



EXPRO

WELL FLOW MANAGEMENT™

Multifinger Caliper Analysis Report



Client: NAM
Well No.: ROSSUM-WEERSELO-2
Field: ROSSUM-WEERSELO
Country: Netherlands
Survey Date: 12th November 2019
Survey Type: Extended 24-Arm Caliper
Job ID: DAC635

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Client: NAM	Well No.: ROSSUM-WEERSELO-2	Field: ROSSUM-WEERSELO
Survey Date: 12/11/2019	Survey MFC-24 Extended	Job ID: DAC635



Pass no.	Survey Interval (m)	Data Quality	Notes
1	1119 to surface	Good	

Rev	Description	Author	Checked by
0	Report		

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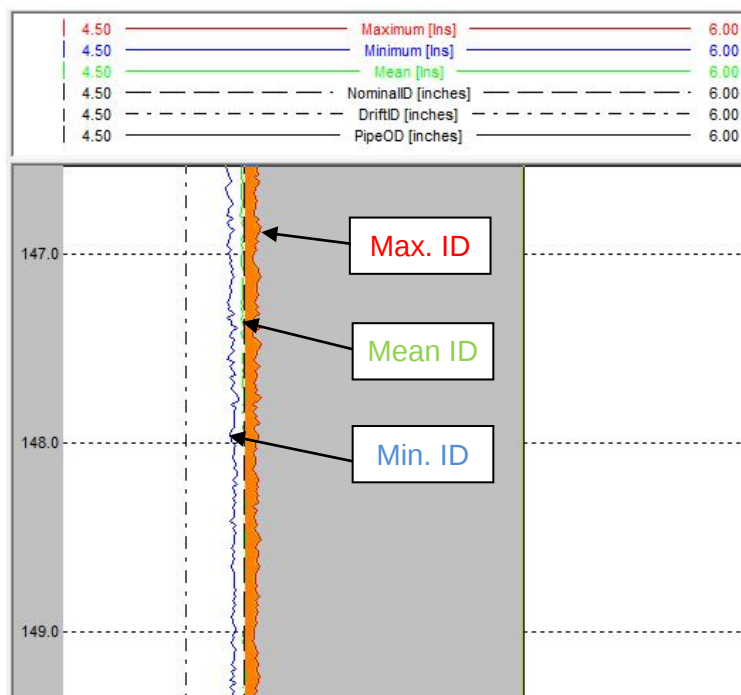
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Definitions

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
- $$\text{Maximum percentage penetration} = 100 * \frac{\text{Max.ID} - \text{Nom.ID}}{\text{OD} - \text{Nom.ID}}$$

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
- $$\left(\frac{100}{N}\right) * \sum_{i=1}^N (Si^2 - \text{Nom.ID}^2) \div (\text{OD}^2 - \text{Nom.ID}^2)$$
- N: is the number of caliper sensors on the tool, 24, 40, 60.
- Si: is the measured radius value x 2 for each arm.

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1. Survey Objectives and Interpretation Summary

Survey Objectives

An extended 24-arm memory multifinger caliper was run on slickline to determine the general condition of the tubing within the ROSSUM-WEERSELO-2 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

- The 5", 15 lb/ft tubing was shown to be in moderate to poor condition.
- The maximum recorded ID within the 5", 15 lb/ft tubing was 4.722" (53.0%) at 917.69 m.
- The 4", 10.9 lb/ft tubing was shown to be in moderate condition in terms of metal loss.
- The maximum recorded ID within the surveyed interval of 4", 10.9 lb/ft tubing was 3.898" at 1116.89 m.
- There were no clear signs of any significant deposition present within the surveyed interval.

Statistical Data Summary	2019	2018	2017	2016	T.L. Max Difference
Maximum % Penetration	80.5 %	100.0 %	34.3 %	29.3 %	65.7 %
Maximum Penetration Depth	1116.89 m	1129.02 m	1107.47 m	1135.98 m	-
Average Maximum % Penetration	16.4 %	13.2 %	14.9 %	13.3 %	3.2 %
Maximum % Circumferential Wall Loss	21.9 %	27.6 %	-	-	-
Maximum % Circumferential Wall Loss Depth	1116.90 m	1128.96 m	-	-	-
Average Recorded Mean ID	4.410 inches	4.371 inches	4.366 inches	4.360 inches	0.044 inches
Average Maximum % Circumferential Wall Loss	5.6 %	4.5 %	-	-	-

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"

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2. Data Interpretation

5", 15 lb/ft Tubing Condition

- The 5", 15 lb/ft tubing appears to be in moderate to poor condition, with 6 of the 86 joints logged containing maximum recorded percentage penetration values between 20 - 54% of the tubing nominal wall thickness, while the remaining 80 joints average 14.5% (see Figure 1, Section 3 & Max. Percentage Penetration per Joint vs. Depth Plot, Section 4).
- The maximum recorded ID within the 5", 15 lb/ft tubing was 4.722" (53.0%) at 917.69 m. This relates to sharply defined isolated pit. The feature was recorded by a single arm (suggesting a maximum potential width of 1.09") and measured approximately 15 mm in length (see Figures 2 & 3, Section 3).
- Aside from the abovementioned pit feature, the 5", 15 lb/ft tubing appears to be in good to moderate condition overall. This is emphasised by the average mean recorded ID of 4.431", which remains somewhat close to the manufacturer specified nominal ID of 4.408" (see Measured ID per Joint vs. Depth Plot, Section 4).
- There were no clear signs of any significant deposition present within the 5", 15 lb/ft tubing.

4", 10.9 lb/ft Tubing Condition

- 2 joints of 4", 10.9 lb/ft tubing were logged. These were shown to be in moderate condition in terms of metal loss, with 1 of the 2 joints containing a maximum recorded percentage penetration value below 34% of the tubing nominal wall thickness (see Figure 4, Section 3 & Max. Percentage Penetration per Joint vs. Depth Plot, Section 4).
- The maximum recorded ID within the surveyed interval of 4", 10.9 lb/ft tubing was 3.898" at 1116.89 m. Normally this would be equivalent to an 80.5% penetration if related to metal loss. However, this instead relates to what appears to be an area of significant localised deformation recorded within a pup joint below the SLSD. The feature was recorded between approximately 1118.70 – 1116.50 m, giving a length of 2.2 m. However, it appears that the worst of the deformation is between approximately 1117.20 – 1116.60 m (see Figures 5 – 9, Section 3).
- The maximum recorded ID within the surveyed interval of 4", 10.9 lb/ft tubing related to metal loss was 3.654" (equivalent to a 34.0% penetration) at 1113.06 m. This relates to one of a few sharply defined pits within the pup joint above the SLSD.
- The minimum recorded ID within the 4", 10.9 lb/ft tubing was 3.079" at 1117.00 m. This relates to the abovementioned area of localised deformation and may pose a threat to wellbore accessibility as it falls far below the manufacturer specified ID of 3.351".
- There were no clear signs of any significant deposition present within the surveyed interval of 4", 10.9 lb/ft tubing.

Time-lapse Analysis

- 24-arm caliper surveys have been performed previously within this well by Expro, on the 1st of November 2016, 22nd of June 2017 and the 9th of October 2018. Time-lapse analysis has been performed by comparing these previously recorded datasets with data recorded in the current 2019 survey (see Time-lapse Plots, Section 4).
- Based on the plots, it seems that the overall condition of the well has not changed drastically since 2016. However, the 2019 survey did not extend deep enough to record the severe deformation recorded in the 2018 survey at 1129.02 m.
- Two key features which are only present in the 2019 survey are the deeply penetrating pit at 917 m and the localised deformation between 1119 – 1116 m.

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3. Caliper Graphics

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

Figure 2: Maximum Recorded ID within 5", 15 lb/ft Tubing

Figure 3: Maximum Recorded ID within 5", 15 lb/ft Tubing (Cross-section)

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

Figure 5: Area of Localised Deformation within 4", 10.9 lb/ft Tubing

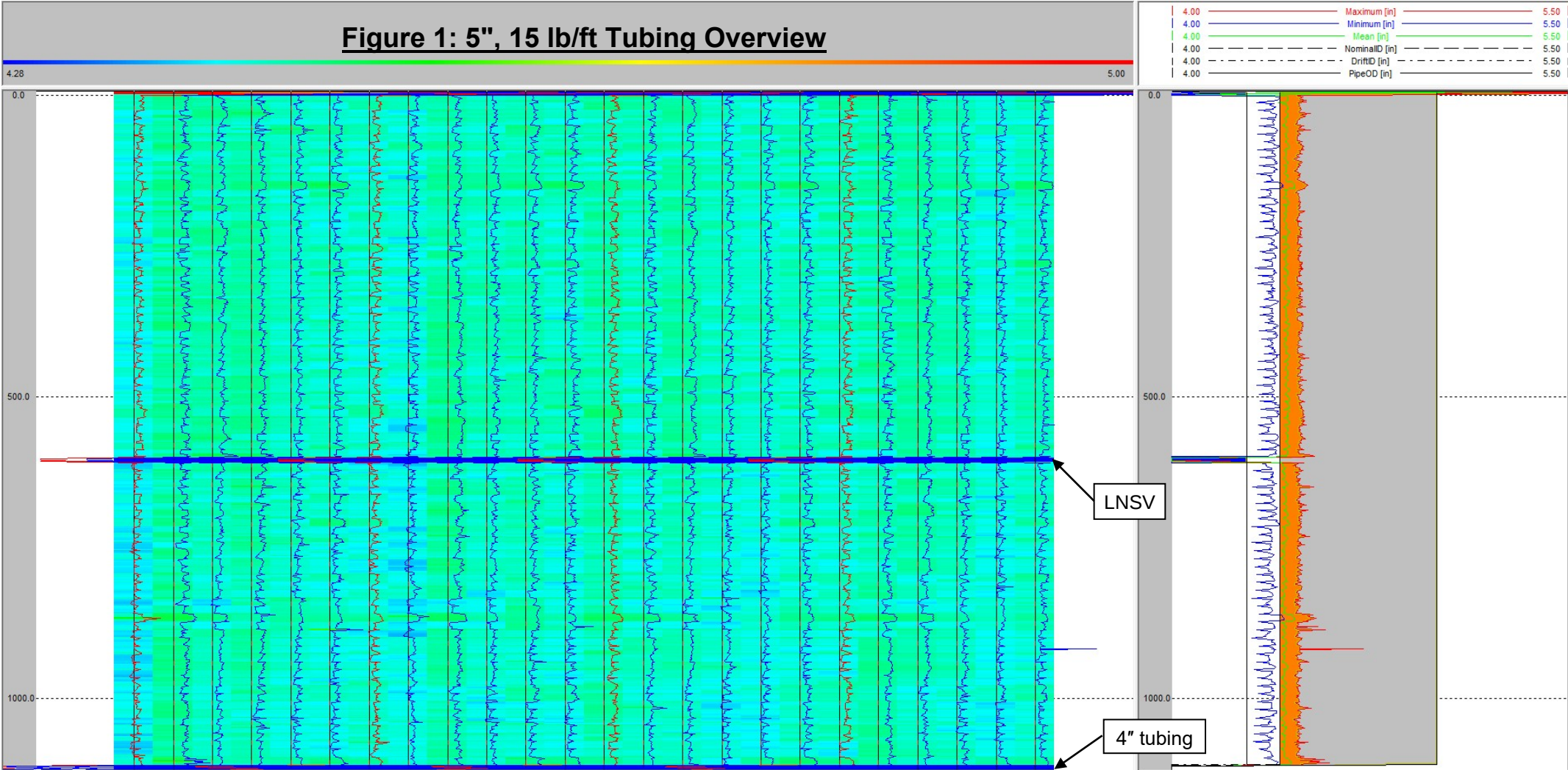
Figure 6: Maximum Recorded ID within 4", 10.9 lb/ft Tubing (Cross-section)

Figure 7: Minimum Recorded ID within 4", 10.9 lb/ft Tubing (Cross-section)

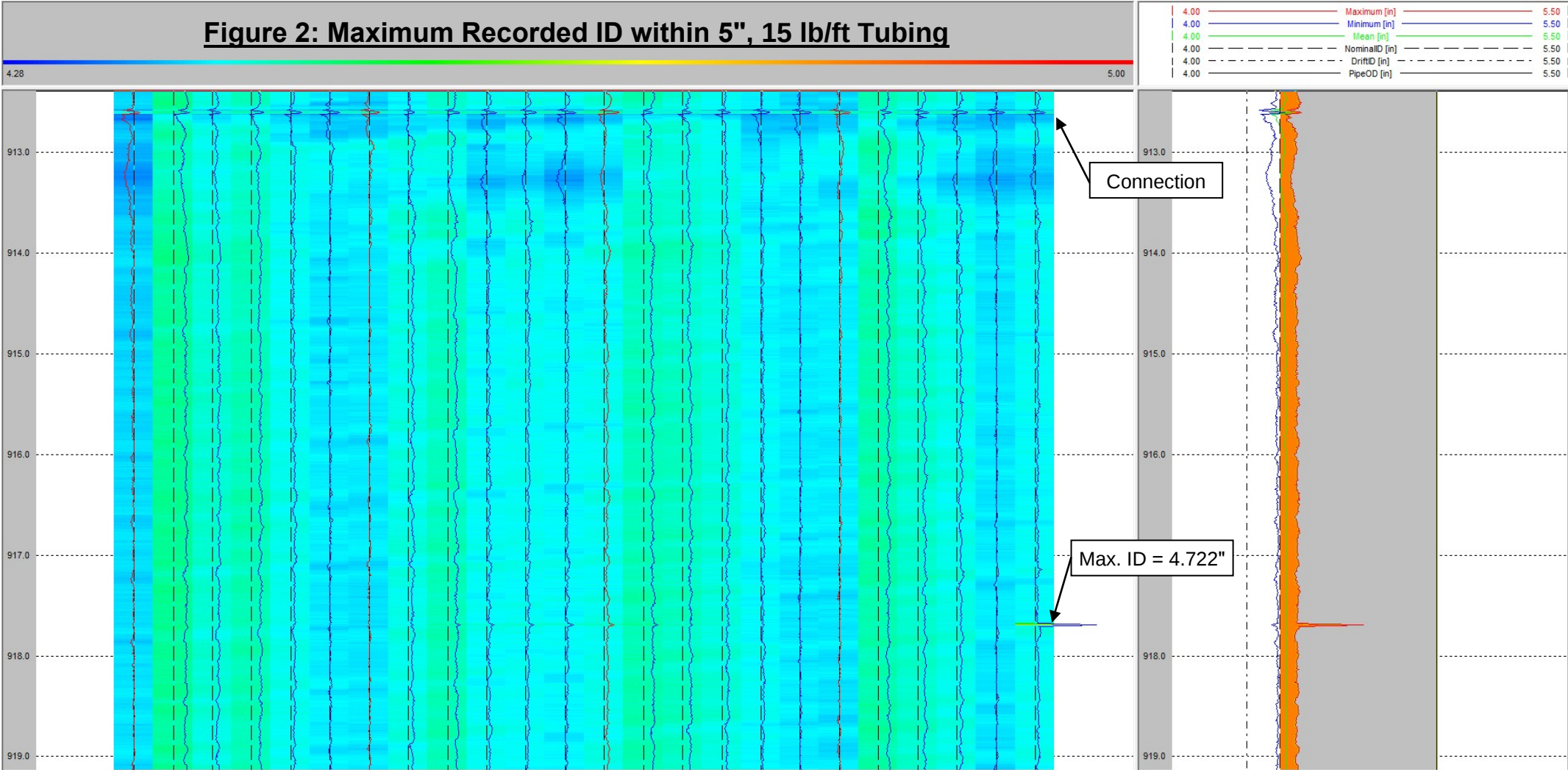
Figure 8: Area of Localised Deformation within 4", 10.9 lb/ft Tubing (3D) – 1

Figure 9: Area of Localised Deformation within 4", 10.9 lb/ft Tubing (3D) – 2

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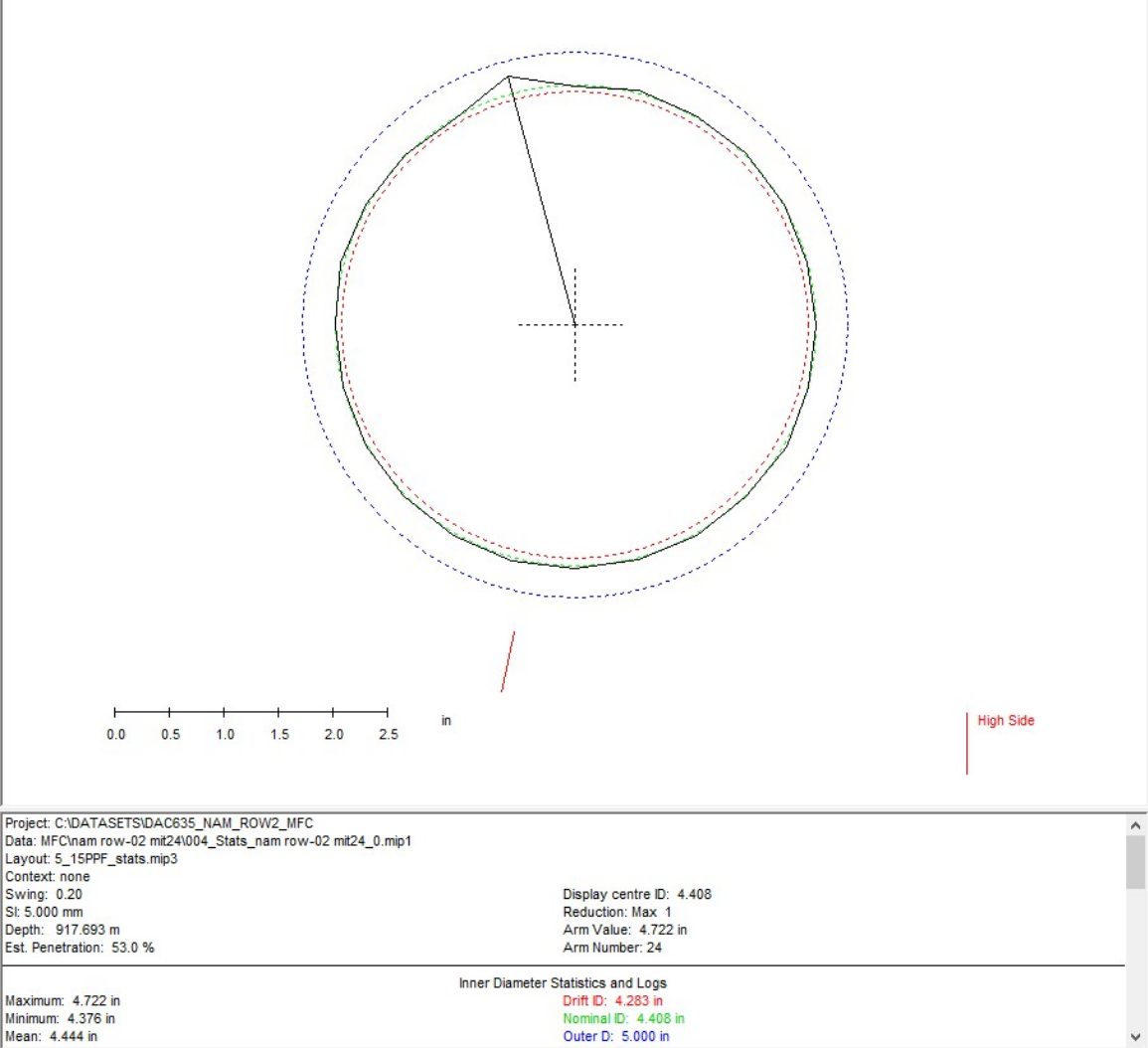
Client: NAM	Well No.: ROSSUM-WEERSELO-2	Field: ROSSUM-WEERSELO
Survey Date: 12/11/2019	Survey MFC-24 Extended	Job ID: DAC635



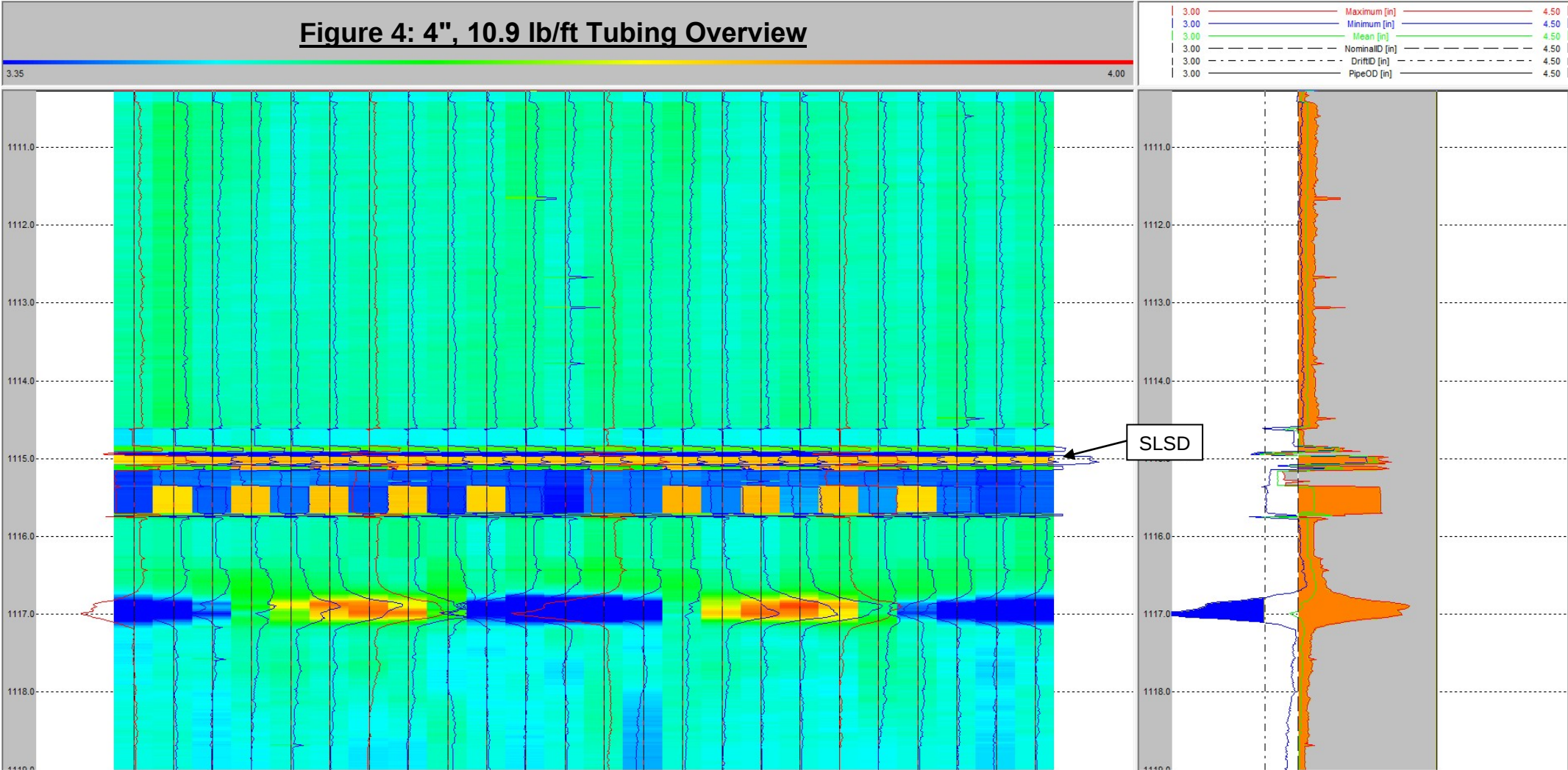
Client: NAM	Well No.: ROSSUM-WEERSELO-2	Field: ROSSUM-WEERSELO
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**Figure 3: Maximum Recorded ID within 5", 15 lb/ft Tubing
(Cross-section)**



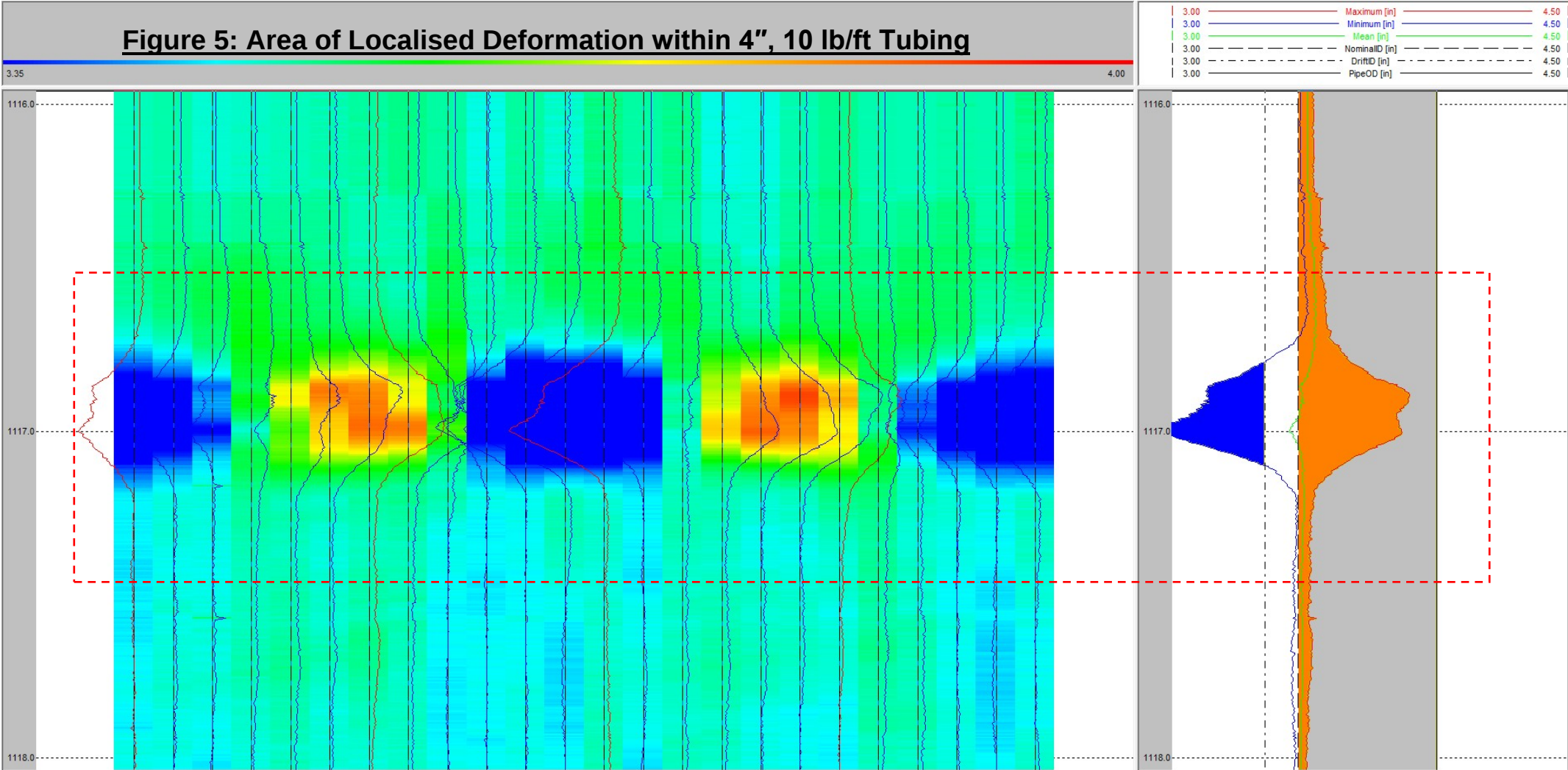
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Survey Date: 12/11/2019	Survey MFC-24 Extended	Job ID: DAC635



Client: NAM	Well No.: ROSSUM-WEERSELO-2	Field: ROSSUM-WEERSELO
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Figure 5: Area of Localised Deformation within 4", 10 lb/ft Tubing



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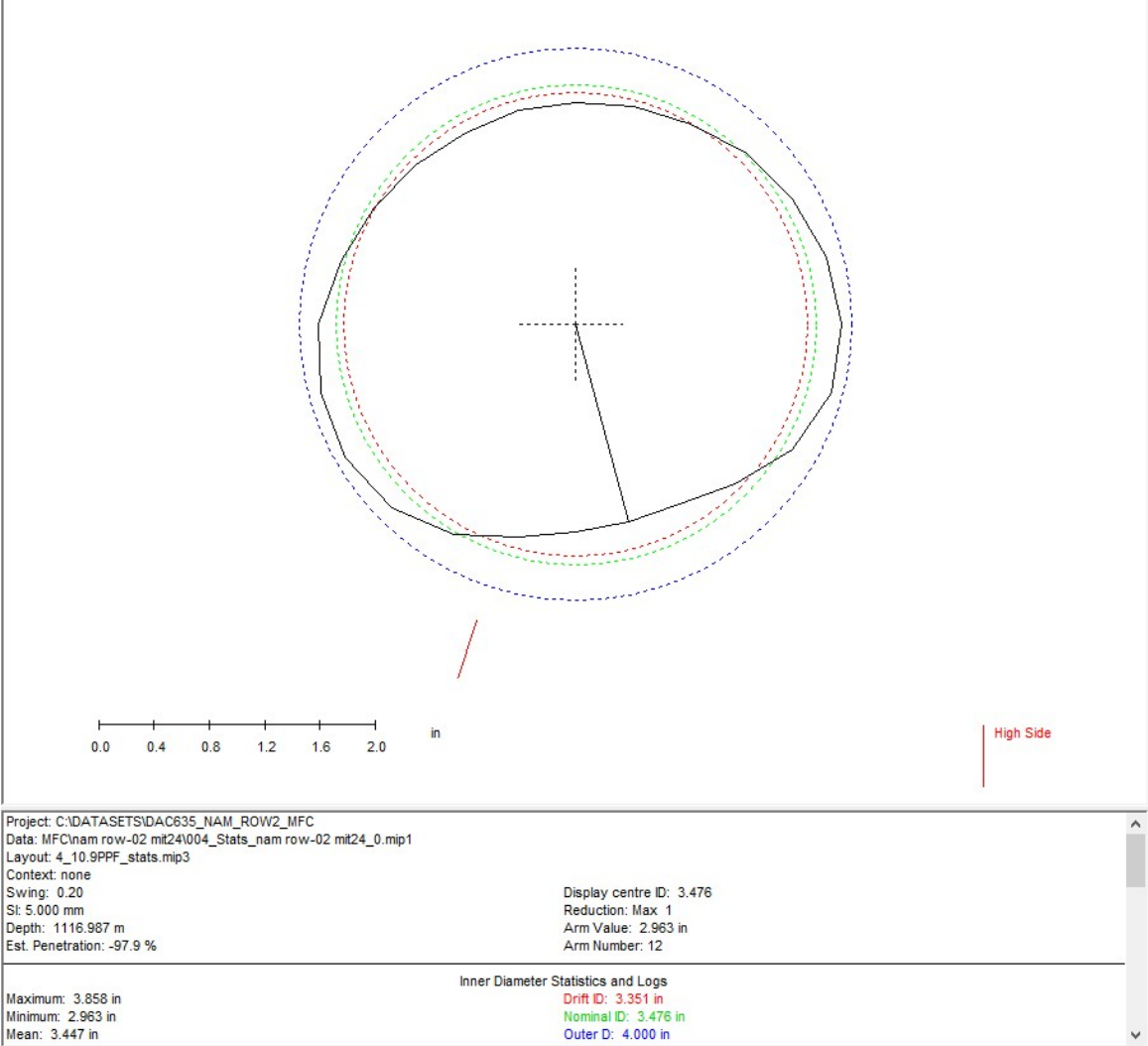
**Figure 6: Maximum Recorded ID within 4", 10.9 lb/ft Tubing
(Cross-section)**



Client: NAM	Well No.: ROSSUM-WEERSELO-2	Field: ROSSUM-WEERSELO
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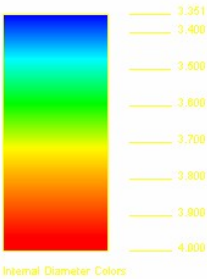
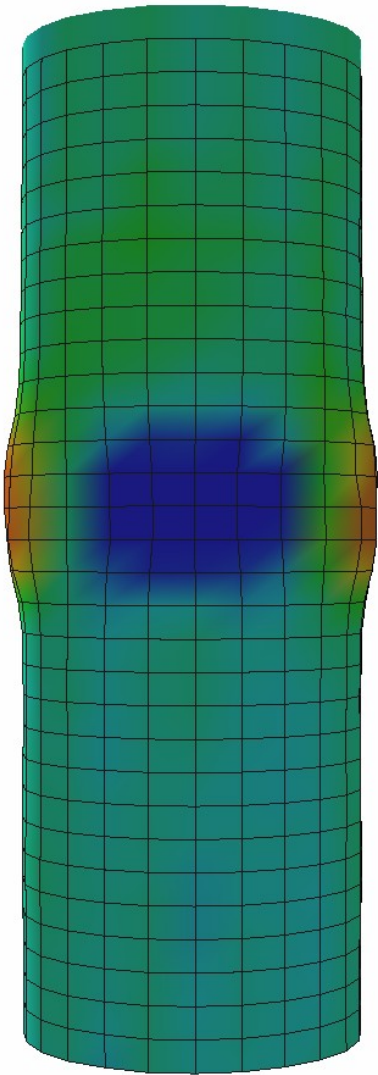
**Figure 7: Minimum Recorded ID within 4", 10.9 lb/ft Tubing
(Cross-section)**



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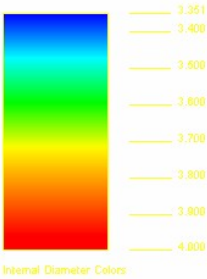
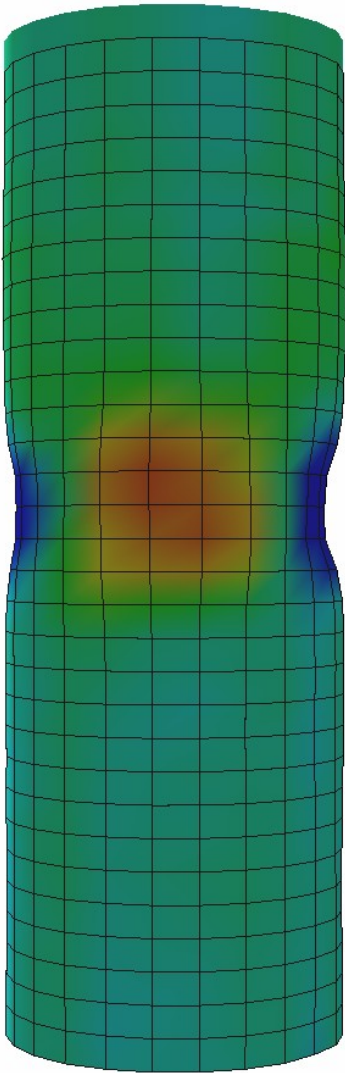
Figure 8: Area of Localised Deformation within 4", 10 lb/ft Tubing (3D) - 1



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Figure 9: Area of Localised Deformation within 4", 10 lb/ft Tubing (3D) - 2



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4. Statistical Analysis

Max. Percentage Penetration vs. Depth Plot

Max. Percentage Circumferential Wall Loss vs. Depth Plot

Measured ID vs. Depth Plot

Time-lapse Percentage Penetration Histogram Plot

Time-lapse Max. Percentage Penetration vs. Depth Plot

Time-lapse Maximum ID vs. Depth Plot

Time-lapse Mean ID vs. Depth Plot

Time-lapse Minimum ID vs. Depth Plot

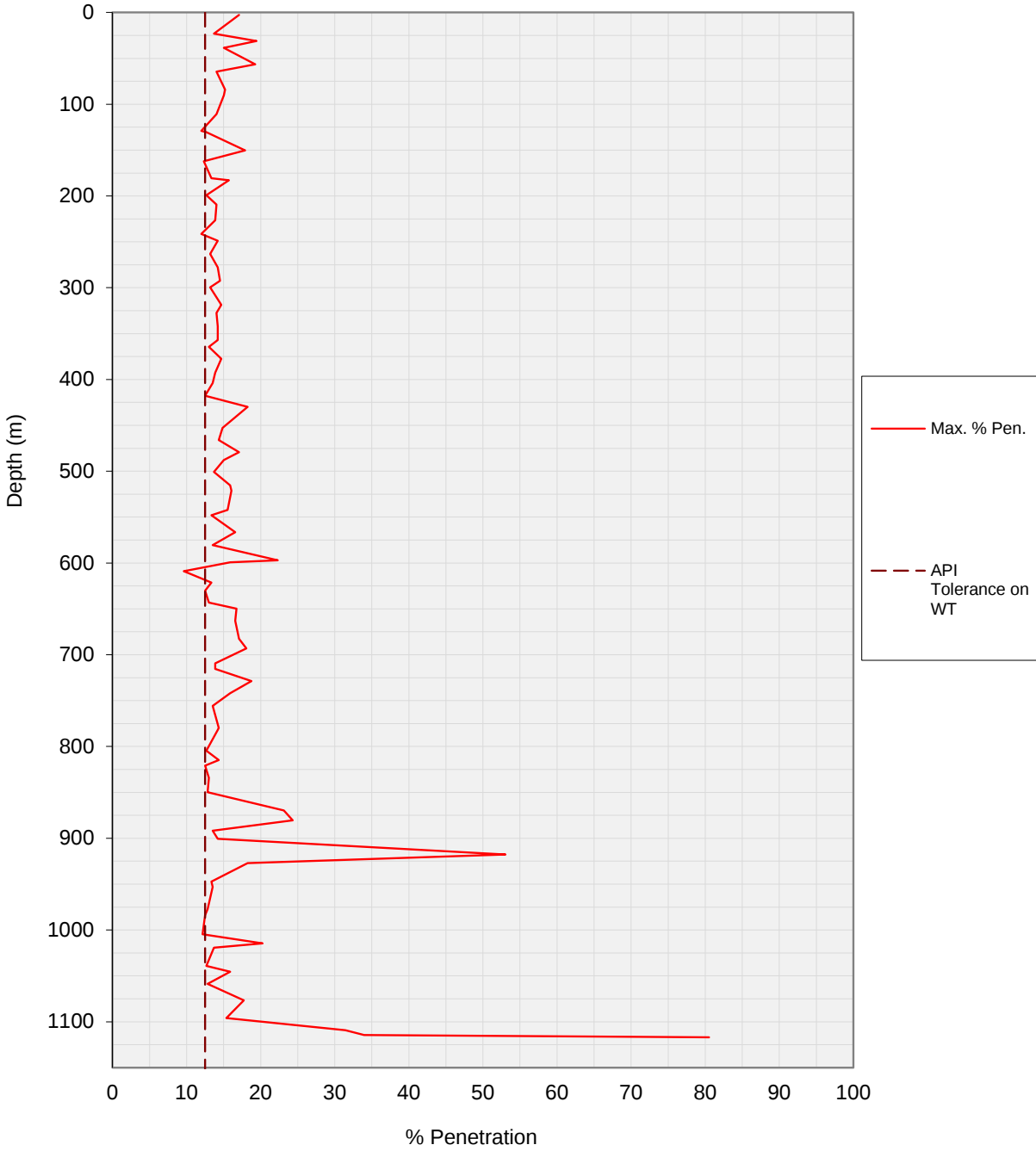
Tabulated Data

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

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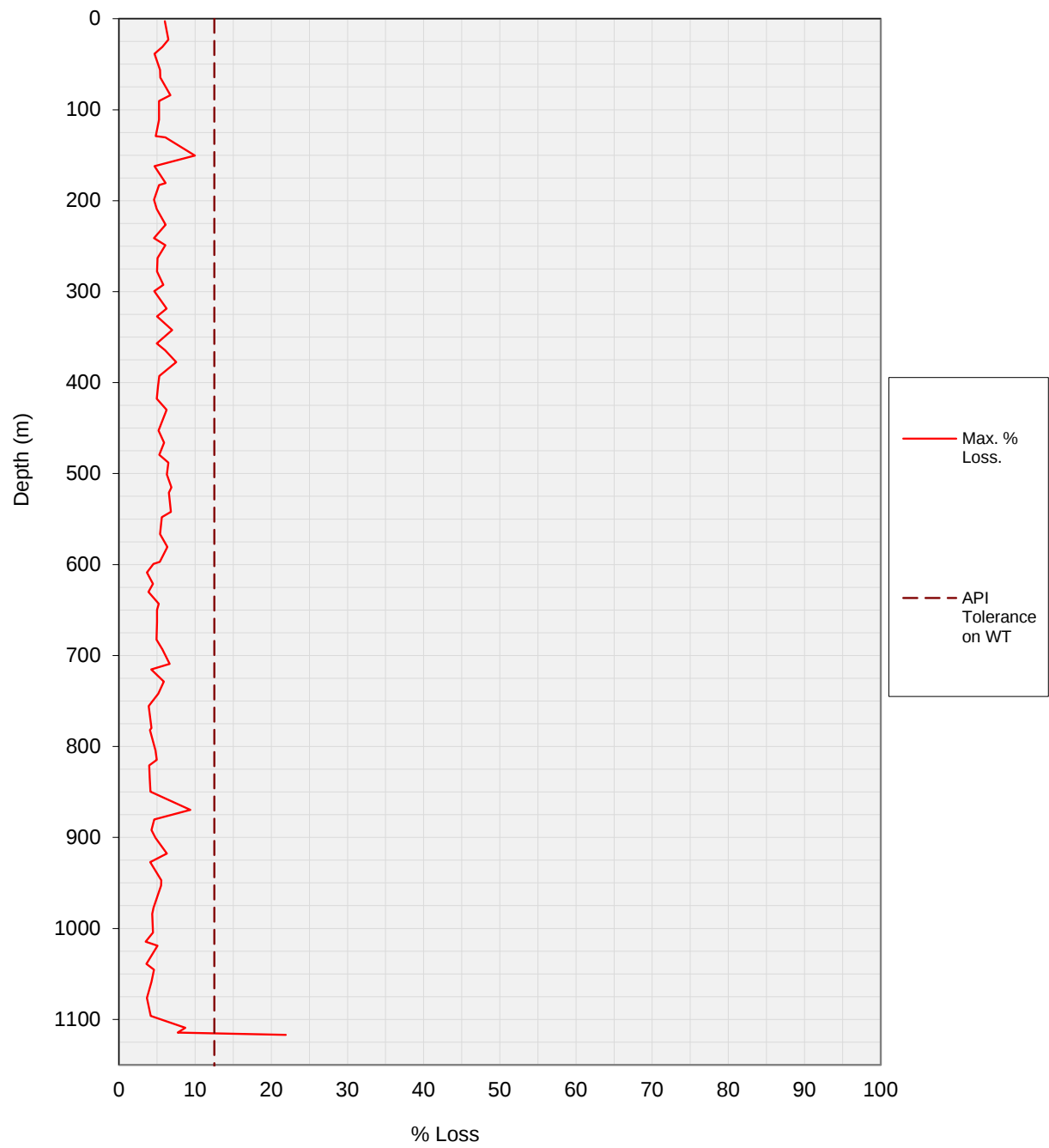
Max. Percentage Penetration per Joint vs. Depth Plot



Client: NAM	Well No.: ROSSUM-WEERSELO-2	Field: ROSSUM-WEERSELO
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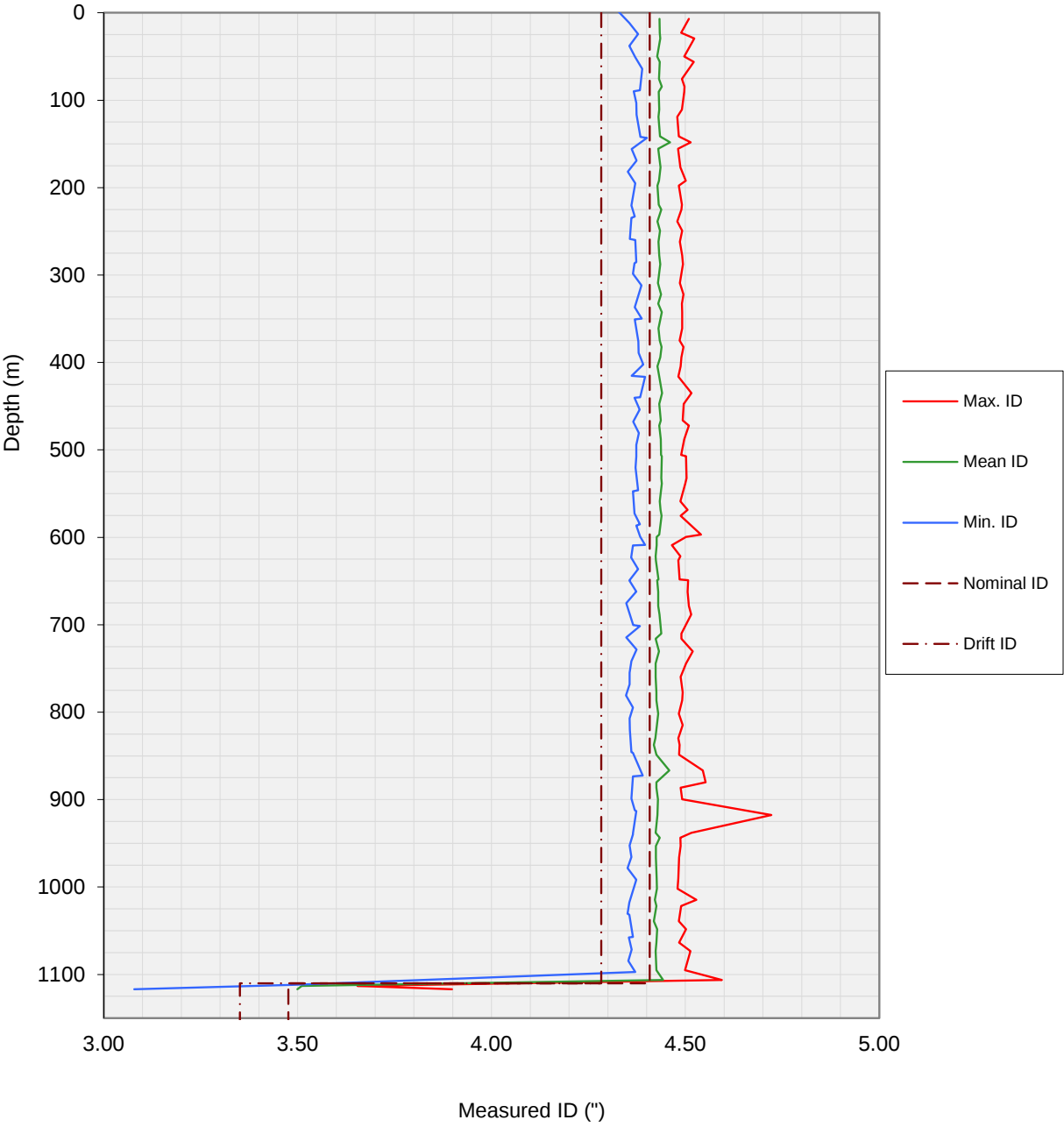
Max. Percentage Circumferential Wall Loss per Joint vs. Depth Plot



Client: NAM	Well No.: ROSSUM-WEERSELO-2	Field: ROSSUM-WEERSELO
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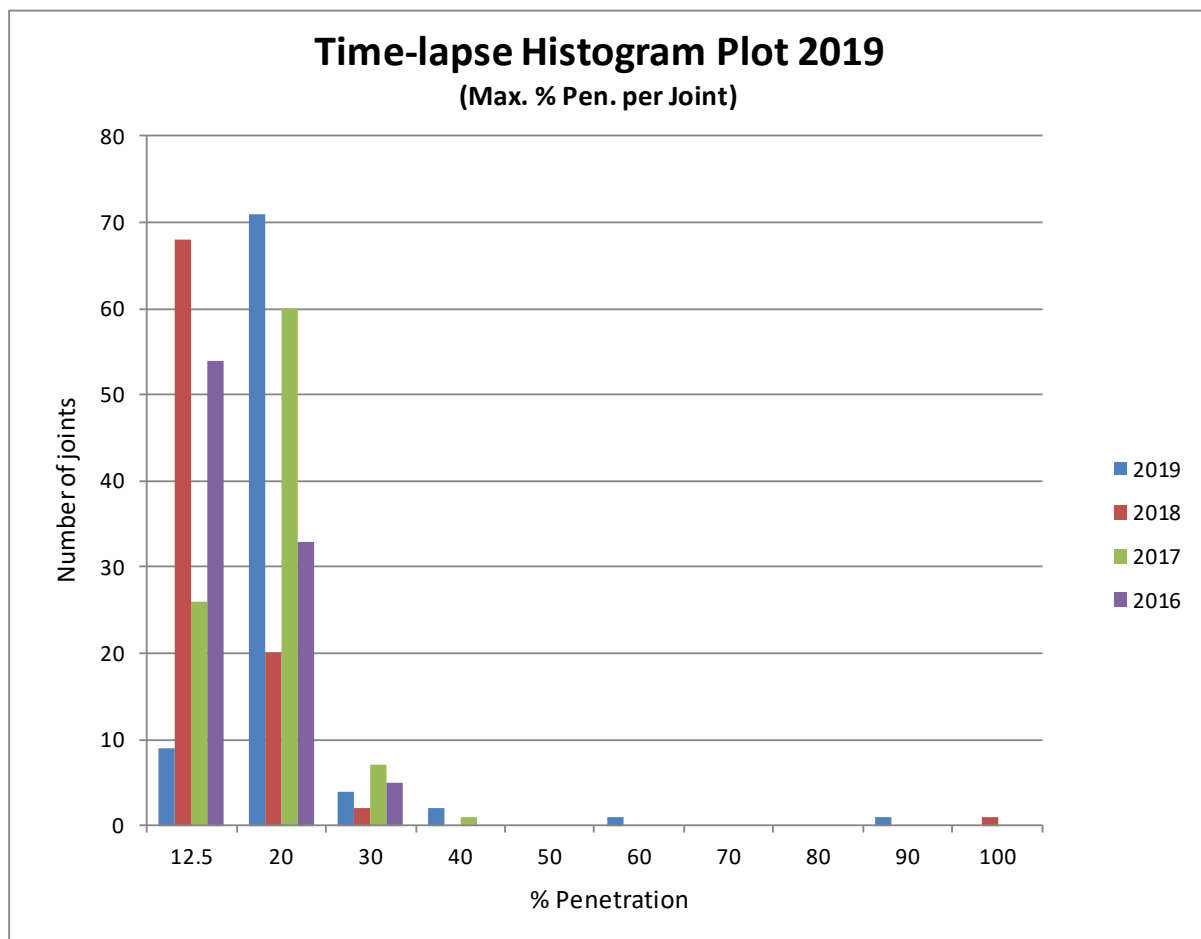
Measured ID per Joint vs. Depth Plot



Client: NAM	Well No.: ROSSUM-WEERSELO-2	Field: ROSSUM-WEERSELO
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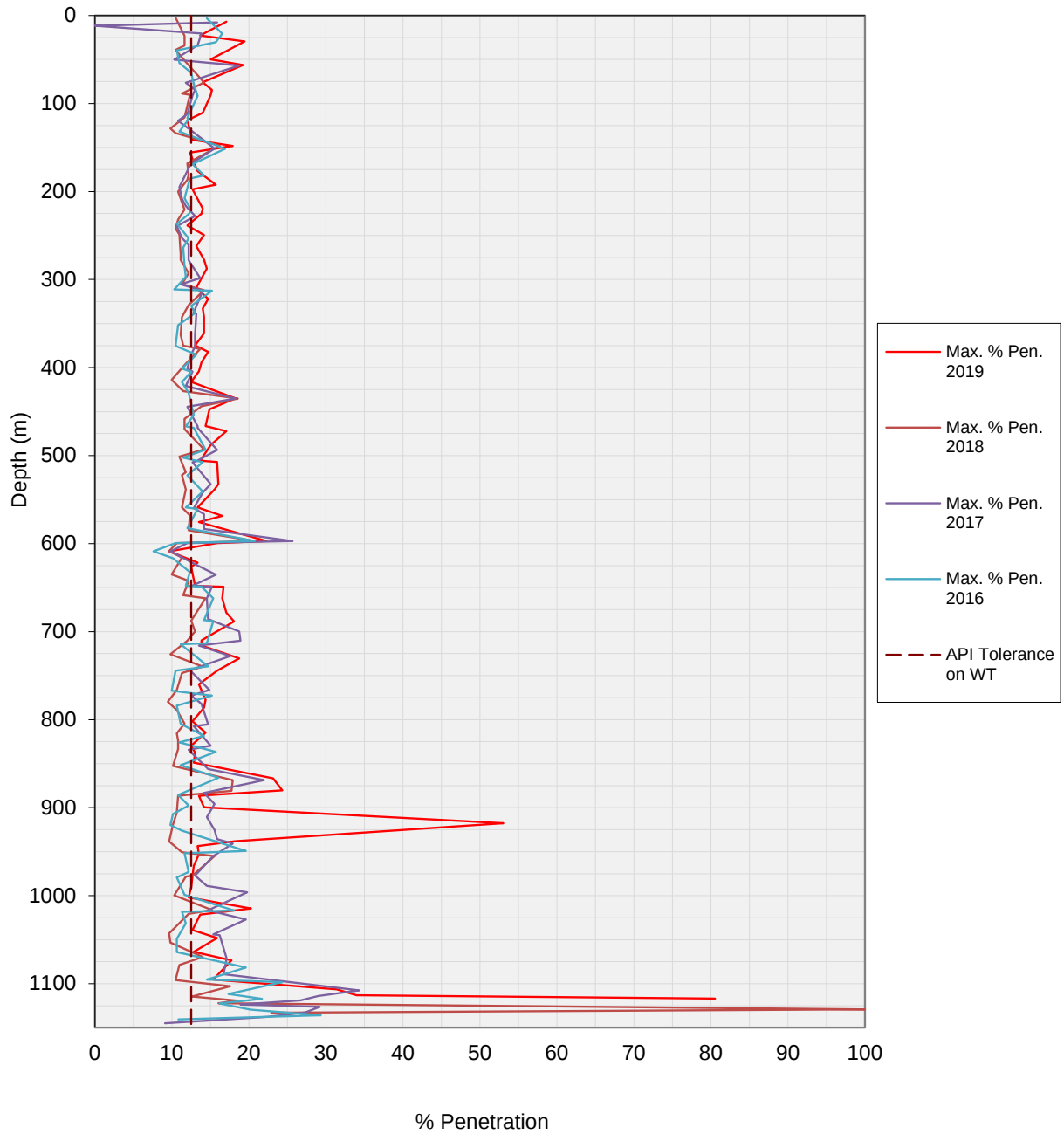
Total number of joints logged: 88			
9	Joints with Max. % Penetrations Between	0	and 12.5 %
71	Joints with Max. % Penetrations Between	12.5	and 20 %
4	Joints with Max. % Penetrations Between	20	and 30 %
2	Joints with Max. % Penetrations Between	30	and 40 %
0	Joints with Max. % Penetrations Between	40	and 50 %
1	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 %
1	Joints with Max. % Penetrations Between	80	and 90 %
0	Joints with Max. % Penetrations Between	90	and 100 %



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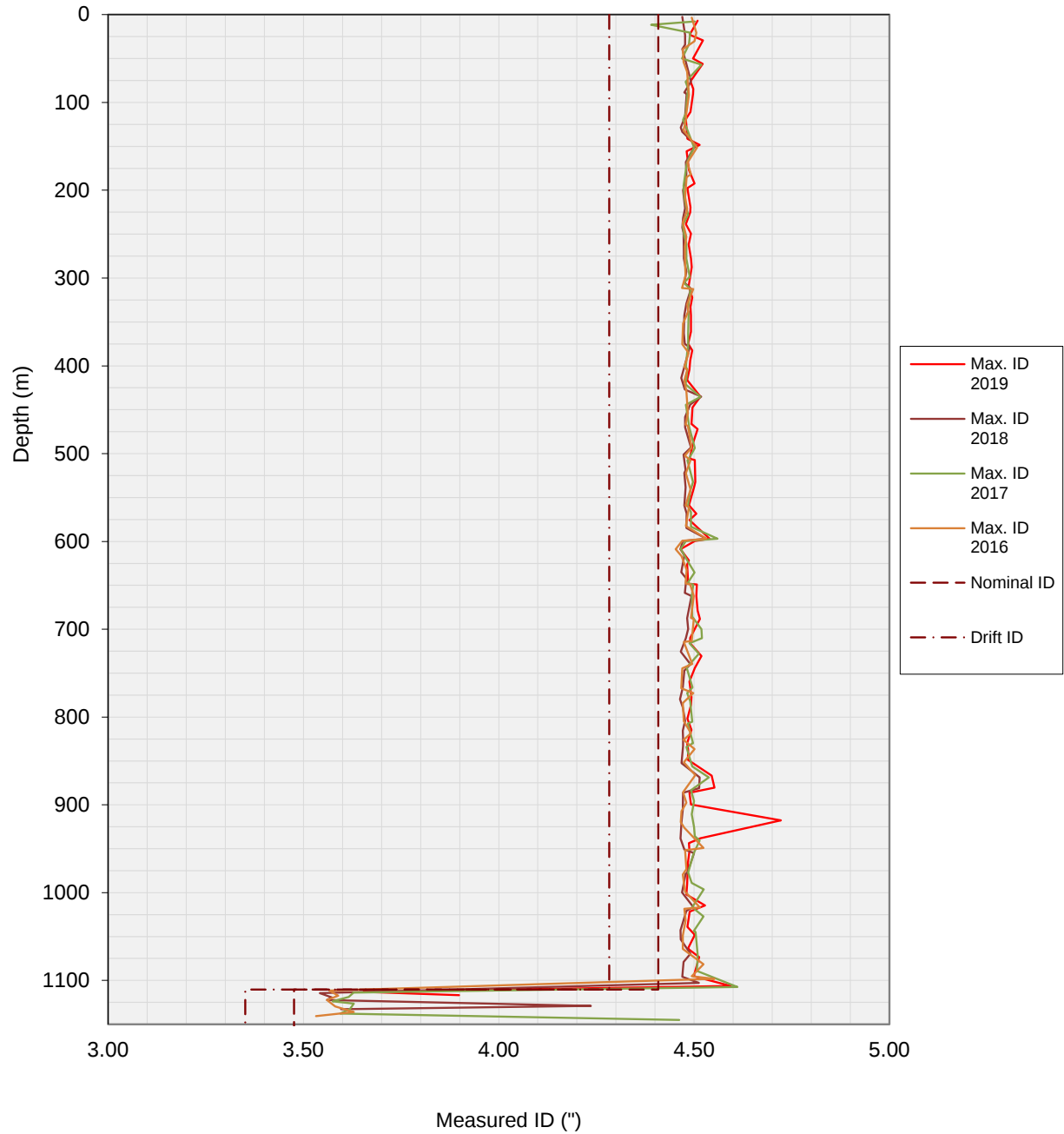
Time-lapse Max. Percentage Penetration per Joint vs. Depth Plot



Client: NAM	Well No.: ROSSUM-WEERSELO-2	Field: ROSSUM-WEERSELO
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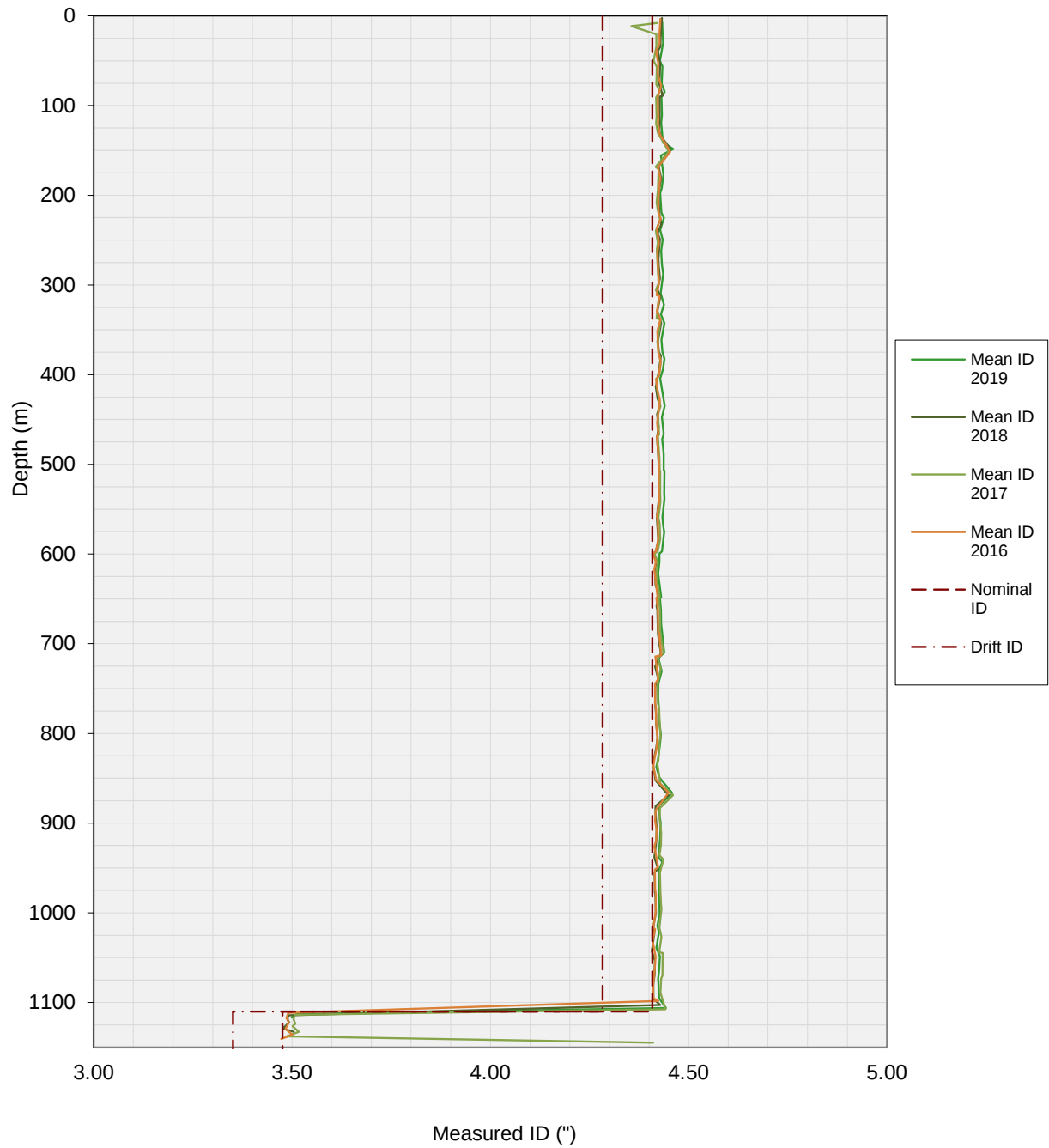
Time-lapse Maximum ID per Joint vs. Depth Plot



Client: NAM	Well No.: ROSSUM-WEERSELO-2	Field: ROSSUM-WEERSELO
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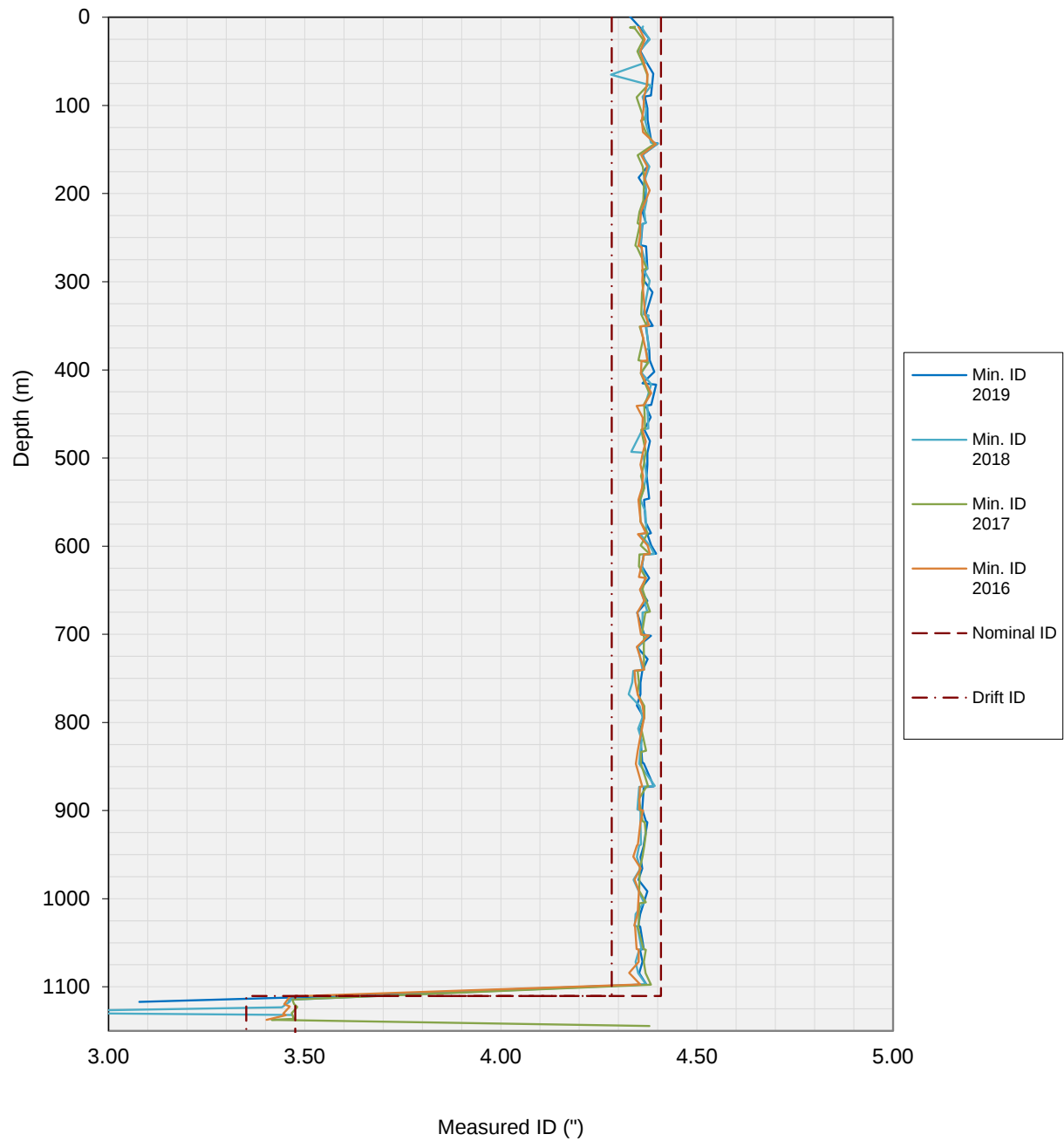
Time-lapse Mean ID per Joint vs. Depth Plot



Client: NAM	Well No.: ROSSUM-WEERSELO-2	Field: ROSSUM-WEERSELO
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Time-lapse Minimum ID per Joint vs. Depth Plot



Client: NAM	Well No.: ROSSUM-WEERSELO-2	Field: ROSSUM-WEERSELO
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Client: NAM

Well: ROW-2

Survey Date: 12th November 2019

Tubulars Surveyed: 5", 15 lb/ft
4", 10.9 lb/ft

Nom. ID: 4.408

Nom. ID: 3.476

Drift ID: 4.283

Drift ID: 3.351

Nom. OD: 5.000

Nom. OD: 4.000

Max. % Penetration

Max. % Circumferential Loss

0 - 20%	20 - 40%	40 - 50%	50 - 100%
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	-1.30	10.66	11.96	4.509	7.00	17.1	6.0	4.329	-1.12	4.433	5.000	
2	11.48	23.93	12.46	4.489	22.79	13.7	6.5	4.356	11.81	4.434	5.000	
3	24.35	37.31	12.96	4.523	29.43	19.4	5.7	4.378	24.44	4.435	5.000	
4	37.46	50.48	13.03	4.497	49.95	15.0	4.7	4.356	37.93	4.427	5.000	
5	50.76	63.41	12.65	4.522	56.18	19.3	5.4	4.371	50.84	4.434	5.000	
6	63.69	76.43	12.75	4.491	75.78	14.0	5.4	4.389	64.08	4.432	5.000	
7	76.71	89.11	12.40	4.498	84.62	15.2	6.7	4.383	88.67	4.440	5.000	
8	89.52	102.52	13.01	4.497	90.34	15.0	5.2	4.367	89.93	4.431	5.000	
9	102.81	115.86	13.05	4.491	110.69	14.0	5.2	4.374	103.16	4.433	5.000	
10	116.13	129.20	13.07	4.479	119.07	12.0	4.8	4.374	116.61	4.431	5.000	
11	129.48	142.48	13.00	4.483	141.29	12.7	6.1	4.384	142.03	4.435	5.000	
12	142.65	155.20	12.55	4.514	148.28	17.9	10.0	4.401	143.08	4.461	5.000	
13	155.39	168.33	12.94	4.481	155.65	12.3	4.7	4.362	155.85	4.430	5.000	
14	168.52	181.62	13.11	4.487	176.91	13.3	6.1	4.374	169.11	4.436	5.000	
15	181.76	194.91	13.15	4.501	192.23	15.7	5.3	4.352	181.83	4.432	5.000	
16	195.07	208.20	13.14	4.483	197.58	12.7	4.6	4.371	195.10	4.428	5.000	
17	208.37	220.75	12.38	4.491	219.40	14.0	4.9	4.361	220.44	4.431	5.000	
18	220.94	233.83	12.89	4.490	225.07	13.9	6.1	4.370	233.18	4.438	5.000	
19	234.01	246.97	12.97	4.479	238.68	12.0	4.6	4.361	234.53	4.428	5.000	
20	247.16	259.23	12.06	4.492	249.45	14.2	6.1	4.357	258.65	4.435	5.000	
21	259.40	272.32	12.93	4.486	261.99	13.2	5.1	4.371	259.97	4.430	5.000	
22	272.59	285.67	13.08	4.492	277.51	14.2	5.0	4.374	285.24	4.432	5.000	
23	285.84	298.40	12.56	4.494	287.61	14.5	5.8	4.369	286.39	4.435	5.000	
24	298.60	311.18	12.58	4.486	309.09	13.2	4.6	4.365	298.65	4.429	5.000	
25	311.37	324.22	12.85	4.495	322.02	14.7	6.3	4.387	311.91	4.437	5.000	
26	324.39	337.35	12.96	4.491	332.79	14.0	5.0	4.370	336.77	4.430	5.000	
27	337.56	349.98	12.42	4.492	342.51	14.2	7.0	4.388	349.98	4.439	5.000	
28	350.16	363.29	13.13	4.492	361.13	14.2	5.0	4.370	350.73	4.431	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	363.47	376.15	12.68	4.485	374.89	13.0	6.0	4.378	376.01	4.434	5.000	
30	376.56	389.40	12.84	4.495	382.24	14.7	7.5	4.380	388.93	4.439	5.000	
31	389.68	402.73	13.05	4.490	394.16	13.9	5.3	4.392	402.21	4.435	5.000	
32	402.92	415.62	12.70	4.488	404.35	13.5	5.1	4.362	415.35	4.428	5.000	
33	416.03	427.64	11.61	4.482	416.18	12.5	5.0	4.396	416.60	4.432	5.000	
34	428.05	440.31	12.26	4.516	434.96	18.2	6.2	4.384	439.77	4.440	5.000	
35	440.49	453.61	13.12	4.496	447.33	14.9	5.2	4.369	440.49	4.433	5.000	
36	453.81	466.92	13.11	4.493	466.28	14.4	5.9	4.382	453.81	4.437	5.000	
37	467.10	480.24	13.14	4.509	472.14	17.1	5.3	4.365	467.63	4.433	5.000	
38	480.43	493.57	13.14	4.497	487.93	15.0	6.5	4.380	480.83	4.437	5.000	
39	493.74	506.92	13.18	4.489	505.83	13.7	6.3	4.374	494.27	4.437	5.000	
40	507.10	519.97	12.87	4.502	507.24	15.9	6.9	4.374	507.62	4.439	5.000	
41	520.15	533.35	13.21	4.503	532.35	16.0	6.6	4.372	520.16	4.438	5.000	
42	533.51	546.64	13.13	4.500	538.38	15.5	6.8	4.378	546.04	4.439	5.000	
43	546.80	559.93	13.13	4.487	558.91	13.3	5.6	4.365	547.29	4.434	5.000	
44	560.14	572.69	12.55	4.506	568.51	16.6	5.4	4.369	572.61	4.436	5.000	
45	572.87	585.64	12.77	4.488	575.51	13.5	6.4	4.383	585.23	4.438	5.000	
46	586.06	599.14	13.09	4.540	597.03	22.3	5.4	4.374	586.49	4.433	5.000	
47	599.29	600.38	1.09	4.502	599.40	15.9	4.5	4.384	599.37	4.426	5.000	Pup joint
48	600.51	608.09	7.58	4.221	605.02	-	-	3.820	605.11	3.934	5.000	Safety valve assembly
49	608.35	608.87	0.52	4.465	608.84	9.6	3.7	4.396	608.58	4.426	5.000	Pup joint
50	609.11	622.26	13.15	4.487	621.73	13.3	4.5	4.365	609.42	4.423	5.000	
51	622.47	635.61	13.14	4.482	626.40	12.5	3.9	4.360	623.03	4.424	5.000	
52	635.81	648.67	12.87	4.485	648.06	13.0	5.2	4.378	636.31	4.431	5.000	
53	648.84	661.86	13.02	4.507	649.01	16.7	5.0	4.356	649.41	4.427	5.000	
54	662.04	675.12	13.08	4.506	662.22	16.6	5.0	4.374	662.04	4.430	5.000	
55	675.30	688.02	12.71	4.509	678.61	17.1	4.9	4.348	675.43	4.430	5.000	
56	688.21	700.94	12.74	4.515	688.38	18.1	5.7	4.365	700.39	4.433	5.000	
57	701.13	714.26	13.12	4.490	709.97	13.9	6.7	4.383	701.65	4.438	5.000	
58	714.43	727.59	13.16	4.490	715.93	13.9	4.2	4.348	714.53	4.423	5.000	
59	727.78	740.79	13.01	4.519	730.47	18.8	5.9	4.374	728.32	4.432	5.000	
60	740.96	754.09	13.13	4.502	744.29	15.9	5.2	4.361	741.56	4.423	5.000	
61	754.31	767.33	13.01	4.488	759.73	13.5	3.9	4.356	754.87	4.423	5.000	
62	767.60	780.68	13.08	4.493	777.36	14.4	4.3	4.356	768.12	4.425	5.000	
63	780.86	793.99	13.13	4.492	786.37	14.2	4.1	4.347	780.86	4.426	5.000	
64	794.18	806.42	12.25	4.483	801.88	12.7	4.8	4.365	794.62	4.430	5.000	

Client: NAM	Well No.: ROSSUM-WEERSELO-2	Field: ROSSUM-WEERSELO
Survey Date: 12/11/2019	Survey MFC-24 Extended	Job ID: DAC635



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	806.64	819.59	12.95	4.493	814.73	14.4	5.0	4.356	807.20	4.427	5.000	
66	819.86	833.00	13.14	4.482	829.65	12.5	4.0	4.357	820.28	4.423	5.000	
67	833.21	846.22	13.00	4.485	837.35	13.0	4.0	4.361	845.72	4.419	5.000	
68	846.46	859.56	13.10	4.484	848.71	12.8	4.1	4.365	846.49	4.425	5.000	
69	859.89	872.60	12.72	4.545	866.67	23.1	9.4	4.390	872.60	4.459	5.000	
70	872.82	885.99	13.17	4.552	880.32	24.3	4.6	4.365	873.43	4.425	5.000	
71	886.19	899.26	13.08	4.488	886.38	13.5	4.2	4.361	898.68	4.425	5.000	
72	899.44	912.54	13.10	4.492	899.60	14.2	4.8	4.370	911.95	4.429	5.000	
73	912.73	925.82	13.10	4.722	917.69	53.0	6.3	4.374	913.19	4.428	5.000	
74	925.99	939.11	13.12	4.516	938.08	18.2	4.1	4.365	938.63	4.424	5.000	
75	939.31	951.76	12.45	4.487	943.50	13.3	5.5	4.365	939.82	4.434	5.000	
76	951.92	965.06	13.14	4.488	952.88	13.5	5.5	4.356	952.49	4.424	5.000	
77	965.24	978.26	13.02	4.484	966.22	12.8	4.5	4.361	965.77	4.424	5.000	
78	978.43	991.42	12.99	4.482	990.29	12.5	4.4	4.351	978.43	4.426	5.000	
79	991.62	1004.75	13.14	4.480	1002.06	12.2	4.5	4.374	991.72	4.427	5.000	
80	1004.92	1018.00	13.08	4.528	1014.54	20.3	3.5	4.356	1017.51	4.421	5.000	
81	1018.26	1031.02	12.76	4.489	1021.62	13.7	5.0	4.351	1030.46	4.425	5.000	
82	1031.23	1044.32	13.09	4.483	1039.10	12.7	3.6	4.356	1031.82	4.419	5.000	
83	1044.52	1057.66	13.13	4.502	1048.17	15.9	4.6	4.365	1057.12	4.427	5.000	
84	1057.81	1070.66	12.85	4.484	1063.67	12.8	4.2	4.355	1057.82	4.426	5.000	
85	1071.08	1084.13	13.06	4.513	1073.31	17.7	3.7	4.362	1071.48	4.423	5.000	
86	1084.33	1096.98	12.65	4.499	1095.26	15.4	4.2	4.353	1084.38	4.425	5.000	
87	1097.18	1110.15	12.97	4.594	1106.33	31.4	8.7	4.371	1097.29	4.443	5.000	
88	1110.25	1110.39	0.13	3.571	1110.26	-	-	3.482	1110.34	3.490	4.000	X-over
89	1110.45	1114.54	4.10	3.654	1113.06	34.0	7.7	3.486	1111.90	3.510	4.000	Pup joint
90	1114.67	1115.69	1.03	3.830	1115.05	-	-	3.316	1114.96	3.525	4.000	SLSD
91	1115.82	1118.93	3.10	3.898	1116.89	80.5	21.9	3.079	1117.00	3.499	4.000	Partially logged pup joint

Client: NAM	Well No.: ROSSUM-WEERSELO-2	Field: ROSSUM-WEERSELO
Survey Date: 12/11/2019	Survey MFC-24 Extended	Job ID: DAC635

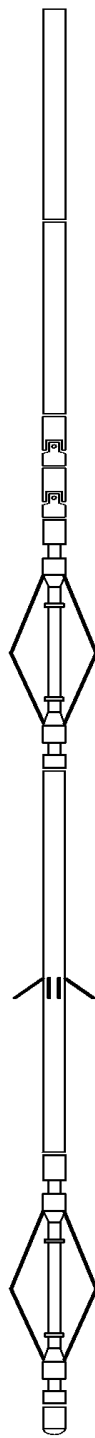


5. Well & Survey Information

Site: ROSSUM-WEERSELO-2 Well Name: ROSSUM-WEERSELO-2 Wellbore Name: ROW-2 Legal Wellbore Name: ROSSUM-WEERSELO-2-1 Original Spud Date: 20/03/1955 Spud/Kick-off date: 20/03/1955 Tree Cap Connection: 6.875" 4G ACME H2S Present: Y NORM / LSA Present: N Well Comments: NOTE: For further detail: consult OpenWells/Wellfile Schematic Datum: TBF @ 31.03m		Casing Assemblies <table> <tr> <th>Name</th><th>Top MD(m)</th><th>Base MD(m)</th><th>Size(in)</th></tr> <tr> <td>Conductor - run</td><td>0.80</td><td>46.80</td><td>13.375</td></tr> <tr> <td>Surface Casing</td><td>-0.00</td><td>586.30</td><td>9.625</td></tr> <tr> <td>Production Casing</td><td>-0.00</td><td>1,175.37</td><td>7.000</td></tr> </table>	Name	Top MD(m)	Base MD(m)	Size(in)	Conductor - run	0.80	46.80	13.375	Surface Casing	-0.00	586.30	9.625	Production Casing	-0.00	1,175.37	7.000			
Name	Top MD(m)	Base MD(m)	Size(in)																		
Conductor - run	0.80	46.80	13.375																		
Surface Casing	-0.00	586.30	9.625																		
Production Casing	-0.00	1,175.37	7.000																		
Wellbore Comments: PLEASE NOTE: While running 2.75" dummy through X-LN @ 1151.81 m aH TBF not able to pass due to possible debris in well. See Daily Ops Report: 26/08/2013.																					
Top Refers	Casing Details	Schematic Wellbore (DWG2216)	Completion Details	Bulk Casing ID	HEAD ORIENTED AT DEPTH (NOT AT DATE #1)																
13.375", 46.80m			-0.73m, HNTT 4.00SA.5.0.LDO.5.1/4 R.C.L.H1/U. ,	4.000in / 4.000in																	
			-0.72m, WLLM 4.000 22-SAMA-4000-070.SA.8100/5500 HGS. , LM3846	1.750in / 1.750in																	
			-0.71m, WLSF2.750.17-BPV-0065-SLB.BPV.3600.H2S.N. EQ 8x2mm. , PV2200	0.000in / 0.000in																	
			-0.20m, CSNG. 5.0 - 15.0 VAM. L80. ,	4.408in / 4.408in																	
			12.07m, CGPJ 5.0 - 15.0 VAM. BxP.L80. ,	4.408in / 4.408in																	
			12.57m, CSNG. 5.0 - 15.0 VAM. L80. ,	4.408in / 4.408in																	
			599.24m, CGPJ 5.0 - 15.0 VAM. BxP.L80. ,	4.408in / 4.408in																	
			600.44m, FLCP. 5.0 x 4.1/2 VAM. BxP. 15FT.9Cr1Mo. ,	3.865in / 3.865in																	
			604.94m, WLLM 3.61 910RQ38101.RQ.201013320.H2S. , LM3168	2.620in / 2.620in																	
			604.95m, WLSF.3.61.824-76-3812.RQ/DES.5K.2200FT.H2S.CO2.E. OPD 139. Full 164. CL 132 bar O-ring. , PV2418	2.500in / 2.500in																	
9.625", 586.37m			604.93m, LNSV. 3.613.RRQ. 4.1/2 VAM. 9Cr1Mo. ,	3.813in / 3.813in																	
			605.64m, FLCP. 4.1/2 x 5.0 VAM. BxP. 9FT. 9Cr1Mo. ,	3.865in / 3.865in																	
			608.34m, CGPJ 5.0 - 15.0 VAM. BxP.L80. ,	4.408in / 4.408in																	
			608.94m, CSNG. 5.0 - 15.0 VAM. L80. ,	4.408in / 4.408in																	
			1,110.19m, CGCO 5.0-15.0 VAM x 4.0-10.9 VAM. ,	3.476in / 3.476in																	
			1,110.41m, TGPJ 4.0 - 10.9 VAM. BxP.16RL.L80. ,	3.476in / 3.476in																	
			1,114.64m, SLSD 3.313 OTIS XA. 4.0 VAM. 9Cr1Mo. SHIFT UP TO OPEN. ,	3.313in / 3.313in																	
			1,115.84m, TGPJ 4.0 - 10.9 VAM. BxP.16RL.L80. ,	3.476in / 3.476in																	
			1,120.07m, SPMA 4.0-10.9 VAM. KBMG. SOUR. 4130. ,	3.356in / 3.356in																	
			1,120.17m, Camco Dummy Valve E. 1 inch. ,	/																	
			1,122.13m, TGPJ 4.0 - 10.9 VAM. BxP.16RL. ,	3.476in / 3.476in	H 1,208.00m.14/09/2015 00:00																
			1,126.35m, TGPJ 4.0 - 10.9 VAM. BxP.16RL.L80. ,	3.476in / 3.476in	H 1,208.00m.31/10/2016 15:50																
			1,130.54m, SPMA 4.0-10.9 VAM. KBMG. SOUR. 4130. ,	3.356in / 3.356in	H 1,209.00m.10/04/2014 00:00																
			1,130.64m, Camco Dummy Valve E. 1 inch. ,	/	H 1,209.00m.22/05/1997 00:00																
			1,132.53m, TGPJ 4.0 - 10.9 VAM. BxP.16RL. ,	3.476in / 3.476in	H 1,209.00m.24/06/1993 00:00																
			1,136.94m, X-LN. 3.313. 4.0 VAM. 9Cr1Mo. ,	3.313in / 3.313in	H 1,210.00m.26/01/2007 00:00																
			1,137.29m, TGPJ 4.0 - 10.9 VAM. BxP.16RL.L80. ,	3.476in / 3.476in	H 1,210.00m.26/01/2007 00:00																
			1,141.60m, CGCO 4.0 VAM x 3.1/2 VAM. BxP. L80. ,	2.921in / 2.921in	H 1,210.00m.26/01/2007 00:00																
			1,141.92m, SNAT. 80DA40. KBH-22. B 3.1/2 VAM. 4140. ,	3.250in / 3.250in	H 1,210.00m.27/11/2012 00:00																
			1,142.50m, PARP 7.0. 84DAB40. B 5.0 VAM. 4140. ,	3.250in / 3.250in	H 1,210.00m.26/06/2013 00:00																
			1,148.99m, CGPJ 5.0 - 15.0 VAM. BxP. L80. ,	2.488in / 2.488in	H 1,210.00m.26/06/2013 00:00																
			1,146.38m, TGPJ 3.1/2 - 10.2 VAM. BxP.C75. ,	2.922in / 2.922in	H 1,210.00m.26/11/1999 00:00																
			1,150.99m, FLCP. 3.1/2 VAM. BxP. 3FT. 9Cr1Mo. ,	2.812in / 2.812in	H 1,210.00m.21/09/1999 00:00																
			1,151.81m, X-LN. 2.75. 3.1/2 VAM. 9Cr1Mo. ,	2.750in / 2.750in	H 1,210.00m.11/05/1998 00:00																
			1,152.07m, ENTRY GUIDE 2.75. 3.1/2 VAM. 9Cr1Mo. ,	2.750in / 2.750in	H 1,210.00m.19/06/1992 00:00																
					H 1,211.00m.10/05/2007 00:00																
					H 1,211.00m.20/06/2007 00:00																
7.000", 1,175.37m																					
Prepared By: EUROPE/Albert.Slim (Albert.Slim) Date: 26/09/2019 Data QA/QC'd by: Date QA/QC'd:																					

Client: NAM	Well No.: ROSSUM-WEERSELO-2	Field: ROSSUM-WEERSELO
Survey Date: 12/11/2019	Survey MFC-24 Extended	Job ID: DAC635



Sensor	Offset (m)	Schematic	Description	Length (m)	O.D. (in)	Weight (lb)
MIT	0.94		MBH-025 (052137) Memory Battery Housing	0.71	1.69	11.60
			UMT-003 (217180) Ultrawire Memory Tool 128MB	0.65	1.69	10.60
			PKJ-013 (98631) Production Knuckle Joint	0.17	1.69	3.50
			PKJ-013 (C-1355) Production Knuckle Joint	0.17	1.69	3.50
			PRC-034 (C-1255) Production Roller Centraliser (4 Arm)	0.84	1.69	13.00
			MIT-028 (10015579) Multifinger Imaging Tool (UW 24F)	1.28	1.69	20.70
			PRC-034 (C-1263) Production Roller Centraliser (4 Arm)	0.84	1.69	13.00
			BUL-006 (10251276) Bullnose Terminator	0.10	1.69	1.20
Dataset: Total length: Total weight: O.D.:			Sondex Ultrawire Memory MIT/MTT 4.77 m 77.10 lb 1.69 in			