



EXPRO

WELL FLOW MANAGEMENT™

Multifinger Caliper Analysis Report



Client: NAM
Well No.: ROW-4
Field: ROSSUM-WEERSELO
Country: Netherlands
Survey Date: 20th September 2023
Survey Type: Extended 24-Arm Caliper
Job ID: DAC879

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Client: NAM	Well No.: ROW-4	Field: ROSSUM-WEERSELO
Survey Date: 20/08/2023	Survey MFC-24 Extended	Job ID: DAC879



Pass no.	Survey Interval (m)	Data Quality	Notes
1	1369 to surface	Good	

Rev	Description	Author	Checked by
0	Report	5.1.2.e	5.1.2.e
1	Report	5.1.2.e	5.1.2.e

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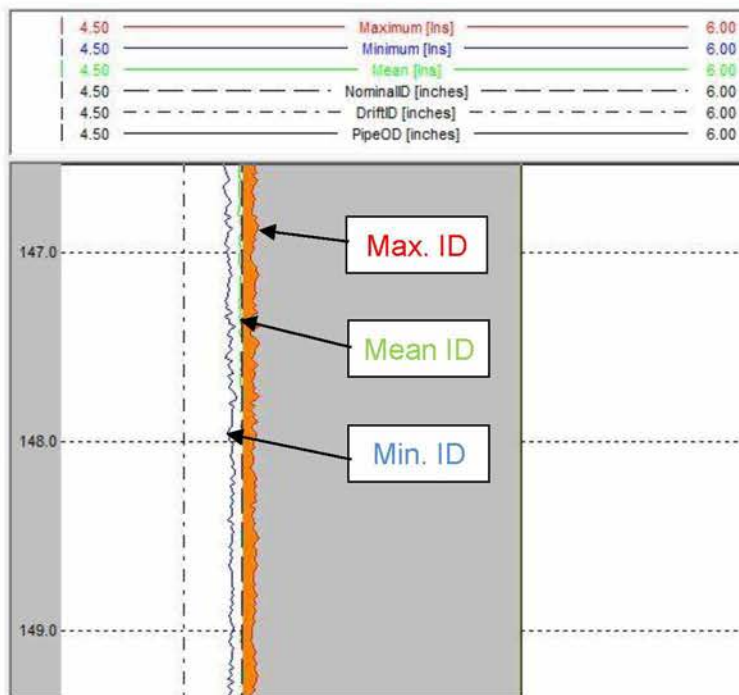
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Definitions

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

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

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Client: NAM	Well No.: ROW-4	Field: ROSSUM-WEERSELO
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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 well ROW-4.

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 3-1/2" tubing is shown to be in moderate condition.
- The maximum recorded ID of 3.116", equivalent to a 33.6% penetration, at 961.21 m was located at 961.21 m within an isolated and very sharply defined pit feature.
- Intermittent pitting has been found within the 3-1/2" tubing and 7" liner.
- Time-lapse analysis shows the tubing to not have deteriorated since the previous 2022 survey.

Statistical Data Summary	2023	2022	2021	2020	2019	T.L. Max Difference
Maximum % Penetration	33.6 %	38.2 %	42.7 %	38.6 %	37.0 %	42.7 %
Maximum Penetration Depth	961.21 m	1097.84 m	1148.96 m	1017.18 m	1098.07 m	-
Average Maximum % Penetration	16.4 %	16.8 %	29.5 %	18.0 %	15.3 %	14.2 %
Maximum % Circumferential Wall Loss	13.6 %	13.7 %	15.6 %	15.6 %	13.2 %	2.4 %
Maximum % Circumferential Wall Loss Depth	291.93 m	581.92 m	1148.96 m	149.81 m	582.74 m	-
Average Recorded Mean ID	3.125 inches	2.963 inches	3.242 inches	3.085 inches	2.917 inches	0.325 inches
Average Maximum % Circumferential Wall Loss	6.8 %	8.5 %	22.3 %	9.9 %	7.6	15.4 %
Survey Interval (m)	1369 to surface	1205 to surface	1367 to surface	1290 to surface	1202 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"

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2. Data Interpretation

3-1/2" Tubing Condition

- The 3-1/2" tubing is shown to be in moderate condition, with all 139 joints shown to contain maximum recorded percentage penetrations below 34% of the tubing nominal wall thickness (see Figure 1, in Section 3 & Max. Percentage Penetration vs. Depth Plot, in Section 4).
- The maximum recorded ID of 3.116", equivalent to a 33.6% penetration, at 961.21 m was located at 961.21 m within an isolated and very sharply defined pit feature. This pit was recorded over a single 5 mm depth sample and by a single caliper sensor and therefore has a maximum width of up to 0.702" (see Figures 2 & 3, in Section 3).
- Further isolated and sharply defined pits have been located throughout the logged interval. Due to the sharply defined nature of these pitting features, it is possible that the recorded values are underestimating how deep these metal loss feature penetrate into the nominal wall thickness due to the caliper sensors being unable to fully extend into them. The pitting is generally found towards the low-side of the well and affects some tubing connections.
- The average recorded mean ID within the 3-1/2" tubing is 2.950", which remains close to the nominal value of 2.922".
- There is a noticeable variance in joint ID that is believed to relate joint manufacturing and not related to any corrosive or erosive processes (see Figure 5, in Section 3).
- There are no indications of any build of deposition or restrictions within the surveyed interval, with no IDs recorded below the manufacturer quoted drift ID of 2.797".

7" Liner Condition

- The 7" liner is shown to be in moderate condition, with all maximum recorded percentage penetrations being below 32% of the nominal wall thickness (See Figure 6, in Section 3).
- Excluding the perforations, no significantly high IDs have been recorded within the liner although there is some minor intermittent pitting present.
- The recorded mean ID of 6.153" remains close to the nominal ID of 6.094".
- Perforations have been clearly imaged, but not recorded as full wall penetrations due to the caliper sensors being unable to fully extend into these sharply defined features.

Time-lapse Analysis

- 24-arm caliper surveys have been performed previously within this well by Expro. Time-lapse analysis has been performed by means of comparison of the previously recorded datasets from 2022, 2021, 2020 & 2019 along with that recorded in the current 2023 survey (see Time-lapse plots on in Section 4).
- Due to differing survey lengths, the 7" casing condition cannot be compared directly between all years. The difference in mean ID between the 2023 & 2021 survey within the 7" liner is 0.023", which is below the tool tolerance of 0.03" and indicates no significant changes in tubular condition have occurred.
- The 2021 survey is an outlier compared to the other datasets and shows the same trends but is significantly higher, this may be related to a major cleanup operation that was performed in the tubing immediately before the caliper survey in 2021.
- There is no clear indication that the tubing has deteriorated since the previous survey performed in 2022, with maximum % penetrations staying around similar values. The minor differences in values are believed to relate to the tool following a different rotation path and tool calibrations that are still within calibration tolerance.

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3. Caliper Graphics

Figure 1: 3-1/2" Tubing Overview

Figure 2: Maximum Recorded ID

Figure 3: Cross-section of Maximum Recorded ID

Figure 4: Connection Pit

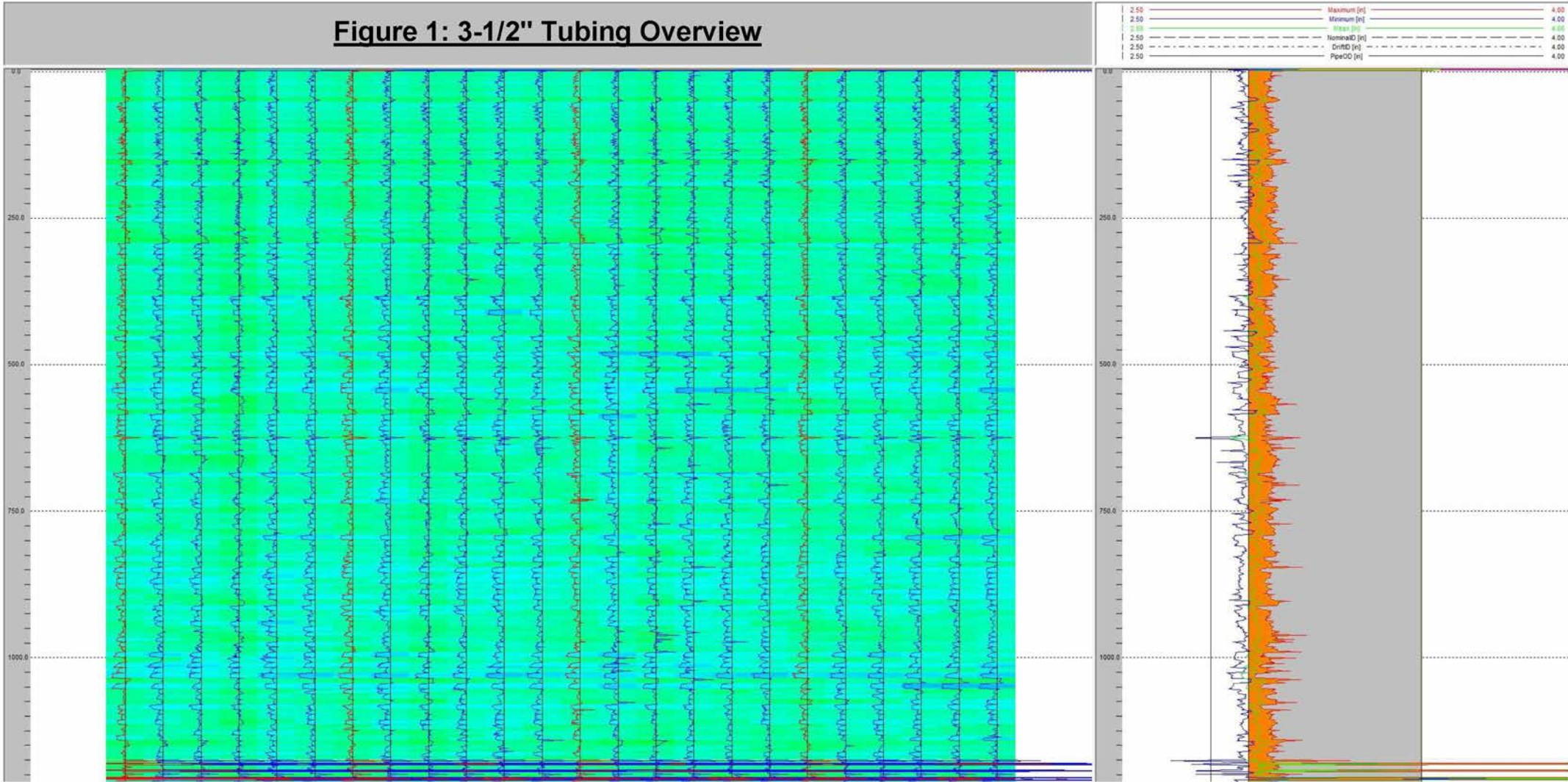
Figure 5: Joint ID Manufacturing Variance

Figure 6: 7" Liner Overview

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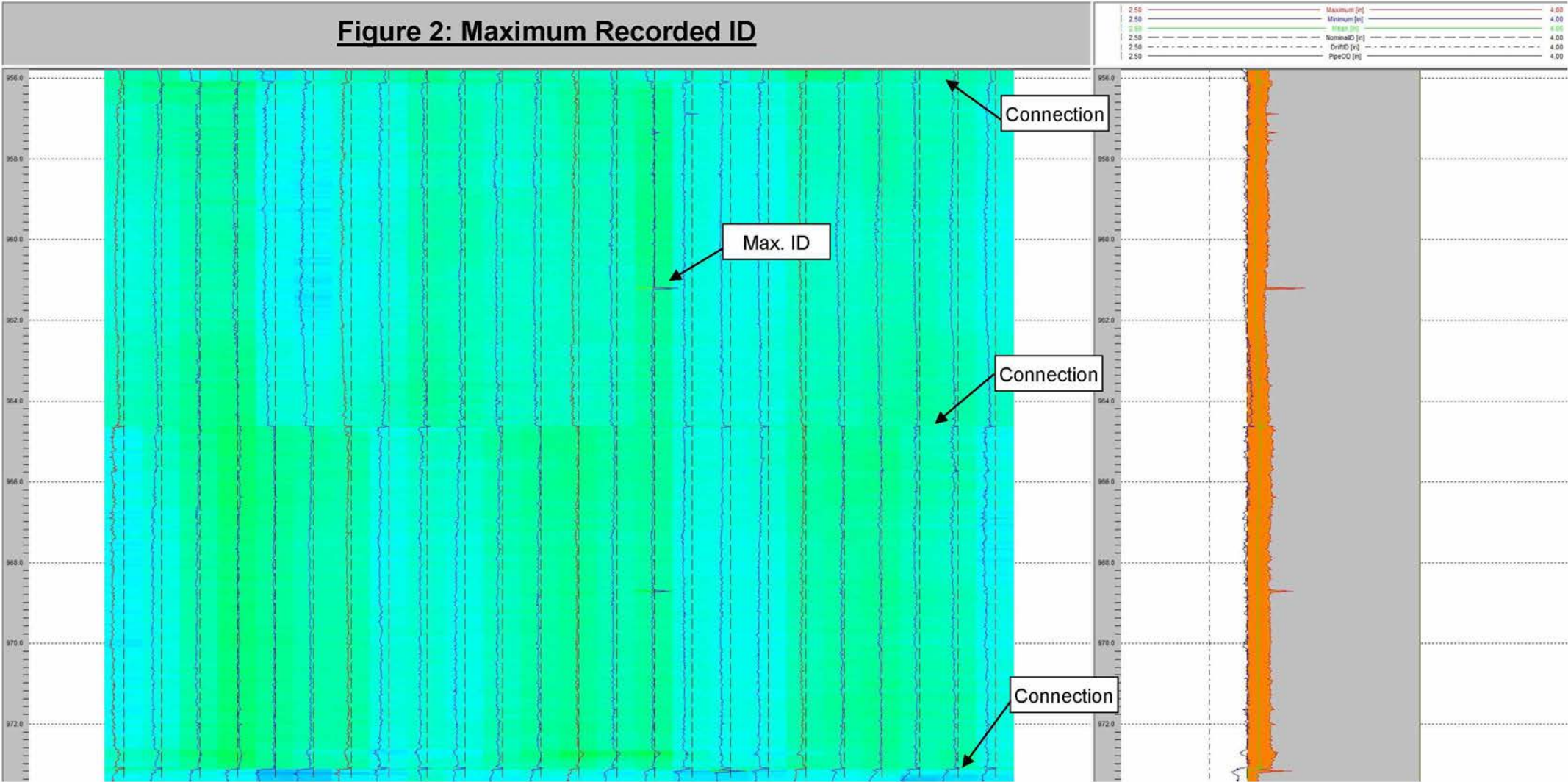
Figure 1: 3-1/2" Tubing Overview



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Figure 2: Maximum Recorded ID



Client: NAM	Well No.: ROW-4	Field: ROSSUM-WEERSELO
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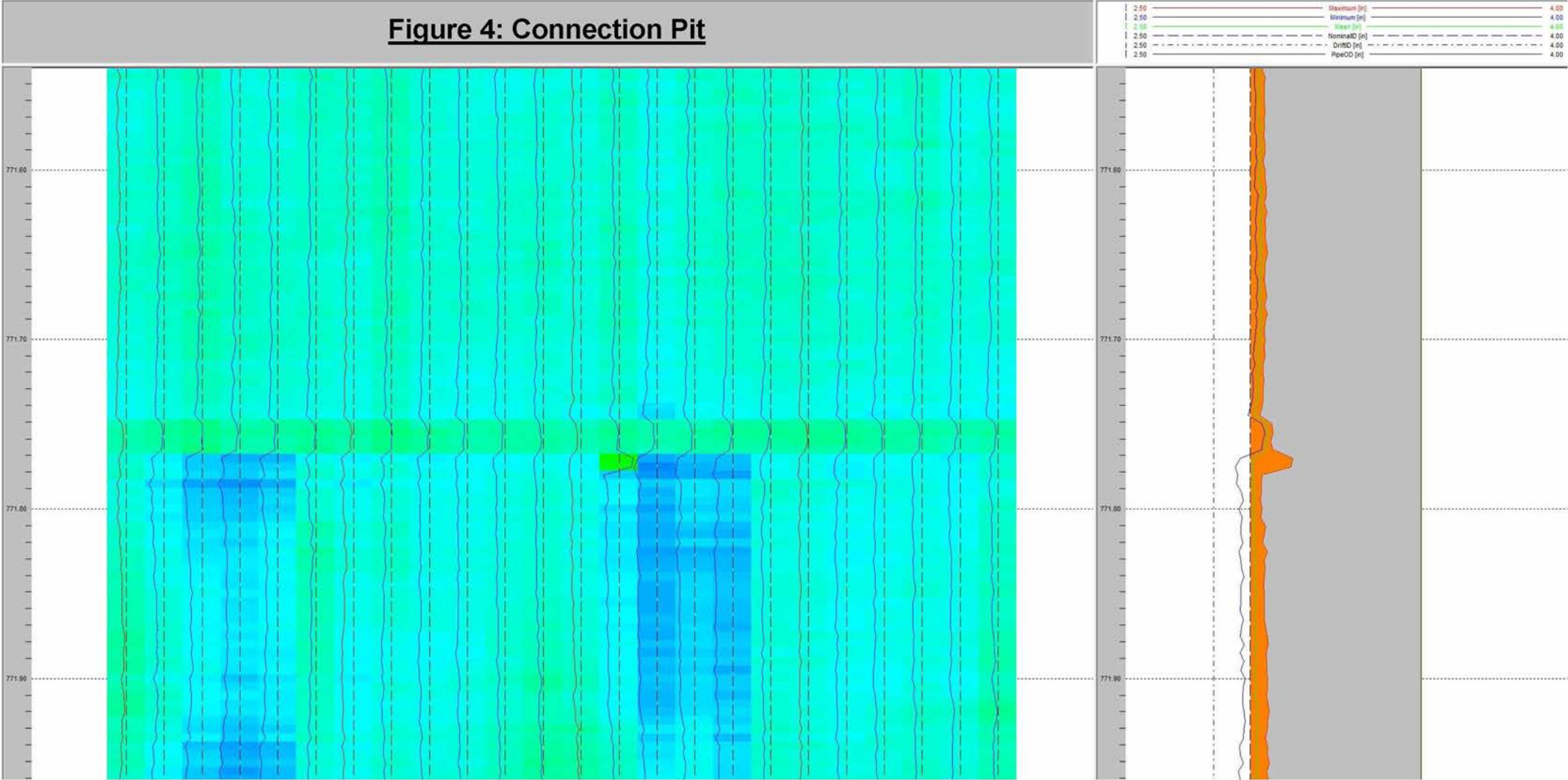
Figure 3: Cross-section of Maximum Recorded ID



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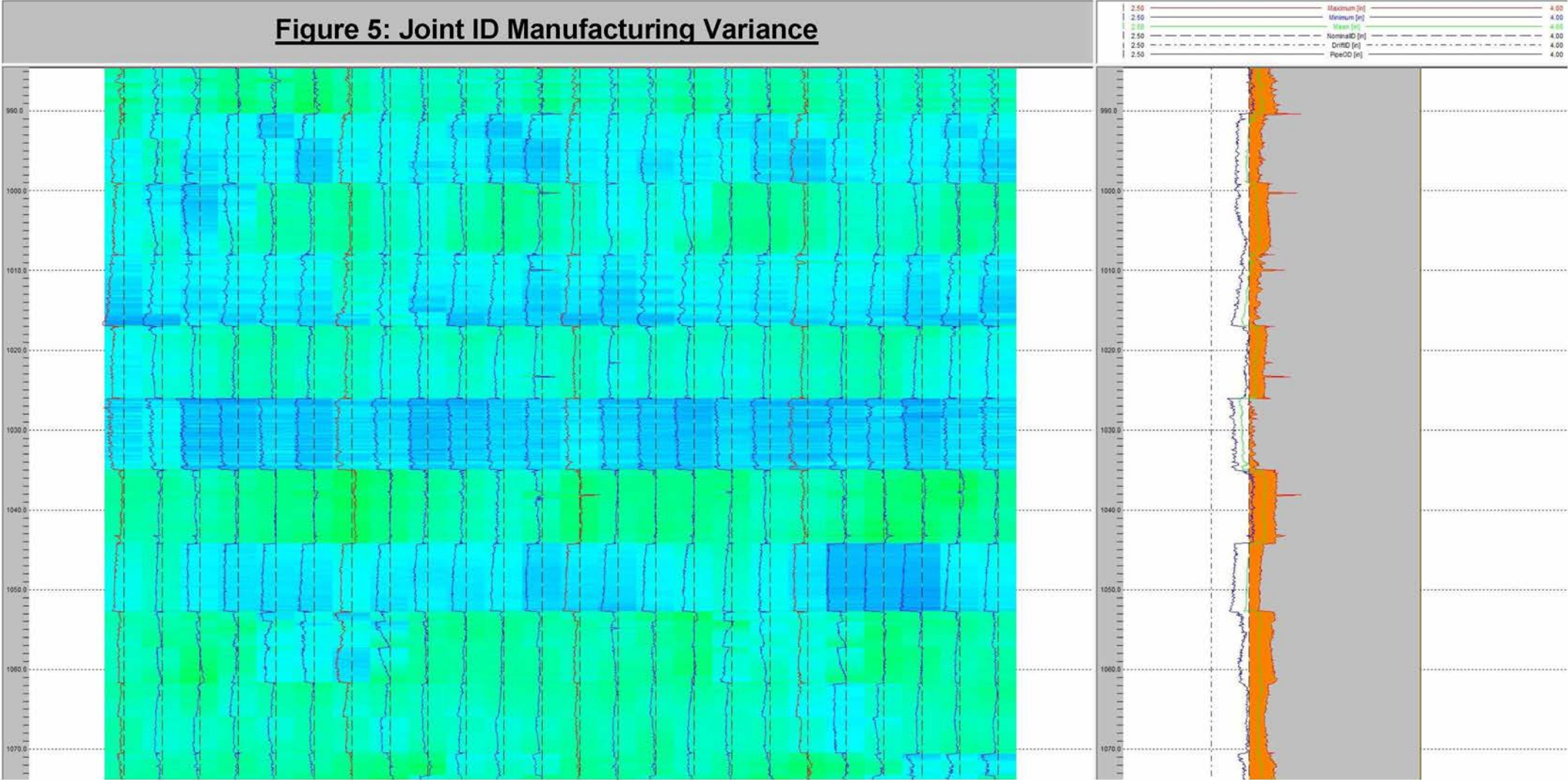
Figure 4: Connection Pit



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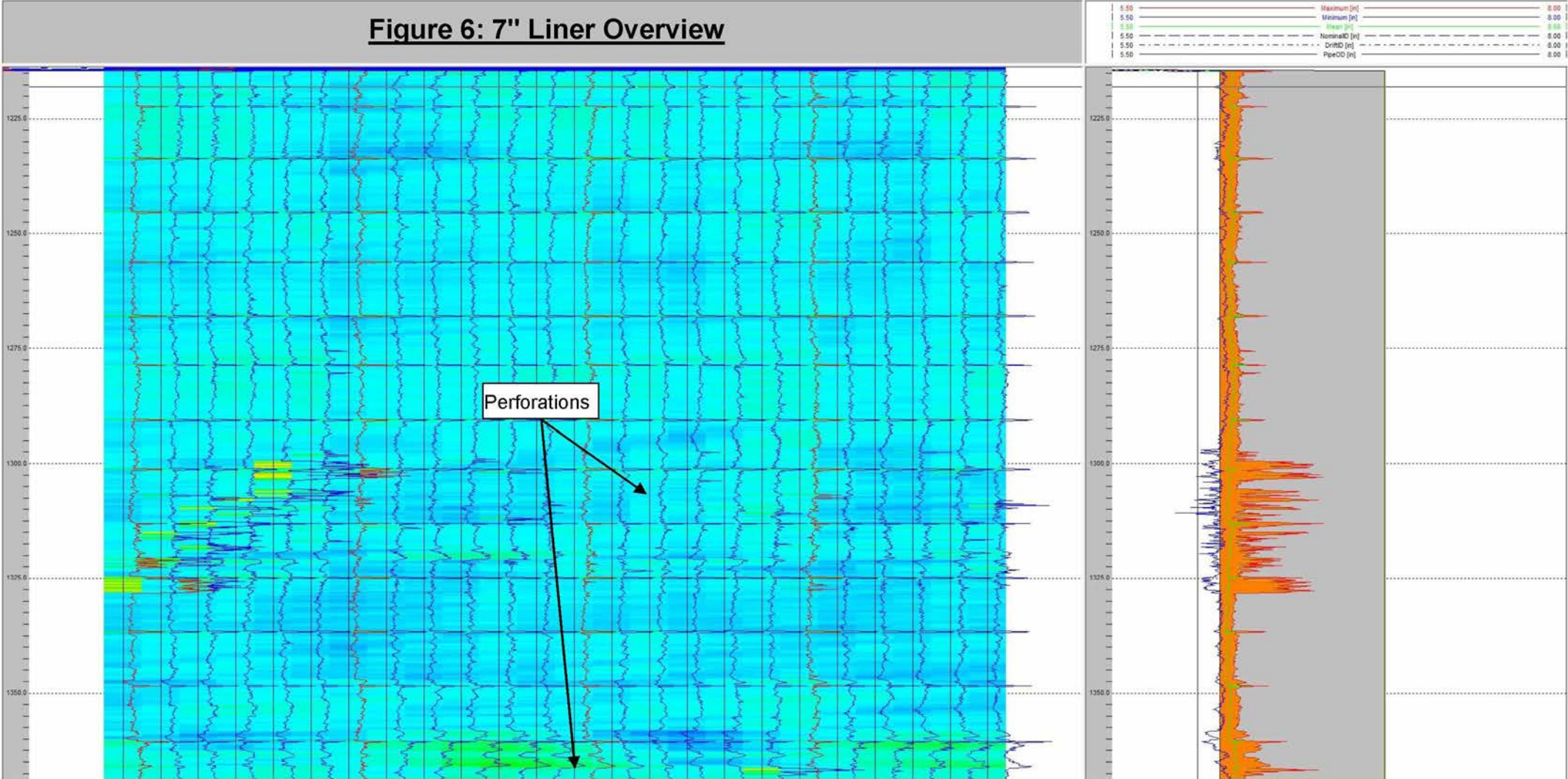
Figure 5: Joint ID Manufacturing Variance



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Figure 6: 7" Liner Overview



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4. Statistical Analysis

Max. Percentage Penetration per Joint vs. Depth Plot

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

Measured ID per Joint vs. Depth Plot

Tabulated Data

Time-lapse Percentage Penetration Histogram Plot

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

Time-lapse 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

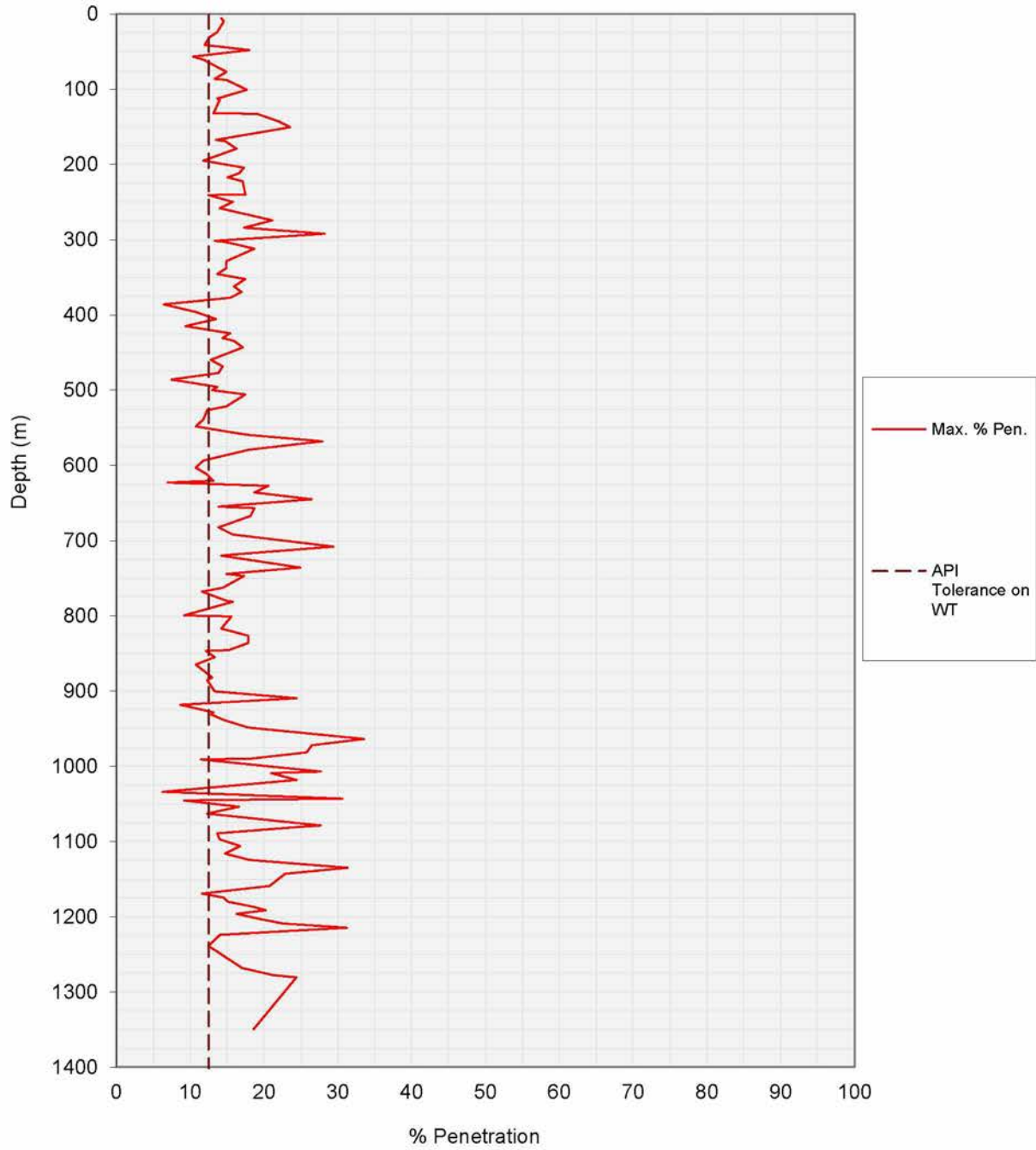
Time-lapse Minimum ID per Joint vs. Depth Plot

(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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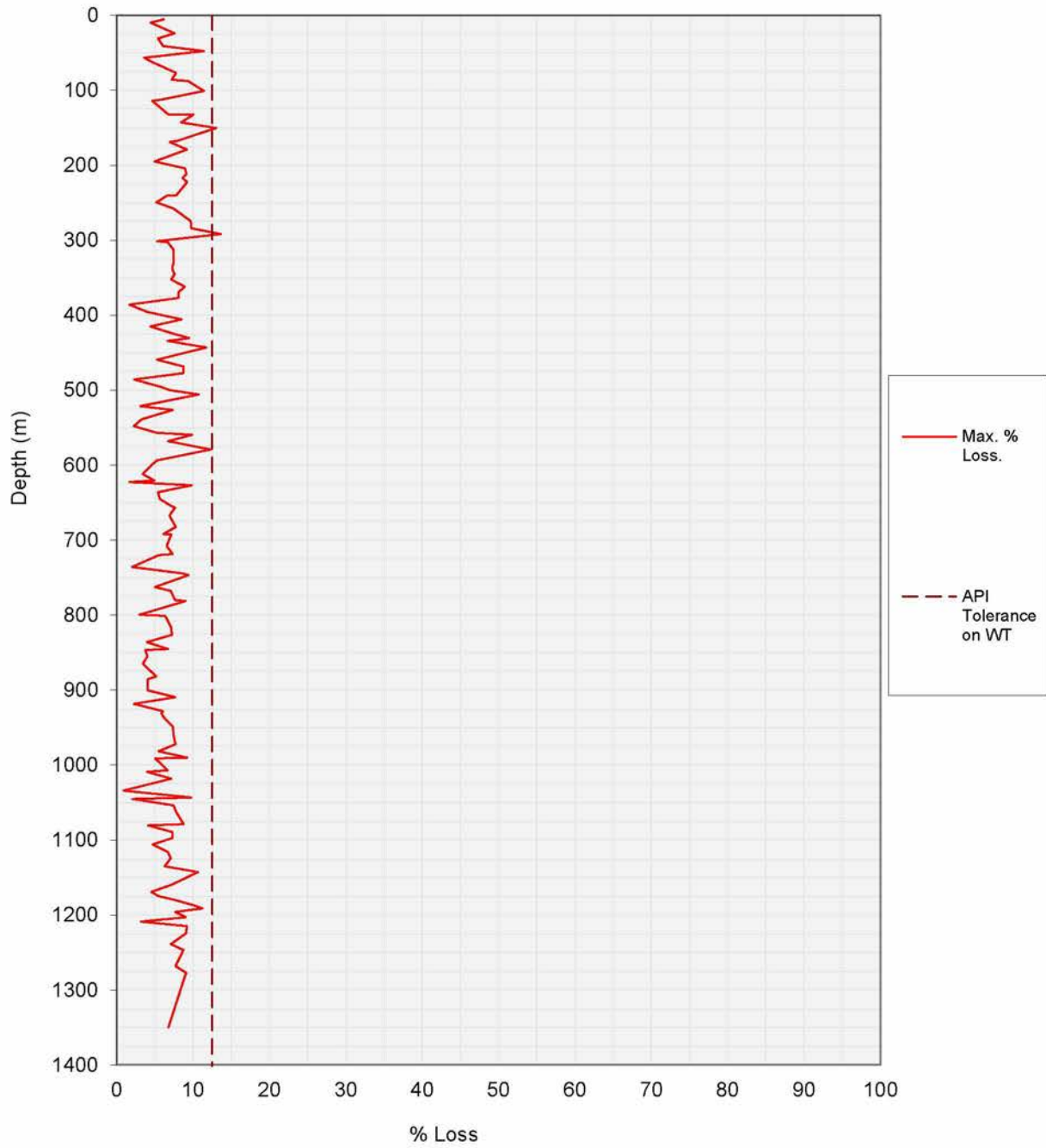
Max. Percentage Penetration per Joint vs. Depth Plot



Client: NAM	Well No.: ROW-4	Field: ROSSUM-WEERSELO
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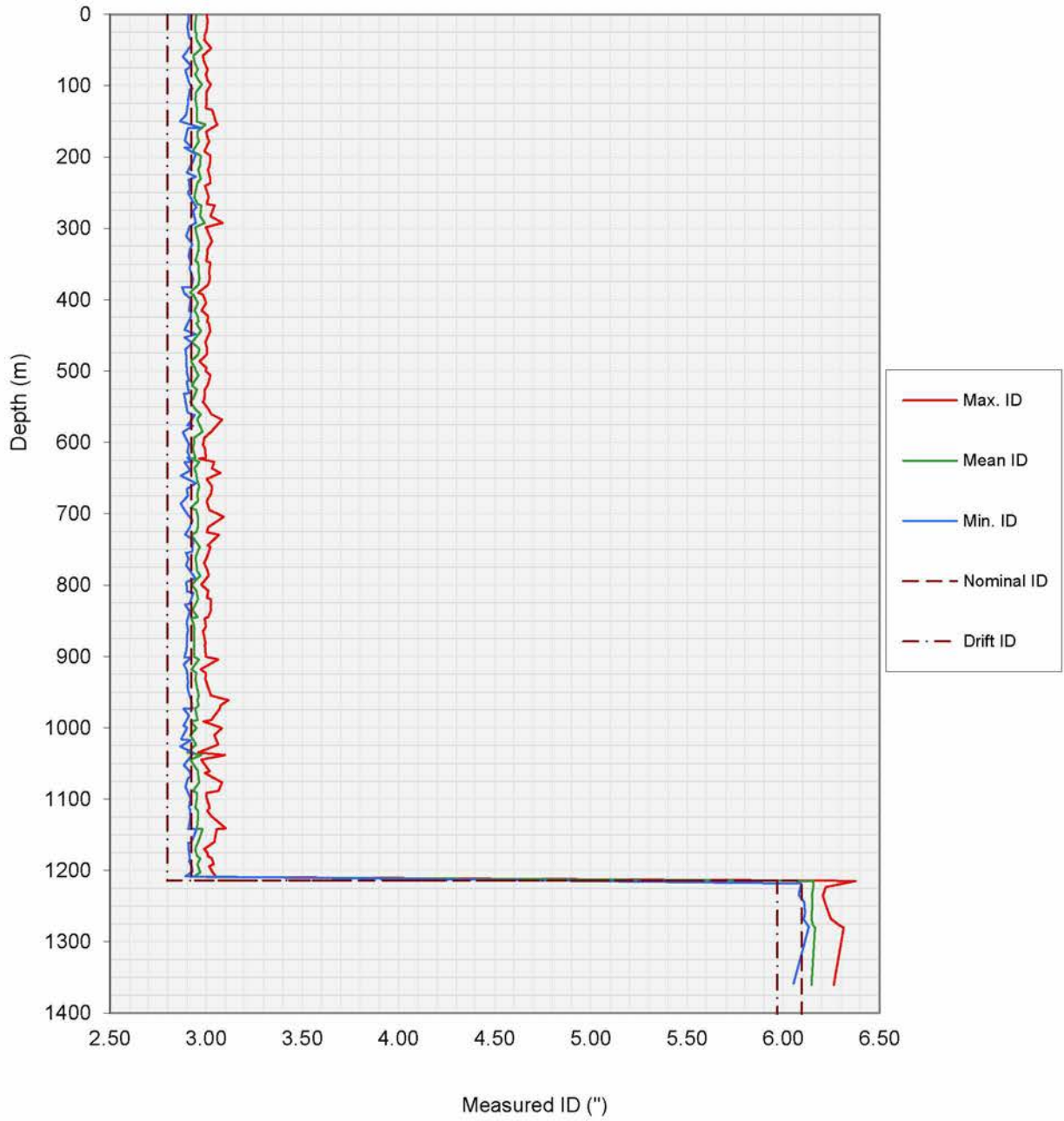
Max. Percentage Circumferential Wall Loss per Joint vs. Depth Plot



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Measured ID per Joint vs. Depth Plot



Client: NAM	Well No.: ROW-4	Field: ROSSUM-WEERSELO
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Client: NAM

Well: ROW-4

Survey Date: 20th September 2023

Tubulars Surveyed: 3-1/2" 10.2 lb/ft, tubing
7" 32 lb/ft, liner

Nom. ID: 2.922
Nom. ID: 6.094

Drift ID: 2.797
Drift ID: 5.969

Nom. OD: 3.500
Nom. OD: 7.000

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	-2.38	6.41	8.79	3.004	0.23	14.2	6.2	2.907	-2.02	2.949	3.500	
2	6.56	15.74	9.19	3.006	10.60	14.5	4.4	2.910	9.08	2.944	3.500	
3	15.95	24.27	8.31	3.001	24.01	13.7	7.6	2.902	16.02	2.943	3.500	
4	24.59	33.17	8.58	2.995	26.84	12.6	5.4	2.913	32.94	2.949	3.500	
5	33.36	41.95	8.59	2.991	36.13	11.9	6.1	2.923	34.99	2.950	3.500	
6	42.24	51.33	9.10	3.026	47.62	18.0	11.4	2.924	42.35	2.977	3.500	
7	51.50	60.12	8.62	2.982	58.02	10.4	3.6	2.879	59.83	2.933	3.500	
8	60.34	68.99	8.65	2.990	67.12	11.8	4.3	2.912	68.95	2.940	3.500	
9	69.21	77.35	8.14	3.008	77.25	14.9	7.8	2.920	73.24	2.957	3.500	
10	77.63	86.63	9.00	2.999	84.09	13.3	7.2	2.893	77.88	2.943	3.500	
11	86.88	95.37	8.50	3.008	92.64	14.9	9.3	2.911	95.35	2.961	3.500	
12	95.56	104.46	8.90	3.024	98.20	17.6	11.4	2.928	104.10	2.979	3.500	
13	104.71	113.77	9.06	3.001	108.93	13.7	5.9	2.916	105.03	2.948	3.500	
14	114.19	123.25	9.07	3.003	118.93	14.0	4.7	2.905	121.23	2.944	3.500	
15	123.67	132.12	8.45	2.998	131.45	13.1	6.7	2.907	123.70	2.952	3.500	
16	132.30	140.88	8.58	3.032	134.07	19.0	10.1	2.897	140.70	2.954	3.500	
17	141.18	149.90	8.72	3.049	149.80	22.0	8.4	2.866	149.76	2.951	3.500	
18	150.12	158.80	8.69	3.058	154.63	23.5	13.0	2.972	158.80	2.995	3.500	
19	158.99	167.39	8.40	3.000	164.30	13.5	8.0	2.906	159.33	2.955	3.500	
20	167.66	176.93	9.27	3.007	172.60	14.7	6.9	2.889	176.89	2.957	3.500	
21	177.28	186.27	8.98	3.016	178.04	16.3	9.2	2.924	186.26	2.962	3.500	
22	186.68	195.45	8.78	2.990	191.83	11.8	4.9	2.888	186.70	2.929	3.500	
23	195.83	205.09	9.26	3.022	198.17	17.3	8.9	2.946	196.05	2.972	3.500	
24	205.33	213.96	8.64	3.018	211.82	16.6	9.1	2.933	205.34	2.967	3.500	
25	214.20	222.03	7.83	3.009	217.73	15.1	8.6	2.900	221.88	2.959	3.500	
26	222.36	231.29	8.93	3.021	230.22	17.1	9.2	2.947	227.67	2.973	3.500	
27	231.55	240.20	8.65	3.023	236.60	17.5	7.8	2.910	231.72	2.955	3.500	
28	240.61	248.81	8.20	2.994	240.64	12.5	6.5	2.914	245.49	2.951	3.500	

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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	249.06	257.58	8.52	3.013	256.05	15.7	5.2	2.905	249.88	2.939	3.500	
30	257.92	266.67	8.75	3.003	265.79	14.0	7.5	2.932	262.69	2.955	3.500	
31	266.99	275.25	8.27	3.044	267.89	21.1	9.7	2.950	270.32	2.975	3.500	
32	275.53	283.93	8.40	3.022	282.88	17.3	9.7	2.933	275.57	2.970	3.500	
33	284.27	292.85	8.59	3.085	292.12	28.2	13.6	2.946	292.15	2.992	3.500	
34	293.13	302.12	8.99	2.999	298.23	13.3	5.3	2.914	297.02	2.944	3.500	
35	302.54	311.08	8.54	3.007	302.92	14.7	6.7	2.897	311.07	2.945	3.500	
36	311.50	320.05	8.55	3.030	318.11	18.7	7.4	2.923	320.02	2.961	3.500	
37	320.33	329.14	8.81	3.008	328.59	14.9	7.5	2.928	322.02	2.961	3.500	
38	329.55	337.77	8.22	3.008	331.04	14.9	7.3	2.914	329.71	2.960	3.500	
39	338.17	346.12	7.96	3.001	345.77	13.7	7.6	2.910	339.02	2.943	3.500	
40	346.53	355.22	8.69	3.023	347.82	17.5	7.1	2.921	347.17	2.959	3.500	
41	355.63	364.18	8.55	3.014	361.55	15.9	8.9	2.914	355.77	2.961	3.500	
42	364.59	372.73	8.15	3.020	369.27	17.0	8.1	2.933	371.77	2.965	3.500	
43	373.15	382.01	8.86	3.011	378.96	15.4	8.1	2.923	381.96	2.960	3.500	
44	382.29	390.12	7.83	2.959	389.89	6.4	1.7	2.875	382.42	2.916	3.500	
45	390.54	398.60	8.06	2.984	392.92	10.7	4.0	2.887	390.89	2.934	3.500	
46	399.02	407.02	8.00	3.000	404.91	13.5	8.5	2.920	399.02	2.957	3.500	
47	407.31	415.80	8.49	2.976	414.84	9.3	4.4	2.910	415.51	2.940	3.500	
48	416.05	424.52	8.48	3.011	423.04	15.4	7.2	2.923	416.38	2.956	3.500	
49	424.84	432.80	7.96	3.005	430.65	14.4	9.5	2.919	425.20	2.960	3.500	
50	433.05	442.32	9.27	3.014	433.21	15.9	6.7	2.888	442.32	2.949	3.500	
51	442.60	451.05	8.45	3.021	444.08	17.1	11.7	2.946	448.26	2.973	3.500	
52	451.46	460.25	8.79	2.996	459.54	12.8	5.3	2.888	452.99	2.926	3.500	
53	460.66	469.27	8.61	3.005	469.27	14.4	8.7	2.929	460.66	2.965	3.500	
54	469.55	477.95	8.40	3.002	477.11	13.8	8.7	2.893	469.60	2.958	3.500	
55	478.37	486.71	8.34	2.965	486.29	7.4	2.3	2.897	478.54	2.922	3.500	
56	487.06	495.98	8.92	3.001	495.37	13.7	5.8	2.897	487.38	2.941	3.500	
57	496.39	504.71	8.32	2.997	500.01	13.0	6.9	2.901	503.64	2.948	3.500	
58	505.01	513.32	8.31	3.023	505.76	17.5	10.7	2.910	513.31	2.960	3.500	
59	513.64	522.36	8.72	3.008	519.79	14.9	3.1	2.898	514.91	2.926	3.500	
60	522.63	530.93	8.30	2.993	525.83	12.3	7.3	2.911	530.90	2.952	3.500	
61	531.35	539.74	8.39	2.990	538.56	11.8	3.2	2.885	531.45	2.934	3.500	
62	540.15	548.85	8.70	2.984	543.20	10.7	2.2	2.897	547.66	2.917	3.500	
63	549.26	558.27	9.01	3.015	554.16	16.1	5.3	2.903	557.91	2.947	3.500	
64	558.63	566.88	8.25	3.026	560.34	18.0	9.9	2.941	561.91	2.972	3.500	

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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
65	567.08	576.26	9.18	3.083	568.03	27.9	6.7	2.902	576.02	2.954	3.500	
66	576.67	585.19	8.52	3.026	584.99	18.0	12.3	2.933	576.67	2.981	3.500	
67	585.60	594.48	8.88	2.990	593.66	11.8	5.2	2.879	585.64	2.937	3.500	
68	594.89	603.69	8.80	2.984	603.39	10.7	4.2	2.910	602.78	2.936	3.500	
69	604.06	612.08	8.03	2.993	607.36	12.3	3.4	2.903	612.06	2.930	3.500	
70	612.43	621.48	9.05	2.998	621.44	13.1	4.9	2.916	621.41	2.944	3.500	
71	621.63	622.71	1.08	2.962	622.65	6.9	1.7	2.901	621.69	2.923	3.500	Pup joint
72	622.83	624.48	1.66	2.919	623.59	-	-	2.862	622.84	2.877	3.500	Flow coupling
73	624.61	625.08	0.47	3.093	624.68	-	-	2.754	625.00	2.827	3.500	Safety valve
74	625.22	626.91	1.68	2.917	625.54	-	-	2.861	626.30	2.876	3.500	Flow coupling
75	627.01	627.58	0.57	3.041	627.36	20.6	9.8	2.928	627.35	2.964	3.500	Pup joint
76	627.67	636.86	9.19	3.030	636.77	18.7	5.4	2.888	627.75	2.939	3.500	
77	637.09	646.19	9.10	3.075	642.72	26.5	5.6	2.918	639.08	2.948	3.500	
78	646.53	655.47	8.93	3.002	651.46	13.8	7.2	2.868	646.59	2.952	3.500	
79	655.87	664.92	9.05	3.030	661.28	18.7	7.6	2.946	657.01	2.964	3.500	
80	665.33	674.47	9.14	3.027	671.15	18.2	6.9	2.899	665.34	2.954	3.500	
81	674.88	683.34	8.46	3.002	682.12	13.8	7.7	2.906	674.91	2.957	3.500	
82	683.75	691.81	8.06	3.013	691.66	15.7	6.1	2.868	686.03	2.920	3.500	
83	692.09	700.12	8.03	3.016	694.53	16.3	7.1	2.900	700.07	2.948	3.500	
84	700.42	709.26	8.84	3.092	704.34	29.4	6.5	2.930	709.08	2.957	3.500	
85	709.57	718.74	9.17	3.012	718.66	15.6	7.3	2.921	714.97	2.957	3.500	
86	718.96	727.65	8.69	3.004	725.89	14.2	5.5	2.915	719.26	2.949	3.500	
87	728.06	736.31	8.25	3.066	729.40	24.9	2.0	2.891	729.04	2.923	3.500	
88	736.45	745.22	8.77	3.008	744.35	14.9	8.6	2.932	736.46	2.961	3.500	
89	745.50	753.95	8.45	3.022	746.18	17.3	9.3	2.926	753.90	2.967	3.500	
90	754.24	762.71	8.48	3.005	760.24	14.4	5.0	2.895	754.41	2.945	3.500	
91	763.13	771.56	8.43	2.989	768.42	11.6	7.1	2.908	763.14	2.948	3.500	
92	771.89	780.93	9.04	3.008	779.88	14.9	7.6	2.897	772.22	2.953	3.500	
93	781.12	790.36	9.23	3.013	786.54	15.7	9.0	2.943	790.13	2.969	3.500	
94	790.72	799.61	8.89	2.975	799.50	9.2	3.0	2.897	795.82	2.925	3.500	
95	799.75	808.95	9.20	3.012	808.08	15.6	6.3	2.900	808.68	2.949	3.500	
96	809.31	817.79	8.48	3.004	817.59	14.2	7.1	2.934	810.67	2.956	3.500	
97	818.21	827.23	9.02	3.025	819.82	17.8	7.2	2.915	825.81	2.958	3.500	
98	827.51	836.47	8.97	3.025	834.90	17.8	3.9	2.891	827.59	2.929	3.500	
99	836.76	845.49	8.73	3.010	844.91	15.2	6.7	2.914	836.81	2.955	3.500	
100	845.90	854.22	8.32	2.992	846.67	12.1	3.7	2.898	851.89	2.924	3.500	
101	854.47	863.62	9.15	2.999	858.03	13.3	4.0	2.906	863.13	2.938	3.500	
102	863.91	873.13	9.22	2.984	864.59	10.7	3.4	2.901	872.03	2.936	3.500	
103	873.46	882.58	9.12	2.997	881.93	13.0	5.2	2.901	876.91	2.937	3.500	
104	882.87	891.82	8.95	2.993	883.50	12.3	4.0	2.898	891.41	2.939	3.500	
105	892.06	901.35	9.28	2.999	900.39	13.3	4.1	2.887	901.28	2.937	3.500	

Client: NAM	Well No.: ROW-4	Field: ROSSUM-WEERSELO
Survey Date: 20/08/2023	Survey MFC-24 Extended	Job ID: DAC879



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	901.62	910.49	8.87	3.063	904.07	24.4	7.7	2.921	901.69	2.963	3.500	
107	910.70	919.17	8.47	2.972	918.24	8.7	2.2	2.884	910.73	2.925	3.500	
108	919.52	928.64	9.12	2.998	922.96	13.1	6.0	2.900	920.05	2.949	3.500	
109	928.89	937.00	8.11	2.996	931.33	12.8	5.8	2.905	936.91	2.944	3.500	
110	937.30	946.49	9.19	3.006	940.62	14.5	6.3	2.902	939.05	2.950	3.500	
111	946.83	955.94	9.11	3.025	954.84	17.8	7.3	2.906	946.86	2.961	3.500	
112	956.20	964.51	8.31	3.116	961.21	33.6	7.5	2.923	961.65	2.955	3.500	
113	964.77	972.90	8.12	3.075	968.71	26.5	7.7	2.928	972.71	2.961	3.500	
114	973.14	981.72	8.58	3.071	973.17	25.8	5.5	2.883	973.20	2.943	3.500	
115	981.97	990.22	8.26	3.027	989.28	18.2	9.2	2.910	982.68	2.955	3.500	
116	990.54	999.00	8.46	2.988	991.03	11.4	5.0	2.883	997.13	2.921	3.500	
117	999.25	1007.92	8.67	3.082	1000.32	27.7	6.7	2.901	999.86	2.951	3.500	
118	1008.23	1016.86	8.63	3.043	1010.01	20.9	4.0	2.870	1016.36	2.917	3.500	
119	1017.14	1025.99	8.85	3.063	1023.39	24.4	7.1	2.920	1017.34	2.947	3.500	
120	1026.24	1034.90	8.66	2.958	1034.41	6.2	0.9	2.866	1026.44	2.901	3.500	
121	1035.14	1044.12	8.98	3.099	1038.13	30.6	9.7	2.935	1035.28	2.974	3.500	
122	1044.30	1052.63	8.33	2.975	1044.68	9.2	2.1	2.885	1052.31	2.918	3.500	
123	1052.93	1061.58	8.66	3.018	1061.17	16.6	7.4	2.910	1059.67	2.959	3.500	
124	1061.90	1070.49	8.59	2.993	1063.19	12.3	7.8	2.923	1067.64	2.957	3.500	
125	1070.72	1080.06	9.34	3.082	1076.53	27.7	8.7	2.906	1070.94	2.964	3.500	
126	1080.35	1088.61	8.27	3.064	1088.54	24.6	4.1	2.892	1082.52	2.931	3.500	
127	1088.78	1096.58	7.80	3.001	1091.34	13.7	7.3	2.915	1096.47	2.952	3.500	
128	1096.79	1105.05	8.26	3.003	1098.97	14.0	7.2	2.919	1097.50	2.952	3.500	
129	1105.34	1114.63	9.29	3.019	1111.65	16.8	4.7	2.910	1112.18	2.944	3.500	
130	1115.05	1123.41	8.36	3.007	1116.43	14.7	6.7	2.919	1115.28	2.957	3.500	
131	1123.63	1132.68	9.05	3.026	1123.86	18.0	7.1	2.915	1132.58	2.959	3.500	
132	1132.90	1141.68	8.78	3.103	1141.02	31.3	6.3	2.906	1141.56	2.952	3.500	
133	1142.03	1151.27	9.24	3.054	1142.09	22.8	10.6	2.950	1142.05	2.981	3.500	
134	1151.57	1160.57	9.00	3.042	1159.84	20.8	7.2	2.923	1160.56	2.959	3.500	
135	1160.85	1170.09	9.24	2.989	1170.07	11.6	4.5	2.906	1160.96	2.942	3.500	
136	1170.50	1175.15	4.65	3.006	1174.97	14.5	5.4	2.910	1170.67	2.948	3.500	Pup joint
137	1175.22	1176.22	1.00	3.264	1175.60	-	-	2.758	1175.34	2.908	3.500	SLSD
138	1176.30	1180.62	4.32	3.009	1180.05	15.1	7.6	2.912	1176.35	2.954	3.500	Pup joint
139	1180.71	1182.53	1.82	5.256	1181.85	-	-	2.912	1182.35	3.419	3.500	SPM
140	1182.58	1187.17	4.59	3.029	1182.70	18.5	10.0	2.914	1182.69	2.969	3.500	Pup joint
141	1187.24	1191.96	4.72	3.039	1191.26	20.2	11.2	2.912	1187.25	2.954	3.500	Pup joint
142	1192.03	1193.84	1.81	5.600	1193.19	-	-	2.919	1192.24	3.446	3.500	SPM
143	1193.96	1198.60	4.64	3.016	1194.04	16.3	7.7	2.926	1194.38	2.959	3.500	Pup joint
144	1198.64	1198.91	0.27	3.100	1198.75	-	-	2.761	1198.81	2.864	3.500	Nipple
145	1198.97	1203.67	4.70	3.035	1202.80	19.6	9.1	2.929	1201.38	2.969	3.500	Pup joint
146	1203.88	1208.16	4.28	4.434	1208.01	-	-	2.914	1208.15	3.810	3.500	Anchor & PKR

Client: NAM	Well No.: ROW-4	Field: ROSSUM-WEERSELO
Survey Date: 20/08/2023	Survey MFC-24 Extended	Job ID: DAC879

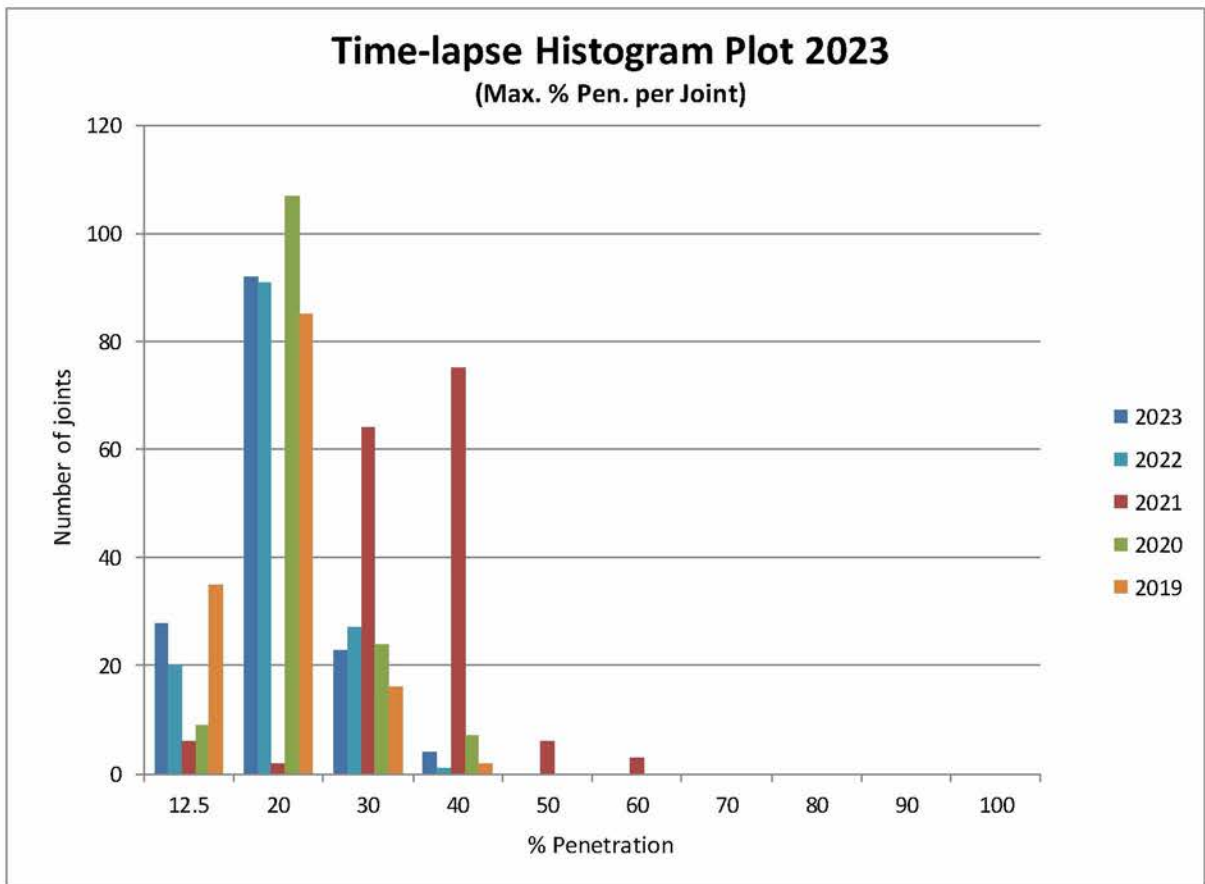


Ref.	Top (m)	Bottom (m)	Length (m)	Max. ID (")	Dep. Max. (m)	Max. Pen. (%)	Max. Loss (%)	Min. ID (")	Dep. Min. (m)	Mean ID (")	Tubular OD (")	Completion Item
147	1208.27	1213.11	4.84	3.052	1208.83	22.5	3.2	2.893	1208.29	2.933	3.500	Pup joint
148	1213.16	1213.82	0.66	2.995	1213.50	-	-	2.928	1213.51	2.943	3.500	XO
149	1213.90	1214.39	0.49	3.124	1214.00	-	-	2.745	1214.34	2.826	3.500	Nipple
150	1214.41	1214.52	0.11	4.702	1214.52	-	-	3.312	1214.42	3.750	7.000	WEG
151	1214.59	1222.39	7.81	6.377	1214.67	31.2	9.2	6.095	1218.26	6.157	7.000	7inch partially logged joint
152	1222.49	1233.72	11.22	6.221	1223.17	14.0	9.1	6.080	1233.71	6.156	7.000	
153	1233.85	1245.38	11.53	6.207	1235.11	12.5	7.1	6.110	1244.73	6.149	7.000	
154	1245.52	1256.26	10.74	6.218	1246.33	13.7	8.7	6.111	1252.34	6.152	7.000	
155	1256.40	1268.00	11.60	6.248	1267.94	17.0	7.7	6.115	1257.59	6.146	7.000	
156	1268.14	1278.63	10.49	6.286	1275.62	21.2	9.1	6.106	1268.52	6.153	7.000	
157	1278.77	1290.55	11.78	6.315	1280.51	24.4	8.9	6.133	1279.02	6.165	7.000	
158	1290.69	1301.25	10.56	6.606	1300.42	-	-	6.057	1297.71	6.146	7.000	Perf. Joint
159	1301.39	1313.05	11.65	6.661	1303.03	-	-	5.999	1310.81	6.141	7.000	Perf. Joint
160	1313.19	1324.87	11.68	6.583	1315.16	-	-	6.054	1318.33	6.148	7.000	Perf. Joint
161	1325.01	1336.61	11.61	6.609	1327.68	-	-	6.066	1325.69	6.134	7.000	Perf. Joint
162	1336.75	1348.43	11.68	6.239	1347.78	-	-	6.083	1347.69	6.135	7.000	Perf. Joint
163	1348.57	1360.55	11.97	6.262	1360.54	18.5	6.8	6.053	1358.91	6.147	7.000	
164	1360.69	1368.90	8.22	6.637	1366.86	-	-	6.057	1360.69	6.180	7.000	Partially logged perf. joint

Client: NAM	Well No.: ROW-4	Field: ROSSUM-WEERSELO
Survey Date: 20/08/2023	Survey MFC-24 Extended	Job ID: DAC879



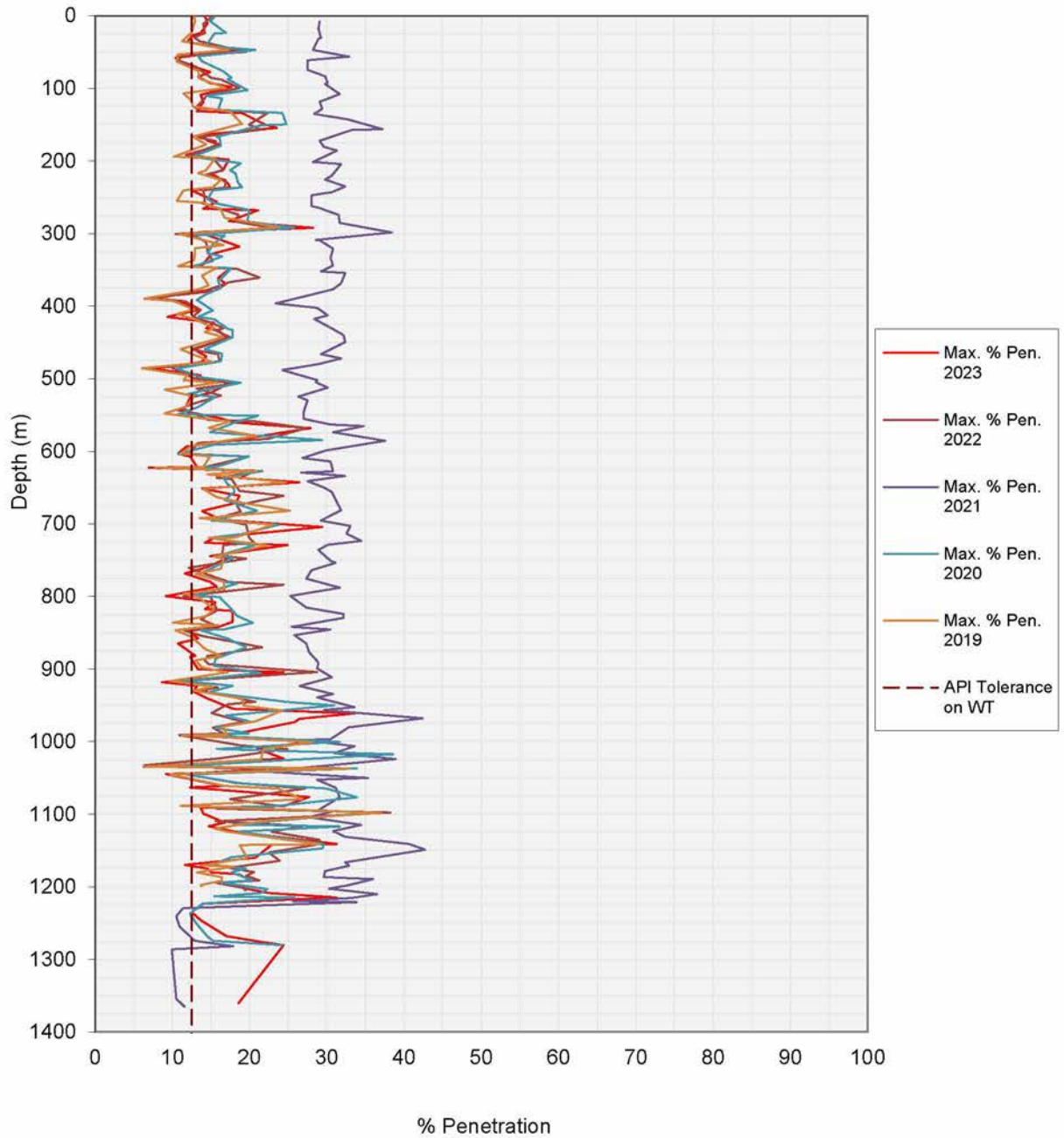
Total number of joints logged: 147			
28	Joints with Max. % Penetrations Between	0	and 12.5 %
92	Joints with Max. % Penetrations Between	12.5	and 20 %
23	Joints with Max. % Penetrations Between	20	and 30 %
4	Joints with Max. % Penetrations Between	30	and 40 %
0	Joints with Max. % Penetrations Between	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 %



Client: NAM	Well No.: ROW-4	Field: ROSSUM-WEERSELO
Survey Date: 20/08/2023	Survey: MFC-24 Extended	Job ID: DAC879



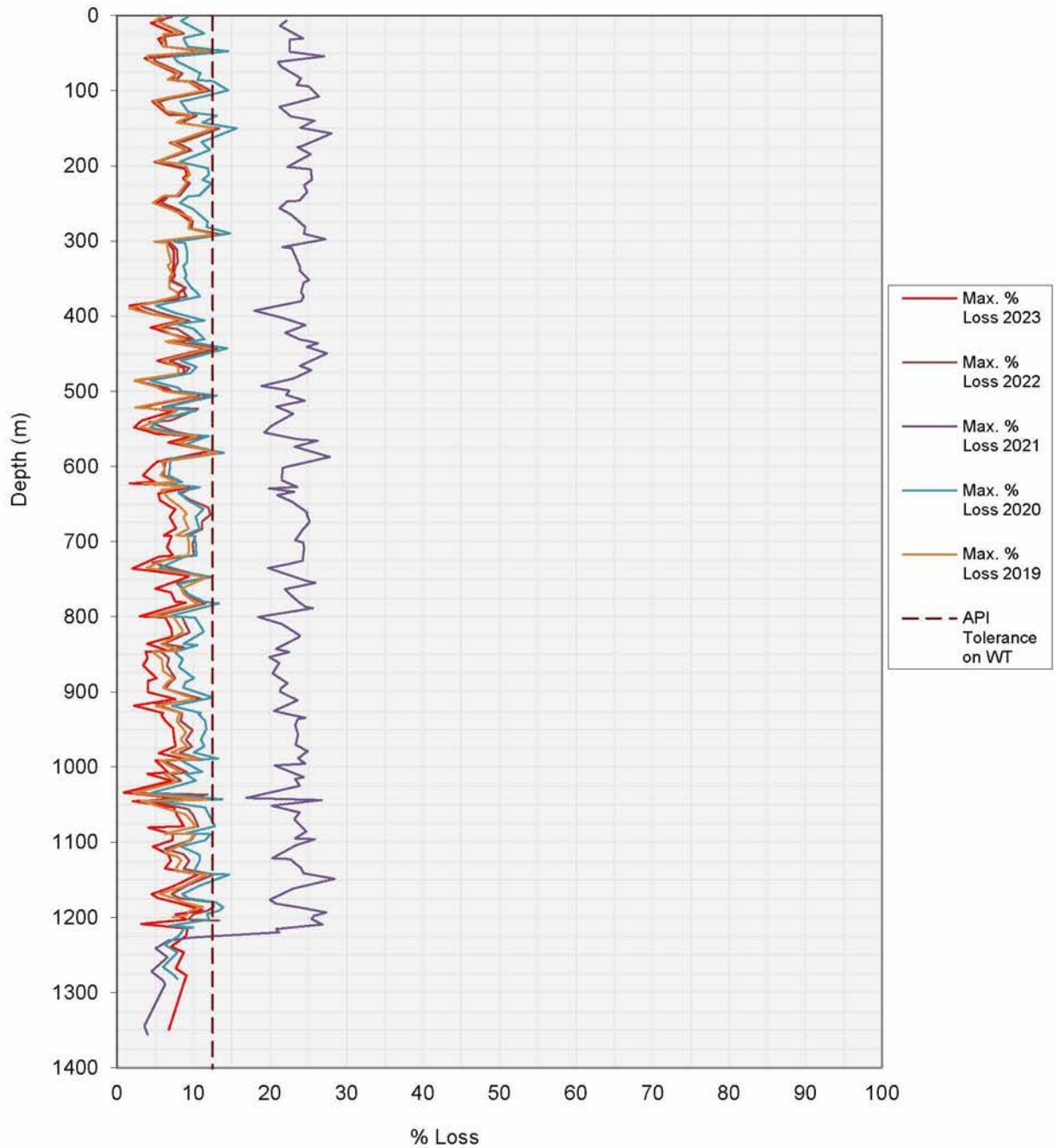
Time-lapse Max. Percentage Penetration per Joint vs. Depth Plot



Client: NAM	Well No.: ROW-4	Field: ROSSUM-WEERSELO
Survey Date: 20/08/2023	Survey: MFC-24 Extended	Job ID: DAC879



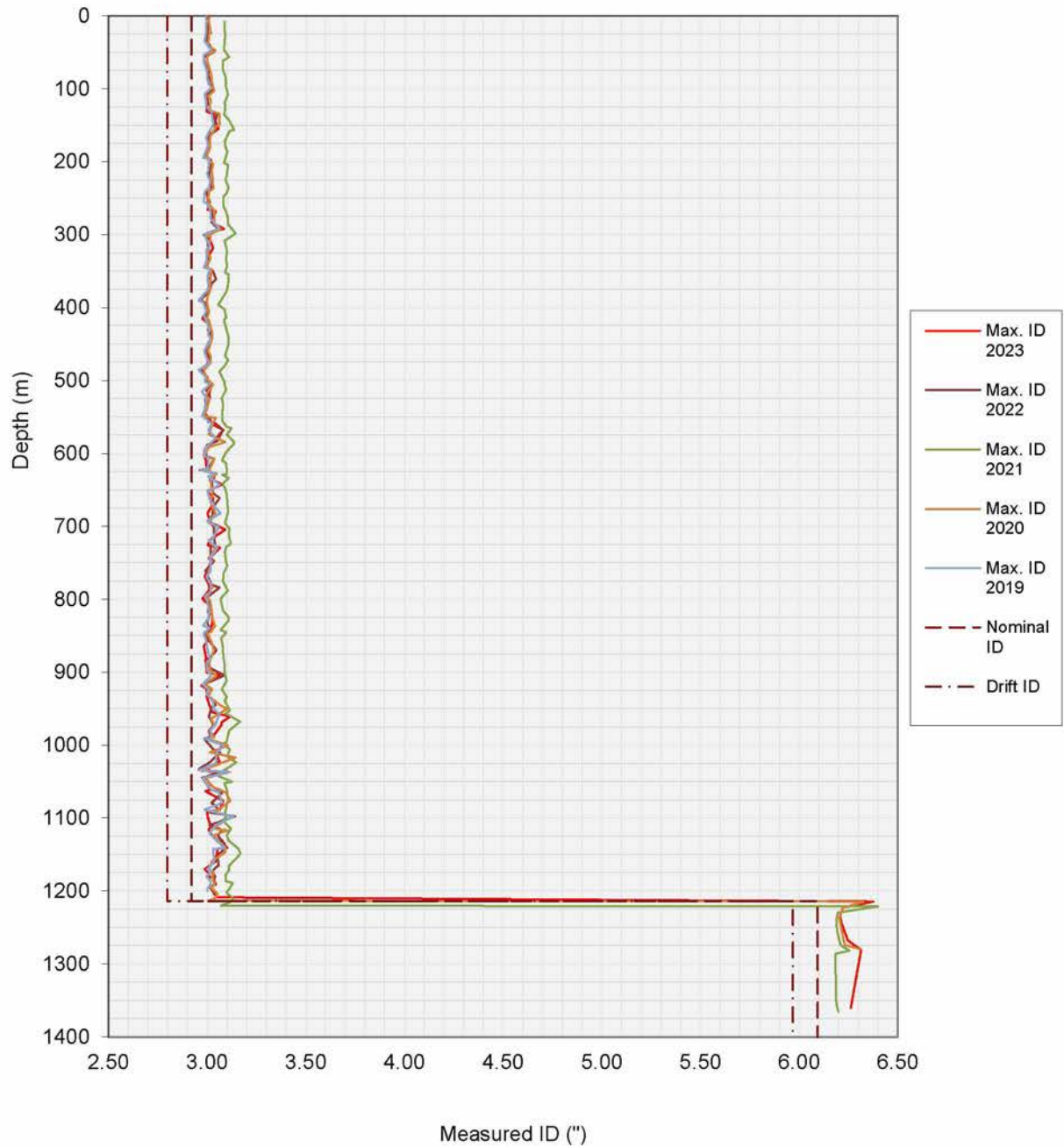
Max. Percentage Circumferential Wall Loss per Joint vs. Depth Plot



Client: NAM	Well No.: ROW-4	Field: ROSSUM-WEERSELO
Survey Date: 20/08/2023	Survey: MFC-24 Extended	Job ID: DAC879



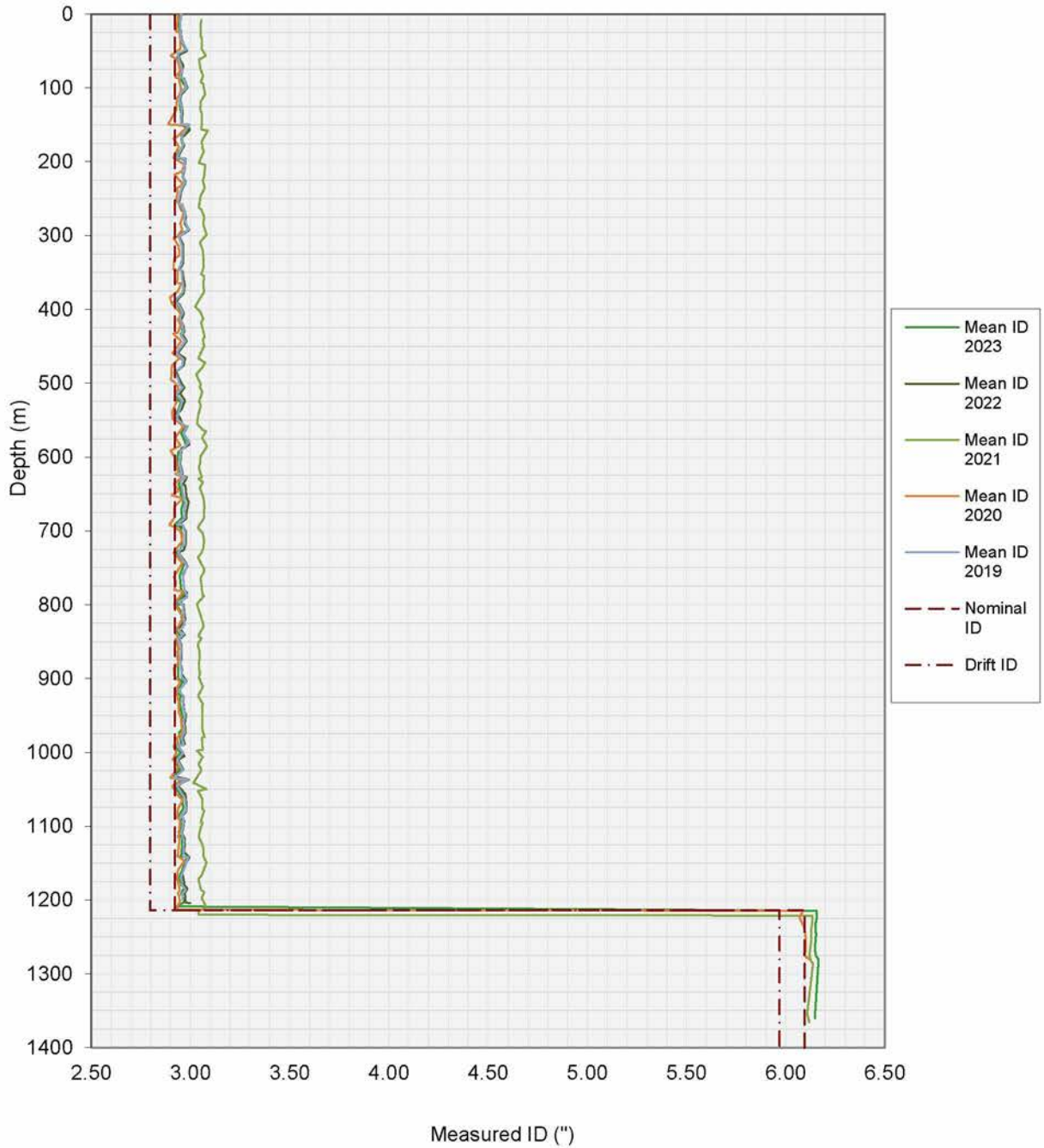
Time-lapse Maximum ID per Joint vs. Depth Plot



Client: NAM	Well No.: ROW-4	Field: ROSSUM-WEERSELO
Survey Date: 20/08/2023	Survey: MFC-24 Extended	Job ID: DAC879



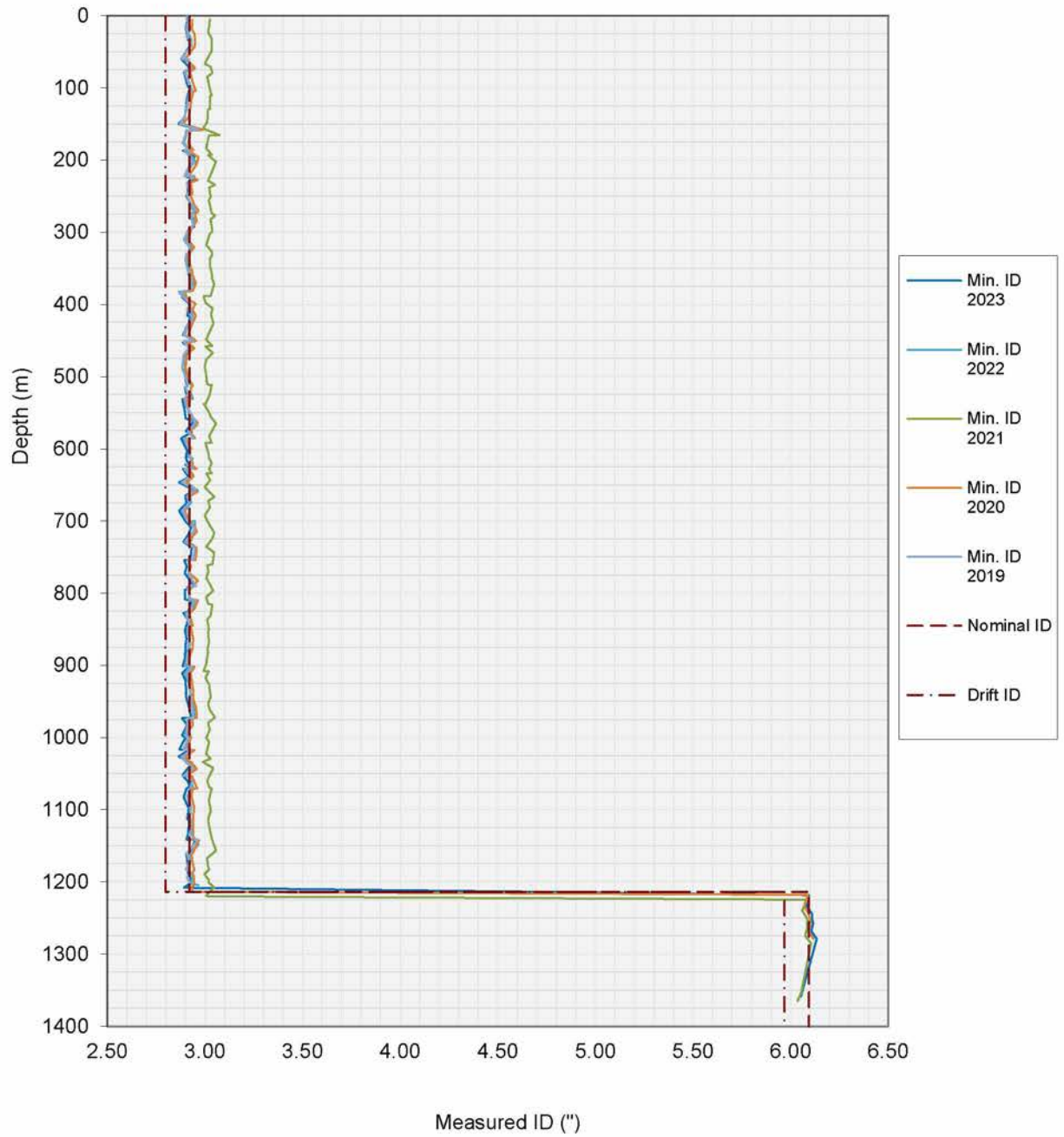
Time-lapse Mean ID per Joint vs. Depth Plot



Client: NAM	Well No.: ROW-4	Field: ROSSUM-WEERSELO
Survey Date: 20/08/2023	Survey: MFC-24 Extended	Job ID: DAC879




Time-lapse Minimum ID per Joint vs. Depth Plot



Client: NAM	Well No.: ROW-4	Field: ROSSUM-WEERSELO
Survey Date: 20/08/2023	Survey MFC-24 Extended	Job ID: DAC879



5. Well & Survey Information



Site: ROSSUM-WEERSELO-3
Well Name: ROSSUM-WEERSELO-4
Wellbore Name: ROW- 4
Wellbore No: 01
Legal Wellbore Name: ROSSUM-WEERSELO- 4-1
Original Spud Date: 20/04/1971
Spud/Kick-off date: 20/04/1971
Tree Cap Connection:
H2S Present: Y
LSA Present: N
Well Comments:
NOTE: For further detail: consult OpenWells/Wellfile
Schematic Datum: TBF @ 25.10m

Casing Assemblies		
Name	Top MD(m)	Base MD(m)
Conductor - driven	0.50	16.60
Surface Casing	0.00	248.62
Intermediate Casing	0.50	810.38
Production Casing	-0.73	1,445.38

Top Perfo's	Casing Details	Schematic last update (30/08/2023)	Completion Details	Body ID / Mn ID	H/JD ORDERED AT DEPTH NOT AT DATE !!!	
	24.000', 16.60m		-2.35m, LEO TENTION TBG HGR, 2.87" X4-PROFILE, 3.1/2" - 10.2# VAM, 5.0' RAMS, CL, H1/U, . -1.79m, TBNG 3.1/2" - 10.2# VAM, L80, .	2.875m / 2.875m 2.922m / 2.922m		
	13.375', 248.62m		621.57m, TGPJ 3.1/2" - 10.2# VAM, L80, 4 ft, . 622.80m, FCLP 3.1/2" - 10.2# VAM, 9C1Mo, . 624.62m, LNSV, 2.750" X4-PROFILE, 3.1/2" - 10.2# VAM, 9C1Mo, . 625.23m, FCLP 3.1/2" - 10.2# VAM, 9C1Mo, . 627.06m, TGPJ 3.1/2" - 10.2# VAM, L80, 2 ft, . 627.66m, TBNG 3.1/2" - 10.2# VAM, L80, .	2.922m / 2.922m 2.812m / 2.812m 2.750m / 2.750m 2.812m / 2.812m 2.922m / 2.922m 2.922m / 2.922m		
	9.825', 810.38m		1.170.35m, TGPJ 3.1/2" - 10.2# VAM, L80, 16 ft, . 1.175.22m, SLSD 2.75" X4-PROFILE, 3.1/2" - 10.2# VAM, 9C1Mo, SHFT UP TO OPEN, . 1.176.28m, TGPJ 3.1/2" - 10.2# VAM, L80, 16 ft, . 1.180.77m, Camco Dummy Valve E, 1 inch, . 1.180.67m, SPMA 3.1/2" - 10.2# VAM, KBUG, SOUR, 4130, Bx B, . 1.182.65m, TGPJ 3.1/2" - 10.2# VAM, L80, 16 ft, PxF, . 1.187.23m, TGPJ 3.1/2" - 10.2# VAM, L80, 16 ft, . 1.192.14m, Camco Dummy Valve E, 1 inch, . 1.192.04m, SPMA 3.1/2" - 10.2# VAM, KBUG, SOUR, 4130, . 1.194.00m, TGPJ 3.1/2" - 10.2# VAM, L80, 16 ft, PxF, . 1.198.63m, LN, 2.750" X-PROFILE, 3.1/2" - 10.2# VAM, 9C1Mo, . 1.198.95m, TGPJ 3.1/2" - 10.2# VAM, L80, 16 ft, . 1.203.79m, ANCHOR SEAL, SNAT, 800A40, KBH-22, 3.1/2" - 10.2# VAM, BU 4140, . 1.204.23m, PACKER 7.0", 82DAB40, 5.0" - 15.0# VAM, BD, 4140, . 1.205.69m, TGPJ 5.0" - 18.0# VAM, L80, 8 ft, PxF, . 1.207.91m, TGCO 5.0" - 15.0# VAM x 3.1/2" - 10.2# VAM, . 1.208.13m, TGPJ 3.1/2" - 10.2# VAM, L80, 16 ft, . 1.213.82m, WLLM 2.75" X4-PROFILE, 3.1/2" - 10.2# VAM, 9C1Mo, . 1.212.59m, FCLP 3.1/2" - 10.2# VAM, 9C1Mo, . 1.213.81m, LN, 2.750" X-PROFILE, 3.1/2" - 10.2# VAM, 9C1Mo, . 1.213.83m, E-plug, 100 bar disc + O-RING, EQ, 6x2 mm holes, . 1.214.13m, ENTRY GUIDE 2.75", 3.1/2" - 10.2# VAM, 9C1Mo, .	2.922m / 2.922m 2.750m / 2.750m 2.922m / 2.922m / 2.875m / 2.875m 2.922m / 2.922m 2.750m / 2.750m 2.922m / 2.922m / 2.875m / 2.875m 2.922m / 2.922m 2.922m / 2.922m 3.250m / 3.250m 3.250m / 3.250m 4.276m / 4.276m 2.921m / 2.921m 2.922m / 2.922m 1.750m / 1.750m 2.812m / 2.812m 2.750m / 2.750m / 2.750m / 2.750m		
1,296.45m						
1,296.85m						
1,299.59m						
1,305.28m						
1,306.85m						
1,310.85m						
1,316.85m						
1,316.85m						
1,322.38m						
1,366.08m						
1,373.38m						
1,373.38m						
1,385.38m						
1,390.65m						
1,397.19m						
1,397.38m	7.000', 1,445.38m					

Prepared By: **ES-1.2.e**
Data QA/QC'd by:

Date QA/QC'd: **30/08/2023**

Client: NAM	Well No.: ROW-4	Field: ROSSUM-WEERSELO
Survey Date: 20/08/2023	Survey MFC-24 Extended	Job ID: DAC879



Sensor	Offset (m)	Schematic	Description	Length (m)	O.D. (in)	Weight (lb)
			MBH-025 (10018758) Memory Battery Housing (5CC) <i>S/N 005247</i>	0.74	1.69	11.00
			UMT-007 (11297923) Ultrawire Memory Tool (1GB)	0.32	1.69	6.60
			PKJ-013 (00499) Production Knuckle Joint	0.17	1.69	3.50
			PKJ-013 (11136402) Production Knuckle Joint	0.17	1.69	3.50
			PRC-034 (C-1224) Production Roller Centraliser (4 Arm)	0.84	1.69	13.00
MIT	1.51		MIT-034 (11140595) Multifinger Imaging Tool (UW 24F Ext.)	1.29	1.69	20.70
			PRC-034 (11187221) Production Roller Centraliser (4 Arm)	0.84	1.69	13.00
			BUL-006 (212792) Bullnose	0.07	1.69	1.50
		Dataset: Sondex Ultrawire Memory MIT/MTT				
		Total length: 4.44 m				
		Total weight: 72.80 lb				
		O.D.: 1.69 in				