



**HVC Aardwarmte Maasdijk B.V.
Westland
Maasdijk Westland
MSD-GT-01
MSD-GT-01
MSD-GT-01 Actual Well**

**Survey Report
28 December 2022**

**Innova Drilling & Intervention
+44 (0) 7740 618 272
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Operator	HVC Aardwarmte Maasdijk B.V.	Local co-ord ref	Well Centered												
Field	Westland	TVD Reference	RT												
Facility	Maasdijk Westland	North Reference	GRID												
Well	MSD-GT-01	Survey Calc Method	Minimum Curvature												
Wellbore	MSD-GT-01 Actual Well														
Field	Westland														
CRS	Netherlands Coordinate System / Netherlands National System (RD)	North Reference	GRID												
Apply Scale Factor	YES	Scale Factor	1.000												
System Datum	MSL	Depth Datum->MSL	10.74m												
Facility	Maasdijk Westland														
Map Northing	442449.676m	Map Easting	73456.448m												
Latitude	51° 57' 55.601" N	Longitude	4° 12' 3.369" E												
Vertical Uncertainty	0.00m	Horizontal Uncertainty	0.00m												
Grid Convergence	-0.937														
Well	MSD-GT-01														
Local North	0.000m	Local East	0.000m												
Map Northing	442449.676m	Map Easting	73456.448m												
Latitude	51° 57' 55.601" N	Longitude	4° 12' 3.369" E												
Depth Datum / Rig	RT / T-207	Datum Elevation	10.74m												
GL Elevation	1.40m	Grid Convergence	-0.937												
Wellbore	MSD-GT-01 Actual Well														
Magnetic Model	igrf13.cof	Date	28/11/2022												
Total Field (nT)	49303.47	Dip Angle (deg)	67.066												
Declination	2.013														
VS Origin	Well	VS Azimuth	326.34												
VS Origin NS	0.00m	VS Origin EW	0.00m												
Survey Program	MSD-GT-01 Actual Well														
Depth From m	Depth To m	Survey	Survey Tool												
0.00	1133.40	16in Section MWD Survey MSD-GT-01	MWD+IGRF+AX+SAG												
1133.40	3288.50	1225in Section MWD	MWD+IGRF+AX+SAG												
Survey Report															
MD m	INC deg	AZI deg	TVD m	NS m	EW m	VS m	DLS deg/30m	BR deg/30m	TR deg/30m	TF deg	CL m	TVD SS m	Up(+)/Dn(-) m	Left(-)/Right m	Dist m
0.00	0.00	0.00	-0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-10.74	-0.68	-0.00	0.68
181.80	0.32	298.47	181.80	0.24	-0.45	0.45	0.05	0.05	0.00	298.47	181.80	171.06	0.24	-0.45	0.51
211.70	0.86	4.39	211.70	0.51	-0.50	0.70	0.79	0.54	66.14	87.75	29.90	200.96	0.51	-0.50	0.71
240.10	1.19	7.32	240.09	1.01	-0.45	1.09	0.35	0.35	3.10	10.49	28.40	229.35	1.01	-0.45	1.11
268.50	1.06	5.22	268.49	1.56	-0.39	1.52	0.14	-0.14	-2.22	-163.45	28.40	257.75	1.56	-0.39	1.61
296.50	1.23	1.46	296.48	2.12	-0.36	1.96	0.20	0.18	-4.03	-25.73	28.00	285.74	2.12	-0.36	2.15
324.90	1.20	0.73	324.88	2.73	-0.34	2.46	0.04	-0.03	-0.77	-153.07	28.40	314.14	2.73	-0.34	2.75
351.90	1.28	5.76	351.87	3.31	-0.31	2.93	0.15	0.09	5.59	56.22	27.00	341.13	3.31	-0.31	3.32
379.40	1.27	4.03	379.36	3.92	-0.26	3.40	0.04	-0.01	-1.89	-105.43	27.50	368.62	3.92	-0.26	3.93
407.20	1.24	353.66	407.16	4.52	-0.27	3.91	0.25	-0.03	11.19	-102.69	27.80	396.42	4.52	-0.27	4.53
435.20	1.32	358.83	435.15	5.15	-0.31	4.46	0.15	0.09	5.54	57.89	28.00	424.41	5.15	-0.31	5.16
464.00	1.25	3.97	463.94	5.79	-0.29	4.98	0.14	-0.07	5.35	123.82	28.80	453.20	5.79	-0.29	5.80
492.30	1.26	3.23	492.23	6.41	-0.26	5.48	0.02	0.01	-0.78	-58.70	28.30	481.49	6.41	-0.26	6.42
520.70	1.00	321.53	520.63	6.92	-0.39	5.97	0.89	-0.27	44.05	-127.65	28.40	509.89	6.92	-0.39	6.93
547.80	1.11	312.02	547.73	7.28	-0.73	6.46	0.23	0.12	-10.53	-62.68	27.10	536.99	7.28	-0.73	7.31
576.00	1.15	304.28	575.92	7.62	-1.17	6.99	0.17	0.04	-8.23	-79.21	28.20	565.18	7.62	-1.17	7.71
604.70	1.22	297.68	604.61	7.92	-1.68	7.53	0.16	0.07	-6.90	-66.17	28.70	593.87	7.92	-1.68	8.10
632.10	1.31	295.45	632.01	8.19	-2.22	8.05	0.11	0.10	-2.44	-29.80	27.40	621.27	8.19	-2.22	8.49
659.90	1.29	289.92	659.80	8.44	-2.80	8.58	0.14	-0.02	-5.97	-101.81	27.80	649.06	8.44	-2.80	8.89
688.80	1.29	296.21	688.69	8.69	-3.40	9.12	0.15	0.00	6.53	90.00	28.90	677.95	8.69	-3.40	9.33
716.40	1.25	290.32	716.29	8.93	-3.96	9.63	0.15	-0.04	-6.40	-109.97	27.60	705.55	8.93	-3.96	9.77
744.80	1.15	292.39	744.68	9.15	-4.52	10.12	0.12	-0.11	2.19	157.60	28.40	733.94	9.15	-4.52	10.20
772.00	1.16	294.96	771.87	9.37	-5.02	10.58	0.06	0.01	2.83	80.36	27.20	761.13	9.37	-5.02	10.63
799.90	1.18	293.29	799.77	9.60	-5.54	11.06	0.04	0.02	-1.80	-60.44	27.90	789.03	9.60	-5.54	11.08
828.40	1.05	294.79	828.26	9.83	-6.04	11.53	0.14	-0.14	1.58	168.09	28.50	817.52	9.83	-6.04	11.54
855.70	1.12	297.47	855.56	10.06	-6.51	11.98	0.09	0.08	2.95	37.29	27.30	844.82	10.06	-6.51	11.98
884.10	1.07	297.27	883.95	10.31	-6.99	12.45	0.05	-0.05	-0.21	-175.73	28.40	873.21	10.31	-6.99	12.45
911.30	1.80	299.50	911.14	10.63	-7.59	13.05	0.81	0.81	4.51	18.15	27.50	1010.70	11.89	-2.68	12.19
939.10	3.06	307.13	938.92	11.30	-8.56	14.15	1.40	1.36	5.49	21.37	28.10	1038.57	10.89	-3.32	11.39
966.90	4.11	311.19	966.66	12.40	-9.90	15.81	1.17	1.13	4.38	26.57	28.20	1066.46	9.61	-3.83	10.34
994.40	5.05	309.38	994.08	13.82	-11.58	17.92	1.04	1.03	-1.97	-9.64	27.50	983.34	12.71	-1.98	12.87
1021.90	6.49	313.51	1021.44	15.65	-13.64	20.59	1.63	1.57	4.47	18.15	27.50	1010.70	11.89	-2.68	12.19
1050.00	8.00	317.70	1049.31	18.19	-16.11	24.07	1.71	1.61	4.47	21.37	28.10	1038.57	10.89	-3.32	11.39
1078.20	9.02	320.91	1077.20	21.36	-18.82	28.21	1.20	1.09	3.41	26.57	28.20	1066.46	9.61	-3.83	10.34
1105.90	10.41	323.68	1104.50	25.06	-21.67	32.87	1.59	1.51	3.00	19.96	27.70	1093.76	8.03	-4.15	9.04
1133.40	12.05	324.08	1131.47	29.39	-24.83	38.22	1.79	1.79	0.44	2.92	27.50	1120.73	6.32	-4.38	7.69
1180.50	13.65	327.53	1177.39	38.06	-30.70	48.69	1.13	1.02	2.20	27.31	47.10	1166.65	2.66	-4.46	5.19
1207.90	13.37	329.75	1204.04	43.53	-34.03	55.09	0.65	-0.31	2.43	119.44	27.40	1193.30	-0.33	-4.20	4.22
1236.20	13.91	335.66	1231.54	49.45	-37.08	61.71	1.58	0.57	6.27	71.71	28.30	1220.80	-4.31	-3.46	5.53

Survey Report

MD m	INC deg	AZI deg	TVD m	NS m	EW m	VS m	DLS deg/30m	BR deg/30m	TR deg/30m	TF deg	CL m	TVD SS m	Up(+)Dn(-) Left(-)/Right m	Out m	
1264.00	14.89	340.34	1258.47	55.86	-39.66	68.48	1.64	1.06	5.05	52.18	27.80	1247.73	-8.82	-2.05	9.06
1291.90	15.96	341.75	1285.36	62.88	-42.07	75.65	1.22	1.15	1.52	20.00	27.90	1274.62	-13.81	-0.17	13.81
1320.50	16.68	342.89	1312.81	70.54	-44.51	83.38	0.83	0.76	1.20	24.53	28.60	1302.07	-19.43	2.05	19.53
1348.60	17.62	343.44	1339.66	78.47	-46.90	91.31	1.02	1.00	0.59	10.05	28.10	1328.92	-25.45	4.45	25.83
1375.90	18.13	343.68	1365.64	86.50	-49.28	99.31	0.57	0.56	0.26	8.33	27.30	1354.90	-31.80	6.93	32.54
1404.20	18.15	345.25	1392.53	94.99	-51.63	107.69	0.52	0.02	1.66	88.40	28.30	1381.79	-39.11	9.67	40.29
1431.13	18.39	346.34	1418.11	103.18	-53.71	115.64	0.47	0.27	1.21	55.44	26.93	1407.37	-46.82	12.48	48.46
1457.80	18.15	349.33	1443.43	111.35	-55.47	123.42	1.09	-0.27	3.36	105.78	26.67	1432.69	-55.05	15.54	57.20
1485.60	19.66	343.12	1469.74	120.08	-57.63	131.89	2.71	1.63	-6.70	-56.08	27.80	1459.00	-63.30	18.58	65.97
1513.60	20.61	339.71	1496.03	129.21	-60.71	141.19	1.62	1.02	-3.65	-52.63	28.00	1485.29	-70.85	21.08	73.92
1540.90	21.72	335.55	1521.48	138.31	-64.46	150.85	2.05	1.22	-4.57	-55.49	27.30	1510.74	-77.63	23.00	80.97
1569.00	23.99	331.71	1547.38	148.08	-69.32	161.68	2.90	2.42	-4.10	-35.09	28.10	1536.64	-83.72	24.37	87.19
1596.40	26.34	330.08	1572.18	158.25	-75.00	173.29	2.68	2.57	-1.78	-17.17	27.40	1561.44	-88.53	25.28	92.07
1624.40	28.94	328.80	1596.98	169.43	-81.60	186.26	2.86	2.79	-1.37	-13.43	28.00	1586.24	-92.23	25.98	95.82
1652.40	31.33	324.69	1621.20	181.17	-89.32	200.31	3.38	2.56	-4.40	-42.60	28.00	1610.46	-94.71	26.06	98.23
1679.90	32.07	323.83	1644.59	192.90	-97.76	214.75	0.95	0.81	-0.94	-31.78	27.50	1633.85	-96.40	25.53	99.72
1708.10	31.99	324.11	1668.50	205.00	-106.56	229.69	0.18	-0.09	0.30	118.43	28.20	1657.76	-97.97	24.91	101.09
1736.10	32.73	324.27	1692.15	217.15	-115.33	244.67	0.80	0.79	0.17	6.67	28.00	1681.41	-99.37	24.35	102.31
1764.10	33.35	323.40	1715.62	229.47	-124.34	259.92	0.84	0.66	-0.93	-37.78	28.00	1704.88	-100.44	23.68	103.19
1792.60	34.13	323.50	1739.32	242.19	-133.77	275.73	0.82	0.82	0.11	4.11	28.50	1728.58	-101.18	22.88	103.74
1821.20	34.97	323.11	1762.88	255.19	-143.46	291.92	0.91	0.88	-0.41	-14.91	28.60	1752.14	-101.53	22.02	103.89
1848.50	35.87	322.45	1785.13	267.79	-153.03	307.71	1.07	0.99	-0.73	-23.30	27.30	1774.39	-101.45	21.04	103.61
1877.00	36.99	323.01	1808.06	281.26	-163.28	324.60	1.23	1.18	0.59	16.76	28.50	1797.32	-100.87	19.97	102.83
1905.00	38.41	323.09	1830.21	294.95	-173.57	341.70	1.52	1.52	0.09	2.00	28.00	1819.47	-99.67	18.99	101.47
1933.10	39.14	322.82	1852.12	308.99	-184.17	359.27	0.80	0.78	-0.29	-13.15	28.10	1841.38	-97.95	17.95	99.58
1961.20	38.43	323.42	1874.02	323.07	-194.74	376.84	0.86	-0.76	0.64	152.34	28.10	1863.28	-96.22	16.96	97.70
1988.70	38.14	323.69	1895.61	336.78	-204.86	393.86	0.37	-0.32	0.29	150.13	27.50	1884.87	-94.76	16.13	96.12
2015.20	38.84	324.59	1916.35	350.14	-214.52	410.34	1.01	0.79	1.02	39.02	26.50	1905.61	-93.25	15.50	94.53
2044.60	38.67	324.79	1939.28	365.16	-225.16	428.73	0.22	-0.17	0.20	143.71	29.40	1928.54	-91.43	14.96	92.65
2077.90	39.52	325.45	1965.12	382.39	-237.16	449.73	0.85	0.77	0.59	26.35	33.30	1954.38	-89.18	14.52	90.35
2100.00	39.91	325.49	1982.12	394.02	-245.17	463.85	0.53	0.53	0.05	3.76	22.10	1971.38	-87.44	14.30	88.60
2127.60	39.69	325.76	2003.32	408.60	-255.14	481.51	0.30	-0.24	0.29	141.95	27.60	1992.58	-85.23	14.08	86.39
2155.60	39.50	325.83	2024.90	423.36	-265.18	499.36	0.21	-0.20	0.08	166.81	28.00	2014.16	-83.09	13.91	84.25
2183.50	40.12	326.86	2046.33	438.23	-275.07	517.22	0.97	0.67	1.11	47.16	27.90	2035.59	-80.85	13.91	82.04
2211.20	40.01	327.49	2067.53	453.21	-284.74	535.05	0.46	-0.12	0.68	105.42	27.70	2056.79	-78.51	14.17	79.77
2239.20	39.75	327.46	2089.02	468.35	-294.39	553.00	0.28	-0.28	-0.03	-175.78	28.00	2078.28	-76.23	14.52	77.60
2267.30	40.32	326.51	2110.53	483.51	-304.24	571.07	0.89	0.61	-1.01	-47.36	28.10	2099.79	-73.86	14.73	75.32
2295.80	40.23	326.70	2132.28	498.89	-314.38	589.50	0.16	-0.09	0.20	126.30	28.50	2121.54	-71.34	14.81	72.86
2323.70	40.09	326.59	2153.60	513.92	-324.27	607.49	0.17	-0.15	-0.12	-153.17	27.90	2142.86	-68.93	14.91	70.53
2352.00	39.72	326.09	2175.31	529.03	-334.34	625.64	0.52	-0.39	-0.53	-139.27	28.30	2164.57	-66.61	14.90	68.26
2379.60	40.11	325.19	2196.48	543.65	-344.33	643.35	0.76	0.42	-0.98	-56.31	27.60	2185.74	-64.35	14.69	66.00
2407.60	40.05	325.00	2217.90	558.43	-354.65	661.38	0.15	-0.06	-0.20	-116.20	28.00	2207.16	-61.97	14.29	63.60
2436.20	39.85	324.92	2239.83	573.47	-365.19	679.73	0.22	-0.21	-0.08	-165.63	28.60	2229.09	-59.61	13.85	61.20
2464.50	40.11	324.80	2261.51	588.34	-375.66	697.91	0.29	0.28	-0.13	-16.56	28.30	2250.77	-57.26	13.38	58.80
2492.70	40.26	324.33	2283.06	603.16	-386.21	716.10	0.36	0.16	-0.50	-63.86	28.20	2272.32	-54.82	12.82	56.30
2520.60	41.07	324.15	2304.22	617.92	-396.83	734.27	0.88	0.87	-0.19	-8.31	27.90	2293.48	-52.18	12.15	53.57
2548.50	41.45	323.48	2325.19	632.77	-407.70	752.65	0.63	0.41	-0.72	-49.56	27.90	2314.45	-49.25	11.34	50.53
2576.10	41.13	323.02	2345.93	647.36	-418.59	770.83	0.48	-0.35	-0.50	-136.68	27.60	2335.19	-46.34	10.35	47.49
2604.20	41.07	320.68	2367.11	661.88	-430.00	789.25	1.64	-0.06	-2.50	-93.12	28.10	2356.37	-43.51	8.91	44.41
2633.60	41.01	323.48	2389.28	677.11	-441.86	808.49	1.88	-0.06	2.86	92.92	29.40	2378.54	-40.57	7.47	41.25
2659.90	41.56	323.56	2409.05	691.06	-452.18	825.83	0.63	0.63	0.09	5.51	26.30	2398.31	-37.80	6.62	38.37
2687.70	42.49	323.74	2429.70	706.05	-463.21	844.42	1.01	1.00	0.19	7.45	27.80	2418.96	-34.51	5.74	34.99
2714.81	43.01	323.52	2449.61	720.87	-474.12	862.80	0.60	0.58	-0.24	-16.10	27.11	2438.87	-30.97	4.87	31.35
2742.70	42.62	323.75	2470.06	736.13	-485.36	881.73	0.45	-0.42	0.25	158.24	27.89	2459.32	-27.29	3.98	27.58
2770.30	42.07	324.01	2490.46	751.15	-496.32	900.30	0.63	-0.60	0.28	162.43	27.60	2479.72	-23.88	3.18	24.09
2797.60	41.13	324.57	2510.88	765.87	-506.90	918.42	1.11	-1.03	0.62	158.63	27.30	2500.14	-20.85	2.53	21.00
2825.80	40.72	324.29	2532.19	780.89	-517.65	936.88	0.48	-0.44	-0.30	-156.00	28.20	2521.45	-18.04	1.91	18.14
2853.90	39.29	324.58	2553.71	795.59	-528.15	954.93	1.54	-1.53	0.31	172.68	28.10	2542.97	-15.70	1.31	15.75
2881.40	38.77	324.73	2575.07	809.71	-538.17	972.24	0.58	-0.57	0.16	169.76	27.50	2564.33	-13.87	0.80	13.89
2909.60	38.15	324.53	2597.15	824.01	-548.32	989.78	0.67	-0.66	-0.21	-168.73	28.20	2586.41	-12.28	0.27	12.28
2937.00	37.31	324.72	2618.82	837.68	-558.03	1006.54	0.93	-0.92	0.21	172.19	27.40	2608.08	-11.08	-0.23	11.08
2964.80	37.05	324.78</													