End of Well Report for:

TUB-4

Nederlandse Aardolie Maatschappij B.V.
1D Corridor, PO Box 28000
9400 HH Assen
The Netherlands

Position	Name	Signature / Date
		15/11/2022
		15/11/2022

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Index End Of Well Report TUB-4

General & well data

Well data

Well Name	TUB-4
Township	Tubbergen
Well bore name	TUB-4

Well coordinations

Northing	495859.22
Easting	258308.18

Operations data

Start date	20/10/2022
End date	03/11/2022
Contractor	WellGear
Unit	WG-011

Elevation data

Elevation reference	TBF	
TBF-NAP	38.07	meter

Well Status

Abandoned with 2 cement plugs and installed a Temporary Adaptor.
The Zechstein Reservoir has been successfully abandoned with internal plug #1.
The Triassic formations have also been successfully abandoned with PWC plug #2.
The surface cement plug will be placed after the monitoring period.

Casing data

Report Description	date_report	String Type	Size (in)	MD top (m)	MD landed (m)	Entity type
13.3/8" Conductor - run	14/04/1951	Conductor - run	13.375	0.5	29.8	Casing
9.5/8" Surface casing	19/04/1951	Surface Casing	9.625	0	450.39	Casing
7" Tieback string (cut and recovered from 65m)	03/07/1951	Tieback String	7.000	65	611.80	Casing
7" Intermediate casing (Cut @ 615m)	13/06/1951	Intermediate Casing	7.000	611.8	1314.8	Casing
4.1/2" casing (cut and pulled @ 550 mAHTBF).	06/09/1951	Production Casing	4.500	550	1420.2	Casing

Suspension tubing string data

Report Description	date_report	String Type	Size (in)	MD top (m)	MD landed (m)	Entity type

Mechanical plug data

Report Description	date_report	String Type	Size (in)	MD top (m)	MD landed (m)	Verification
Set ICF at 545mAHTBF for PWC job	30/10/2022	Mechanical Item	7	545.00	546.00	N/A

Cement plug data

Report description	MD top (m)	MD base (m)	SG	Plug length	Verification
Cement plug #1	1,144.00	1,354.00	1.9	210.0	Tag 10 mT eqv
cement base plug	535.90	545.00	1.9	9.1	N/A part of entire plug
PWC cement plug #2	418.40	535.90	1.9	117.5	Tag 10 mT eqv

Well fluid data

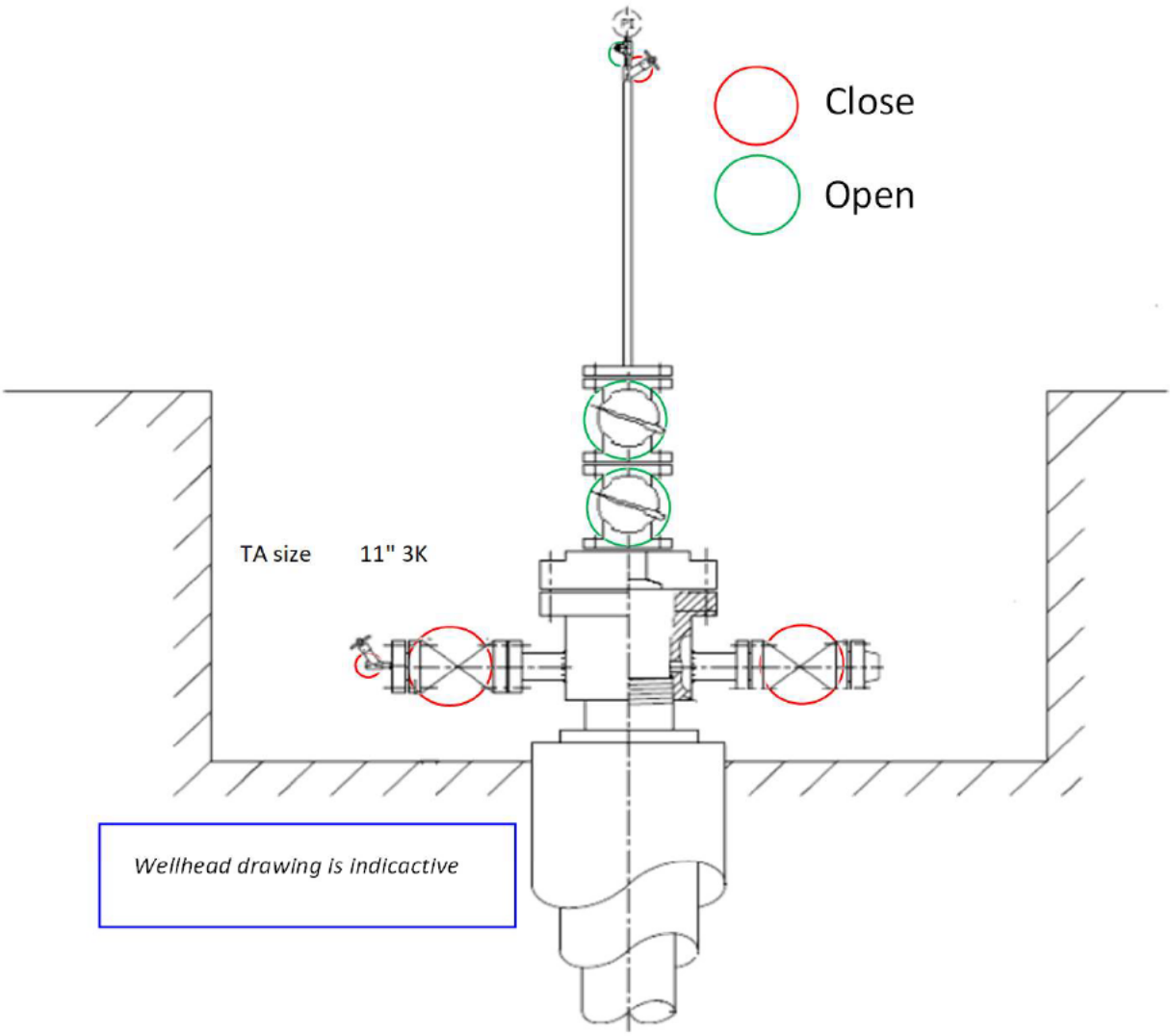
Section	Fluid weight [SG]	Type of fluid

Appendix A: Wellbore deviation data

WELL	TUBBERGEN- 4			Date	14/11/22
WELLBORE	TUB-4		*Interpolated surveys every 30m*		
TBF	41.27	m/NAP			
VS Angle	293	deg			

Remark	MD/TBF (m)	INCL (deg)	AZIMUTH GN (deg)	TVD/TBF (m)	N(+) (m)	E(+) (m)	VS (m)	Dogleg deg/10m	RD X (m)	RD Y (m)	TVD/NAP (m)
	0	0	0	0	0	0	0	0	258308.18	495859.22	-41.27
	30	0.19	176.01	30	-0.06	0	-0.02	0.06	258308.176	495859.159	-11.27
	60	0.21	143.07	60	-0.15	0.04	-0.1	0.04	258308.224	495859.068	18.73
	90	0.19	137.74	90	-0.23	0.11	-0.19	0.01	258308.287	495858.985	48.73
	120	0.2	134.44	120	-0.31	0.18	-0.28	0	258308.359	495858.915	78.73
	150	0.24	125	150	-0.38	0.27	-0.39	0.02	258308.446	495858.842	108.73
	180	0.26	98.19	180	-0.42	0.38	-0.52	0.04	258308.563	495858.796	138.73
	210	0.35	84.94	210	-0.42	0.54	-0.66	0.04	258308.716	495858.802	168.73
	240	0.4	93.15	240	-0.41	0.75	-0.85	0.03	258308.927	495858.809	198.73
	270	0.43	107.6	270	-0.45	0.96	-1.05	0.04	258309.135	495858.771	228.73
	300	0.41	106.22	300	-0.52	1.17	-1.28	0.01	258309.347	495858.701	258.73
	330	0.39	114.31	330	-0.59	1.36	-1.48	0.02	258309.539	495858.628	288.73
	360	0.52	120.19	359.99	-0.69	1.56	-1.71	0.05	258309.743	495858.531	318.72
	390	0.8	131.13	389.99	-0.89	1.84	-2.04	0.1	258310.02	495858.327	348.72
	420	1.22	138.99	419.99	-1.26	2.2	-2.52	0.15	258310.38	495857.96	378.72
	450	1.41	141.76	449.98	-1.8	2.64	-3.14	0.07	258310.825	495857.418	408.71
	480	1.01	168.58	479.97	-2.35	2.91	-3.6	0.23	258311.09	495856.871	438.7
	510	1.01	180.5	509.97	-2.86	2.94	-3.83	0.07	258311.122	495856.356	468.7
	540	1.08	180.1	539.96	-3.42	2.94	-4.04	0.02	258311.119	495855.799	498.69
	570	0.78	187.25	569.96	-3.93	2.92	-4.23	0.11	258311.102	495855.287	528.69
	600	0.26	254.02	599.96	-4.17	2.83	-4.23	0.24	258311.01	495855.054	558.69
	630	0.98	321.61	629.96	-3.97	2.61	-3.95	0.31	258310.785	495855.252	588.69
	660	1.61	320.49	659.95	-3.43	2.19	-3.35	0.21	258310.366	495855.786	618.68
	690	2.19	319.49	689.93	-2.68	1.53	-2.45	0.19	258309.71	495856.543	648.66
	720	2.43	321.78	719.91	-1.72	0.75	-1.36	0.09	258308.927	495857.496	678.64
	750	2.55	320.61	749.88	-0.7	-0.06	-0.22	0.04	258308.116	495858.515	708.61
	780	2.18	318.7	779.85	0.24	-0.87	0.89	0.13	258307.313	495859.464	738.58
	810	1.86	315.77	809.83	1	-1.57	1.83	0.11	258306.612	495860.221	768.56
	840	1.87	314.81	839.82	1.69	-2.25	2.73	0.01	258305.926	495860.907	798.55
	870	1.78	318.07	869.8	2.38	-2.93	3.63	0.05	258305.253	495861.602	828.53
	900	1.47	314.58	899.79	3.01	-3.51	4.41	0.11	258304.671	495862.23	858.52
	930	0.91	298.6	929.78	3.38	-3.99	5	0.21	258304.187	495862.599	888.51
	960	0.55	292.15	959.78	3.54	-4.34	5.38	0.12	258303.84	495862.765	918.51
	990	0.36	282.76	989.78	3.61	-4.54	5.59	0.07	258303.637	495862.831	948.51
	1020	0.4	292.37	1019.78	3.66	-4.73	5.78	0.02	258303.45	495862.88	978.51
	1050	0.41	287.88	1049.78	3.74	-4.93	6	0.01	258303.251	495862.959	1008.51
	1080	0.49	278.83	1079.78	3.77	-5.16	6.22	0.04	258303.03	495862.99	1038.51
	1110	0.68	302.25	1109.78	3.92	-5.44	6.54	0.1	258302.74	495863.14	1068.51
	1140	0.77	292.93	1139.77	4.08	-5.76	6.9	0.05	258302.42	495863.30	1098.5
	1170	0.82	267.09	1169.77	4.18	-6.18	7.32	0.12	258302.00	495863.40	1128.5
	1200	0.9	256.95	1199.77	4.1	-6.62	7.7	0.06	258301.56	495863.32	1158.5
	1230	1.01	256.11	1229.76	3.99	-7.12	8.11	0.04	258301.06	495863.21	1188.49
	1260	0.93	257.15	1259.76	3.86	-7.59	8.5	0.03	258300.59	495863.08	1218.49
	1290	0.91	257.25	1289.76	3.77	-8.08	8.91	0.01	258300.10	495862.99	1248.49
	1320	0.64	258.41	1319.75	3.67	-8.49	9.24	0.09	258299.69	495862.89	1278.48
	1350	0.58	326.64	1349.75	3.74	-8.73	9.5	0.23	258299.45	495862.96	1308.48
	1380	1.18	360	1379.75	4.18	-8.82	9.75	0.26	258299.36	495863.40	1338.48
	1410	2.07	0	1409.74	5.03	-8.82	10.08	0.3	258299.36	495864.25	1368.47
	1440	2.75	0	1439.71	6.33	-8.82	10.59	0.23	258299.36	495865.55	1398.44
	1470	2.75	0	1469.67	7.77	-8.82	11.15	0	258299.36	495866.99	1428.4
	1478	2.75	0	1477.66	8.15	-8.82	11.3	0	258299.36	495867.37	1436.39

Appendix B: Temporary Adaptor drawing



Appendix C: Well Status Diagram after operations

TUBBERGEN- 4

UWI : 110000740753
Site: TUBBERGEN-4
Wellbore Name: TUB- 4
Well Type: Development
Completion Type: Single
Well Fluid Type: Gas
Lift Type: No artificial lift
Original Spud Date: 14/04/1951

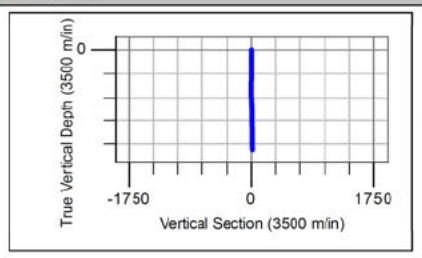
For more info see OpenWells/iWellFile

Longitude: 6° 54' 26.184 E
Latitude: 52° 26' 30.406 N
Maximum Inclination: 2.75°
Maximum Dogleg: 0.326°/10m

All Depths Refer to NAP / MSL

Name	Def.	Rig	Elevation(m)
NAP	N		0.00
GLE	N		37.49
TBF	N		38.07
DFE	Y		41.27

Datum: TBF @ 38.07m



MAASP date: 19/08/2020 00:00
MAASP A: 199.9480bar
MAASP B: 251.9345bar
MAASP C: 5.9984bar

Integrity Issues

Annular Pressures

Hole Section Details

Hole	MD base (m)	TVD shoe (m)
17.5	32	
12.25	462	
8.5	1,316	
6	1,474	

Casing Details

Name	Size(in)	MD top(m)	MD landed(m)	TVD landed(m)
Conductor - run	13.375	1	30	
Surface Casing	9.625	0	450	
Tieback String	7.000	65	612	
Intermediate Casing	7.000	612	1,315	
Production Casing	4.500	550	1.420	

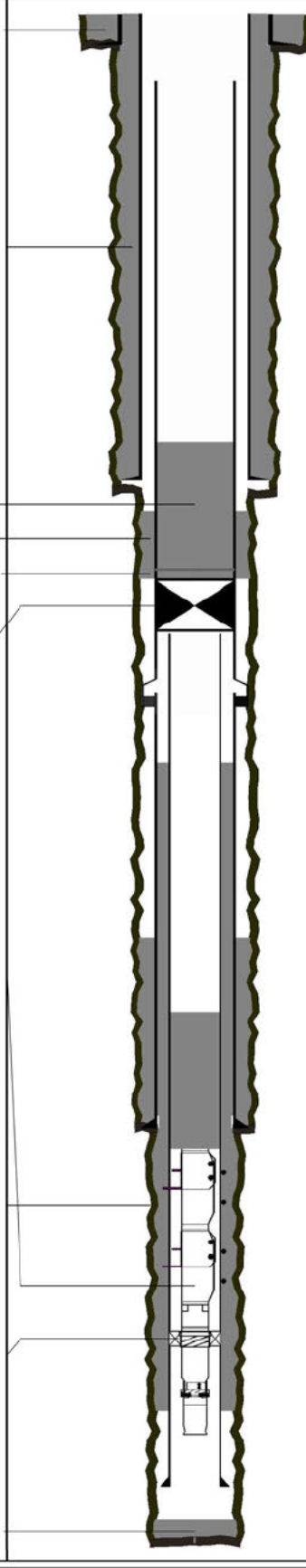
Annular Fluid

Description	
	29.80
	450.37
	611.76
	1,314.55
	1,419.93

Wellbore Information

Name	KO Depth(m)	KO Date
TUB- 4	0.00	14/04/1951

Wellbore Comments	Milled Window TVD	Casing Details	MD (m)	TVD (m)	Confirmed TOC	Packers / Plugs
		13.3/8" CONDUCTOR SHOE 30m 30m MD / TV	0	0		Cement Casing, 13in, 0m, 30m MD
			1	0		
			29	29		
			30	30		
			65	65		
						Cement Casing, 10in, 0m, 451m MD
		FLOAT SHOE 9.5/8" - 40.0# THREA UNKNOWN, J55 40ppf J55 450m 450m MD / TV	450	450		
			450	450		Cement Plug #2, 7in, 418m, 536m MD
						Cement , 7in, 480m, 536m MD
						Cement Base Plug, 7in, 536m, 545m MD
			550	550		ICP base for PWC plug, 545m MD
			611	611		
			612	612		
			612	612		
						Cement Plug #1, 5in, 1,144m, 1, 354m MD
		FLOAT SHOE 7.0" - 23.0# THREADTYPE UNKNOWN 23ppf 1, 315m 1315m MD / TV	1314	1314		
			1315	1315		Cement Casing, 7in, 1,010m, 1, 315m MD
						PARP 4.1/2", 22DAB25, 2.7/6" - 6.4# VAM, 4140, 1,379m, 1379m, MD / TVD
TUB- 4, Hole #1;Compass 2000 Description: Spudded: 14-04-1951; BARE FOOT COMPLETIONVOOR X-MASTREE F-PLUG ALTIJD PLUG MET 2 7/8 OF 2 3/8 ONDERKANT GEBRUIKEN [Original Compass Actual Design Datum: ORT TUB-4 @ 41.27 metres above System Datum]		FLOAT SHOE 4.1/2" - 11.6# LTC, N80 12ppf N80 1,420m 1420m MD / TV	1420	1419		
			1420	1420		Cement Plug, , 1,452m, 1,474m MD



Formation	MD (m)	TVD (m)
	1	1
NLSPB_NS		
NLSPB_CKTX	230	230
	260	260
NLSPB_KNGL		
	518	518
NLSPB_KNN		
	547	547
NLSPB_RNMU		
	700	700
NLSPB_RNRO		
	862	862
NLSPB_RNSO	946	946
NLSPB_RBMD	982	982
NLSPB_RBMV	1,057	1,057
NLSPB_RBSH		
	1,302	1,302
NLSPB_ZEZ5	1,317	1,317
NLSPB_ZEZ4		
	1,361	1,361
NLSPB_ZEZ3		
	1,459	1,458
NLSPB_ZEZ2	1,474	1,474
NLSPB_BASEPICK		

Current User: EUROPE
Date Generated: 14/11/2022
Data QA/QC'd by:
Date QA/QC'd:

Notes:

Template: D&R Proposal
Date: 14/11/2022

Appendix D: Geology / Formation - data

Brackish water interface depth mNAP

Formation	Member	Code	Lithology (used for geomechanical calculations)	Fluid : Gas (G), Oil (O), Brine (B)	Top/Base	AHORT (m)	TVDNAP (m)	Base Pore		Base Frac	
								Gradient (bar/10m, from surface)	Pressure(base)	Gradient (bar/10m, from surface)	Pressure(base)
Upper North Sea		NU	Sand	brine	Top	3.80	-37.5	0.00	1.0	**1.32**	**1.0**
					Base	233	191.7	1.06	20.3	**1.32**	**25.4**
Middle North Sea											
Lower North Sea											
Ommelanden Formation											
Texel Formation	Plenus Marl										
	Texel Marlstone	CKTXM			Top	233.00	191.73	1.06	20.32	1.32	25.37
					Base	263.00	221.73	1.06	23.50	1.32	29.35
Holland (KNGL)		KNGL	Shale		Top	**263.0**	**221.7**	1.06	23.5	1.32	29.4
					Base	**521.0**	**479.7**	1.06	50.8	1.33	63.8
Vlieland Claystone (KNNC)		KNNC	Shale	gas/oil	Top	**521.0**	**479.7**	1.06	50.8	1.33	63.8
					Base	**550.0**	**508.7**	1.06	53.9	1.33	67.7
Vlieland Sandstone (KNNS)	Gildehaus Sst.	KNNSG									
Coevorden		SKCF									
Weiteveen		SKWF									
Aalburg		ATAL									
Sleen		ATRT									
Muschelkalk (RNMU)	Middle Muschelkalk	RNMUA									
	Evaporite	RNMUE	Shale		Top	550	508.69	1.06	53.9	1.3	67.7
					Base	578	536.69	1.06	56.9	1.3	71.5
	Lower Muschelkalk	RNMUL	Shale	oil	Top	578	**536.7**	1.06	56.9	1.3	71.5
					Base	703	**661.7**	1.06	70.1	1.3	88.5
Roet (RNRO)	Upper Rot Claystone	RNROU	Shale		Top	703	**661.7**	1.06	70.1	1.3	88.5
					Base	819	**777.6**	1.06	82.4	1.3	104.4
	Upper Roet Evaporite	RNRO2	Salt/Anhydrite		Top	819	**777.6**	2.2	171.1	2.2	171.1
			Salt/Anhydrite		Base	827	**785.6**	2.2	172.8	2.2	172.8
	Intermediate Roet Claystone	RNROM	Shale		Top	827	**785.6**	1.06	83.3	1.3	105.5
					Base	849	**807.5**	1.06	85.6	1.3	108.5
	Main Roet Evaporite	RNRO1	Salt/Anhydrite		Top	849	**807.5**	2.20	177.7	2.2	177.7
			Salt/Anhydrite		Base	866	**824.0**	2.20	181.3	2.2	181.3
Solling (RNSO)	Solling Claystone	RNSOC	Shale		Top	866	**824.0**	1.06	87.3	1.3	110.8
					Base	926	**884.5**	1.06	93.8	1.3	119.2
	Basal Solling Sst.	RNSOB	Sand	brine	Top	926	**884.5**	1.06	93.8	1.3	119.2
					Base	949	**907.5**	1.06	96.2	1.3	122.4
Detfurth (RBMD)	Detfurth Claystone	RBMDC			Top	949	907.51	1.06	96.2	1.3	122.4
					Base	961	919.51	1.06	97.5	1.3	124.0
	Detfurth Sst.	RBMDL	Sand	brine	Top	961	**919.5**	1.06	97.5	1.3	124.0
					Base	985	**943.5**	1.06	100.0	1.4	127.4
Volpriehausen (RBMV)	Volpriehausen Clay-Siltstone	RBMVC	Shale		Top	985	**943.5**	1.06	100.0	1.4	127.4
					Base	1047	**1005.5**	1.06	106.6	1.4	136.1
	Volpriehausen Sandstone	RBMVL	Sand	brine	Top	1047	**1005.5**	1.06	106.6	1.4	136.1
					Base	1060	**1018.5**	1.06	108.0	1.4	137.9
Lower Buntsandstein (RBSH)	Rogenstein	RBSHR	Shale		Top	1060	**1018.5**	1.06	108.0	1.4	137.9
					Base	1166	**1124.0**	1.06	119.1	1.4	152.9
	Main Claystone	RBSHM	Shale		Top	1166	**1124.0**	1.06	119.1	1.4	152.9
					Base	1286	**1244.5**	1.06	131.9	1.4	170.2
	Basal Buntsandstein	RBSHL	Shale		Top	1286	**1244.5**	1.06	131.9	1.4	170.2
					Base	1305	**1263.5**	1.06	133.9	1.4	172.9
Zechstein 5	Z5 Salt	ZEZ5H			Top	1305	1263.48	2.2	278.0	2.2	278.0
					Base	1312	1270.48	2.2	279.5	2.2	279.5
	Z5 Salt Clay	ZEZ5G			Top	1312	1270.48	1.89	240.1	1.9	240.1
					Base	1320	1278.48	1.89	241.6	1.9	241.6
Zechstein 4	Z4 Salt	ZEZ4H	Salt/Anhydrite		Top	1320	1278.48	2.2	281.3	2.2	281.3
			Salt/Anhydrite		Base	1347	1305.48	2.2	287.2	2.2	287.2
	Z4 Anhydrite	ZEZ4A			Top	1347	1305.48	2.2	287.2	2.2	287.2
					Base	1351	1309.48	2.2	288.1	2.2	288.1
	Red Salt Clay	ZEZ4R	Shale		Top	1351	1309.48	1.89	247.5	1.9	247.5
					Base	1364	1322.48	1.89	249.9	1.9	249.9
Zechstein 3	Z3 Salt	ZEZ3H	Salt/Anhydrite		Top	1364	1322.48	2.2	290.9	2.2	290.9
			Salt/Anhydrite		Base	1412	1370.46	2.2	301.5	2.2	301.5
	Z3 Anhydrite	ZEZ3A	Salt/Anhydrite		Top	1412	**1370.5**	2.20	301.5	2.2	301.5
			Salt/Anhydrite		Base	1416	**1374.5**	2.20	302.4	2.2	302.4
	Z3 Carbonate	ZEZ3C	Carbonate	gas	Top	1416	**1374.5**	0.59	81.1	1.1	152.7
					Base	1459	**1417.4**	0.57	81.4	1.1	160.2
	Z3 Grey Salt Clay	ZEZ3G	Shale		Top	1459	**1417.4**	1.89	267.9	1.9	267.9
					Base	1462	**1420.4**	1.89	268.5	1.9	268.5
Zechstein 2	Z2 Roof Anhydrite	ZEZ2T	Salt/Anhydrite		Top	1462	**1420.4**	2.20	312.5	2.2	312.5
			Salt/Anhydrite		Base	1466	**1424.4**	2.20	313.4	2.2	313.4
	Z2 Salt	ZEZ2H	Salt/Anhydrite		Top	1466	1424.41	2.2	313.4	2.2	313.4
			Salt/Anhydrite		Base	1477	1435.9	2.2	315.9	2.2	315.9