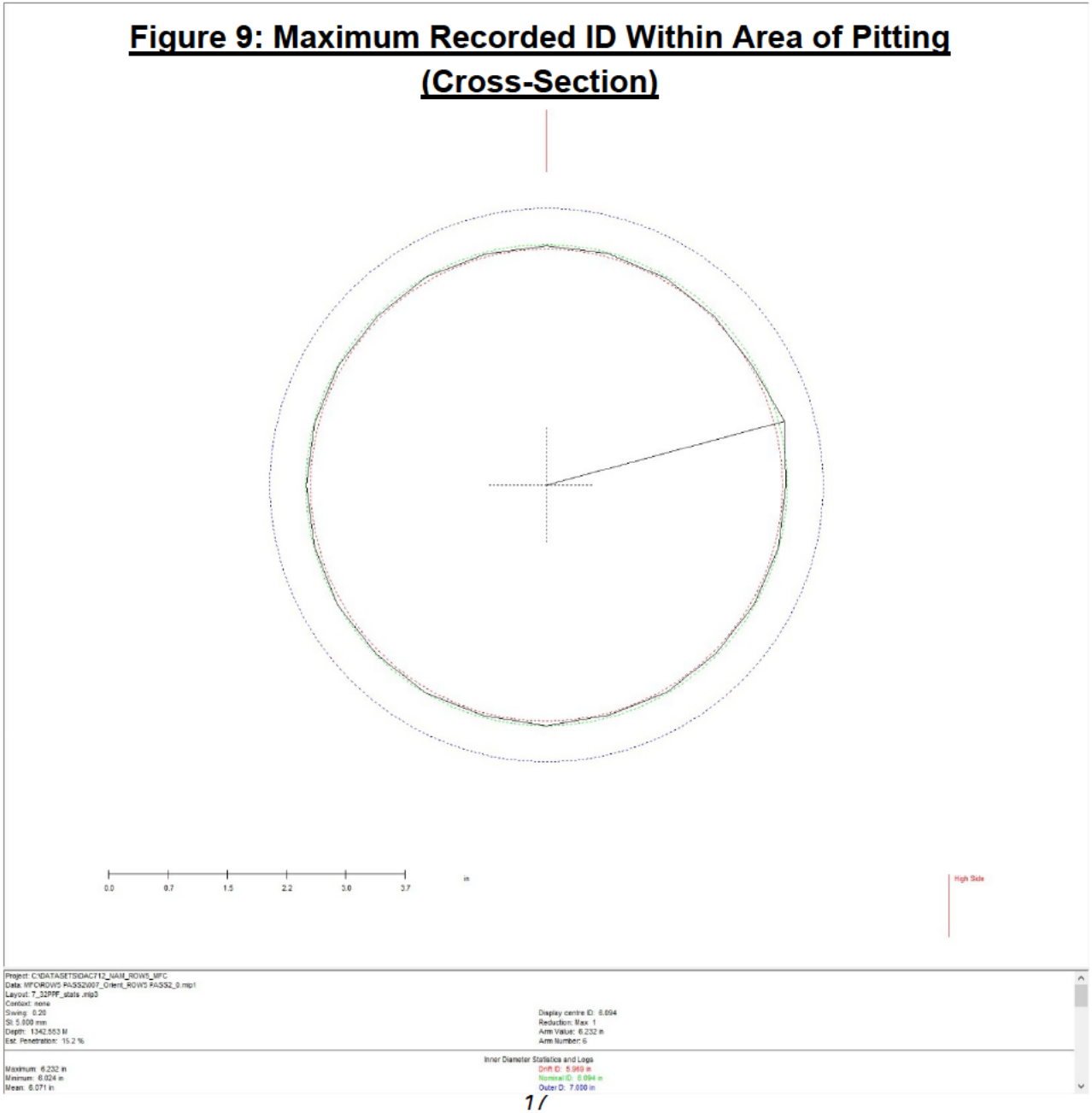
Figure 9: Maximum Recorded ID Within Area of Pitting (Cross-Section)



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Survey Date:	26/06/2021	Survey	MFC-24 Extended	Job ID:	DAC712

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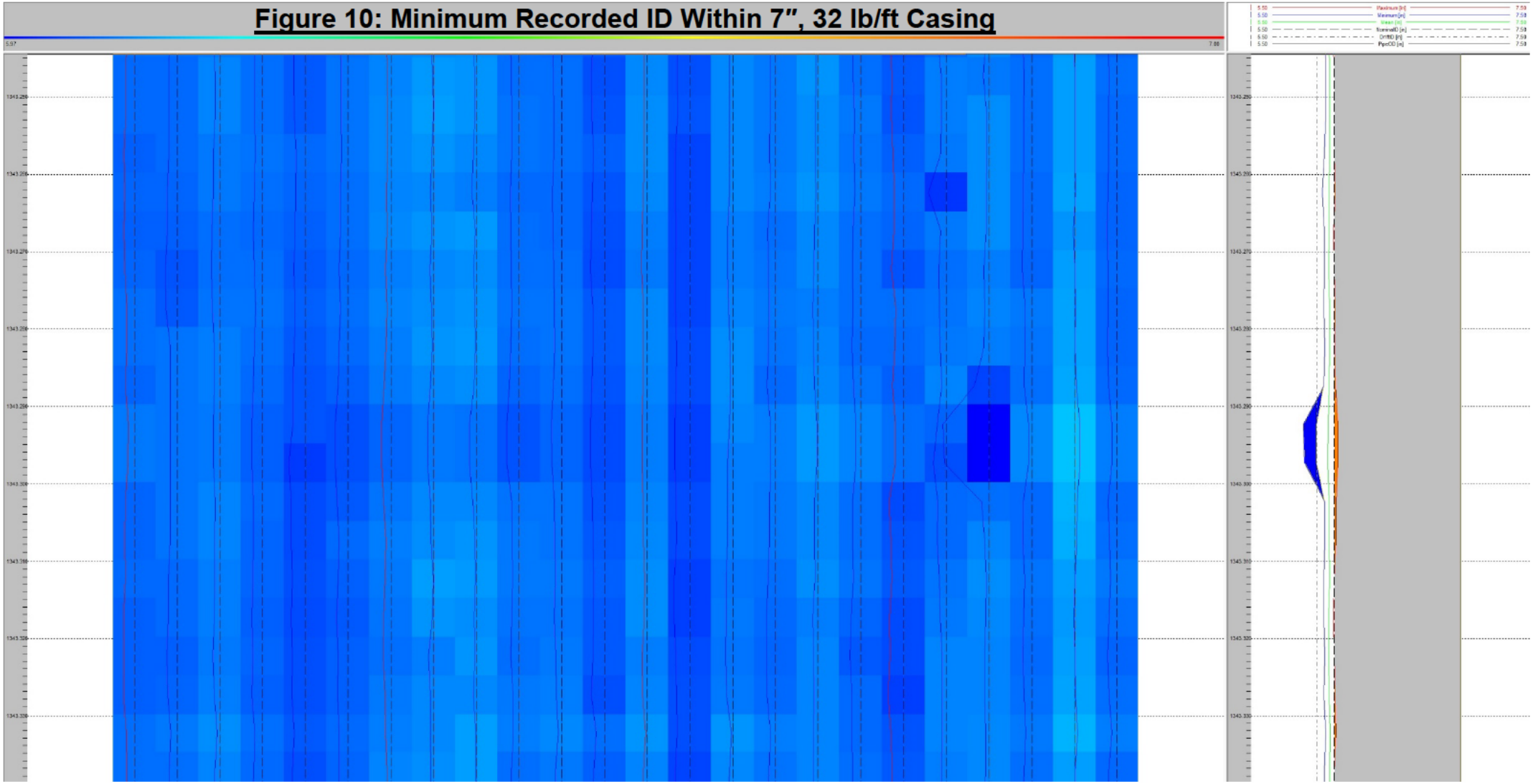
Figure 10: Minimum Recorded ID Within 7", 32 lb/ft Casing



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Survey Date:	26/06/2021	Survey	MFC-24 Extended	Job ID:	DAC712

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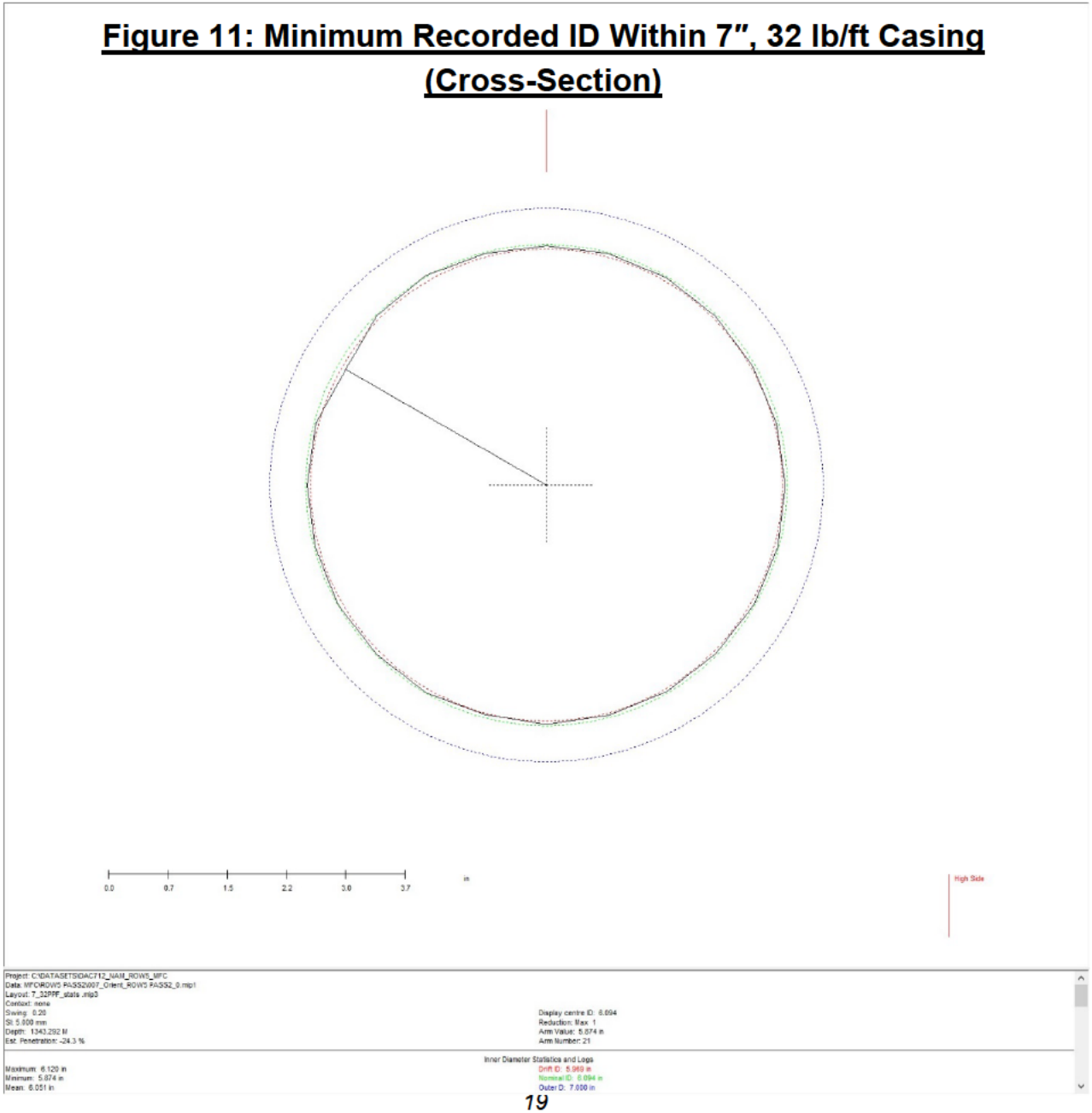
Figure 11: Minimum Recorded ID Within 7", 32 lb/ft Casing (Cross-Section)

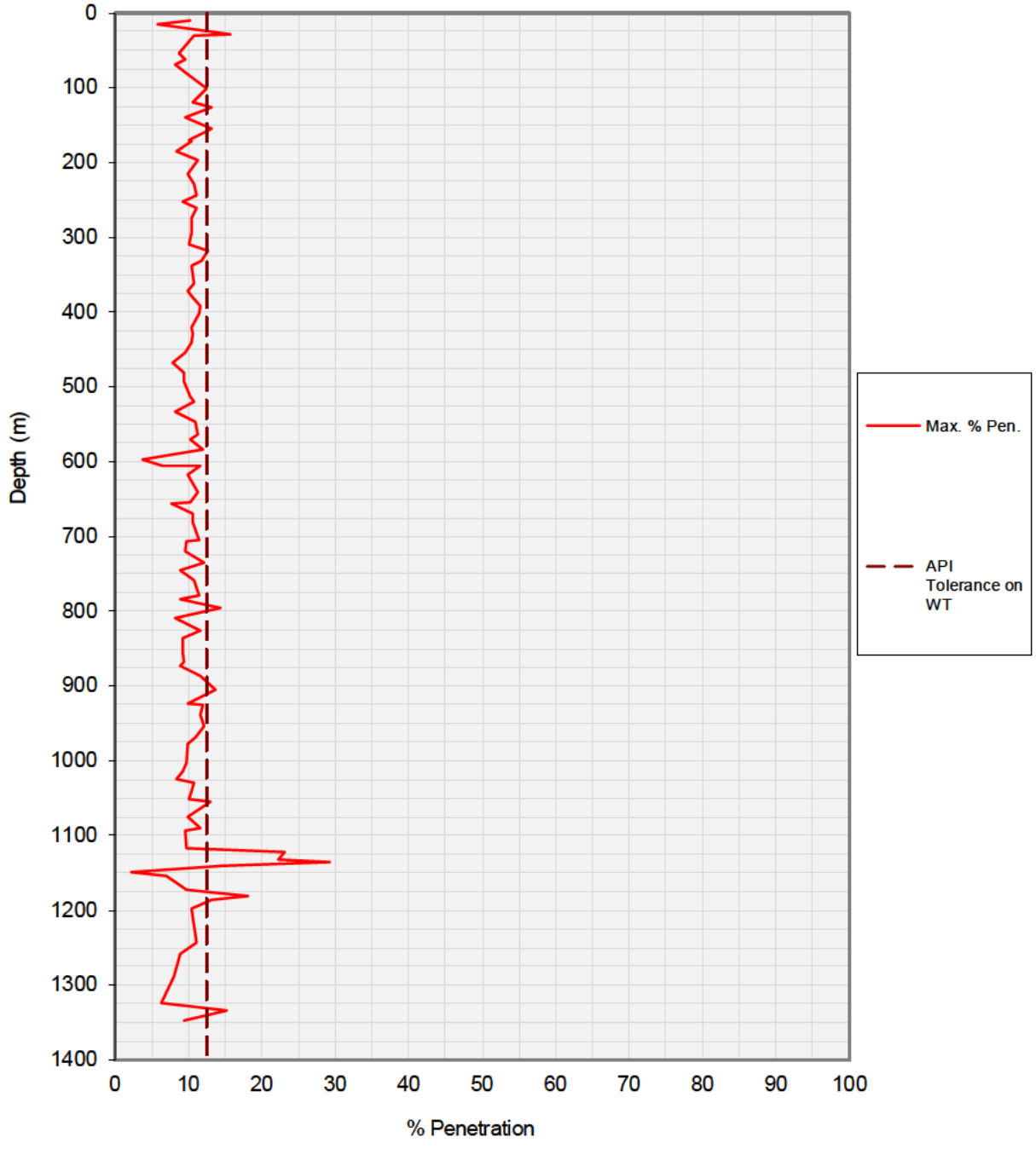


4. Statistical Analysis

(Note: All values from statistical analysis are based on the maximum, mean & minimum recorded ID's from each tubing or casing joint)

Client:	NAM	Well No.:	ROSSUM-WEERSELO-5	Field:	ROSSUM-WEERSELO
Survey Date:	26/06/2021	Survey	MFC-24 Extended	Job ID:	DAC712

Max. Percentage Penetration per Joint vs. Depth Plot



Client:	NAM	Well No.:	ROSSUM-WEERSELO-5	Field:	ROSSUM-WEERSELO
Survey Date:	26/06/2021	Survey	MFC-24 Extended	Job ID:	DAC712

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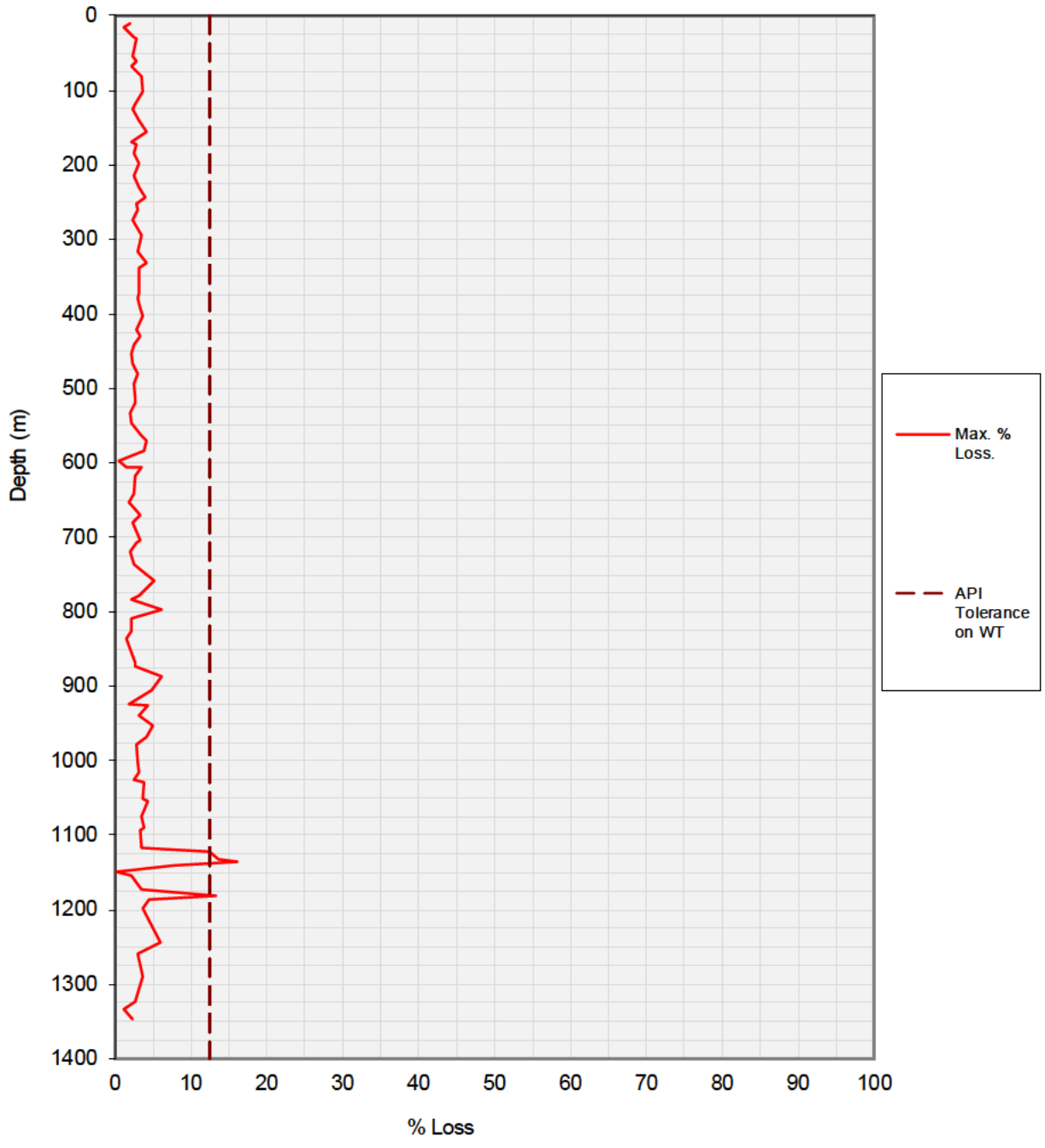
Max. Percentage Circumferential Wall Loss per Joint vs. Depth Plot



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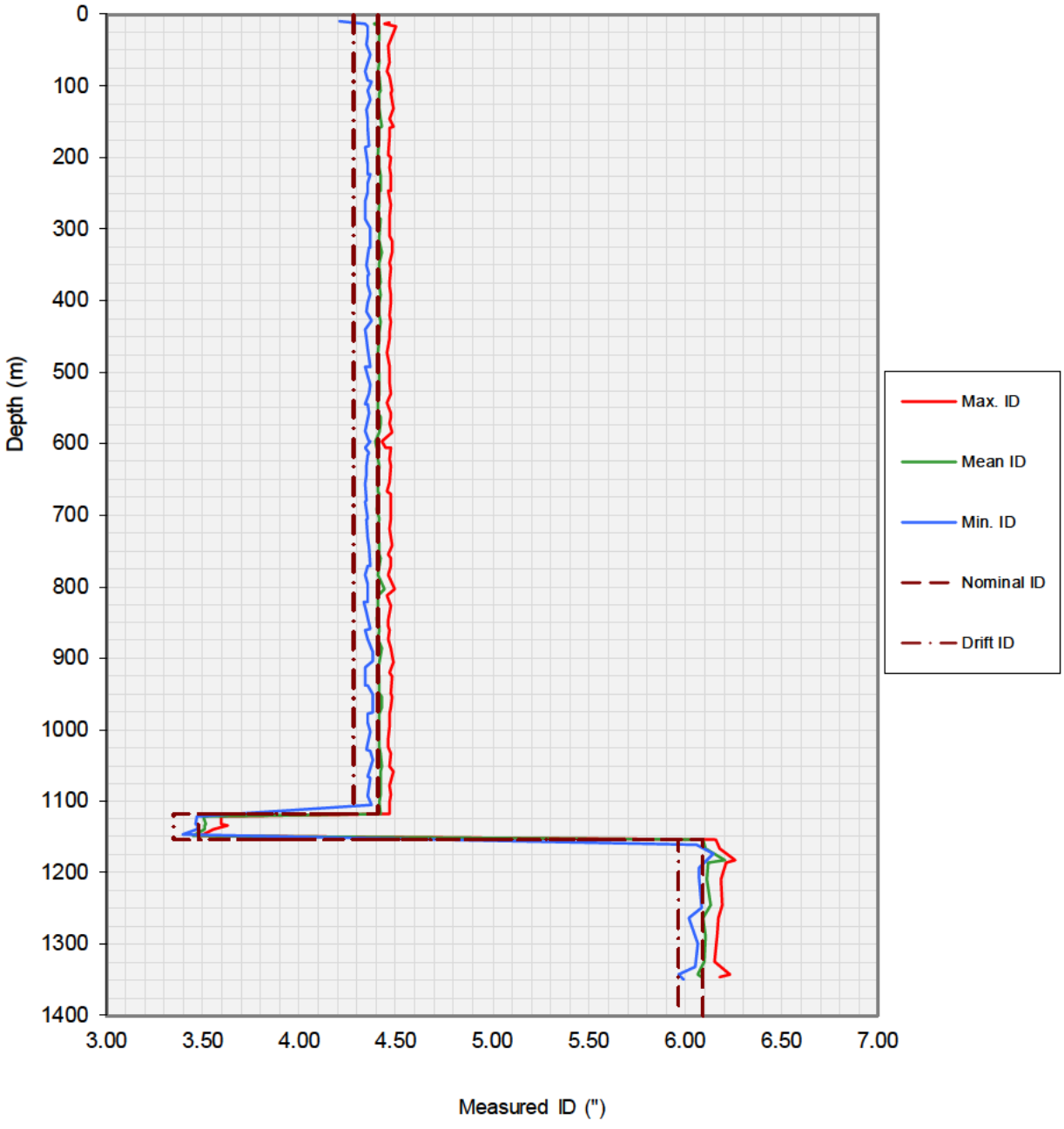
Measured ID per Joint vs. Depth Plot



Client:	NAM	Well No.:	ROSSUM-WEERSELO-5	Field:	ROSSUM-WEERSELO
Survey Date:	26/06/2021	Survey	MFC-24 Extended	Job ID:	DAC712

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Client: NAM
Well: ROW-5
Survey Date: 26th June 2021

Tubulars Surveyed:	**5", 15 lb/ft**	**Nom. ID: 4.408**	**Drift ID: 4.283**	**Nom. OD: 5.000**
	4", 10.9 lb/ft	**Nom. ID: 3.476**	**Drift ID: 3.351**	**Nom. OD: 4.000**
	7", 32 lb/ft	**Nom. ID: 6.094**	**Drift ID: 5.969**	**Nom. OD: 7.000**

Max. % Penetration	0 - 20%	20 - 40%	40 - 50%	50 - 100%
Max. % Circumferential Loss	0 - 10%	10-20 %	20 - 25 %	25 - 100 %

Ref.	Top (m)	Bottom (m)	Length (m)	Max. ID (")	Dep. Max. (m)	Max. Pen. (%)	Max. Loss (%)	Min. ID (")	Dep. Min. (m)	Mean ID (")	Tubular OD (")	Completion Item
1	9.53	11.83	2.30	4.469	10.36	10.3	1.9	4.209	9.53	4.408	5.000	Pup joint
2	11.96	15.47	3.51	4.442	13.31	5.7	1.1	4.340	12.16	4.384	5.000	Pup joint
3	15.63	28.63	13.00	4.501	16.72	15.7	2.4	4.356	16.14	4.414	5.000	
4	28.78	41.60	12.83	4.472	34.72	10.8	2.8	4.357	29.19	4.415	5.000	
5	41.76	54.53	12.77	4.460	42.38	8.8	2.4	4.348	42.26	4.410	5.000	
6	54.95	67.12	12.18	4.465	65.70	9.6	2.8	4.370	55.40	4.416	5.000	
7	67.54	80.43	12.89	4.457	79.00	8.3	2.2	4.338	79.96	4.406	5.000	
8	80.71	92.97	12.26	4.466	86.10	9.8	3.4	4.356	92.52	4.417	5.000	
9	93.25	105.79	12.54	4.482	105.58	12.5	3.6	4.371	93.68	4.421	5.000	
10	106.04	118.93	12.89	4.471	109.24	10.6	2.6	4.351	106.56	4.414	5.000	
11	119.26	132.08	12.82	4.486	131.76	13.2	2.3	4.369	119.32	4.413	5.000	
12	132.28	145.12	12.85	4.465	145.08	9.6	3.1	4.344	132.81	4.418	5.000	
13	145.29	157.63	12.34	4.486	157.20	13.2	4.1	4.356	145.69	4.424	5.000	
14	157.80	170.75	12.95	4.468	157.88	10.1	2.1	4.356	158.36	4.413	5.000	
15	170.98	183.86	12.89	4.470	171.54	10.5	2.8	4.361	183.46	4.415	5.000	
16	184.07	196.43	12.36	4.458	196.41	8.4	2.5	4.343	184.50	4.408	5.000	
17	196.60	209.53	12.93	4.475	200.14	11.3	3.1	4.357	209.17	4.415	5.000	
18	209.75	222.72	12.97	4.467	214.08	10.0	2.6	4.352	222.27	4.415	5.000	
19	222.91	234.70	11.79	4.472	224.57	10.8	3.1	4.369	223.22	4.417	5.000	
20	234.91	246.63	11.73	4.474	246.29	11.1	3.9	4.352	235.42	4.422	5.000	
21	247.06	259.97	12.91	4.463	247.15	9.3	2.8	4.351	247.44	4.415	5.000	
22	260.13	273.15	13.02	4.474	265.23	11.1	3.0	4.343	260.16	4.414	5.000	
23	273.31	286.18	12.88	4.470	282.12	10.5	2.3	4.338	285.79	4.405	5.000	
24	286.34	299.28	12.94	4.470	286.40	10.5	3.4	4.365	299.21	4.419	5.000	
25	299.46	311.94	12.48	4.468	309.98	10.1	3.1	4.370	299.93	4.416	5.000	
26	312.35	324.89	12.54	4.483	315.72	12.7	2.9	4.365	324.74	4.417	5.000	
27	325.07	337.34	12.28	4.478	332.28	11.8	4.1	4.360	325.36	4.424	5.000	
28	337.51	350.24	12.73	4.470	347.28	10.5	3.2	4.348	349.88	4.414	5.000	

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Ref.	Top (m)	Bottom (m)	Length (m)	Max. ID (")	Dep. Max. (m)	Max. Pen. (%)	Max. Loss (%)	Min. ID (")	Dep. Min. (m)	Mean ID (")	Tubular OD (")	Completion Item
29	350.45	363.38	12.94	4.472	353.78	10.8	3.1	4.361	363.37	4.415	5.000	
30	363.55	376.20	12.65	4.467	373.29	10.0	3.1	4.357	364.13	4.418	5.000	
31	376.43	389.43	13.00	4.470	379.47	10.5	2.9	4.356	377.06	4.412	5.000	
32	389.70	401.47	11.77	4.477	391.33	11.7	3.3	4.369	389.85	4.419	5.000	
33	401.89	414.77	12.89	4.476	402.94	11.5	3.6	4.356	402.41	4.417	5.000	
34	414.94	427.89	12.94	4.470	421.03	10.5	2.8	4.347	415.48	4.413	5.000	
35	428.06	439.86	11.80	4.471	429.07	10.6	3.4	4.374	428.61	4.420	5.000	
36	440.08	453.03	12.95	4.470	444.49	10.5	2.4	4.342	440.59	4.413	5.000	
37	453.22	466.00	12.78	4.465	453.63	9.6	2.2	4.347	453.23	4.412	5.000	
38	466.16	479.09	12.94	4.455	473.21	7.9	2.3	4.351	466.79	4.409	5.000	
39	479.45	492.31	12.85	4.464	490.52	9.5	3.0	4.365	491.84	4.409	5.000	
40	492.49	505.22	12.72	4.464	503.09	9.5	2.4	4.338	493.03	4.411	5.000	
41	505.63	518.40	12.77	4.469	513.52	10.3	2.7	4.365	518.08	4.415	5.000	
42	518.56	531.53	12.97	4.472	531.06	10.8	2.7	4.358	531.11	4.412	5.000	
43	531.74	544.70	12.97	4.457	542.62	8.3	2.0	4.343	544.29	4.406	5.000	
44	544.89	557.24	12.35	4.473	557.24	11.0	2.2	4.351	545.40	4.409	5.000	
45	557.62	569.89	12.28	4.475	562.32	11.3	3.5	4.361	557.77	4.419	5.000	
46	570.16	583.04	12.88	4.469	571.07	10.3	4.2	4.338	582.62	4.418	5.000	
47	583.32	595.98	12.65	4.479	584.20	12.0	3.8	4.360	595.97	4.415	5.000	
48	596.15	597.28	1.12	4.430	597.15	3.7	0.4	4.365	597.28	4.391	5.000	Pup joint
49	597.40	601.57	4.17	3.953	600.53	-	-	3.918	597.94	3.930	5.000	Flow coupling
50	601.67	602.22	0.55	4.226	601.73	-	-	3.802	601.80	3.875	5.000	Safety valve
51	602.41	604.73	2.32	3.967	603.39	-	-	3.918	602.79	3.936	5.000	Flow coupling
52	604.91	605.41	0.50	4.446	605.13	6.4	1.5	4.338	605.41	4.402	5.000	Pup joint
53	605.50	616.63	11.13	4.477	605.93	11.7	3.5	4.361	613.20	4.411	5.000	
54	616.78	629.70	12.92	4.467	622.69	10.0	2.7	4.351	616.79	4.409	5.000	
55	629.86	642.57	12.72	4.475	630.08	11.3	2.4	4.347	630.00	4.413	5.000	
56	642.99	655.71	12.72	4.469	653.58	10.3	1.8	4.347	643.45	4.406	5.000	
57	655.98	668.34	12.36	4.454	666.38	7.8	2.2	4.343	656.47	4.409	5.000	
58	668.55	679.92	11.37	4.471	670.44	10.6	3.3	4.350	679.86	4.416	5.000	
59	680.34	692.81	12.47	4.471	691.73	10.6	2.3	4.343	680.86	4.402	5.000	
60	693.09	705.76	12.67	4.476	704.79	11.5	3.3	4.356	705.23	4.414	5.000	
61	705.96	718.57	12.61	4.466	718.29	9.8	2.7	4.350	705.99	4.409	5.000	
62	718.77	731.65	12.89	4.465	718.85	9.6	1.9	4.353	731.36	4.405	5.000	
63	731.87	744.32	12.45	4.480	743.04	12.2	2.5	4.360	743.94	4.413	5.000	
64	744.50	757.30	12.80	4.461	755.55	9.0	3.5	4.360	744.51	4.412	5.000	

Client:	NAM	Well No.:	ROSSUM-WEERSELO-5	Field:	ROSSUM-WEERSELO
Survey Date:	26/06/2021	Survey	MFC-24 Extended	Job ID:	DAC712

EXPRO

Ref.	Top (m)	Bottom (m)	Length (m)	Max. ID (")	Dep. Max. (m)	Max. Pen. (%)	Max. Loss (%)	Min. ID (")	Dep. Min. (m)	Mean ID (")	Tubular OD (")	Completion Item
65	757.50	770.55	13.05	4.472	759.80	10.8	5.1	4.369	770.54	4.420	5.000	
66	770.72	782.32	11.60	4.476	771.68	11.5	3.2	4.352	771.26	4.417	5.000	
67	782.52	795.34	12.82	4.461	784.03	9.0	2.1	4.338	783.09	4.408	5.000	
68	795.53	808.46	12.94	4.493	803.30	14.4	6.2	4.356	795.54	4.439	5.000	
69	808.64	821.52	12.88	4.457	812.84	8.3	2.1	4.352	821.27	4.408	5.000	
70	821.70	834.17	12.47	4.477	826.21	11.7	2.1	4.335	822.00	4.409	5.000	
71	834.36	847.22	12.87	4.463	846.76	9.3	1.4	4.347	834.97	4.403	5.000	
72	847.38	859.65	12.27	4.463	855.27	9.3	2.2	4.365	859.33	4.412	5.000	
73	859.81	872.47	12.66	4.464	861.73	9.5	2.7	4.343	860.21	4.414	5.000	
74	872.88	885.47	12.59	4.461	872.99	9.0	2.6	4.352	873.28	4.410	5.000	
75	885.75	896.41	10.66	4.477	886.32	11.7	6.2	4.383	891.63	4.429	5.000	
76	900.41	911.85	11.44	4.489	905.42	13.7	4.9	4.378	903.23	4.416	5.000	
77	912.13	924.91	12.79	4.467	921.06	10.0	1.9	4.338	912.58	4.406	5.000	
78	925.20	937.93	12.73	4.479	926.06	12.0	4.3	4.344	937.51	4.416	5.000	
79	938.11	951.14	13.02	4.477	949.45	11.7	3.2	4.356	938.62	4.415	5.000	
80	951.41	963.95	12.54	4.480	955.09	12.2	4.9	4.378	951.67	4.429	5.000	
81	964.22	976.47	12.25	4.473	969.35	11.0	4.1	4.384	975.73	4.424	5.000	
82	976.61	989.51	12.90	4.467	977.63	10.0	2.8	4.352	977.18	4.412	5.000	
83	989.66	1002.70	13.04	4.466	996.43	9.8	3.0	4.352	989.68	4.415	5.000	
84	1002.97	1015.78	12.82	4.463	1012.40	9.3	3.1	4.370	1003.48	4.415	5.000	
85	1016.06	1028.42	12.37	4.458	1024.52	8.4	2.5	4.347	1028.30	4.415	5.000	
86	1028.59	1041.26	12.68	4.472	1033.52	10.8	3.8	4.369	1029.01	4.420	5.000	
87	1041.54	1053.39	11.85	4.468	1052.08	10.1	3.7	4.378	1041.96	4.424	5.000	
88	1053.53	1066.11	12.58	4.485	1059.39	13.0	4.3	4.356	1065.92	4.419	5.000	
89	1066.54	1078.82	12.29	4.467	1078.54	10.0	3.5	4.365	1067.00	4.422	5.000	
90	1079.08	1091.78	12.70	4.477	1091.29	11.7	3.8	4.361	1080.23	4.423	5.000	
91	1092.06	1104.24	12.18	4.465	1102.49	9.6	3.3	4.356	1092.50	4.416	5.000	
92	1104.66	1117.59	12.93	4.466	1117.47	9.8	3.4	4.374	1104.66	4.420	5.000	
93	1117.66	1117.94	0.29	3.497	1117.74	-	-	3.468	1117.92	3.480	4.000	X-over
94	1118.10	1122.16	4.05	3.597	1121.54	23.1	12.4	3.469	1122.16	3.503	4.000	Pup joint
95	1122.26	1123.97	1.72	5.580	1123.43	-	-	3.414	1122.26	4.116	4.000	SPM
96	1124.14	1132.67	8.53	3.593	1132.01	22.3	13.7	3.464	1132.36	3.511	4.000	
97	1132.75	1134.44	1.69	5.361	1133.90	-	-	3.405	1132.77	4.098	4.000	SPM
98	1134.54	1138.90	4.36	3.629	1134.81	29.2	16.1	3.475	1134.57	3.510	4.000	Pup joint
99	1138.95	1139.17	0.23	3.644	1139.03	-	-	3.351	1139.17	3.418	4.000	Nipple
100	1139.36	1143.58	4.22	3.552	1140.12	14.5	7.6	3.469	1139.38	3.509	4.000	Pup joint
101	1143.74	1147.20	3.46	4.435	1144.73	-	-	3.473	1147.10	4.228	4.000	Anchor / packer
102	1147.34	1151.69	4.35	3.488	1149.18	2.3	0.1	3.394	1147.45	3.446	4.000	Pup joint
103	1151.84	1153.17	1.33	5.985	1153.17	-	-	3.349	1152.91	3.518	7.000	Nipple / WEG assembly
104	1153.29	1161.04	7.75	6.158	1154.13	7.1	2.2	6.048	1160.87	6.090	7.000	
105	1161.36	1172.85	11.49	6.182	1167.37	9.7	3.4	6.061	1161.70	6.107	7.000	

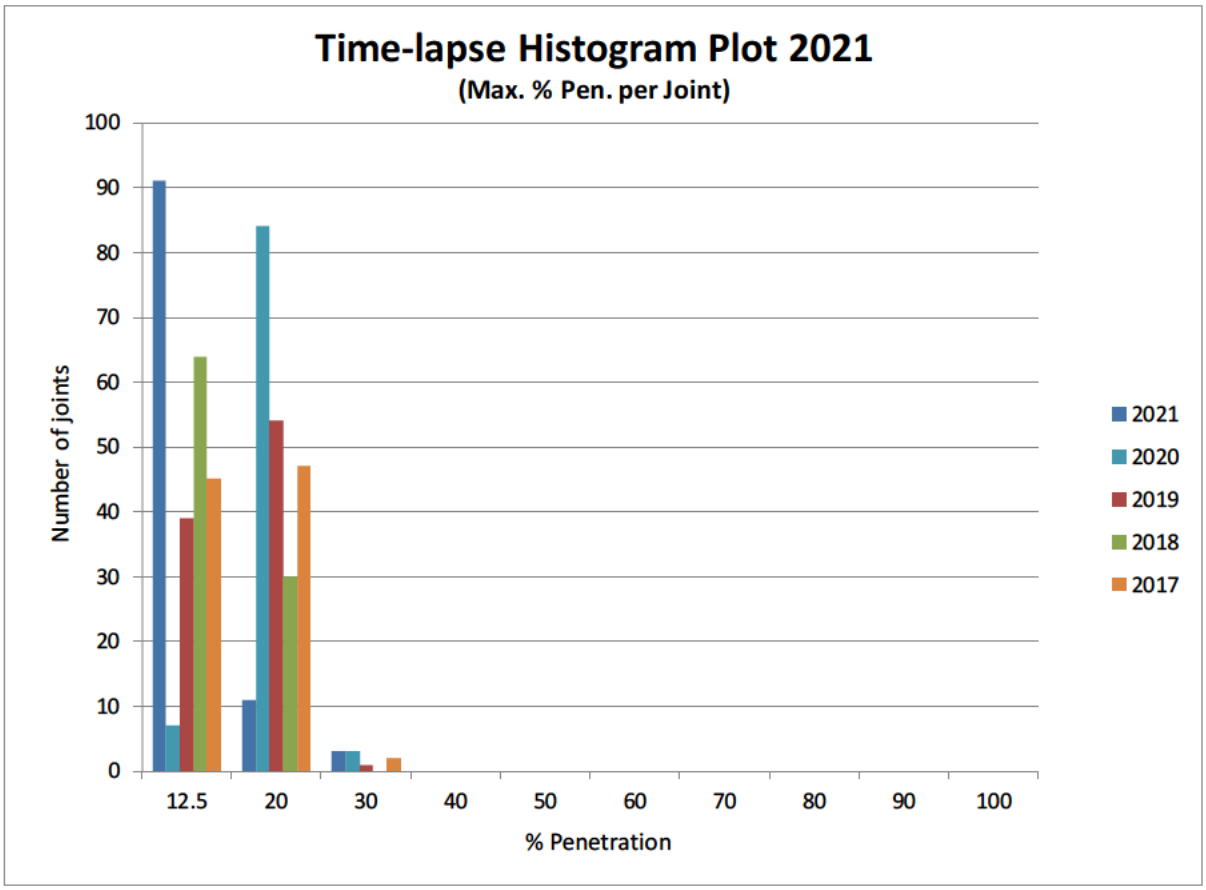
Client:	NAM	Well No.:	ROSSUM-WEERSELO-5	Field:	ROSSUM-WEERSELO
Survey Date:	26/06/2021	Survey	MFC-24 Extended	Job ID:	DAC712

EXPRO

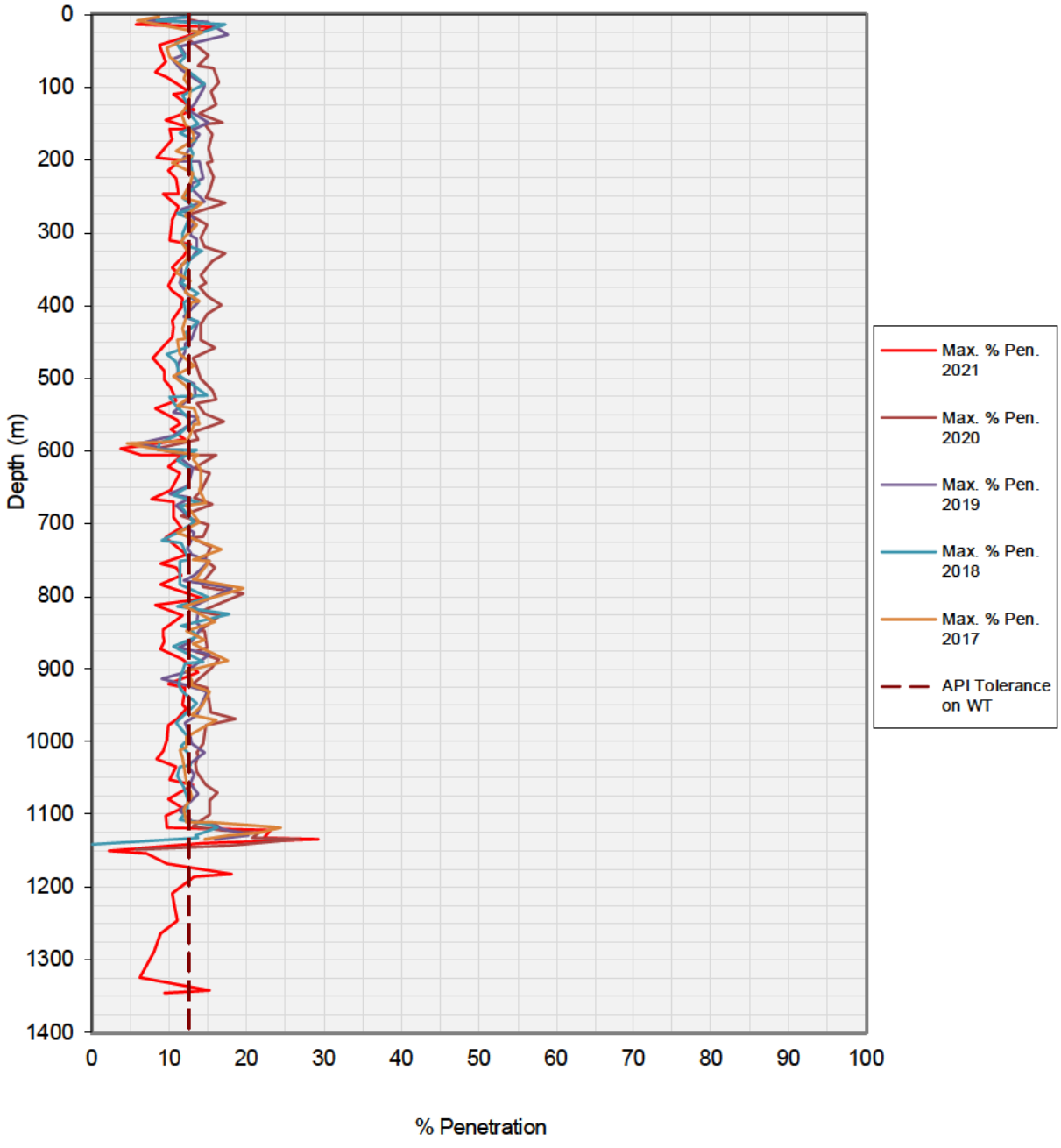
Ref.	Top (m)	Bottom (m)	Length (m)	Max. ID (")	Dep. Max. (m)	Max. Pen. (%)	Max. Loss (%)	Min. ID (")	Dep. Min. (m)	Mean ID (")	Tubular OD (")	Completion Item
106	1173.32	1184.74	11.42	6.258	1182.77	18.1	13.2	6.147	1173.89	6.204	7.000	
107	1185.21	1197.13	11.92	6.214	1185.84	13.2	4.5	6.075	1193.20	6.118	7.000	
108	1197.46	1209.15	11.70	6.188	1208.98	10.4	3.7	6.070	1208.22	6.111	7.000	
109	1209.37	1220.08	10.71	6.492	1214.73	-	-	6.030	1211.66	6.116	7.000	Perforated joint
110	1220.28	1231.76	11.48	6.429	1226.96	-	-	6.050	1226.58	6.116	7.000	Perforated joint
111	1231.99	1242.87	10.89	6.364	1232.82	-	-	6.057	1234.02	6.113	7.000	Perforated joint
112	1243.14	1248.84	5.69	6.194	1245.50	11.0	5.9	6.085	1248.41	6.132	7.000	
113	1248.93	1254.06	5.13	5.262	1248.94	-	-	3.009	1252.46	3.911	7.000	Packer / nipple assembly
114	1257.72	1265.80	8.07	6.175	1264.12	8.9	3.0	6.022	1264.08	6.090	7.000	
115	1266.27	1276.68	10.41	6.357	1276.52	-	-	6.032	1276.67	6.086	7.000	Perforated joint
116	1276.86	1288.25	11.39	6.534	1277.67	-	-	5.986	1285.16	6.108	7.000	Perforated joint
117	1288.47	1299.79	11.32	6.167	1289.08	8.1	3.7	6.066	1299.69	6.107	7.000	
118	1300.09	1311.56	11.47	6.554	1307.64	-	-	5.999	1309.16	6.097	7.000	Perforated joint
119	1311.77	1322.35	10.58	6.467	1312.57	-	-	6.003	1313.25	6.099	7.000	Perforated joint
120	1322.82	1333.31	10.49	6.151	1324.80	6.3	2.7	6.052	1332.07	6.101	7.000	
121	1333.75	1345.45	11.70	6.232	1342.55	15.2	1.2	5.967	1343.29	6.069	7.000	
122	1345.70	1351.82	6.12	6.179	1346.33	9.4	2.4	5.995	1349.94	6.087	7.000	Partially logged joint

Client:	NAM	Well No.:	ROSSUM-WEERSELO-5	Field:	ROSSUM-WEERSELO
Survey Date:	26/06/2021	Survey	MFC-24 Extended	Job ID:	DAC712

Total number of joints logged: 105					
91	Joints with Max. % Penetrations Between	0	and	13	%
11	Joints with Max. % Penetrations Between	12.5	and	20	%
3	Joints with Max. % Penetrations Between	20	and	30	%
0	Joints with Max. % Penetrations Between	30	and	40	%
0	Joints with Max. % Penetrations Between	40	and	50	%
0	Joints with Max. % Penetrations Between	50	and	60	%
0	Joints with Max. % Penetrations Between	60	and	70	%
0	Joints with Max. % Penetrations Between	70	and	80	%
0	Joints with Max. % Penetrations Between	80	and	90	%
0	Joints with Max. % Penetrations Between	90	and	100	%

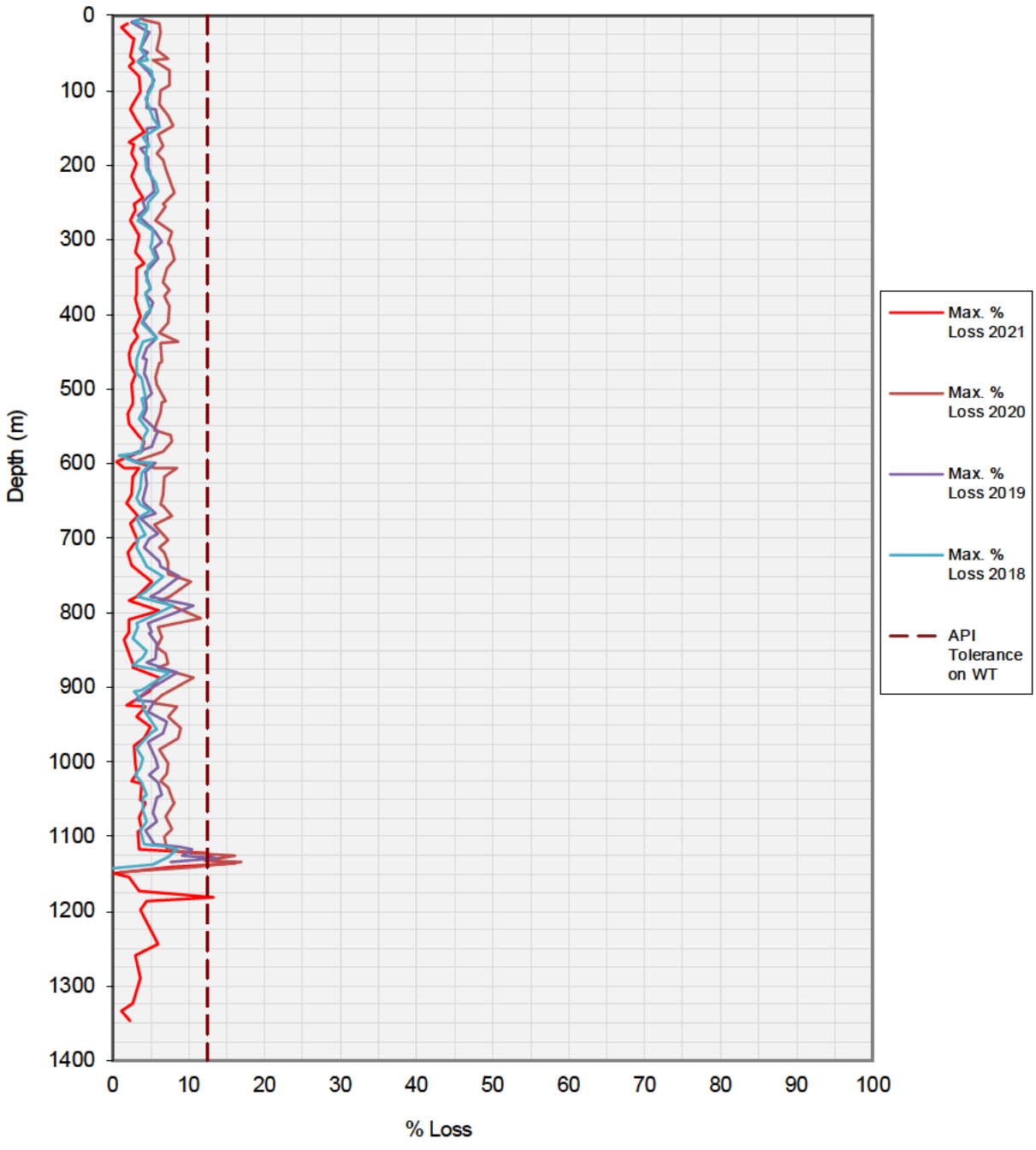


Time-lapse Max. Percentage Penetration per Joint vs. Depth Plot

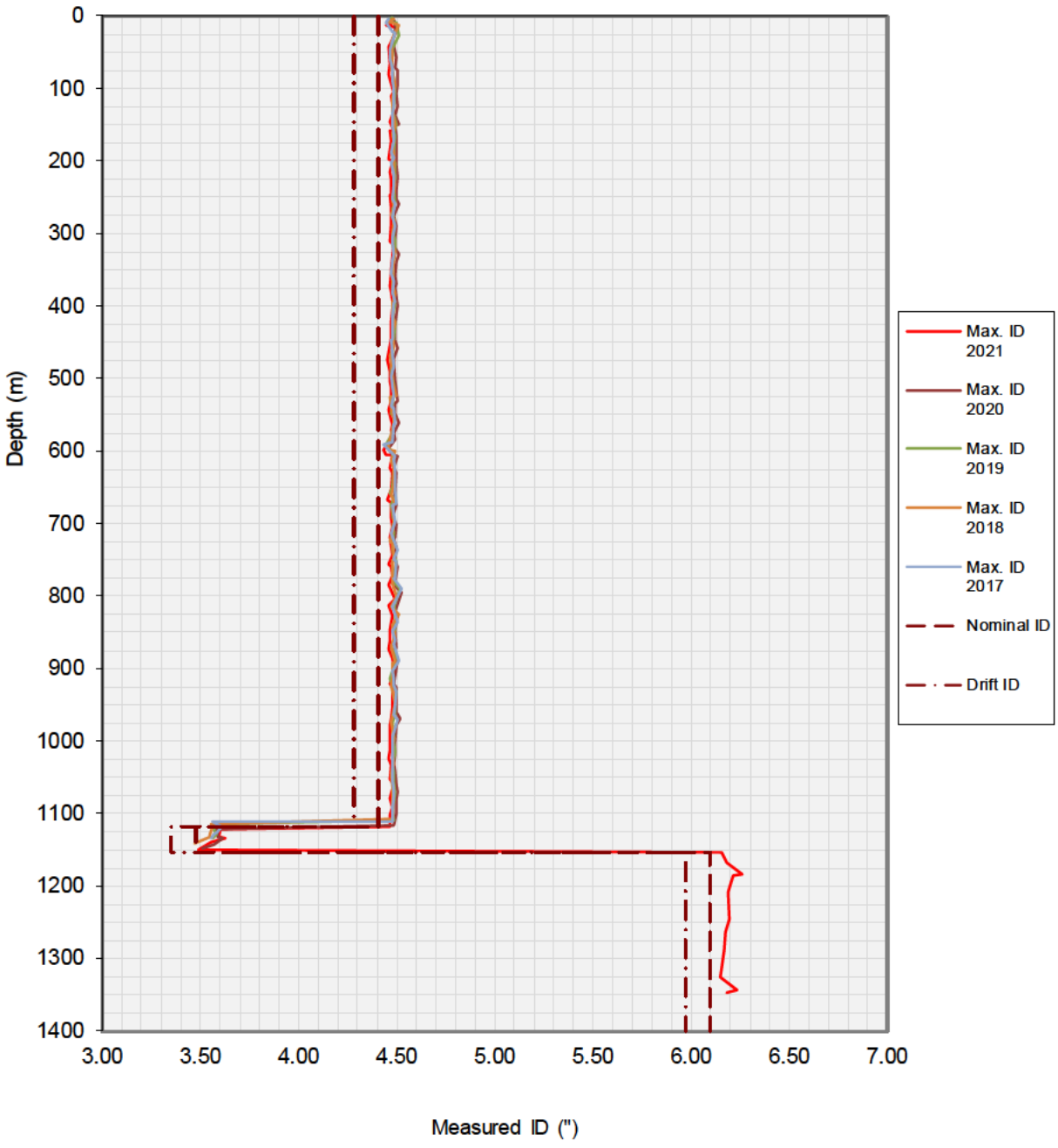


Client:	NAM	Well No.:	ROSSUM-WEERSELO-5	Field:	ROSSUM-WEERSELO
Survey Date:	26/06/2021	Survey	MFC-24 Extended	Job ID:	DAC712

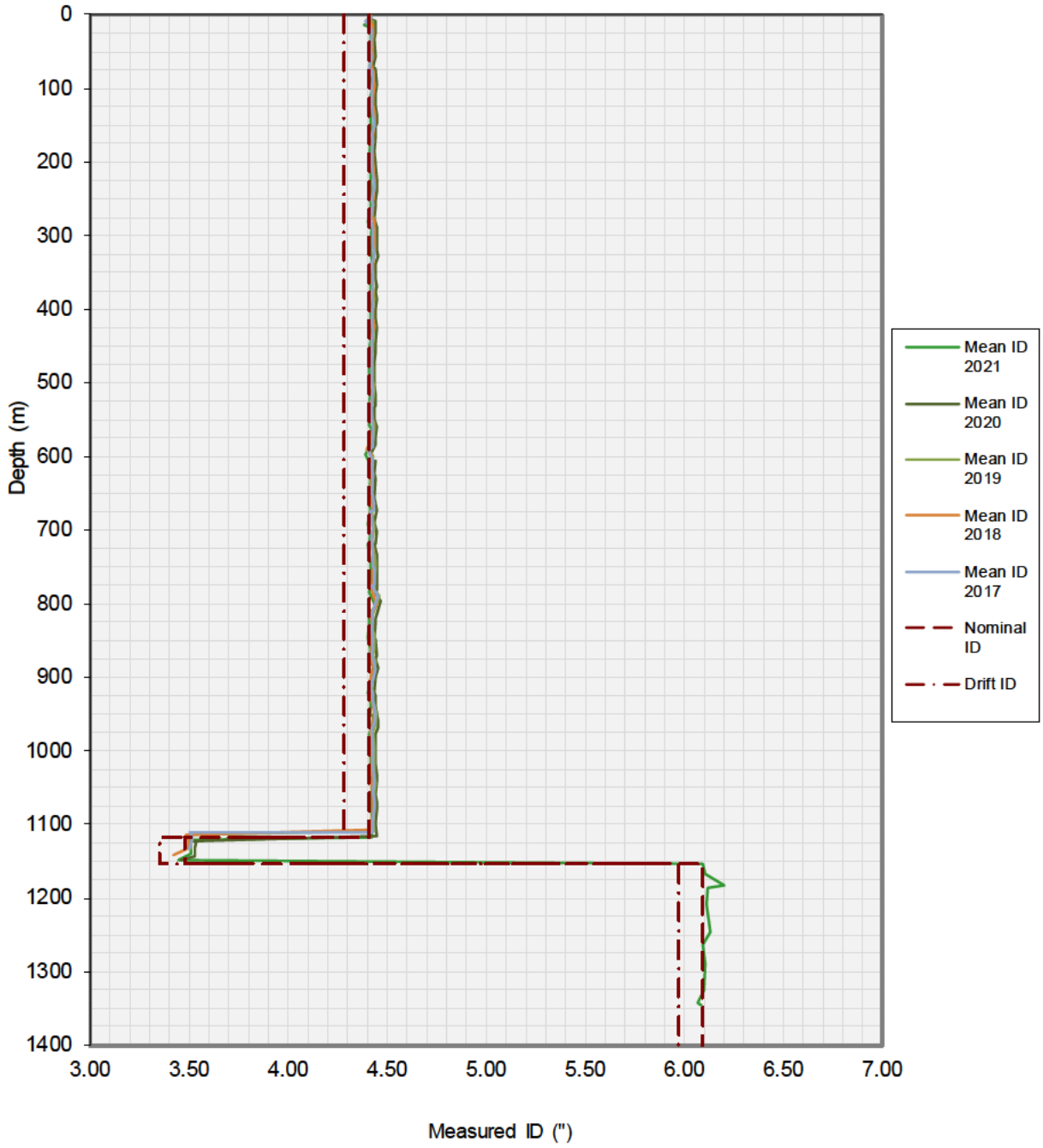
Max. Percentage Circumferential Wall Loss per Joint vs. Depth Plot



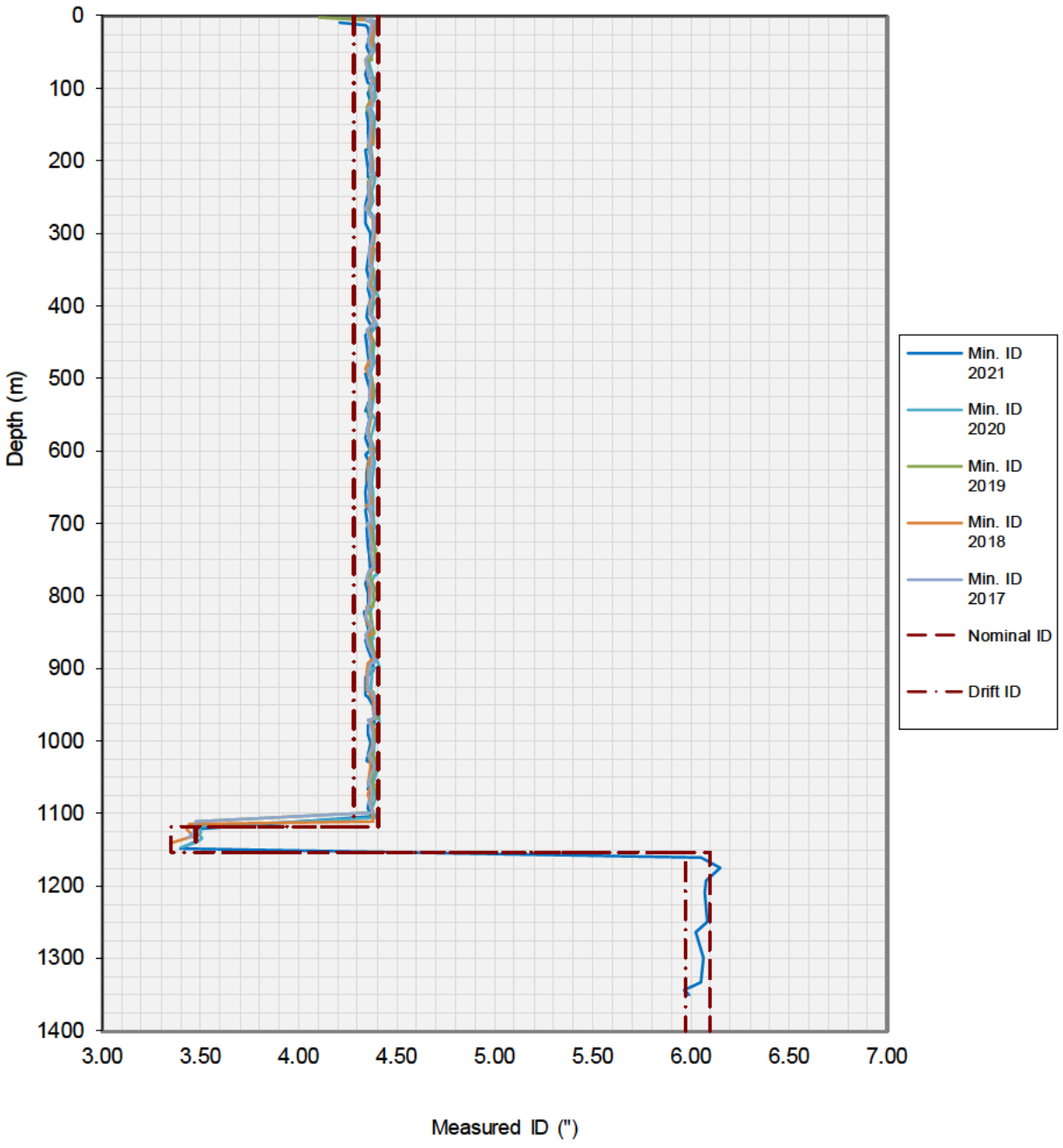
Time-lapse Maximum ID per Joint vs. Depth Plot



Time-lapse Mean ID per Joint vs. Depth Plot



Time-lapse Minimum ID per Joint vs. Depth Plot



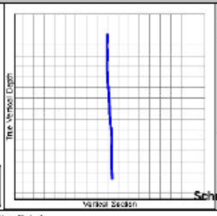
5. Well & Survey Information

ROW- 5

UWI: 110000740766
Site: ROSSUM-WEERSELO-5
Well Type: Development
Completion Type: Single
Well Fluid Type: Water
Lift Type: No artificial lift
Original Spud Date: 04/06/1972
Kick Off Date: 04/06/1972
H2S Present: Y
For more info see OpenWells/iWellfile
All depths Top unless followed by "b" indicating Base

Common Wellbore Name: ROW- 5
MD KO: 0.00m
TVD KO: 0.00m
MD Bottom Hole: 2,047.00m
Reason:
Tree Cap Connection: 6.875" 4G ACME
Working Press: 344.7372bar
Event Start: 20/04/2021
End Date: 23/04/2021

Lat: 52° 22' 7.722 Nong: 6° 55' 18.823 E
North: 487,763.59m East: 259,474.05m



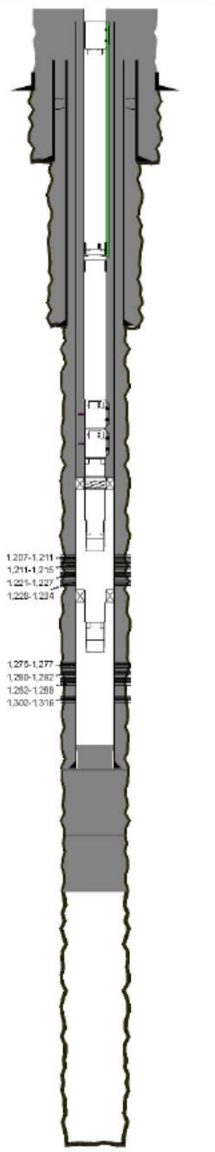
Wellhead Make: Cameron

Component Ref	Install Date	Removal Date
STAN	04/02/1987 04/02/1987	

MAASP A: 195.0000bar MAASP B: 9.0000bar
MAASP C: 4.0000bar MAASP D:
Ground Level: 23.18m
Max Dev: 5.50° Max Dogleg: 0.908°/10m

Schematic RDL: DFE @ 29.46m (Drill Floor Elevation)(default)

Casing Scheme				Hole Section Details				Tubing Data
Description	Top(m)	MD(m)	TVD(m)	Description	Top MD(m)	Base MD(m)	Date	Description
	7.44	36.34	36.34	22	36.34	253.00	05/06/1972	
	6.94	250.66	250.68	14.75	253.00	808.00	10/06/1972	
	6.94	805.00	804.46	9.625	808.00	2,047.00	04/07/1972	
	6.43	1,382.07	1,379.70					



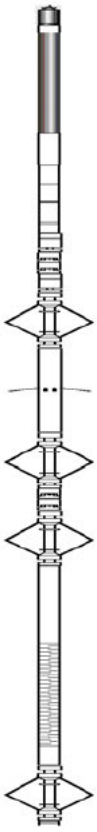
MD (m)	TVD (m)	Dev (°)	Schematic	min ID (in)	max OD (in)	Drift (in)	Length (m)	Description	Comments	HUD / Retrievables
5.87	5.87	0.04		4.000	6.017		0.520	LDO TENTION TBG HGR, 4.00" SA-PROFILE, 5.0" - 15.0# VAM, 5 1/4" RAMS, CL, H1/U		
5.87	5.87							TOC, Casing		
6.43	6.43							TOC, Casing		
6.43	6.43	0.05						CAHG CA 7.0" CSNG x 11.0" CSG.BOWL		
6.88	6.88	0.05		1.750	4.055	0.000	0.010	WLLM,4.000,22-SAMA-4000-I070,SA,8100/8500,H2S	WLLM,4.000,22-SAMA-4000-I070,SA,8100/8500,H2S	
6.89	6.89	0.05		0.000	2.880	0.000	0.010	WLSF,2.750,17-BPV-0068-ISLB,BPV,3600,H2S,N BPV, 2.75" EQ SUB, 8 X 2 mm holes	WLSF,2.750,17-BPV-0068-ISLB,BPV,3600,H2S,N	
6.94	6.94							TOC, Casing		
6.94	6.94							TOC, Casing		
6.94	6.94	0.05						CAHG CA 10.3/4" CSNG x 16.3/4" CSG.BOWL		
36.34b	36.34b	0.23						CONDUCTOR SHOE, 24.0" x 0.5" WT		
66.86	66.86							CGCO 16.0" - 75.0# BTC x 18.0" - 65.0# STC, K55		
250.66b	250.68b	0.29						FLOAT SHOE, 18.0" - 65.0# STC, K55		
304.94	304.94							TOC, Casing		
597.34	597.15	3.77		3.865	5.618		4.500	FLCP, 5.0" - 15.0# VAM x 4 1/2" - 12.6# VAM, 9Cr1Mo		
601.85	601.66	3.78		2.620	3.813	0.000	0.010	WLLM,3.81,910RQ38101,RQ,2010/13320,H2S	WLLM,3.81,910RQ38101,RQ,2010/13320,H2S	
601.86	601.66	3.79		2.600	3.802		0.010	WLSF,3.81,824-76-3812,RQVDES,SK,2200FT,H2S/CO2,E, EQ OPD=130, FULL=165, CLOS=99 bar, O-rings	WLSF,3.81,824-76-3812,RQVDES,SK,2200FT,H2S/CO2,E	
601.84	601.64	3.78		3.813	6.520		0.720	LNSV, 3.813" RRQ-PROFILE, 4.1/2" - 12.6# VAM, 9Cr1Mo		
602.56	602.36	3.79		3.865	5.618		2.700	FLCP, 4.1/2" - 12.6# VAM x 5.0" - 15.0# VAM, 9Cr1Mo		
859.64	859.24							TOC, Casing		
805.00b	804.46b	3.96						CSNG 10 3/4" - 40.5# STC, K55		
1,117.54	1116.14			3.476	5.563		0.250	TGCO 5.0" - 15.0# VAM x 4.0" - 10.9# VAM		
1,122.14	1120.73	5.10		3.306	6.875		1.900	SPMA 4.0" - 10.9# VAM, KBMG, SOUR, 4130, BxB		
1,122.24	1120.83	5.11					0.500	DUMMY VALVE, 1 inch		
1,132.64	1131.18	5.33		3.356	6.875		1.900	SPMA 4.0-10.9 VAM, KBMG, SOUR, 4130		
1,132.74	1131.28	5.33					0.500	Camco Dummy Valve E, 1 inch		
1,138.64	1137.45	5.38		3.313	4.427		0.400	LN, 3.313" X-PROFILE, 4.0" - 10.9# VAM, 9Cr1Mo		
1,143.73	1142.22	5.44		3.750	5.500		0.500	ANCHOR SEAL, SNAT, 81FA47, KBH-22, 4.0" - 10.9# VAM, BU, 4140		
1,143.74	1142.23	5.44		4.000	5.887		1.000	PACKER 7.0", 83FAB47, 5.0" - 18.0# VAM, BD, 4140		
1,146.56	1145.44			3.476	5.563		0.230	TGCO 5.0" - 15.0# VAM x 4.0" - 10.9# VAM		
1,151.70	1150.18	5.46		3.366	4.386		0.830	FLCP, 4.0" - 10.9# VAM, 9Cr1Mo		
1,152.53	1150.96	5.42		3.313	4.427		0.280	LN, 3.313" X-PROFILE, 4.0" - 10.9# VAM, 9Cr1Mo		
1,153.12b	1151.57b	5.41		3.313	5.591		0.310	ENTRY GUIDE 3.313", 4.0" - 10.9# VAM, 9Cr1Mo		
1,250.04	1248.11	5.00		4.000	5.687		1.000	PACKER 7.0", 83FAB47, 5.0" - 18.0# VAM, BD, 4140		1,229.94m, H, Set in dummy
1,253.25	1251.31			2.921	5.563		0.230	TGCO 5.0" - 15.0# VAM x 3.1/2" - 10.2# VAM		
1,258.04	1256.06	5.00		2.760	3.980		0.300	LN, 2.760" X-PROFILE, 3.1/2" - 10.2# VAM, 9Cr1Mo		
1,258.64b	1258.66b	5.00		2.750	3.917		0.300	ENTRY GUIDE 2.75, 3.1/2 VAM, 9Cr1Mo		
1,369.20	1366.86							TOC, Plug		1,358.94m, H, 2.75" dummy + 69 mm gauge cutter 1,358.94m, H, C-SPG survey 1,358.94m, H, reference point X-LN @ 1251m ahTBF 1,359.94m, H, Courier depth. 1,359.94m, H, C-SPG 1,360.94m, H, Bailer run 1,360.94m, H 1,362.94m, H, Courier Depth. 1,363.94m, H, Tov string-end 1,364.94m, H, tov X-1 op 1252 mtr; 1,364.94m, H, 1,364.94m, H 1,367.94m, H, TOV X-1 OP 1251 MTR; 1,369.94m, H, met AM.;
1,382.07b	1379.70b	3.86						FLOAT SHOE, 7.0" - 32.0# VAM, C75		
1,385.00	1382.62							TOC, Plug		
1,500.00	1497.48							TOC, Plug		
2,047.00	2,043.07							WELL TD		

Current User: EUROPE
Date Generated: 03/05/2021
Data QA/QC'd by:
Date QA/QC'd:

Notes:

C&WI v3.0

Client:	NAM	Well No.:	ROSSUM-WEERSELO-5	Field:	ROSSUM-WEERSELO
Survey Date:	26/06/2021	Survey	MFC-24 Extended	Job ID:	DAC712

Sensor	Offset (m)	Schematic	Description	Length (m)	O.D. (in)	Weight (lb)
			CHD-AES (000001) Cable Head	0.32	1.69	2.00
			AGS-001 (219362) Adaptor GO to Sondex	0.11	1.69	1.00
			SBAR-NONE (000002) Sinker Bar	1.52	1.69	77.96
			XTU-002 (215938) Crossover Ultrawire Toolbus to Ultralink	0.48	1.69	6.50
GR	9.59		PGR-020 (11202165) Production Gamma Ray	0.59	1.69	9.50
CCL	9.13		CCL-015 (11190625) Casing Collar Locator	0.47	1.69	9.00
			PSJ-008 (10018433) Production Swivel Joint	0.28	1.69	6.00
			PKJ-013 (10000106) Production Knuckle Joint	0.17	1.69	3.50
			PKJ-013 (11200541) Production Knuckle Joint	0.17	1.69	3.50
			PSJ-008 (0018433) Production Swivel Joint	0.28	1.69	6.00
MIT	6.55		PRC-034 (C-1263) Production Roller Centraliser (4 Arm)	0.84	1.69	13.00
			MIT-034 (10015579) Multifinger Imaging Tool (UW 24F Ext.)	1.29	1.69	20.70
			PRC-034 (11168475) Production Roller Centraliser (4 Arm)	0.84	1.69	13.00
			PKJ-013 (10000107) Production Knuckle Joint	0.17	1.69	3.50
			PKJ-013 (11136402) Production Knuckle Joint	0.17	1.69	3.50
			PRC-034 (C-1264) Production Roller Centraliser (4 Arm)	0.84	1.69	13.00
CBLROT	2.45					
CBLTEMP	2.45					
WVFS6	2.45					
WVFS5	2.45		RBT-003 (11182040) Radial Bond Tool (UW 1 11/16)	3.03	1.69	42.00
WVFS4	2.45					
WVFS3	2.45					
WVFS2	2.45					
WVFS1	2.45					
WVF3FT	2.45		PRC-034 (11168476) Production Roller Centraliser (4 Arm)	0.84	1.69	13.00
WVF5FT	2.15		BUL-006 (11135660) Bullnose Terminator	0.07	1.69	1.20
CBLTEMP	0.91					

Dataset:	Sondex Ultralink RBT 1 11/16"
Total length:	12.45 m
Total weight:	247.86 lb
O.D.:	1.69 in