

**POROČILO O MERITVAH S PLOSKIM DILATOMETROM (DMT) NA OBMOČJU
MALEGA GRABNA in GRADŠČICE**

Projekt: GG poročilo za zagotavljanje poplavne
varnosti JV dela Ljubljane; etapa 1A
(št.poroč. IC 6/016)

Datum: 15.01.2016

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VSEBINA

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Priloge

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1. UVOD

Z DMT sondiranjem pridobimo po globini zvezno količino podatkov o trdnostno-deformacijskih lastnostih tal, s pomočjo izvrednotenega materialnega indeksa pa lahko ločimo glinene in peščene sloje, oz. sloje ki so bolj ali slabše prepustni.

Za vtiskanje predhodno kalibrirane lopatice s krožno membrano v tla smo uporabili stroj Pagani TG 63-100, ki nam omogoča, da smo DMT sondo potiskali na željeno globino s konstantno hitrostjo cca 2 cm/s. Sondirali smo do globine, ko je bila na stroju izkoriščena razpoložljiva sila za vtiskanje lopatice. Končna globina sondiranja pri večini izvedenih preiskav je bila med 8. Količina izvedenih preiskav in globina posameznih sond je razvidna iz preglednice 1, grafični prikaz rezultatov posameznih sondiranj pa je prikazan v prilogi 1. Meritve in interpretacijo rezultatov smo izvedli skladno s standardom SIST-TS CEN ISO/TS 22476-11:2008.

Preglednica 1: Seznam izvedenih DMT preiskav.

Sonda	Globina	Sonda	Globina
	m		m
DMT-N1	8	DMT-N7	8
DMT-N2	8	DMT-N8	8
DMT-N3	8	DMT-N9	8
DMT-N4	8	DMT-N10	8
DMT-N5	8	DMT-N11	8
DMT-N6	8	DMT-N12	8
Skupaj 12 sond		96m	

2. POSTOPEK MERITEV

Iz izvora zračnega tlaka smo preko kontrolne plošče z ventili in manometri ter sistema pnevmatskih cevk kontrolirano obremenjevali membrano DMT sonde, povratno informacijo o deformaciji membrane in posledično tudi deformaciji zemljine ob membrani, pa smo spremljali preko električnega tokokroga sestavljenega iz stikala v DMT sondi, električnega kabla in galvanometra oz. piskača na kontrolni enoti.

Kalibracija DMT sonde s krožno membrano (ΔA , ΔB), ki jo izvedemo pred meritvijo in kontrolno po meritvi, pomeni, da smo določili togost membrane, ki jo upoštevamo pri izvrednotenju testa. Kalibracija je zelo pomembna pri izvrednotenju karakteristik zelo občutljivih mehkih zemljin.

Med meritvijo smo na vsakih 20 cm globine odčitali vrednost tlaka A in B, ki ustrezata tlaku, ko je membrana v svojem ležišču, oz. tlaku, ki je potreben, da se membrana dvigne v zemljino za 1,10 mm nad svoje ležišče.

Za izvrednotenje nekaterih materialnih parametrov tal smo upoštevali korigirane vrednosti odčitkov A, B in C in sicer:

$$p_0 = 1,05 (A - z_M + \Delta A) - 0,05 (B - z_M - \Delta B)$$

$$p_1 = B - z_M - \Delta B$$

$$p_2 = C - z_M - \Delta A$$

kjer je:

p_0, p_1, p_2	korigirani odčitki A, B in C
z_M	odčitek manometra pri atmosferskem tlaku ($z_M = 0$, če uporabljamo isti manometer za odčitke A in B)
$\Delta A, \Delta B$	korekcije določene s kalibracijo membrane
A, B, C	odčitek tlaka na določeni globini sondiranja

2.1 Izračuni geotehničnih parametrov

Iz izmerjenih vrednosti najprej določimo t.i. vmesne parametre I_D , K_D , E_D , s pomočjo katerih kasneje interpretiramo geomehanske materialne karakteristike tal.

$$I_D = (p_1 - p_0) / (p_0 - u_0)$$

$$K_D = (p_0 - u_0) / \sigma'$$

$$E_D = 34.7 (p_1 - p_0)$$

kjer je

I_D	materialni indeks
K_D	indeks horizontalne napetosti
E_D	dilatometrski modul
$\Delta A, \Delta B$	korekcije določene s kalibracijo membrane
A, B	odčitek na določeni globini sondiranja

Interpretacija materialnih lastnosti tal, ki je bila izvedena s pomočjo originalne programske opreme, pa je bila izvedena na osnovi korelacij podanih v preglednici 1.

Preglednica 2: Korelacije za interpretacijo materialnih lastnosti tal pri DMT testu

K_0	koeficient mirnega zemeljskega tlaka	$K_{0, DMT} = (K_D / 1.5)^{0.47} - 0.6$	za $I_D < 1.2$
OCR	koeficient prekonsolidacije	$OCR_{DMT} = (0.5 K_D)^{1.56}$	za $I_D < 1.2$
c_u	nedrenirana strižna trdnost	$C_{u, DMT} = 0.22 \sigma'_{v0} (0.5 K_D)^{1.25}$	za $I_D < 1.2$
ϕ	strižni kot (varna ocena)	$\phi_{safe, DMT} = 28 + 14.6 \log K_d - 2.1 \log^2 K_d$	za $I_D > 1.8$
c_h	koeficient konsolidacije iz disipacijskega testa	$C_{h, DMTA} \approx 7 \text{ cm}^2 / T_{flex}$	T_{flex} iz A-log t
k_h	koeficient prepustnosti	$k_h = C_h \gamma_w / M_h$ ($M_h \approx K_0 M_{DMT}$)	
γ	prostorninska teža	(glej graf 1)	
M	modul stisljivosti v vertikalni smeri in dreniranih pogojih	$M_{DMT} = R_M E_D$ če je ($I_D \leq 0.6$) $R_M = 0.14 + 2.36 \log K_d$ če je ($I_D \geq 3$) $R_M = 0.5 + 2 \log K_d$ če je ($0.6 < I_D < 3$) $R_M = R_{M,0} + (2.5 - R_{M,0}) \log K_d$ kjer je $R_{M,0} = 0.14 + 0.15(I_D - 0.6)$ če je $K_d > 10$ $R_M = 0.32 + 2.18 \log K_d$ če je $R_M < 0.85$ upoštevamo $R_M = 0.85$	
U_0	hidrostatski porni tlak	$U_0 = p_2 \approx C - z_M + \Delta A$	v prepust. zemljinah

Rezultate DMT sondiranja podajamo v prilogi 1.

Priloga 1

Grafični prikaz rezultatov meritev

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Izvo-r d.o.o.

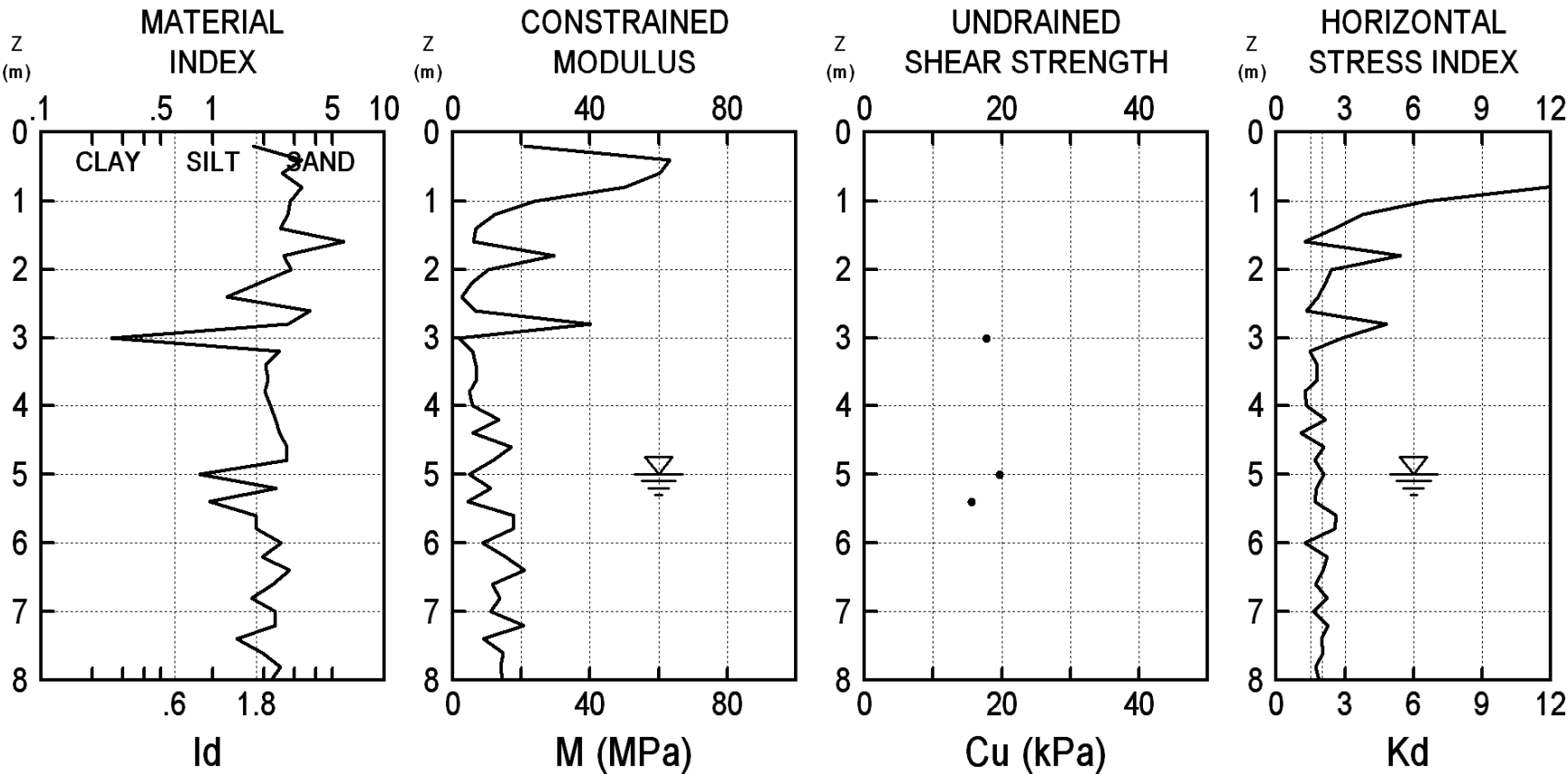
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INTERPRETED GEOTECHNICAL PARAMETERS

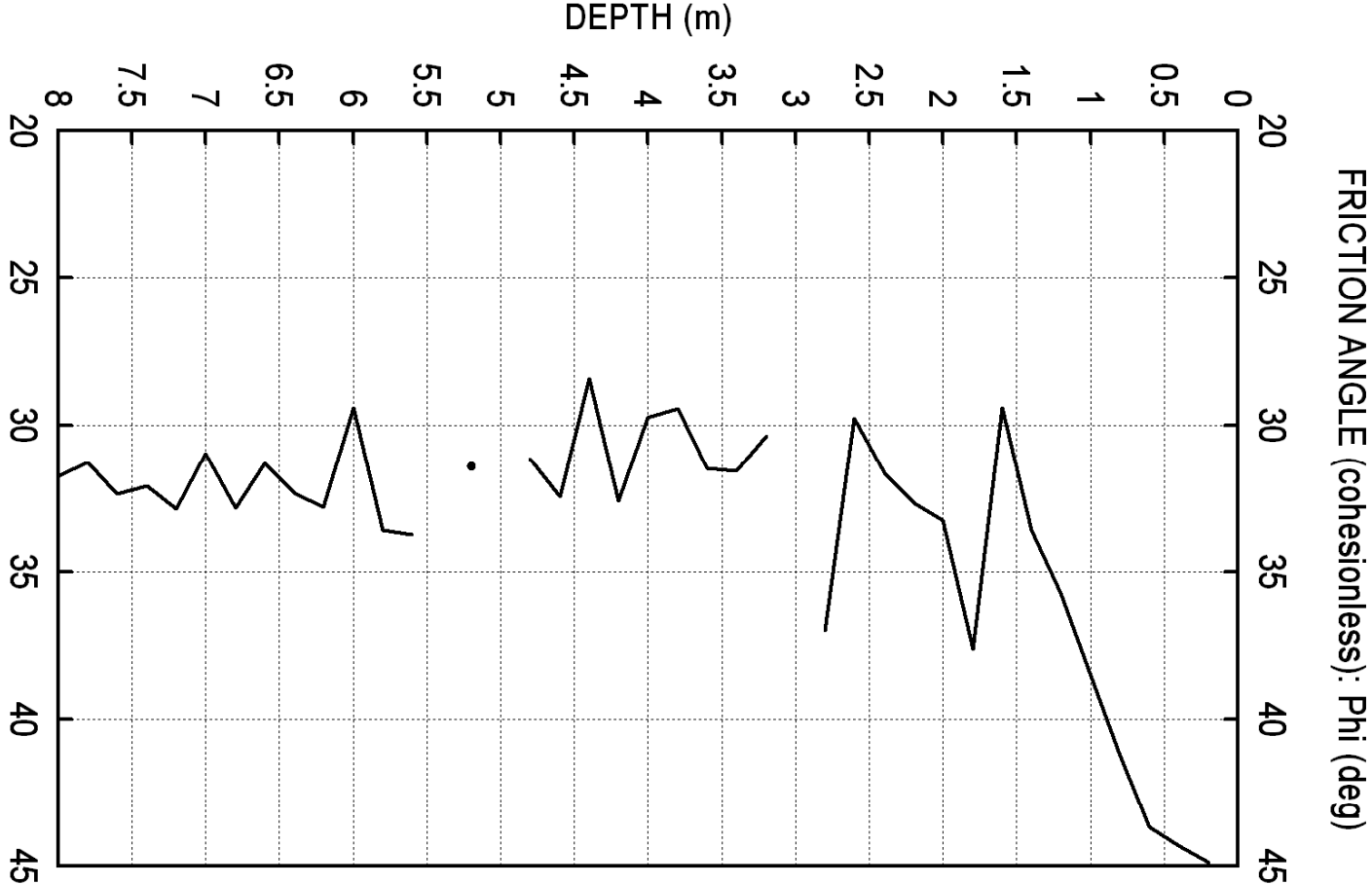
TEST

DMT N1

1.9.2015



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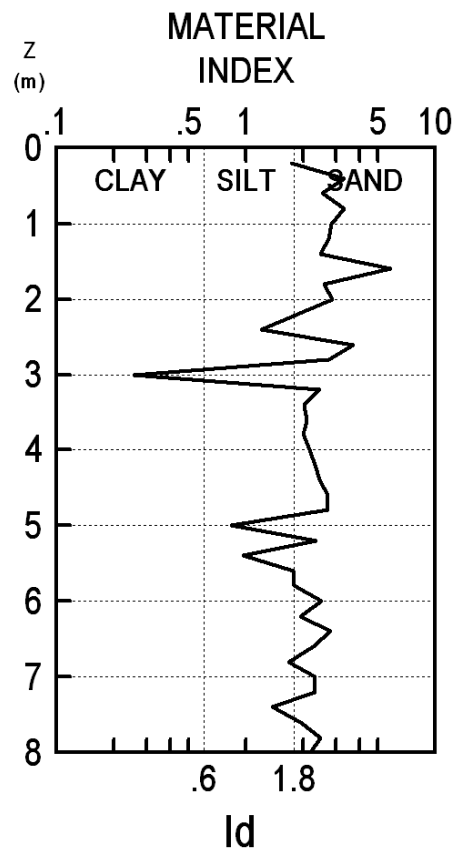
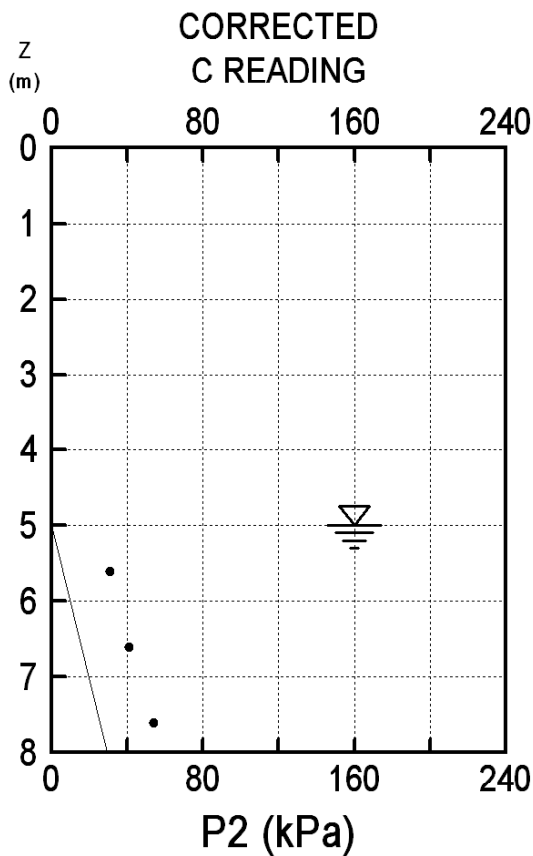
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INTERPRETED GEOTECHNICAL PARAMETERS

TEST

DMT N1

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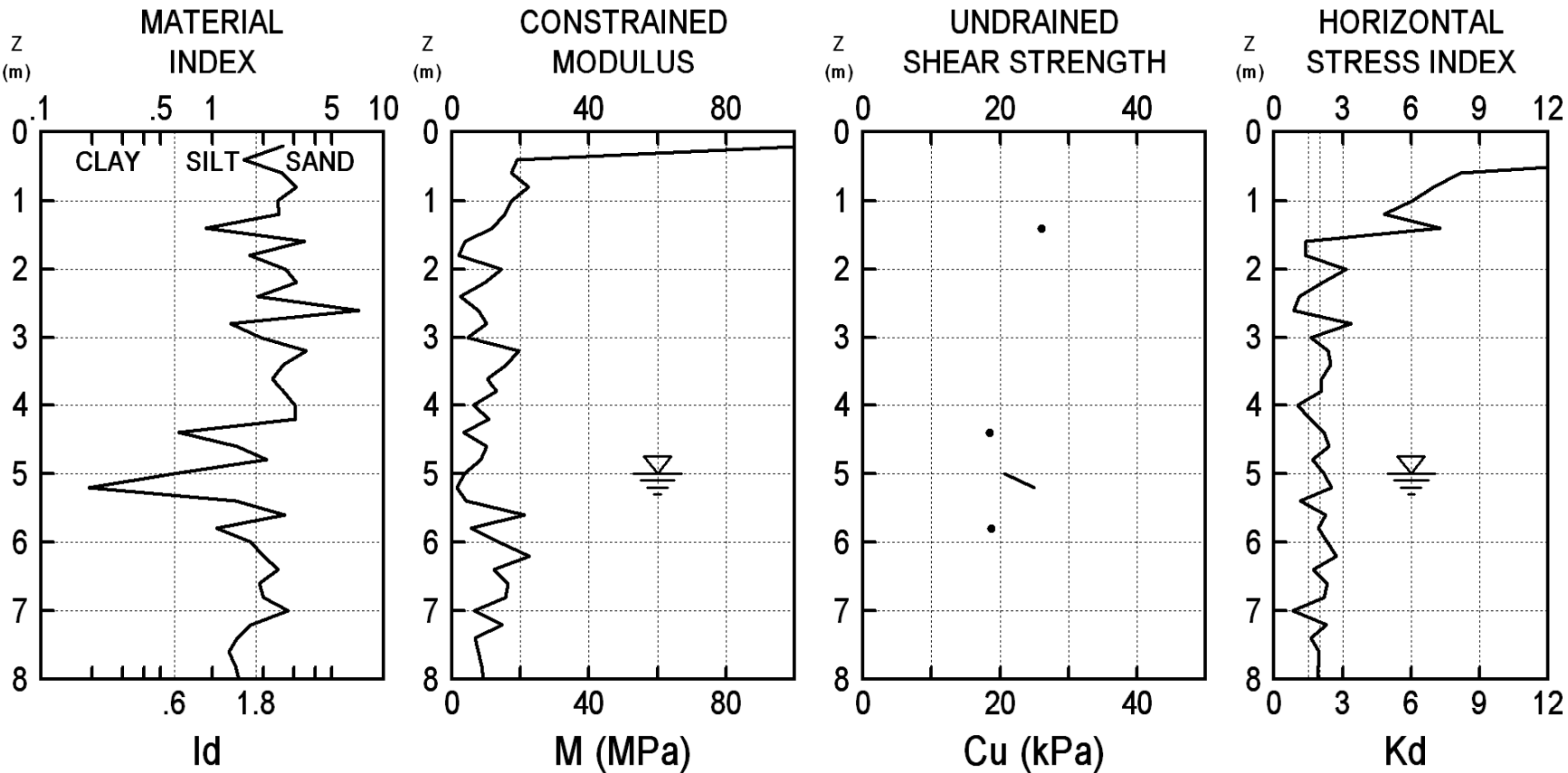
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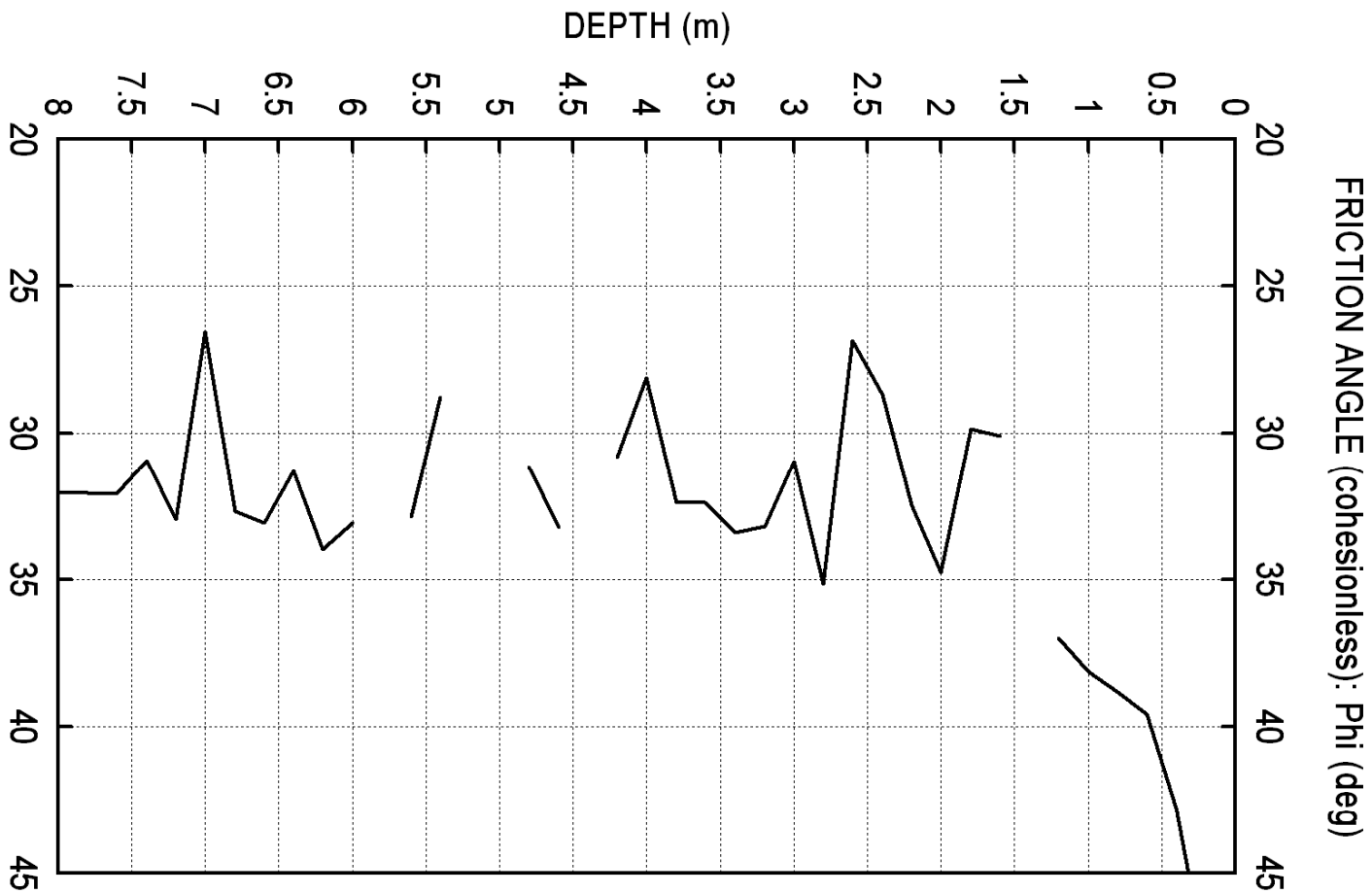
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DILATOMETER TEST (D M T)



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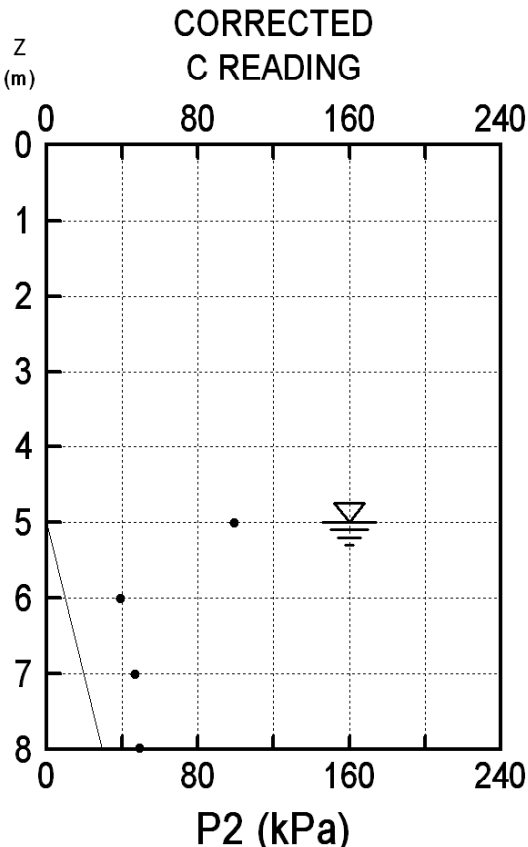
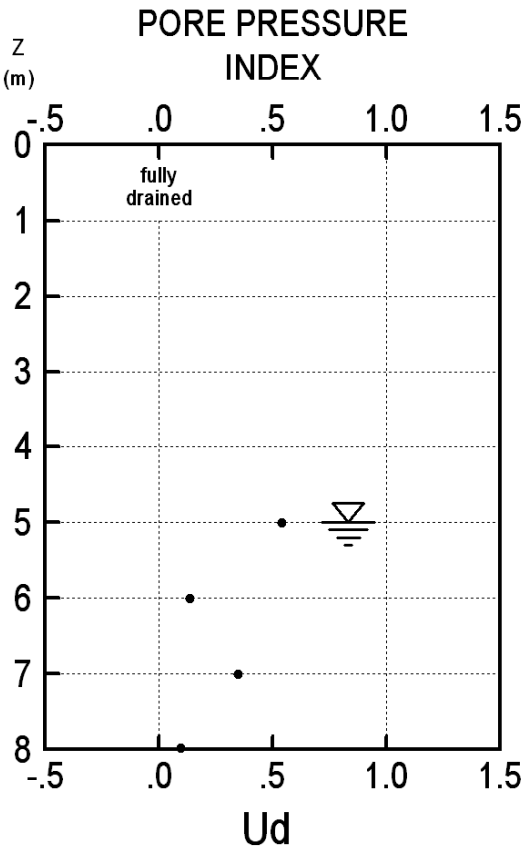
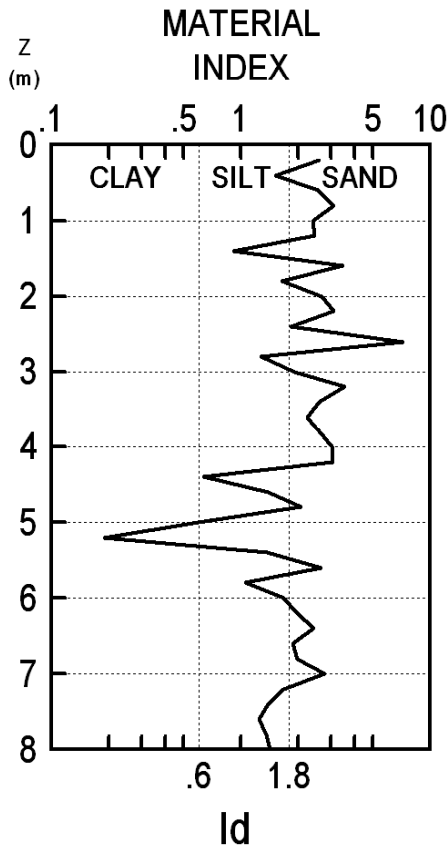
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INTERPRETED GEOTECHNICAL PARAMETERS

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DMT N2

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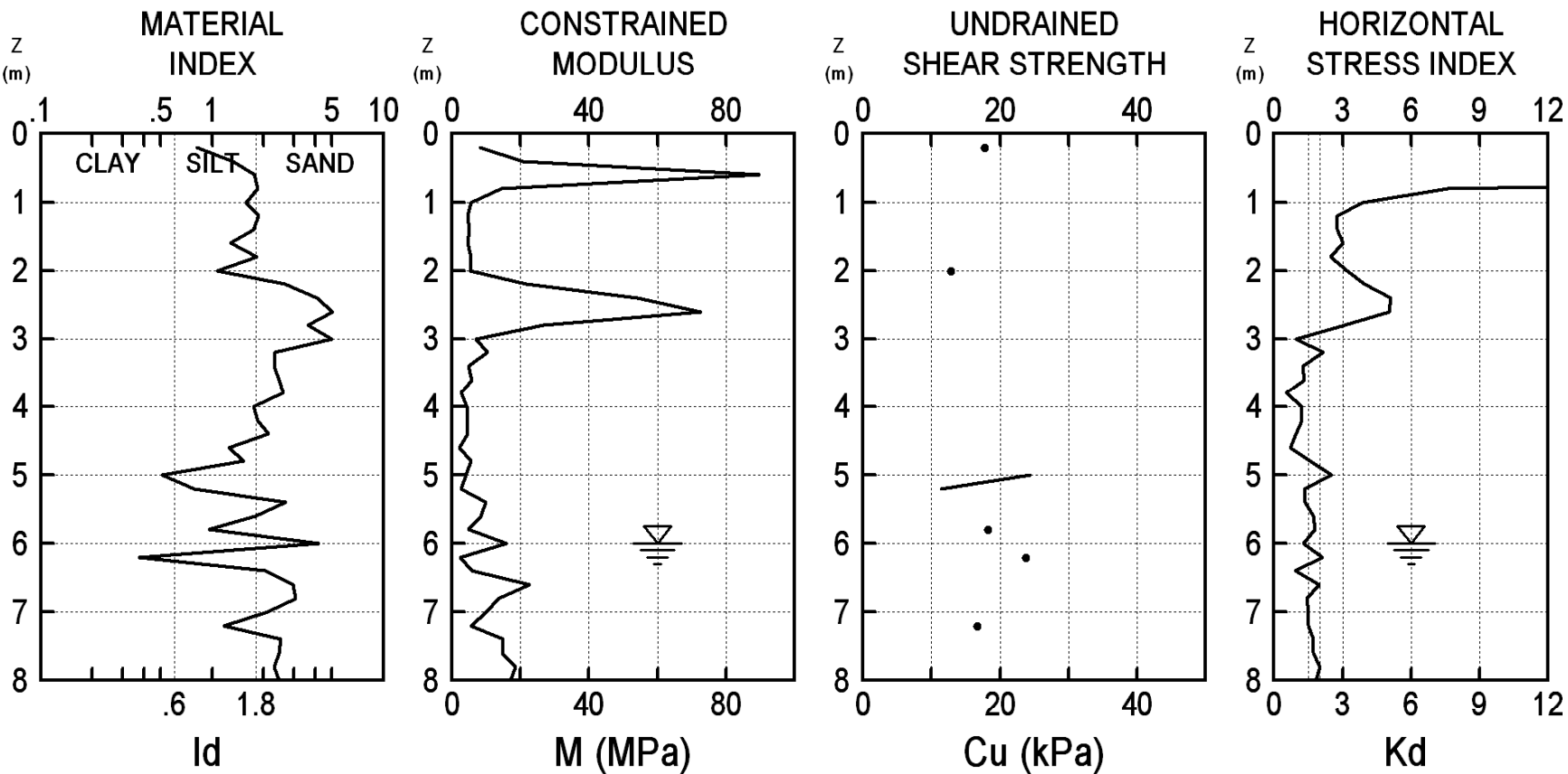
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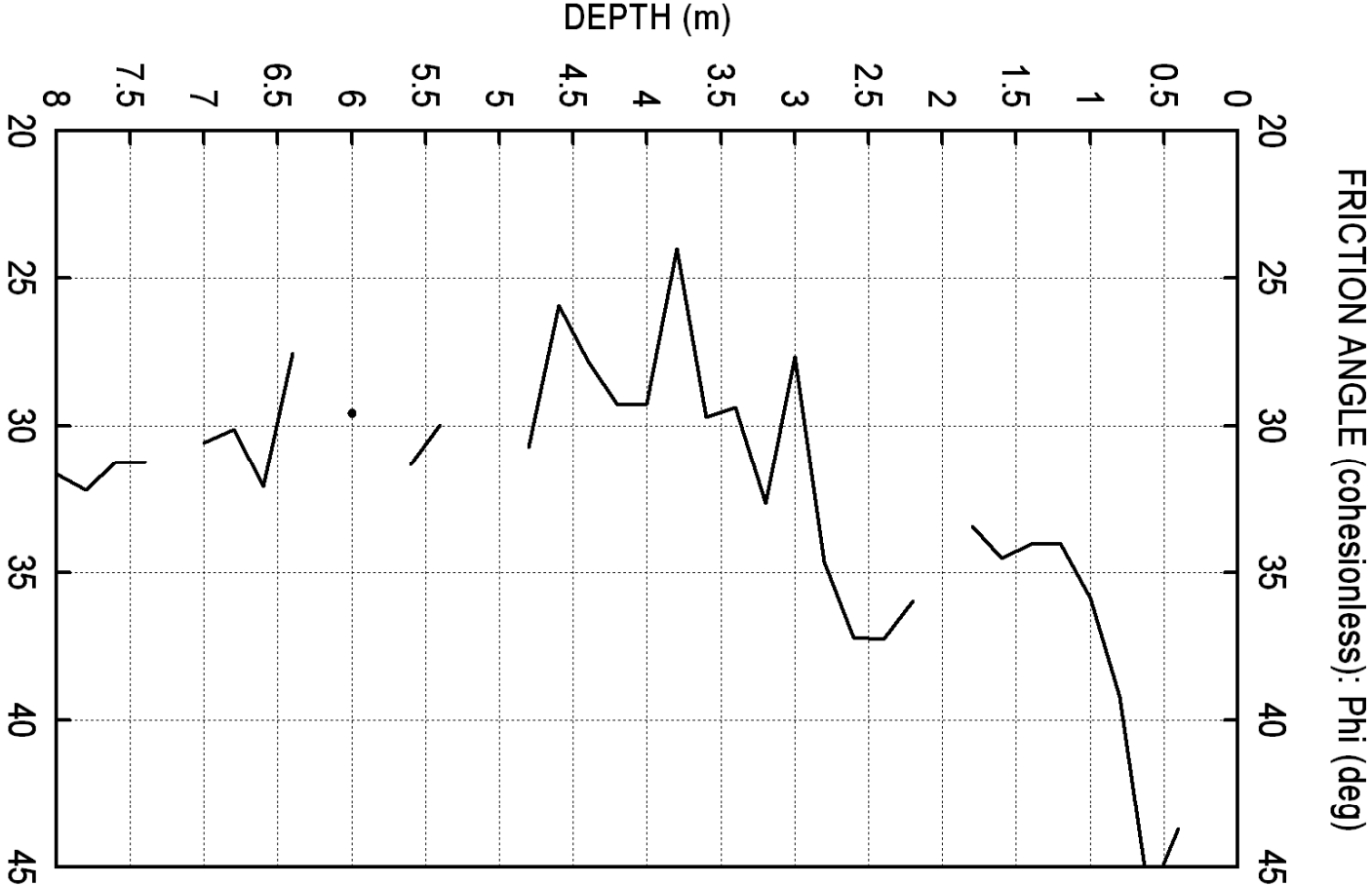
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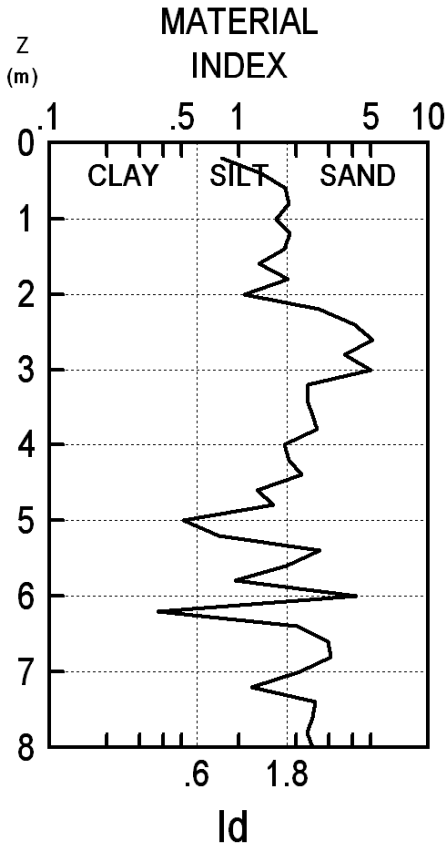
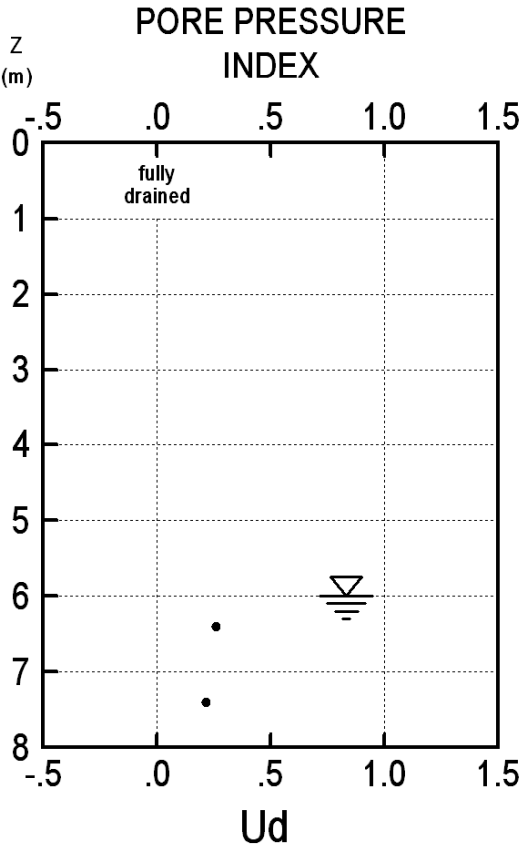
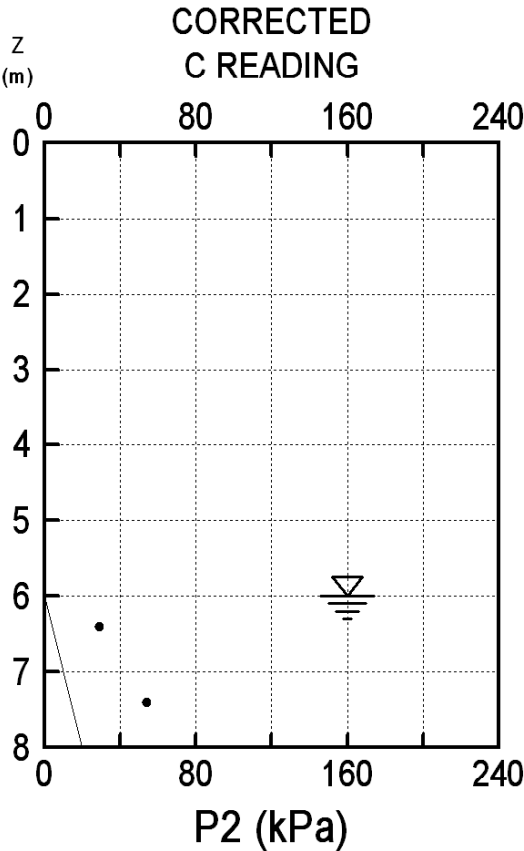
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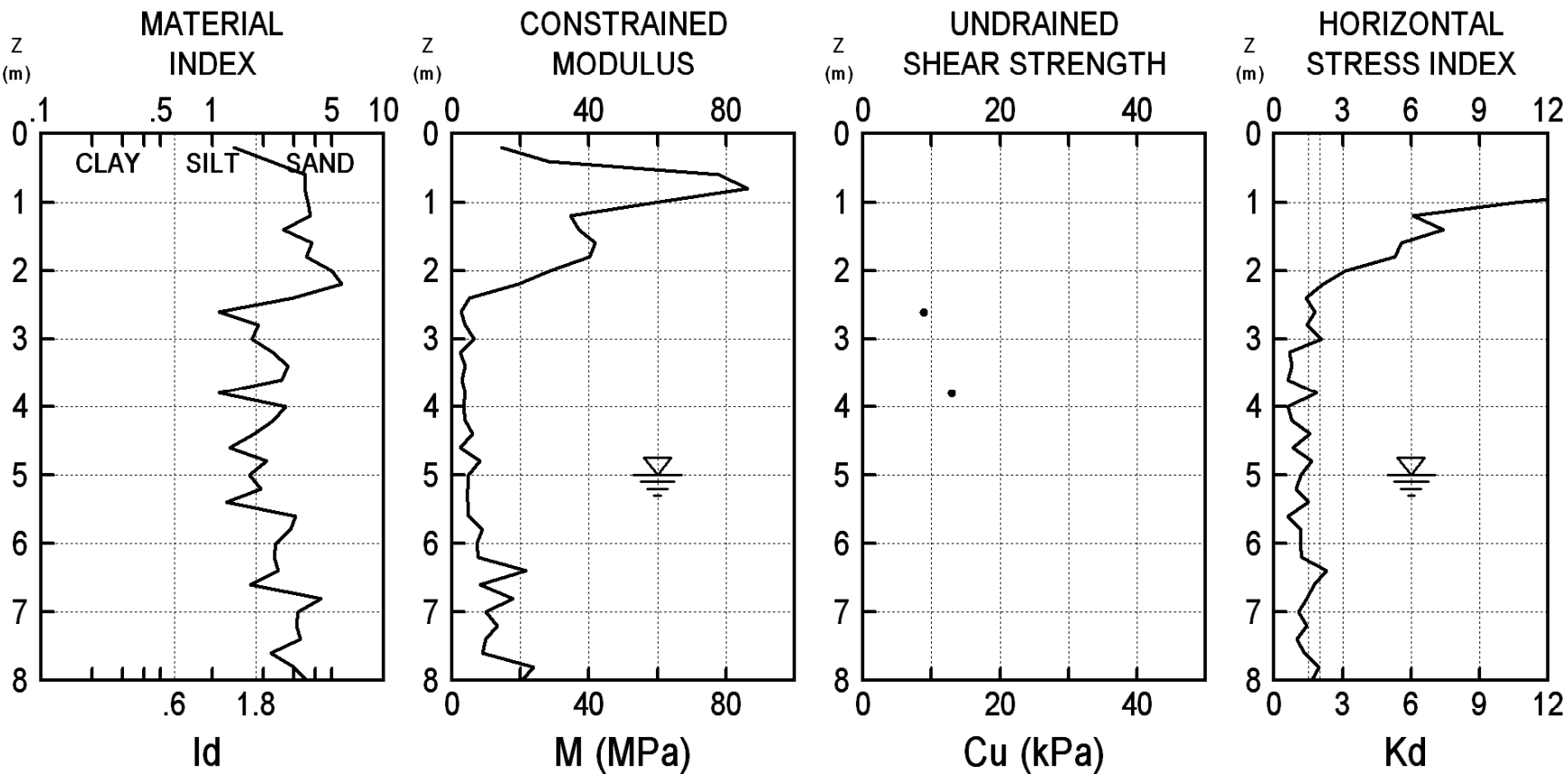
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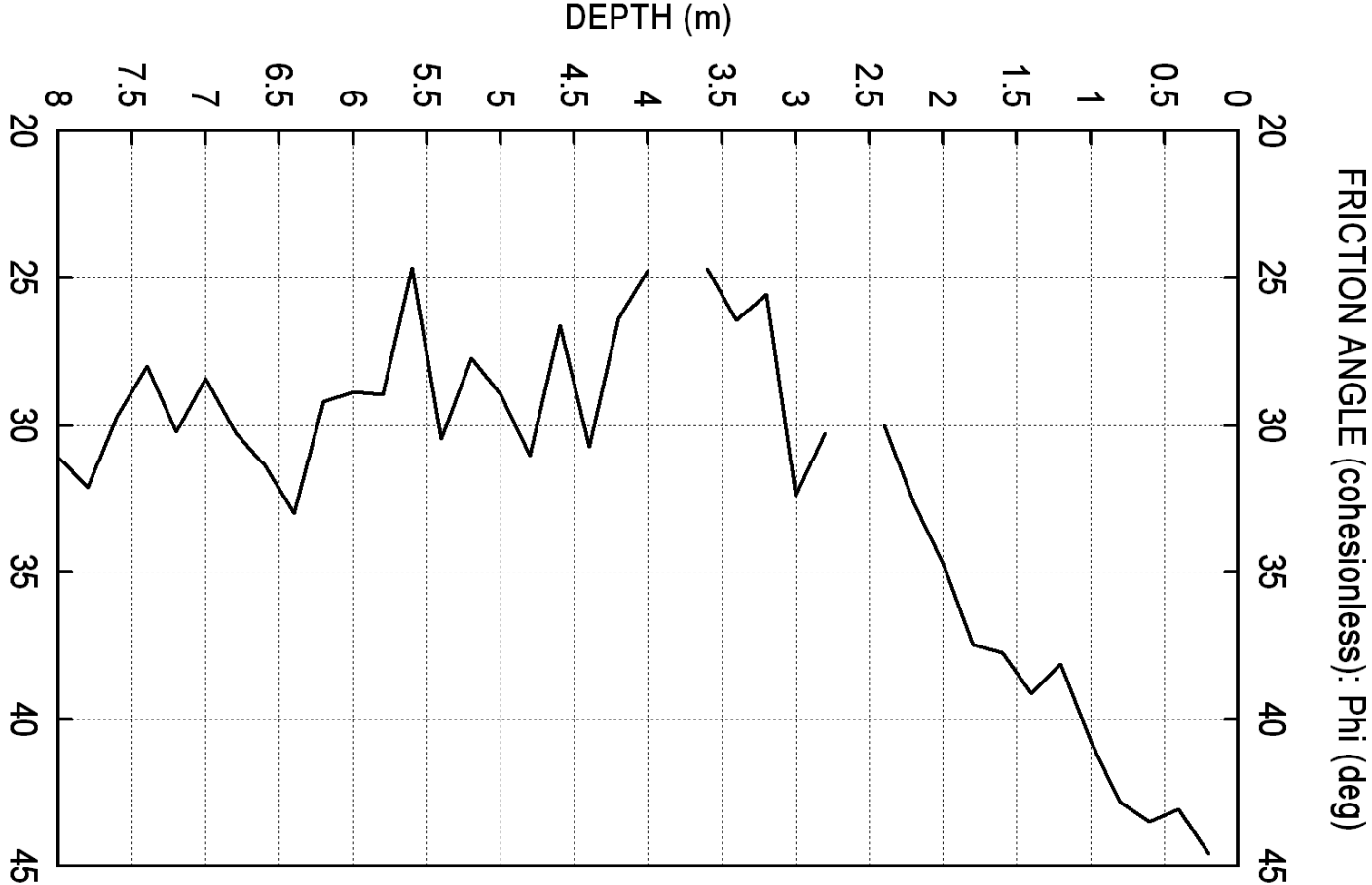
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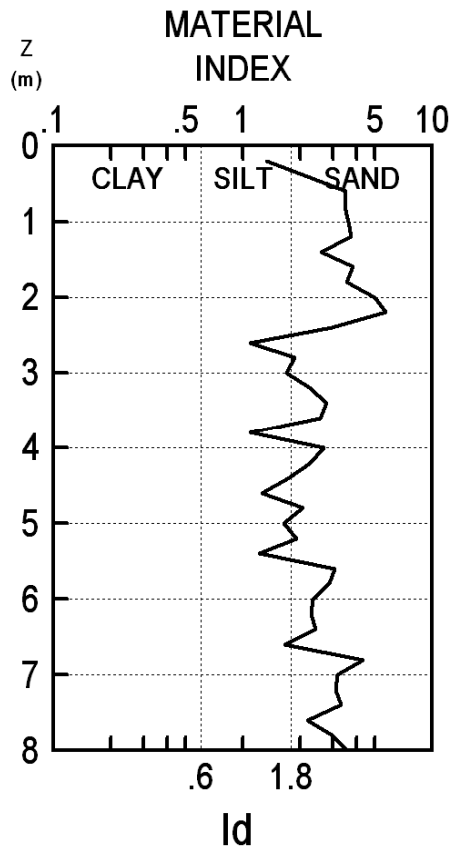
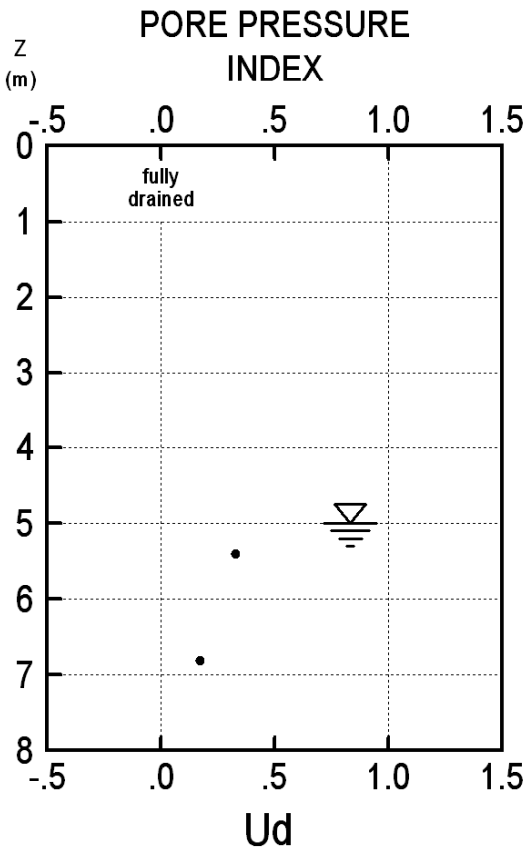
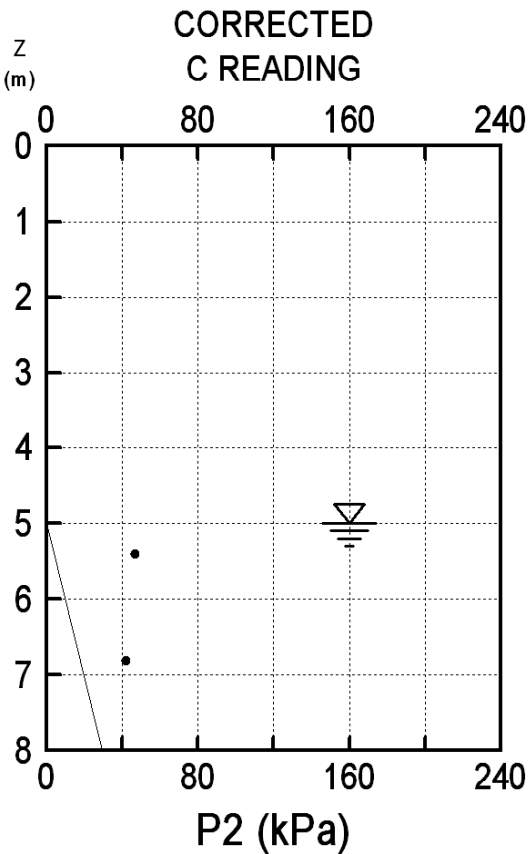
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INTERPRETED GEOTECHNICAL PARAMETERS

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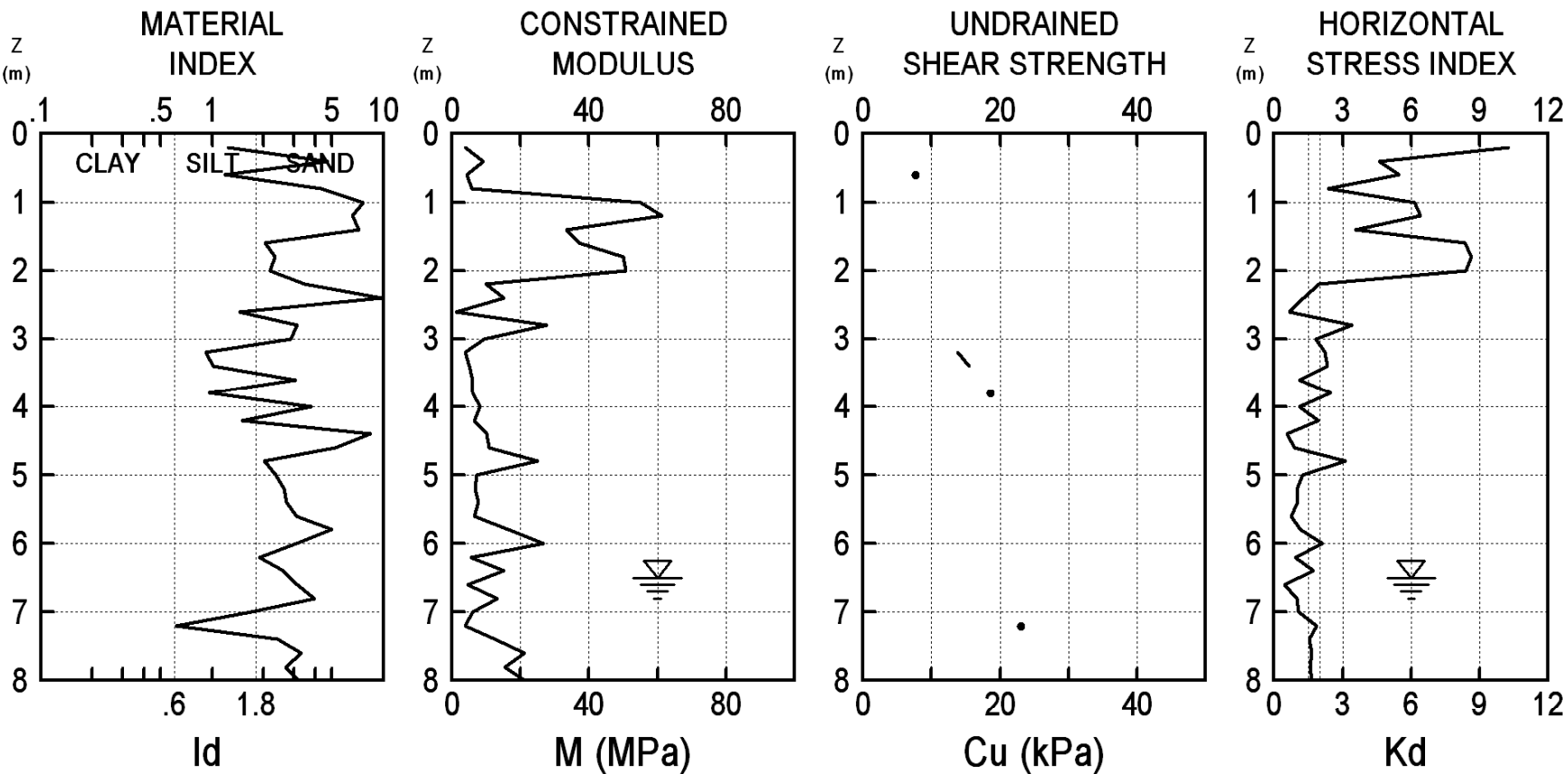
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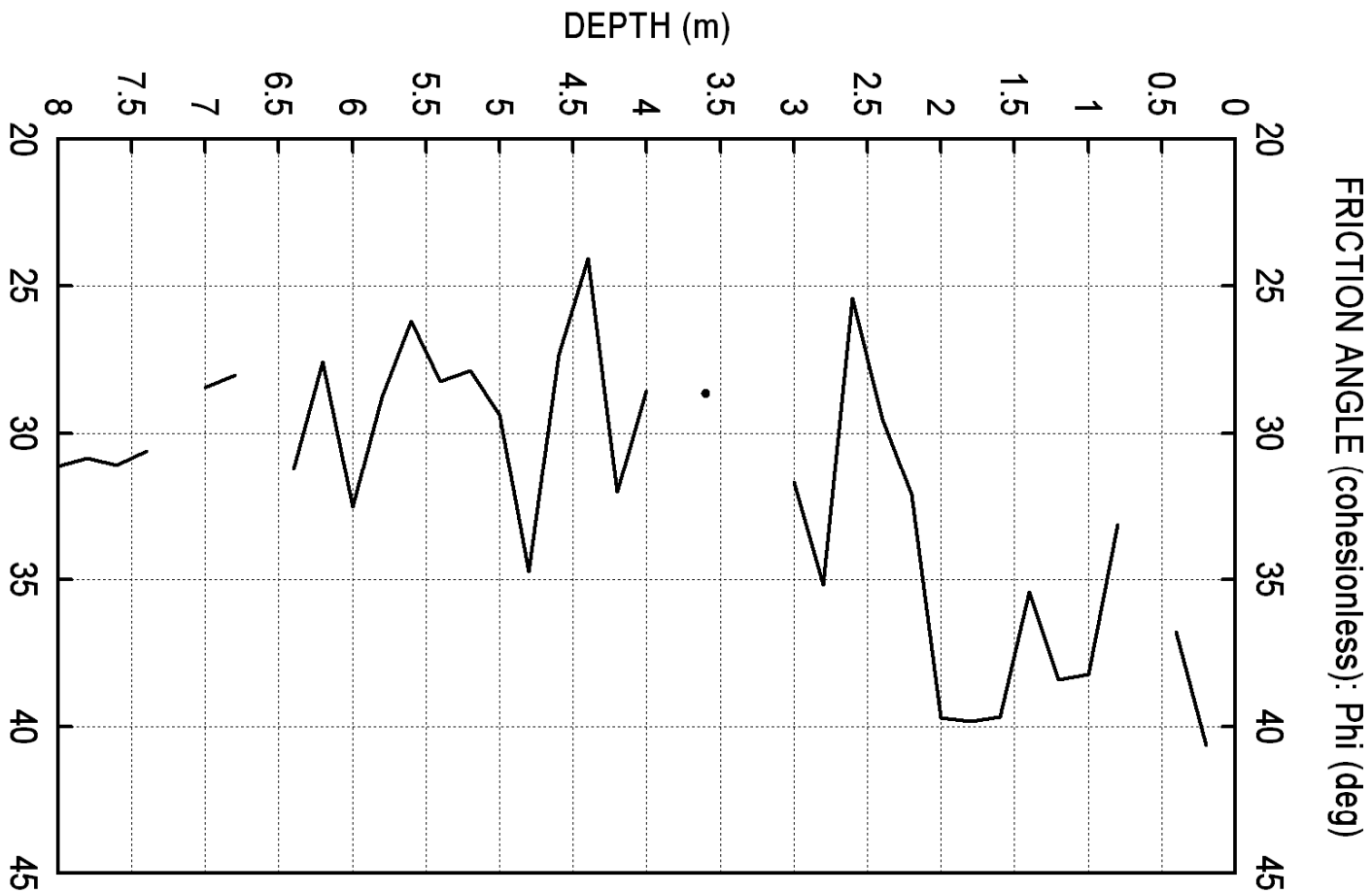
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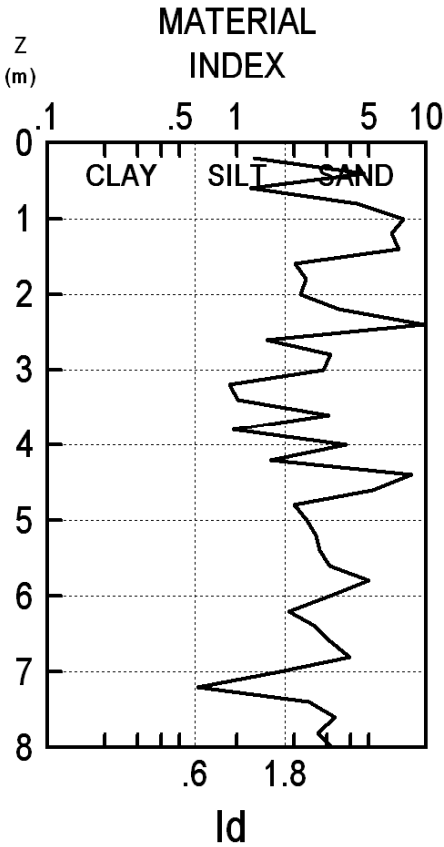
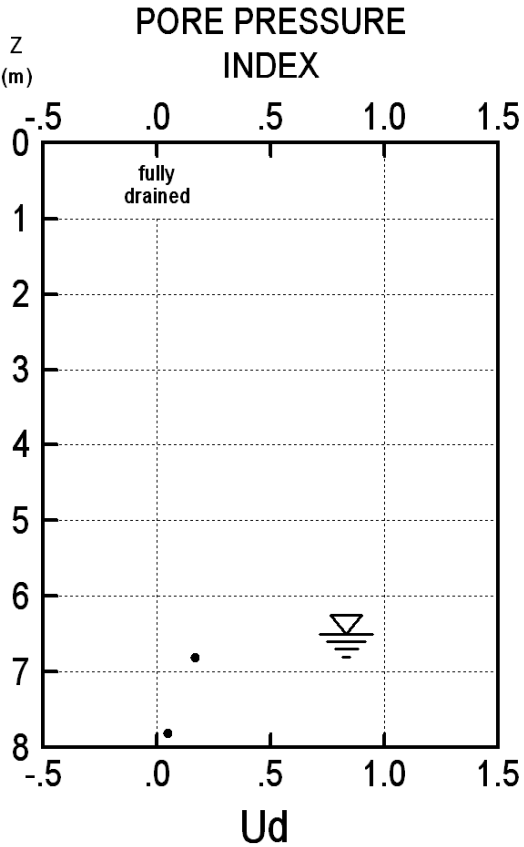
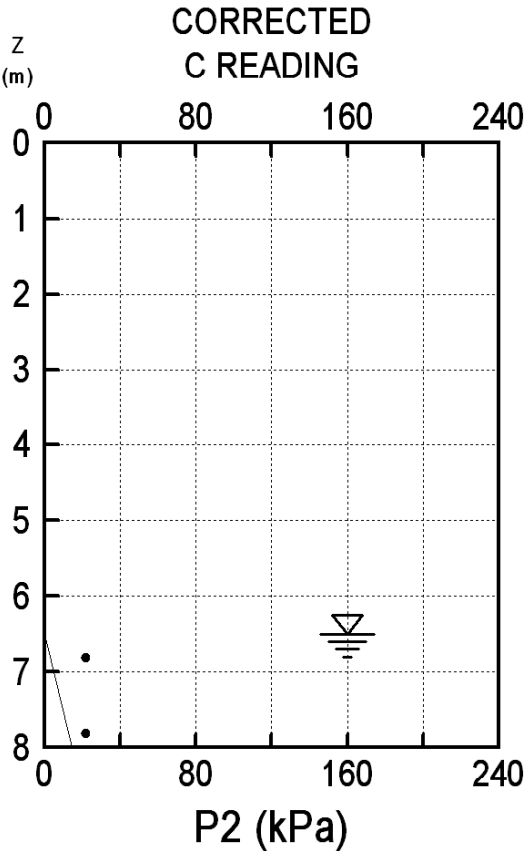


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DILATOMETER TEST (D M T)



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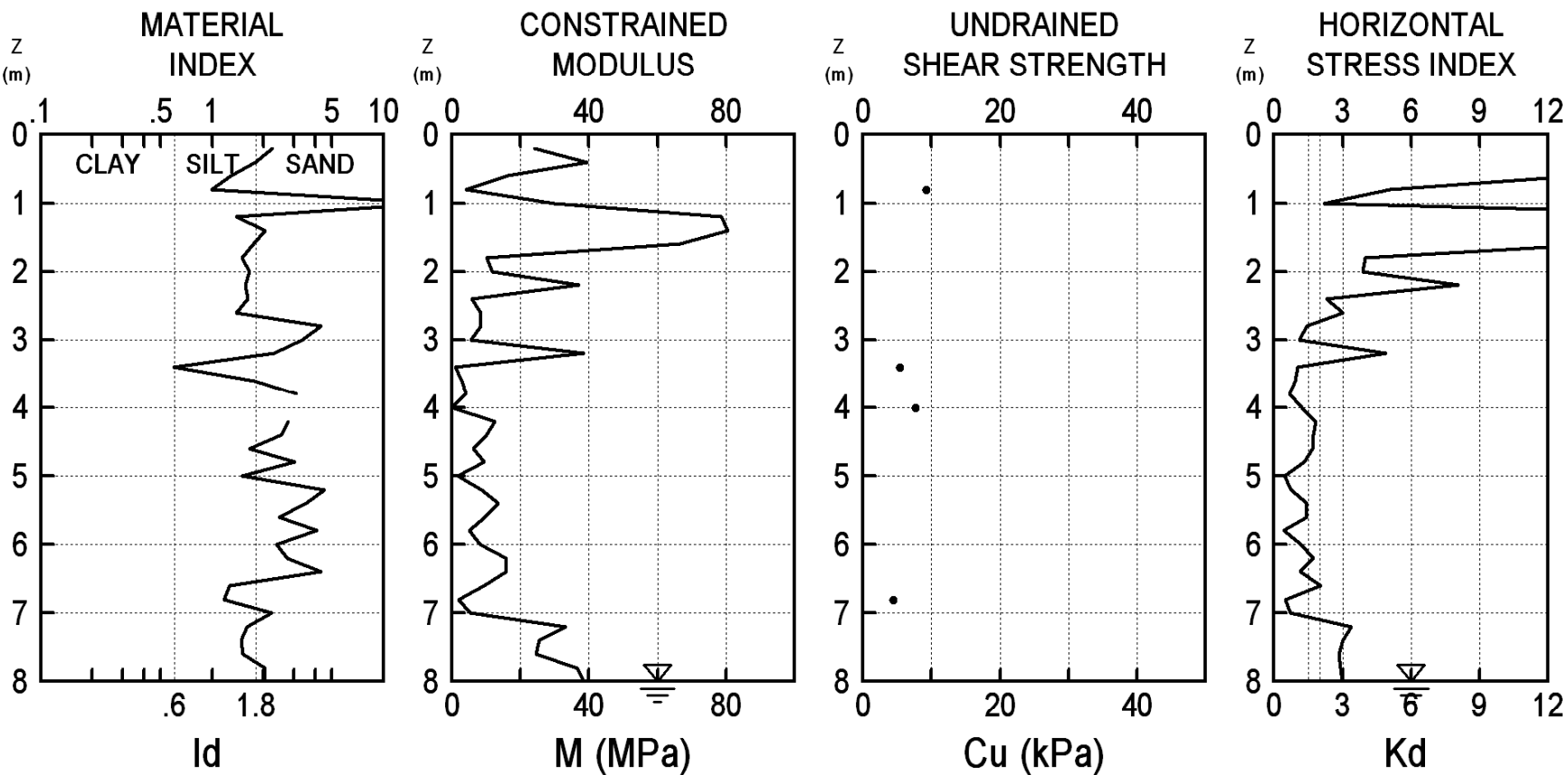
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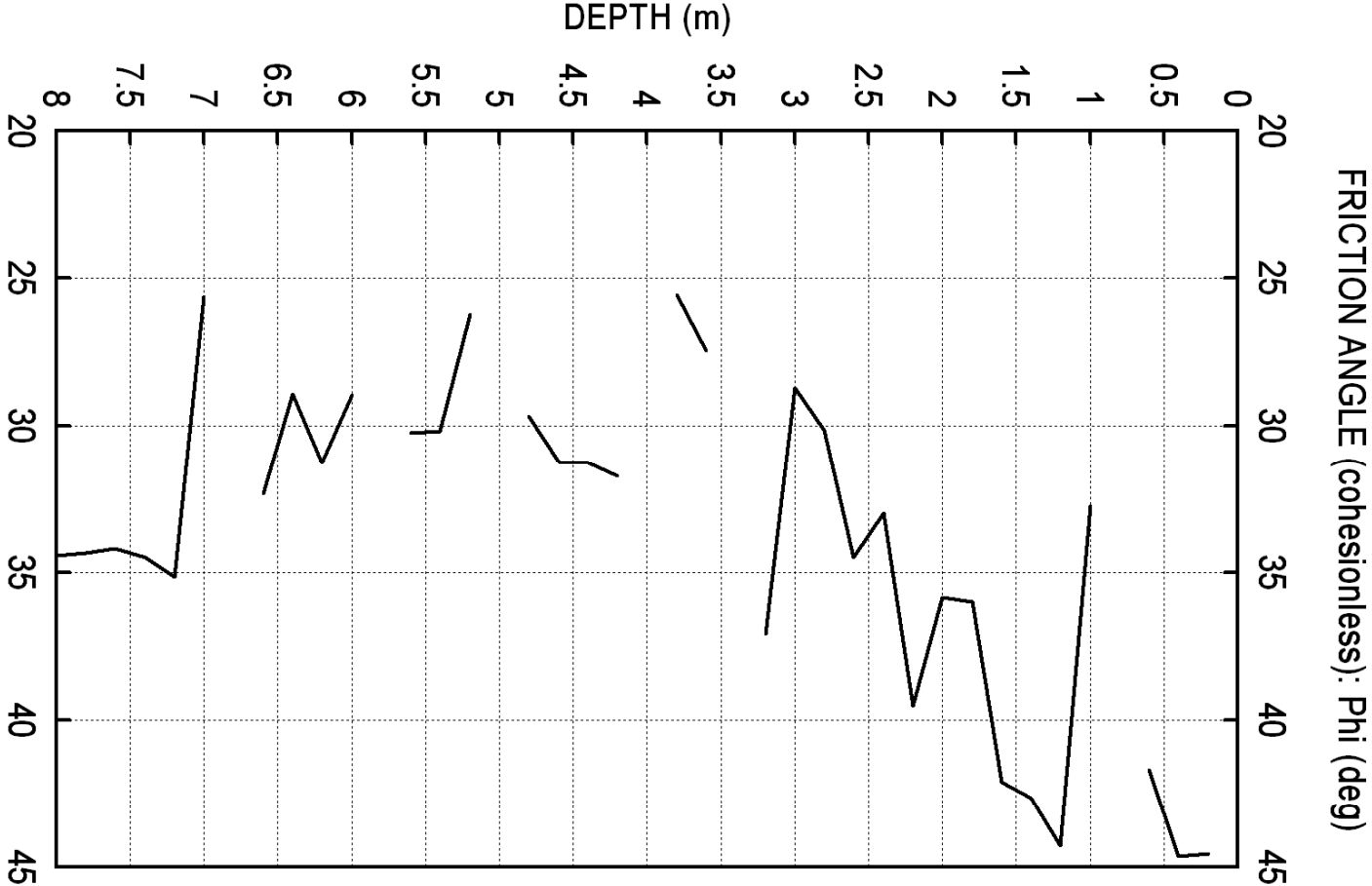
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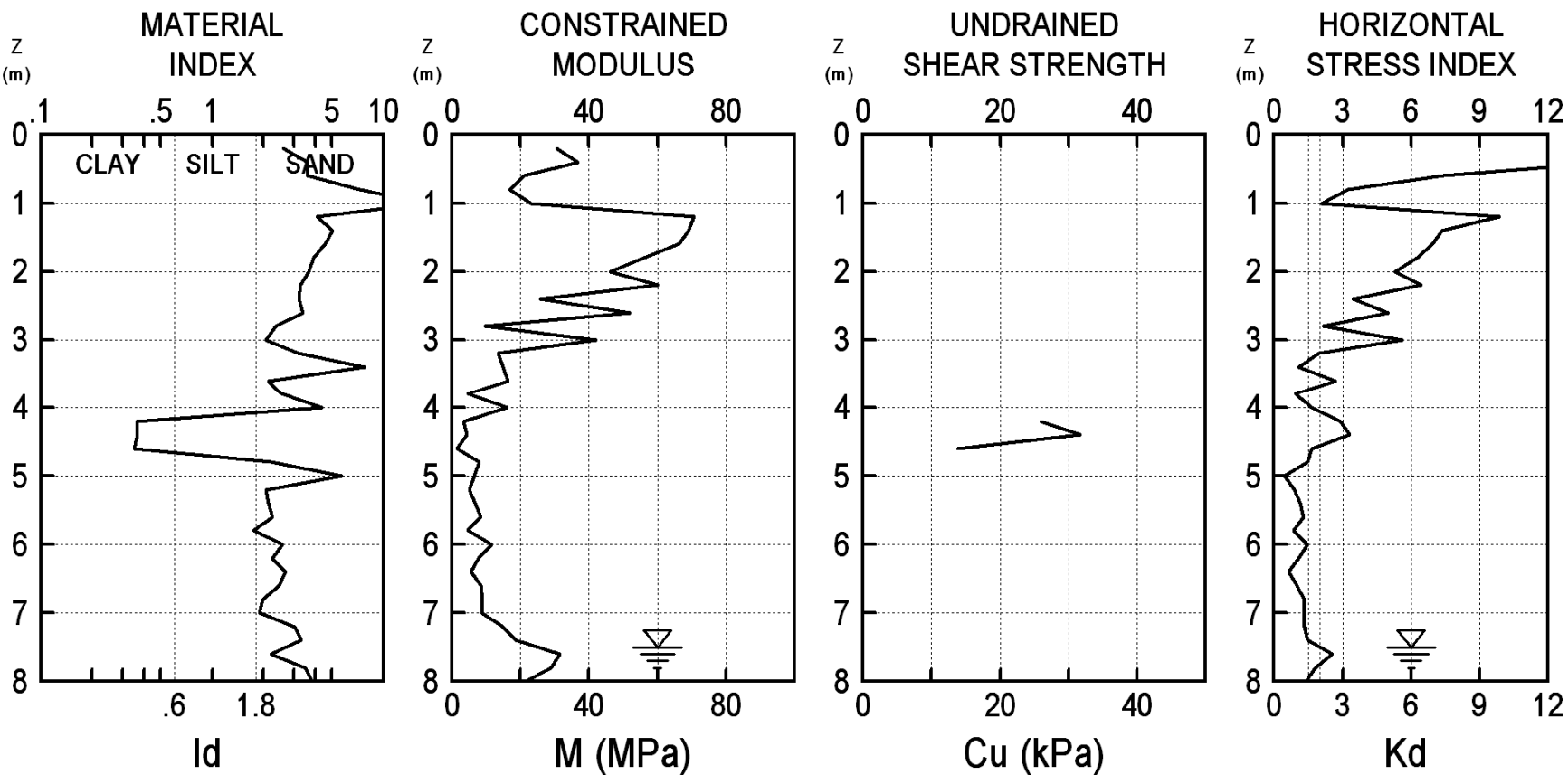
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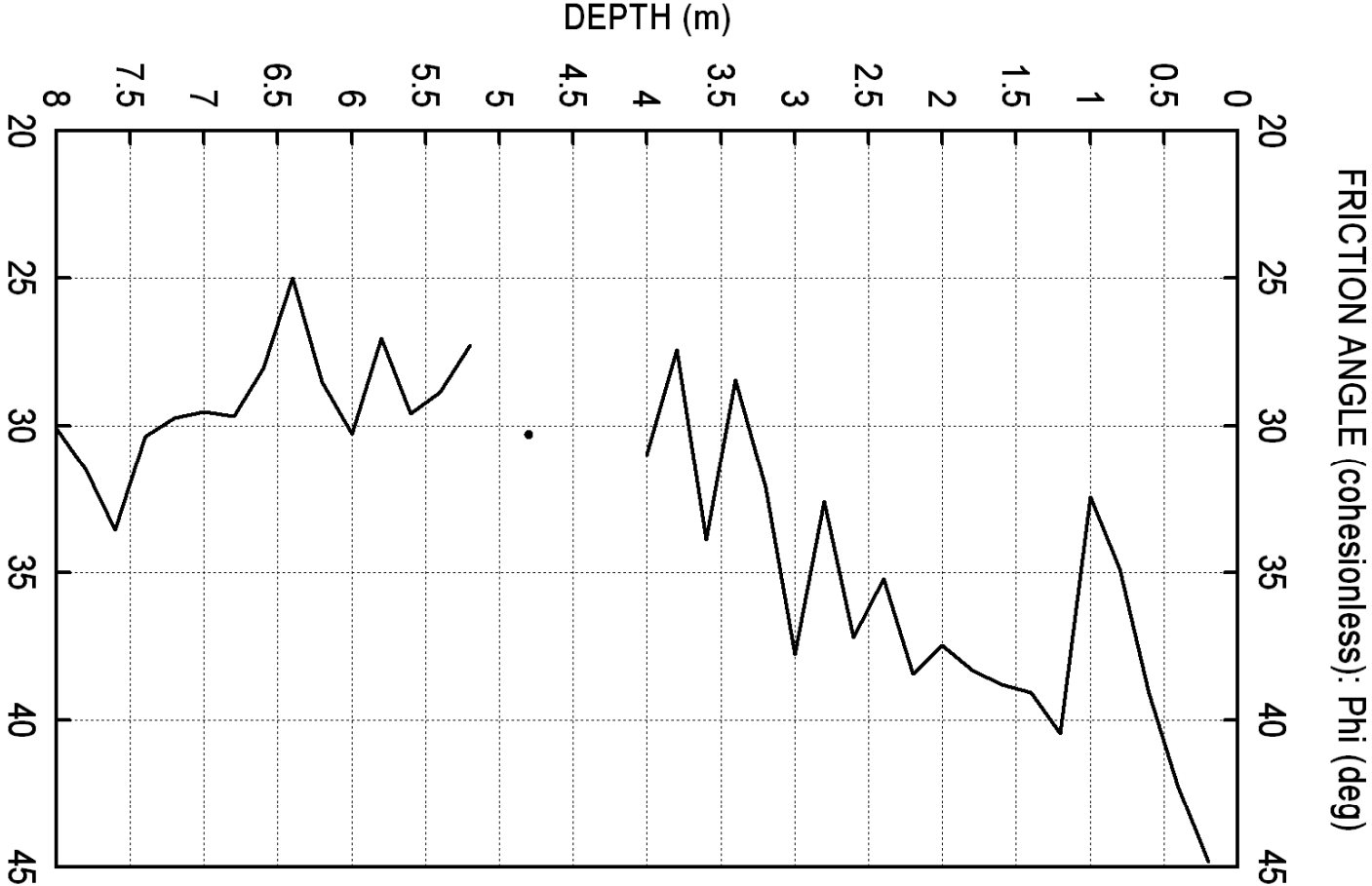
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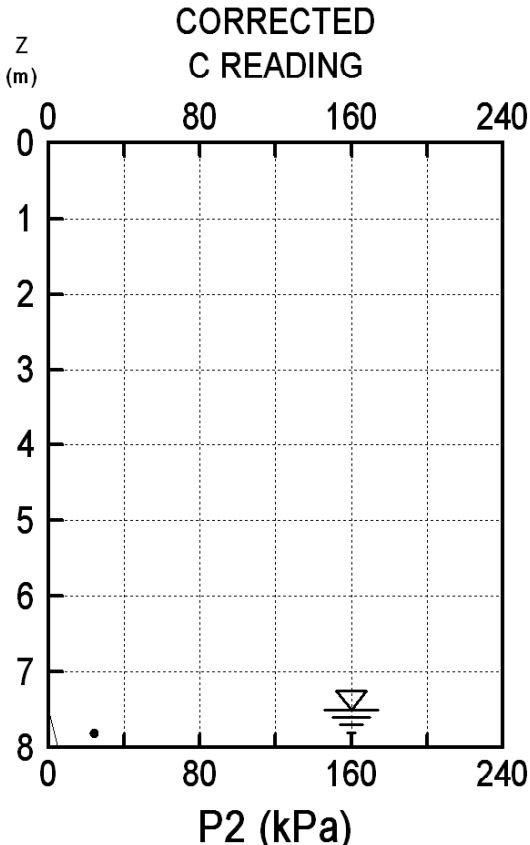
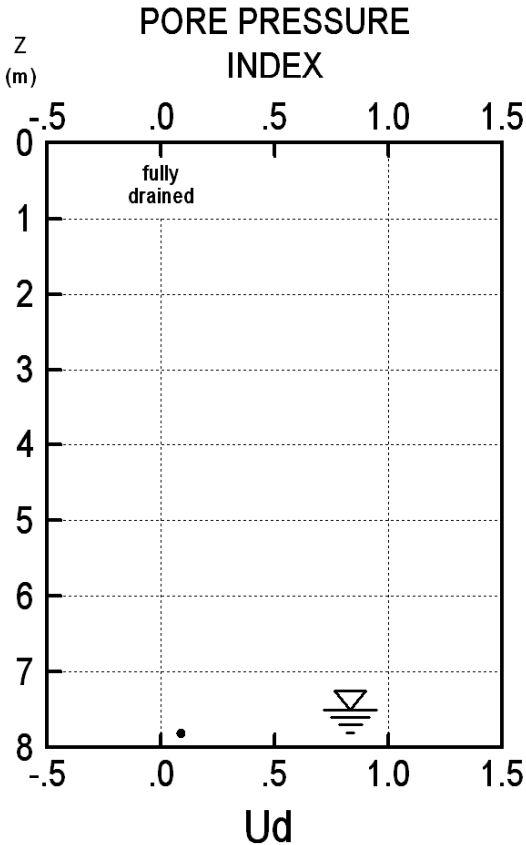
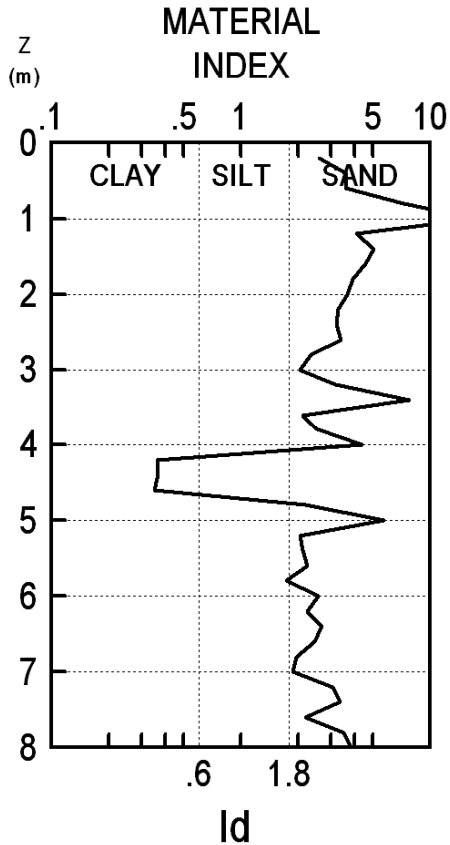
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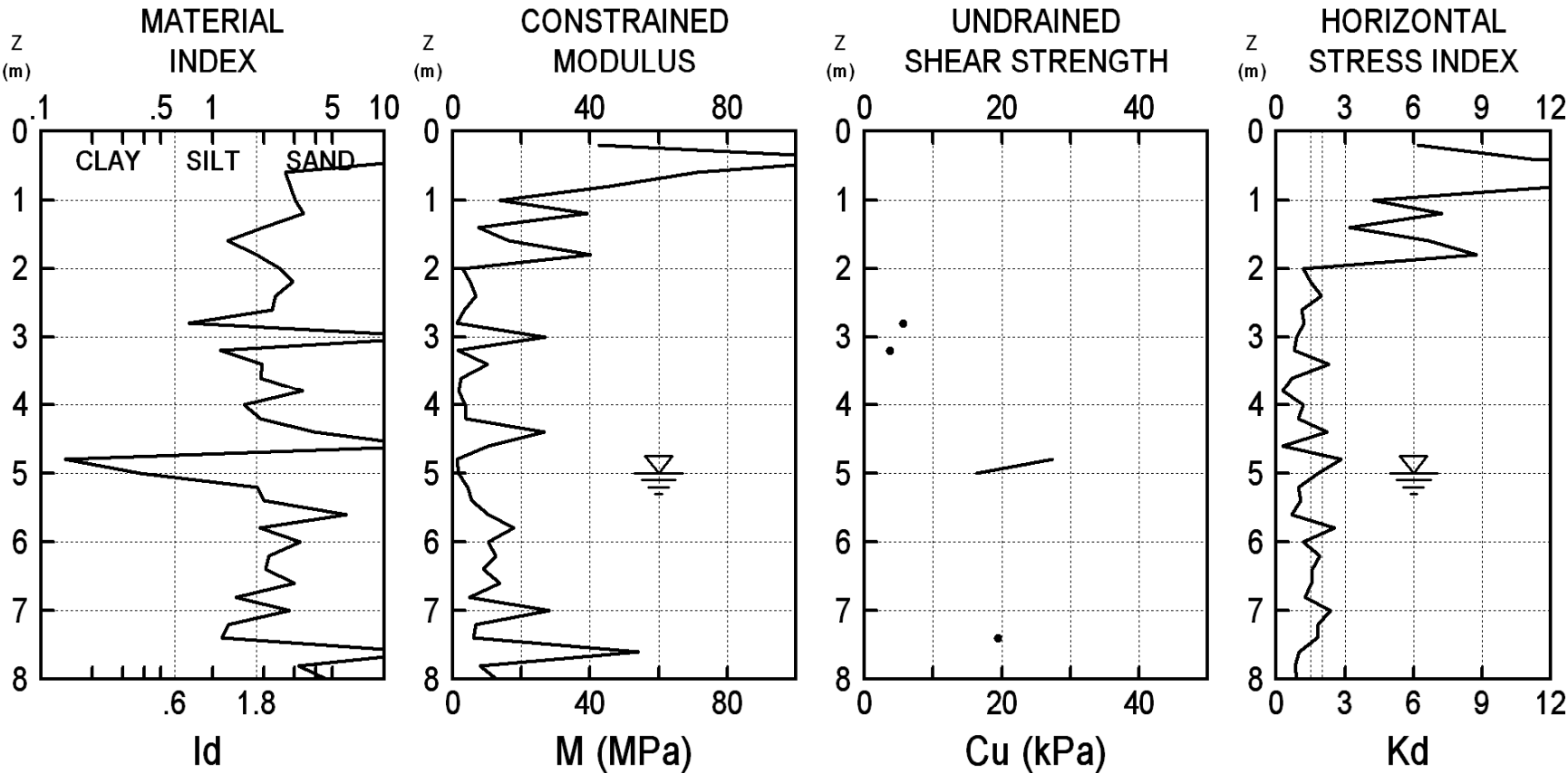
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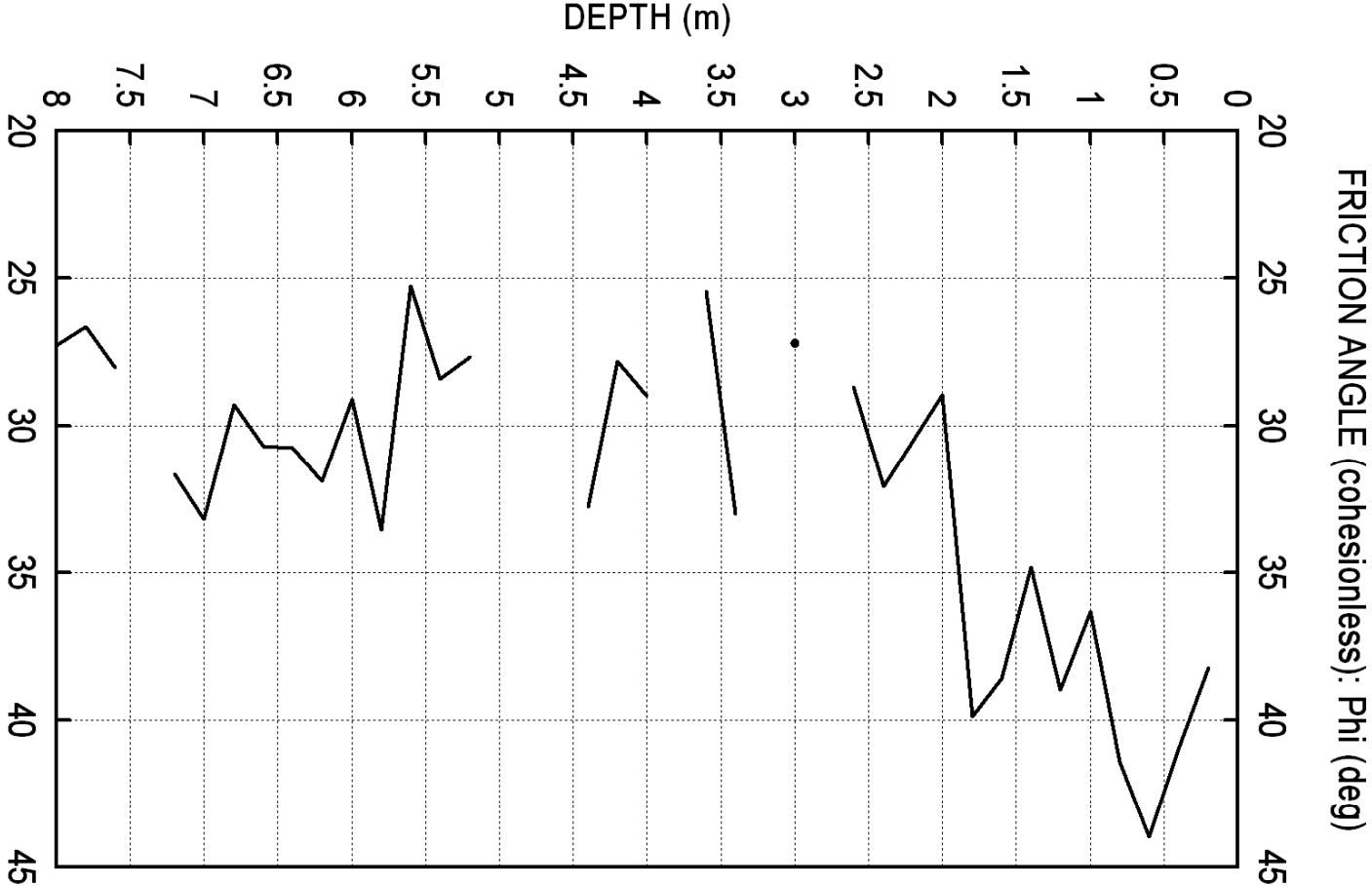
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DMT N8

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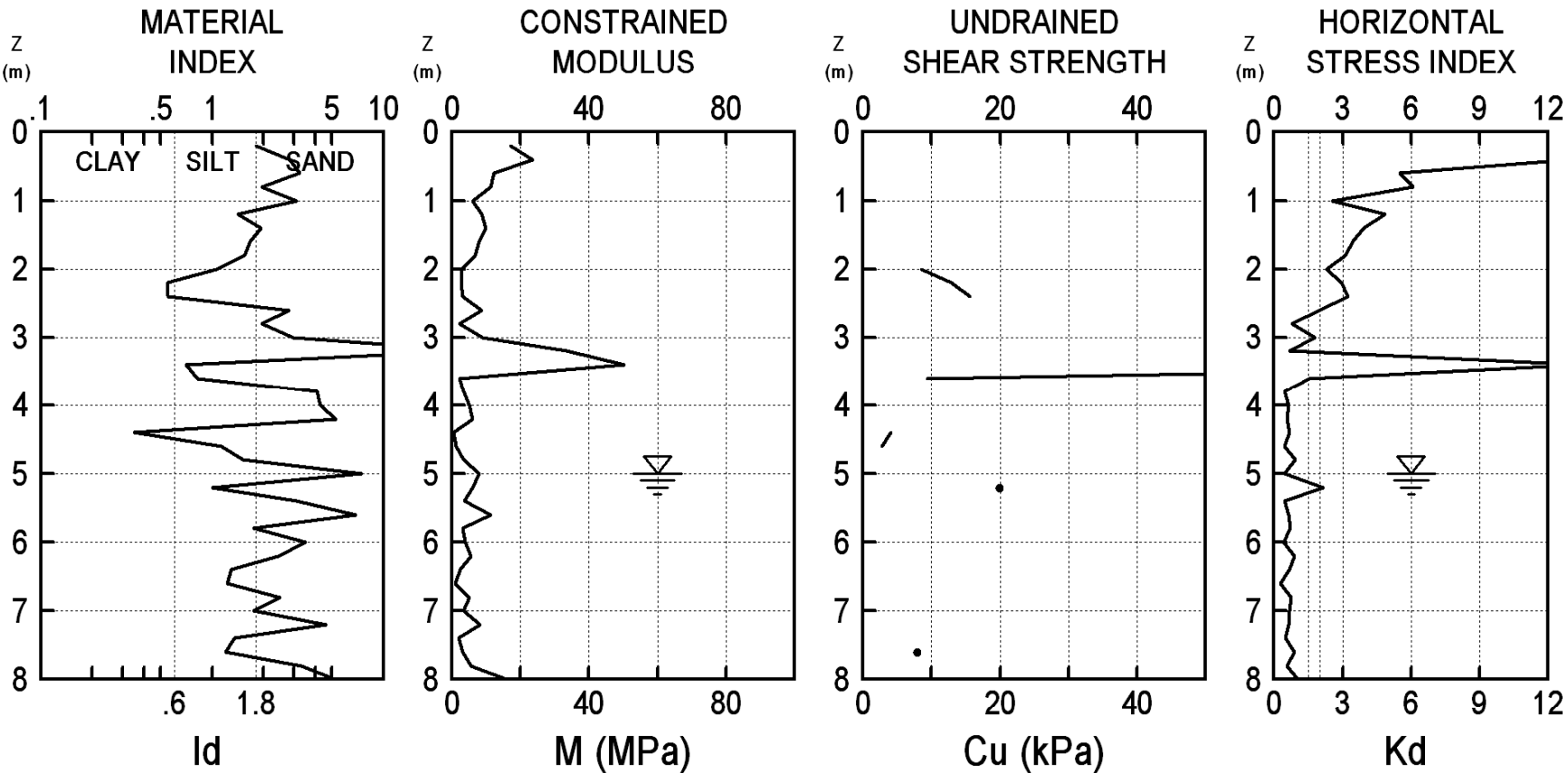
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INTERPRETED GEOTECHNICAL PARAMETERS

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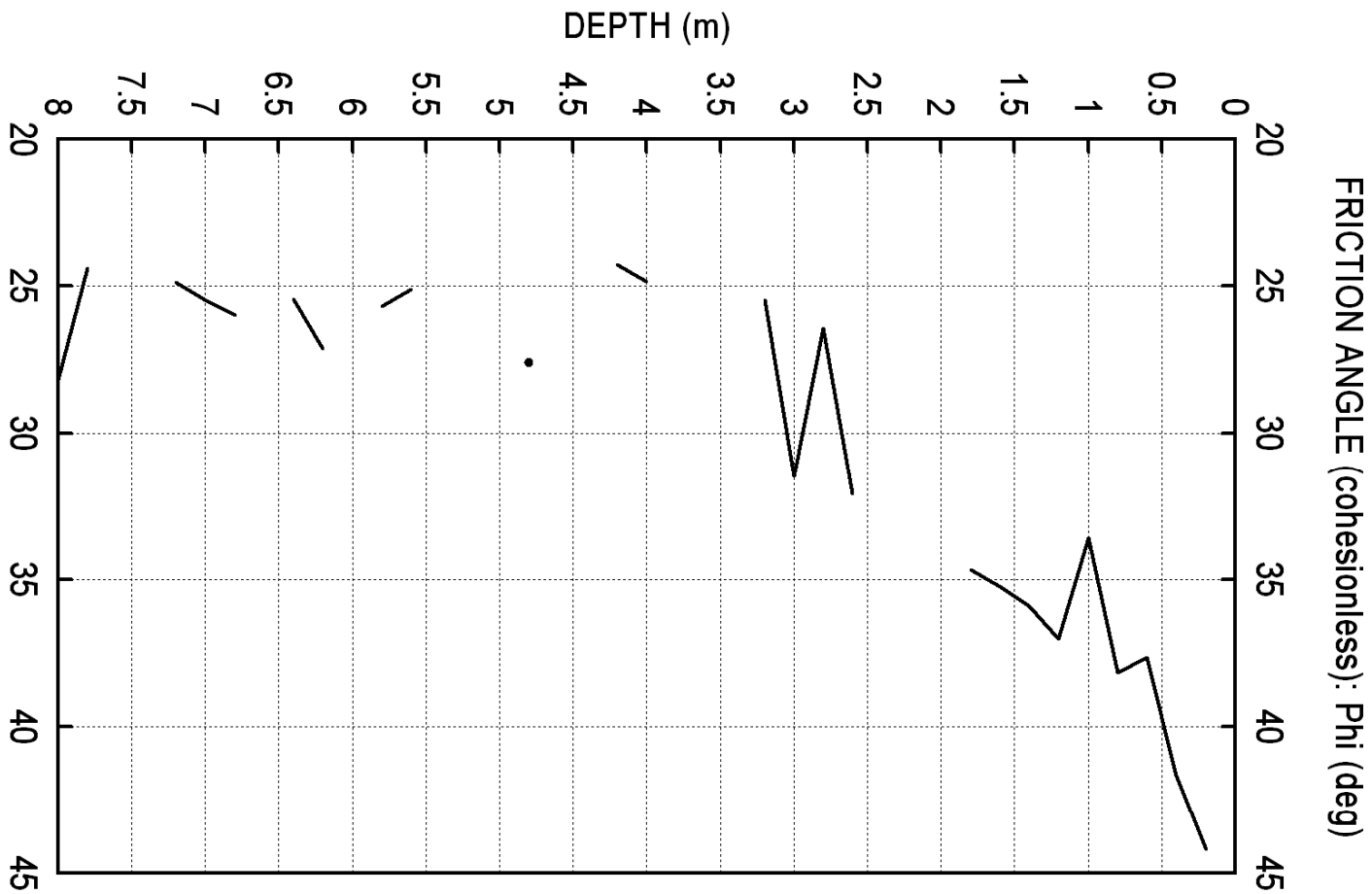
DMT N9

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INTERPRETED GEOTECHNICAL PARAMETERS		1.9.2015

DILATOMETER TEST (D M T)



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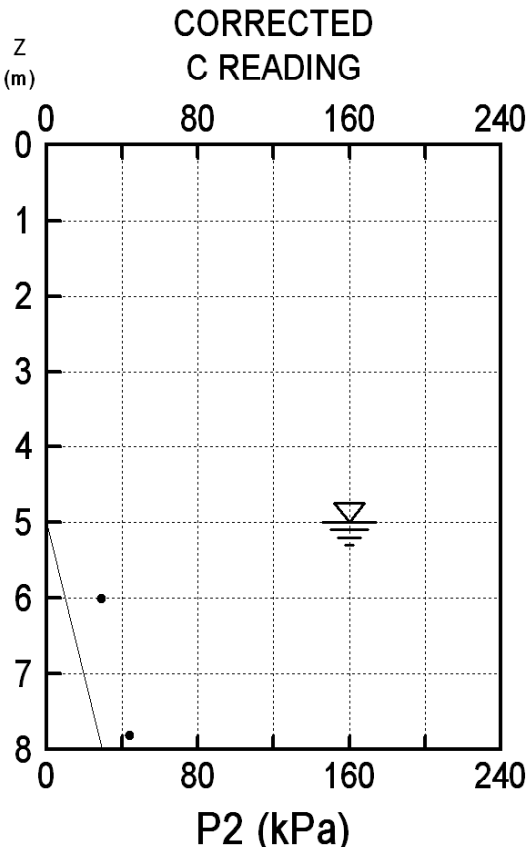
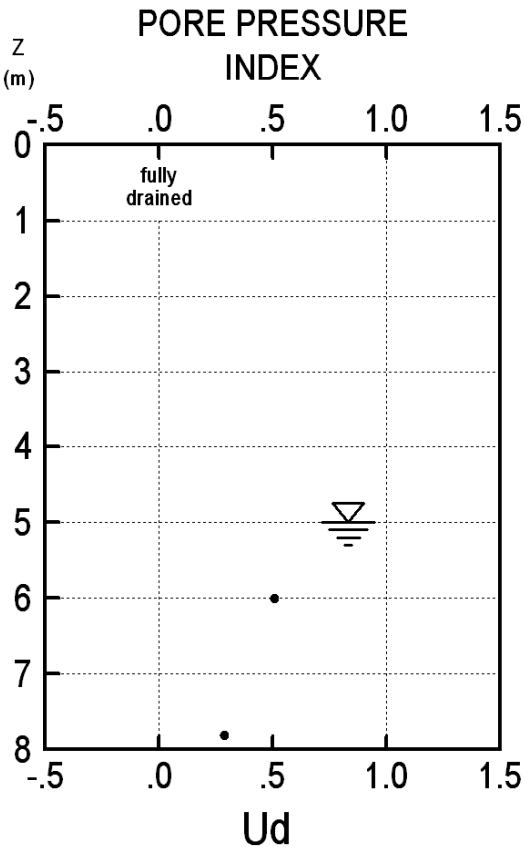
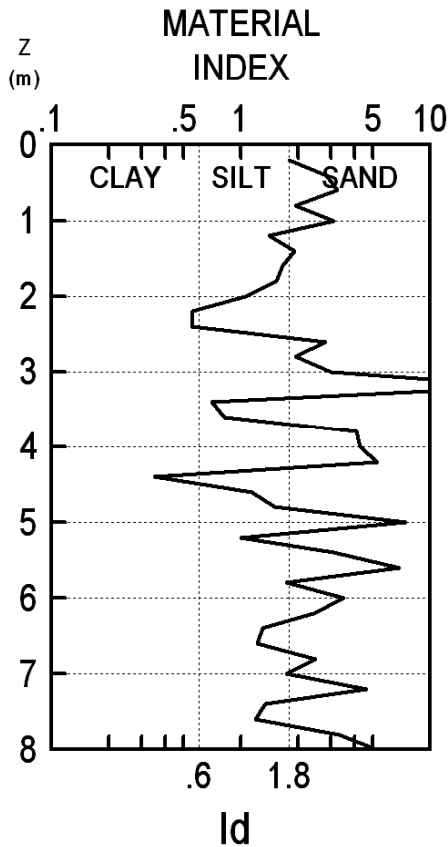
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INTERPRETED GEOTECHNICAL PARAMETERS

TEST

DMT N9

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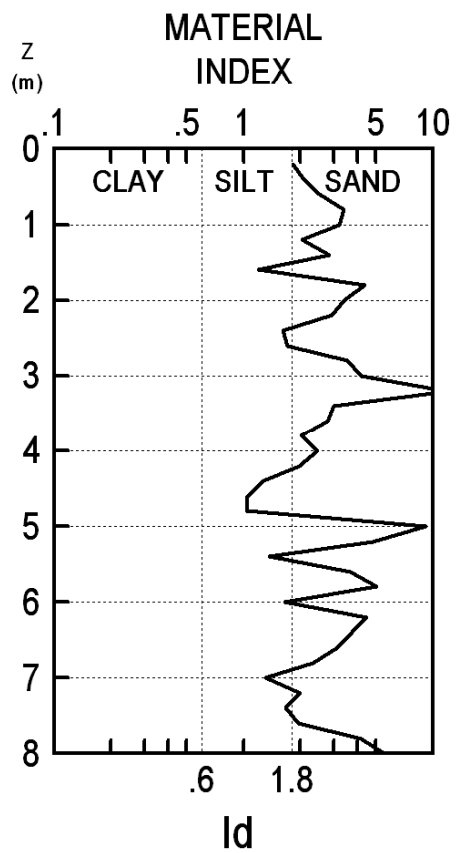
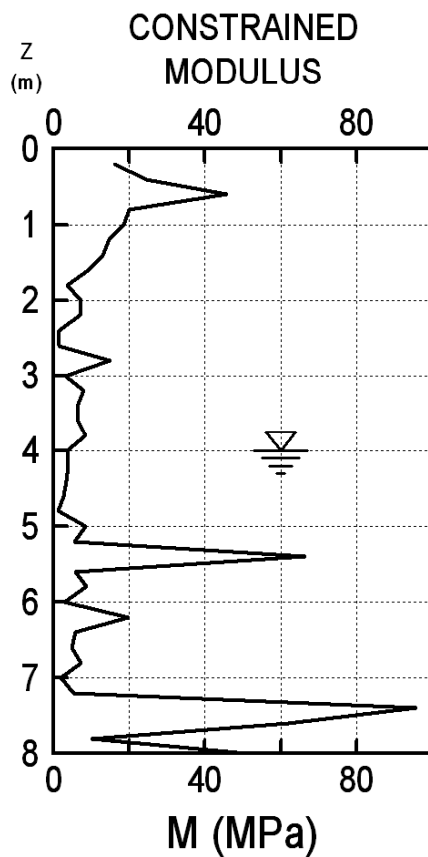
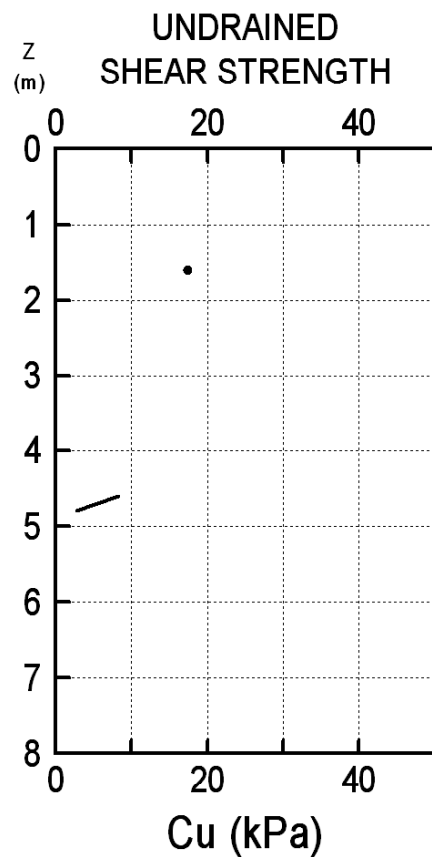
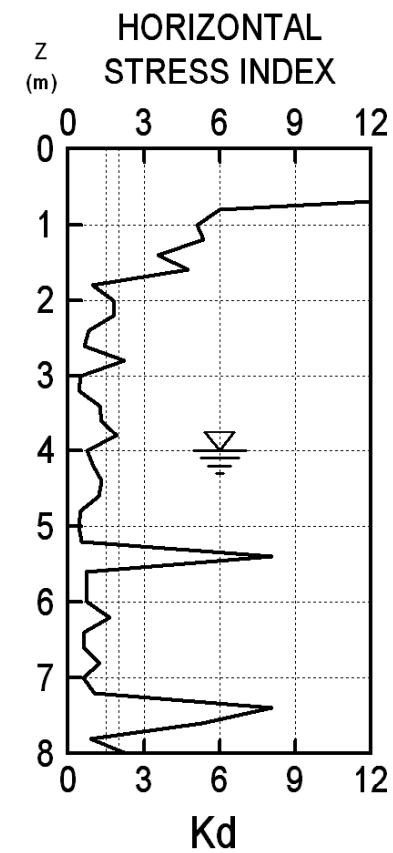
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INTERPRETED GEOTECHNICAL PARAMETERS

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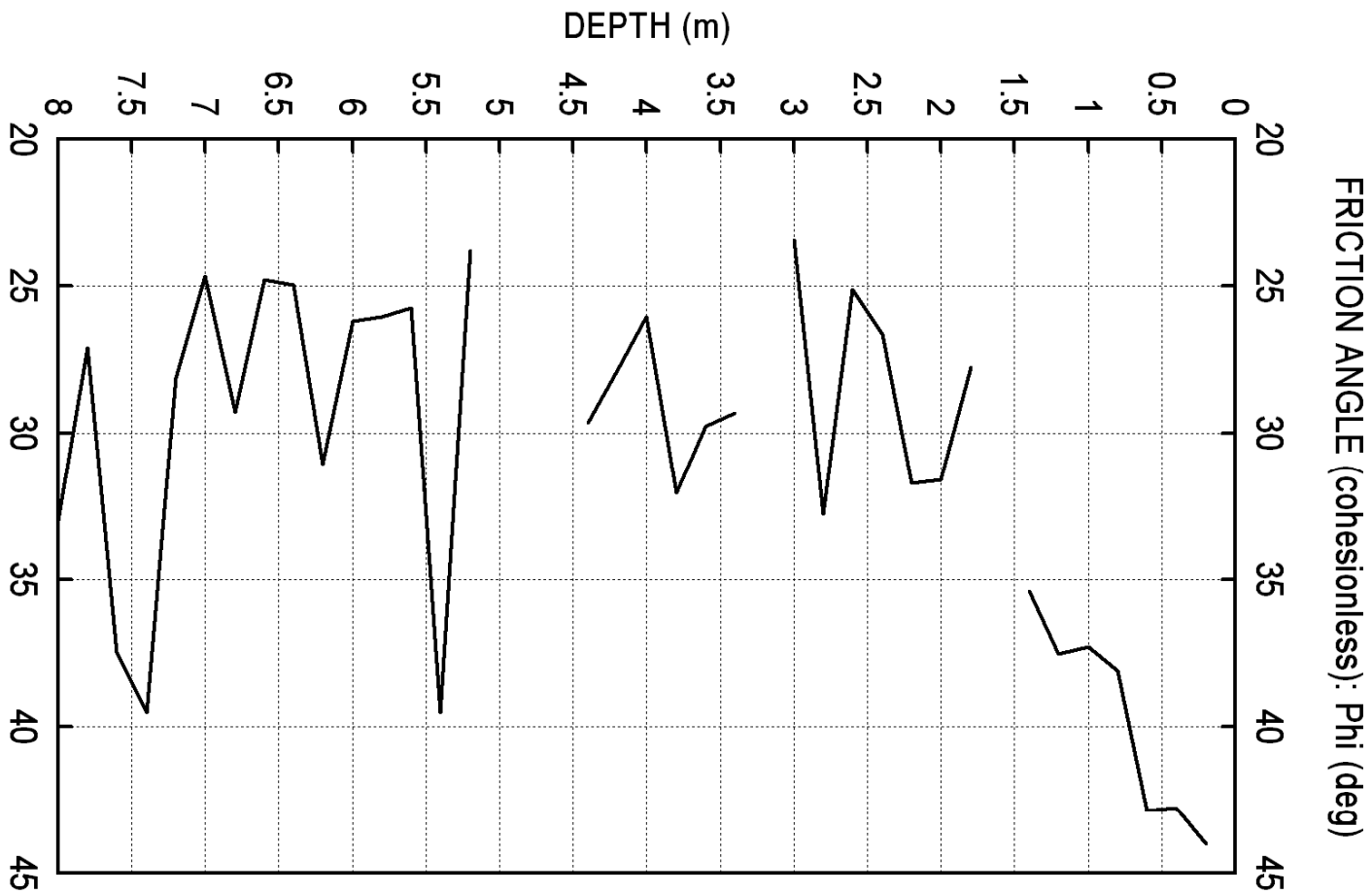
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Popl. varnost JZ dela LJ,1A, PGD	DMT N10	DMT N10
INTERPRETED GEOTECHNICAL PARAMETERS		31.8.2015

DILATOMETER TEST (D M T)



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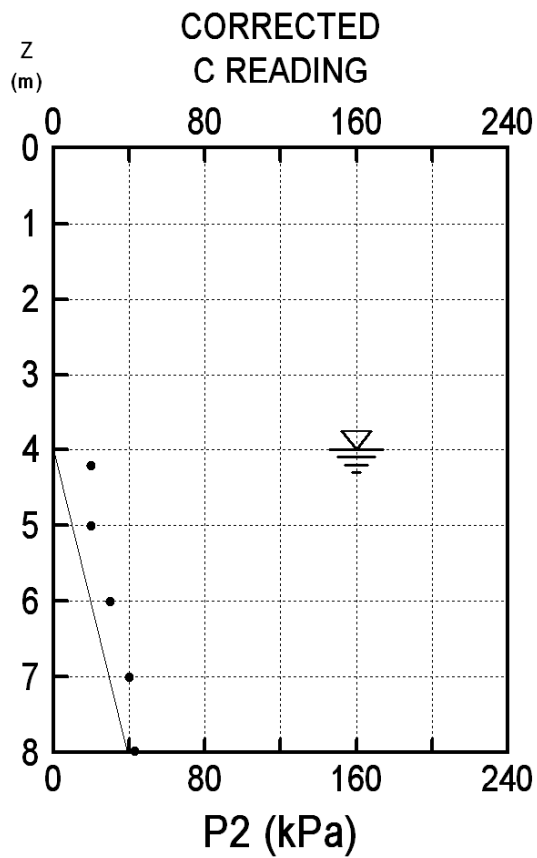
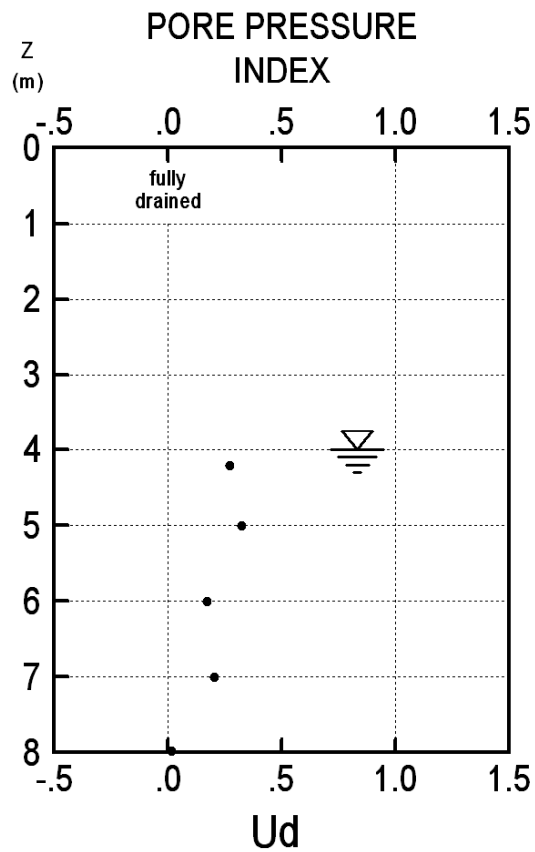
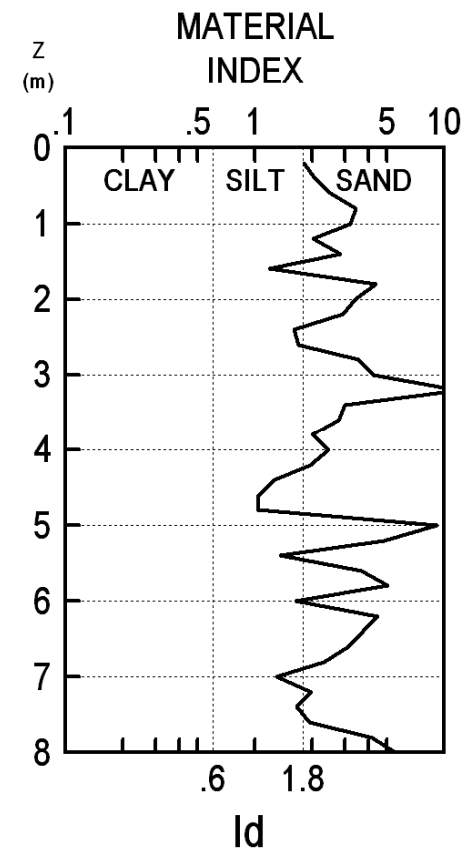
Popl. varnost JZ dela LJ,1A, PGD DMT N10

INTERPRETED GEOTECHNICAL PARAMETERS

TEST

DMT N10

31.8.2015



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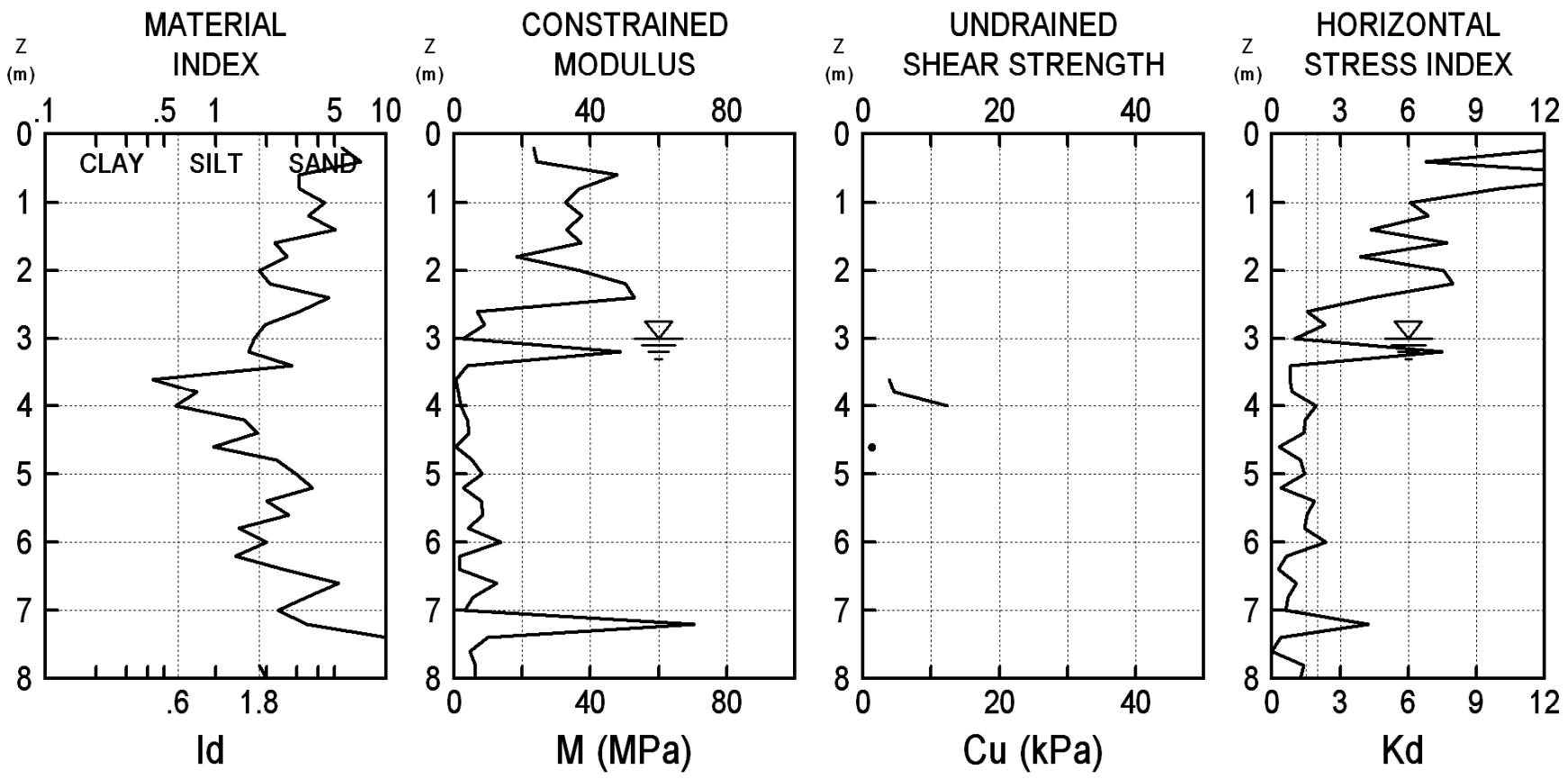
Popl. varnost JZ dela LJ,1A, PGD DMT N11

INTERPRETED GEOTECHNICAL PARAMETERS

TEST

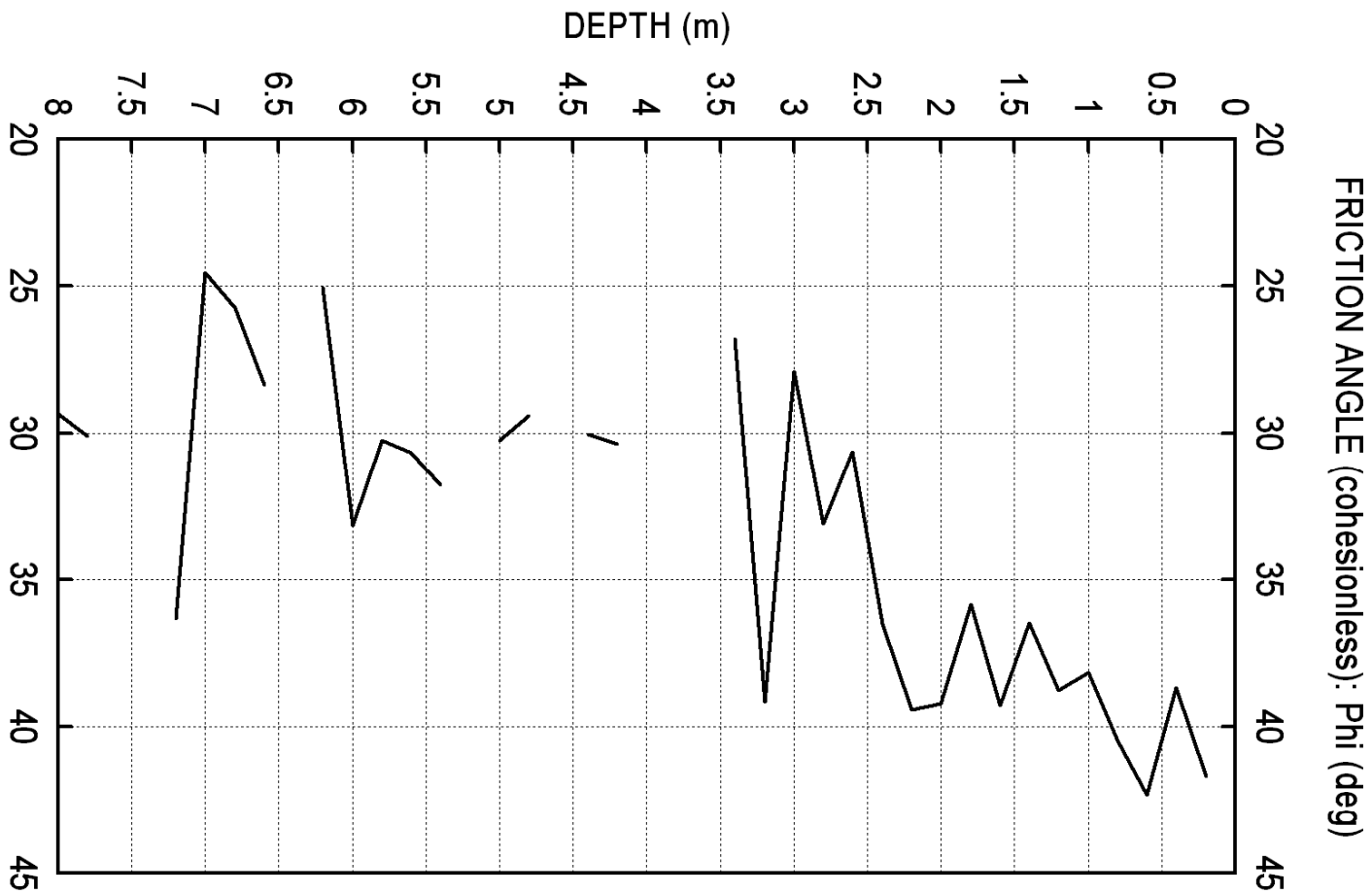
DMT N11

31.8.2015



IRGO Consulting d.o.o.	Izvo-r d.o.o.	TEST
Popl. varnost JZ dela LJ,1A, PGD	DMT N11	DMT N11
INTERPRETED GEOTECHNICAL PARAMETERS		31.8.2015

DILATOMETER TEST (D M T)



IRGO Consulting d.o.o.

Izvo-r d.o.o.

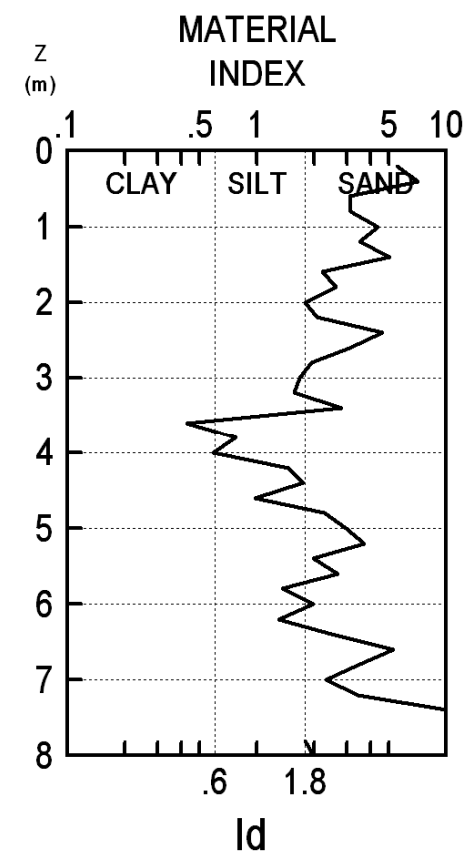
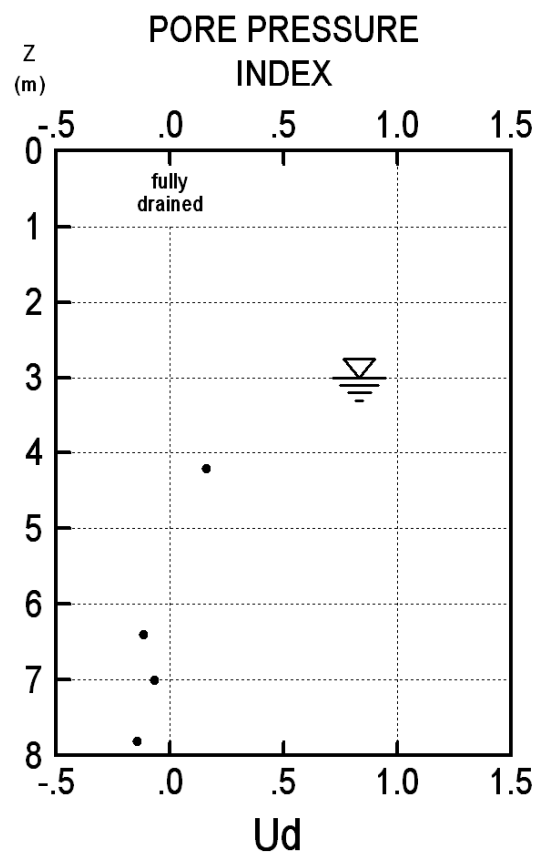
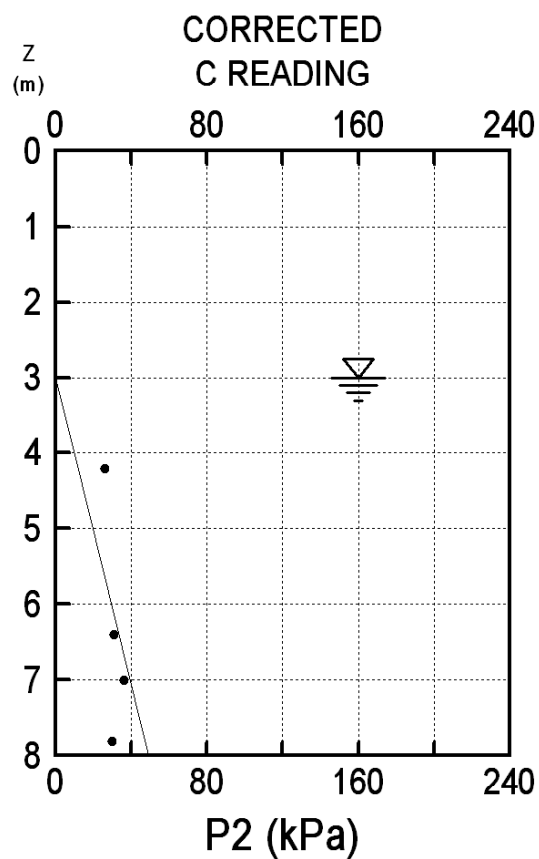
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INTERPRETED GEOTECHNICAL PARAMETERS

TEST

DMT N11

31.8.2015



IRGO Consulting d.o.o.

Izvo-r d.o.o.

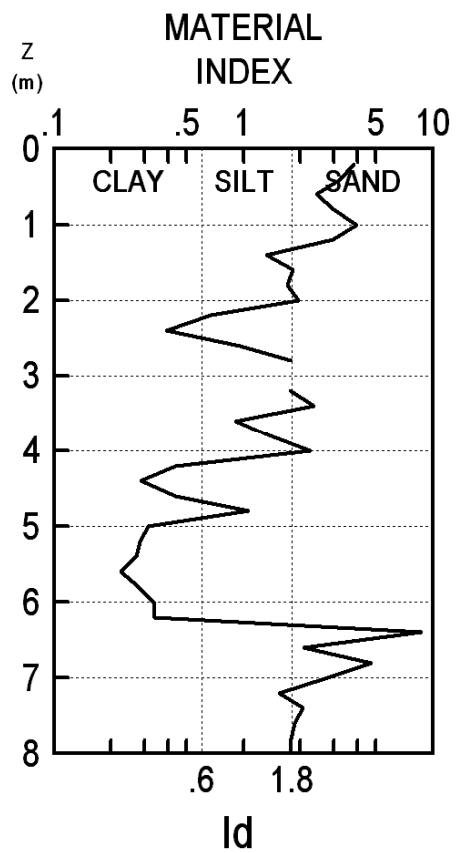
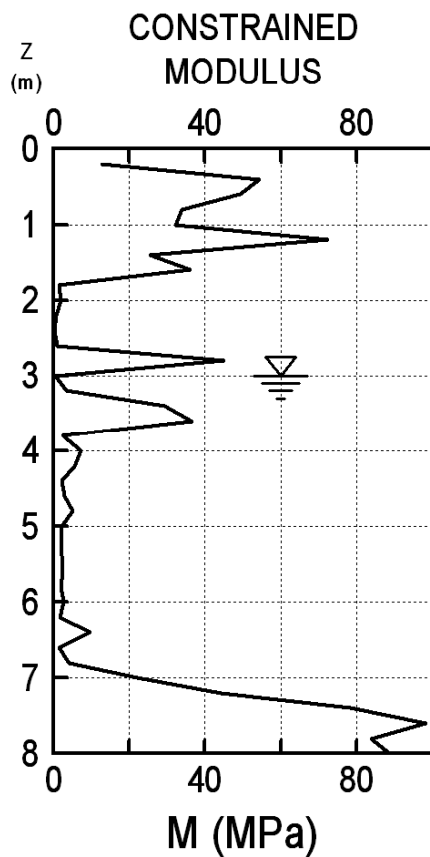
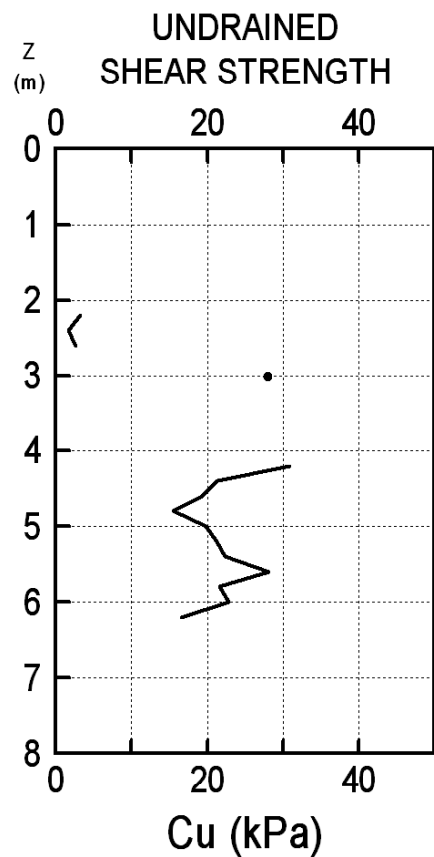
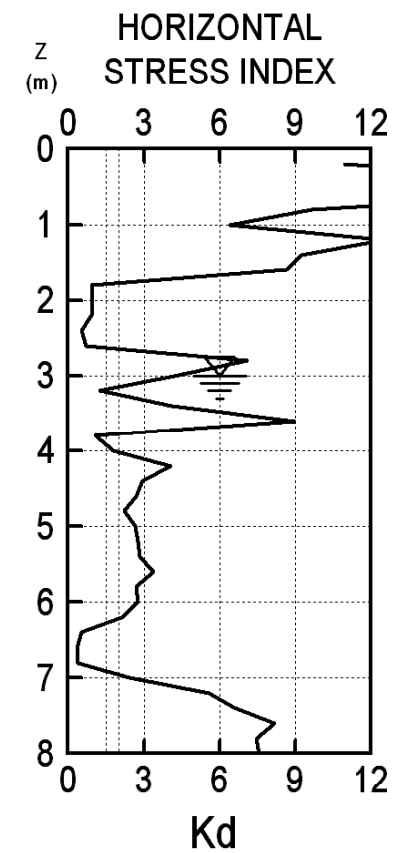
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INTERPRETED GEOTECHNICAL PARAMETERS

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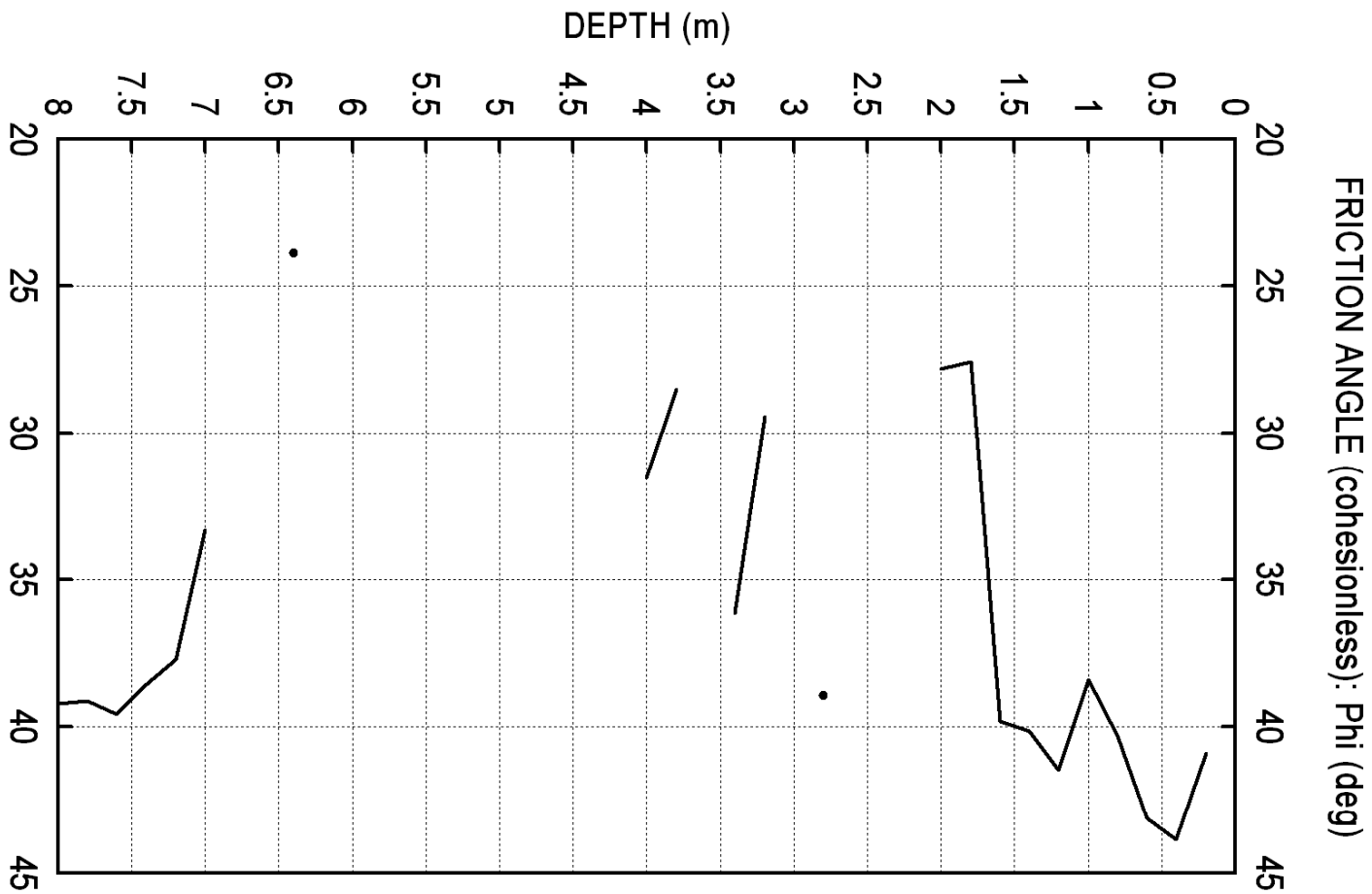
DMT N12

31.8.2015



IRGO Consulting d.o.o.	Izvo-r d.o.o.	TEST
Popl. varnost JZ dela LJ,1A, PGD	DMT N12	DMT N12
INTERPRETED GEOTECHNICAL PARAMETERS		31.8.2015

DILATOMETER TEST (D M T)



IRGO Consulting d.o.o.

Izvo-r d.o.o.

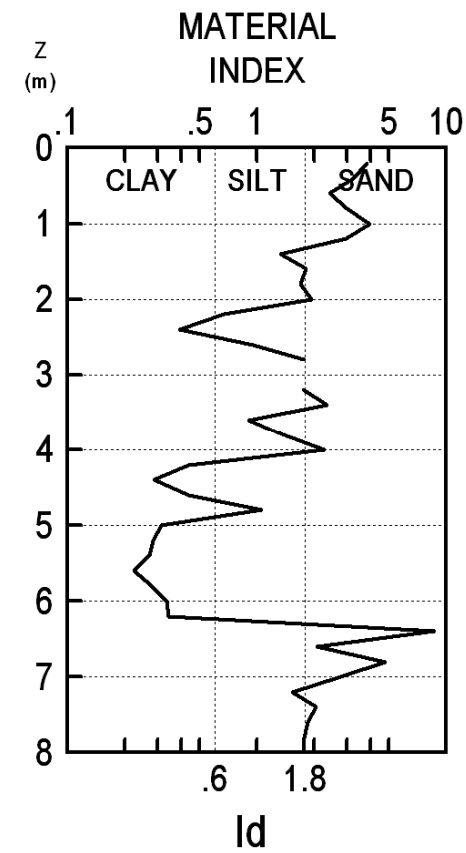
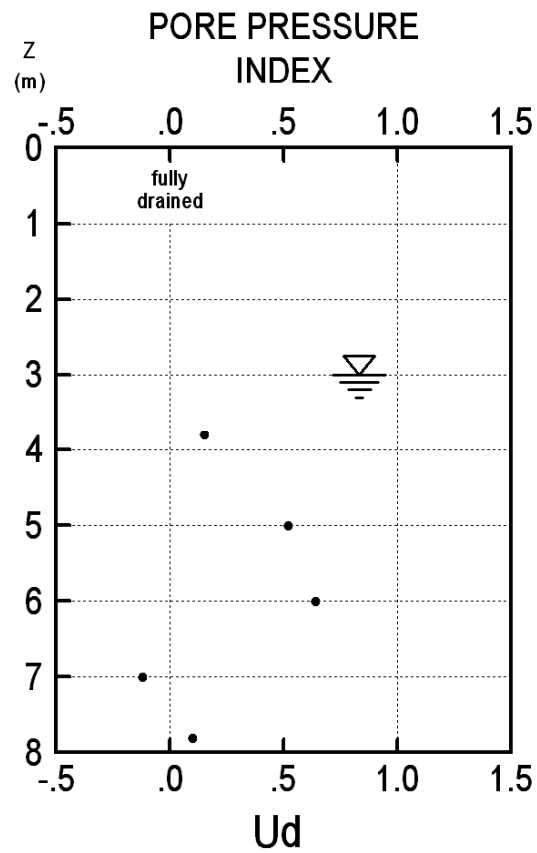
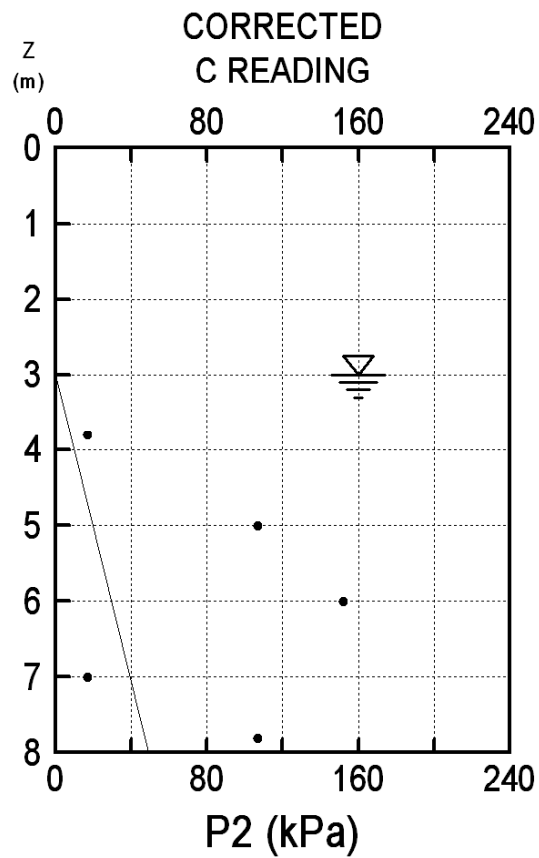
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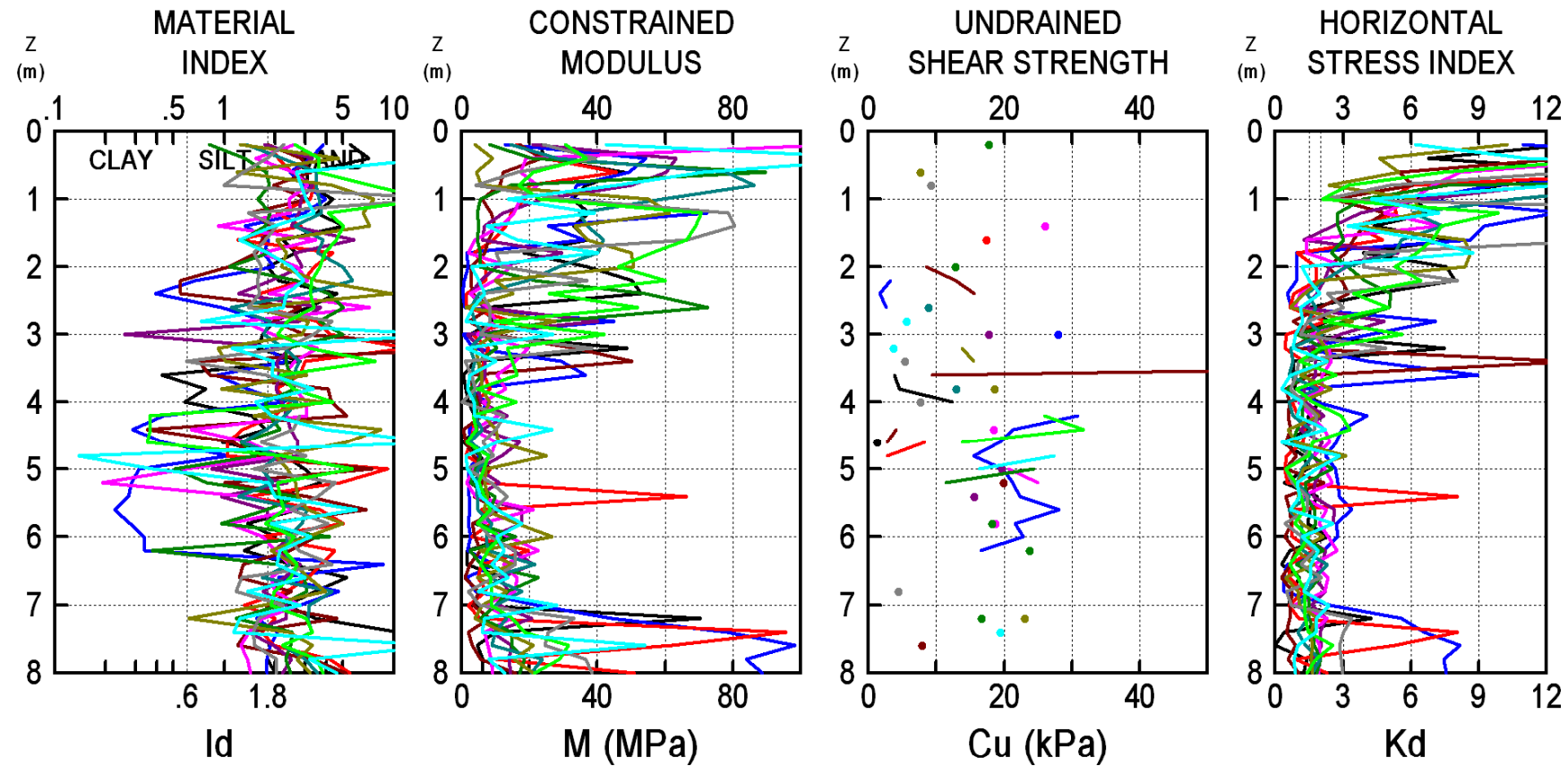
INTERPRETED GEOTECHNICAL PARAMETERS

TEST

DMT N12

31.8.2015



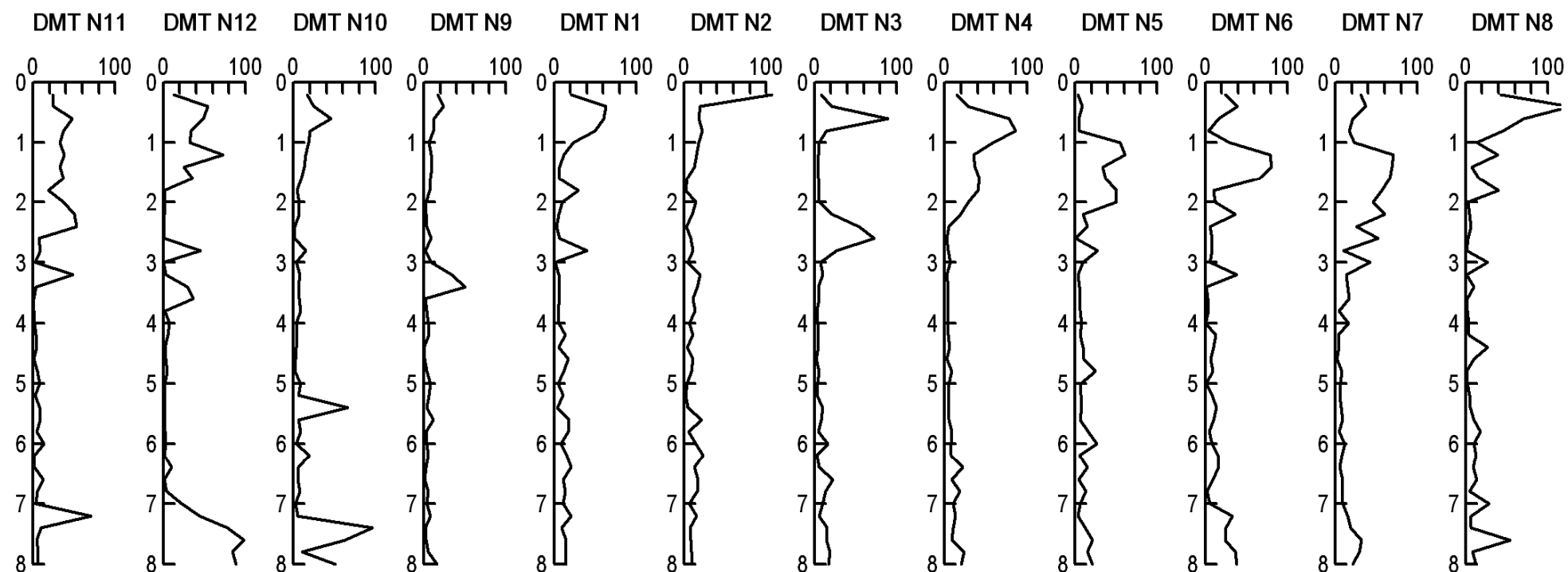


IRGO Consulting d.o.o.

Izvo-r d.o.o.

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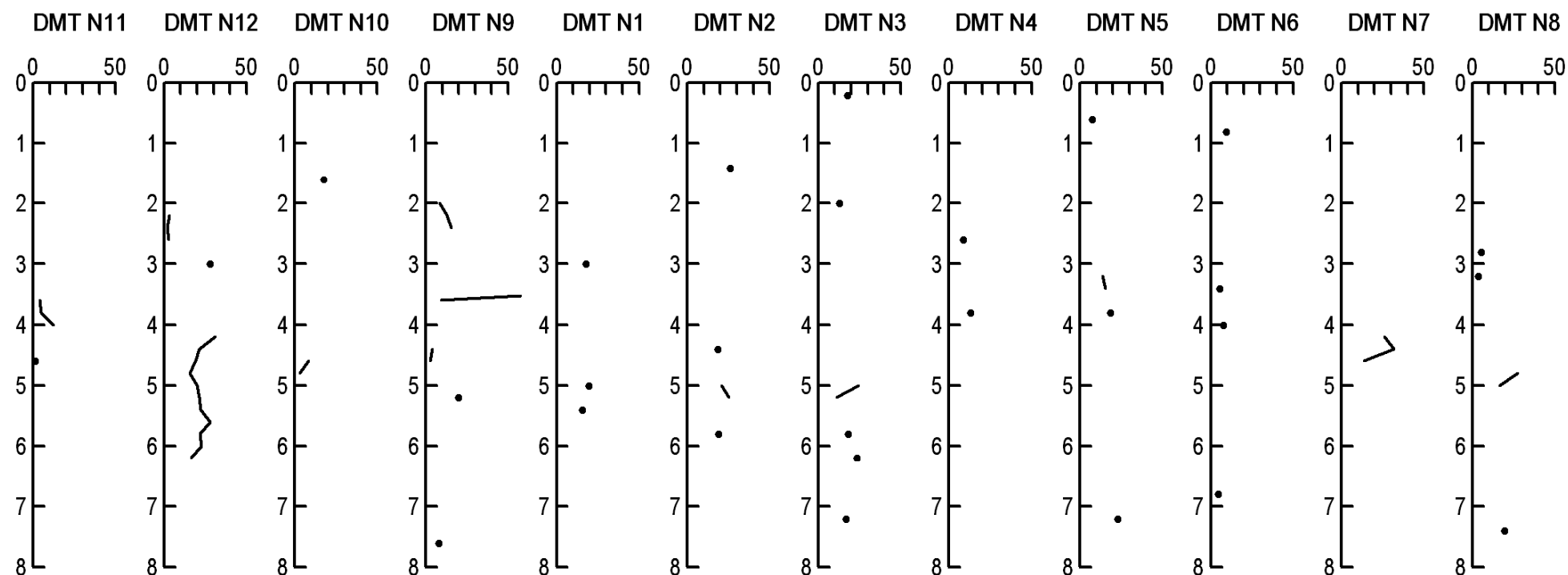
CROSS SECTION OF CONSTRAINED MODULUS M (MPa)



IRGO Consulting d.o.o.

Izvo-r d.o.o.

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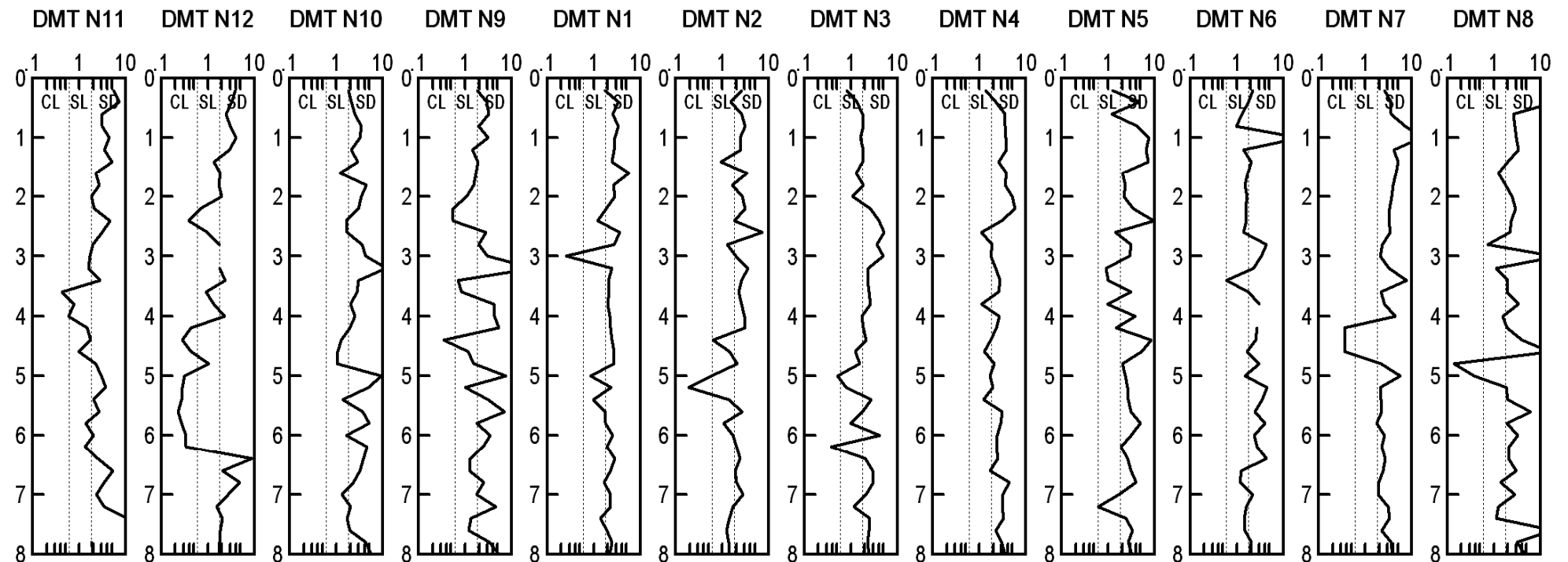
CROSS SECTION OF UNDRAINED SHEAR STRENGTH C_u (kPa)

IRGO Consulting d.o.o.

Izvo-r d.o.o.

Popl. varnost JZ dela LJ,1A, PGD

CROSS SECTION OF MATERIAL INDEX Id

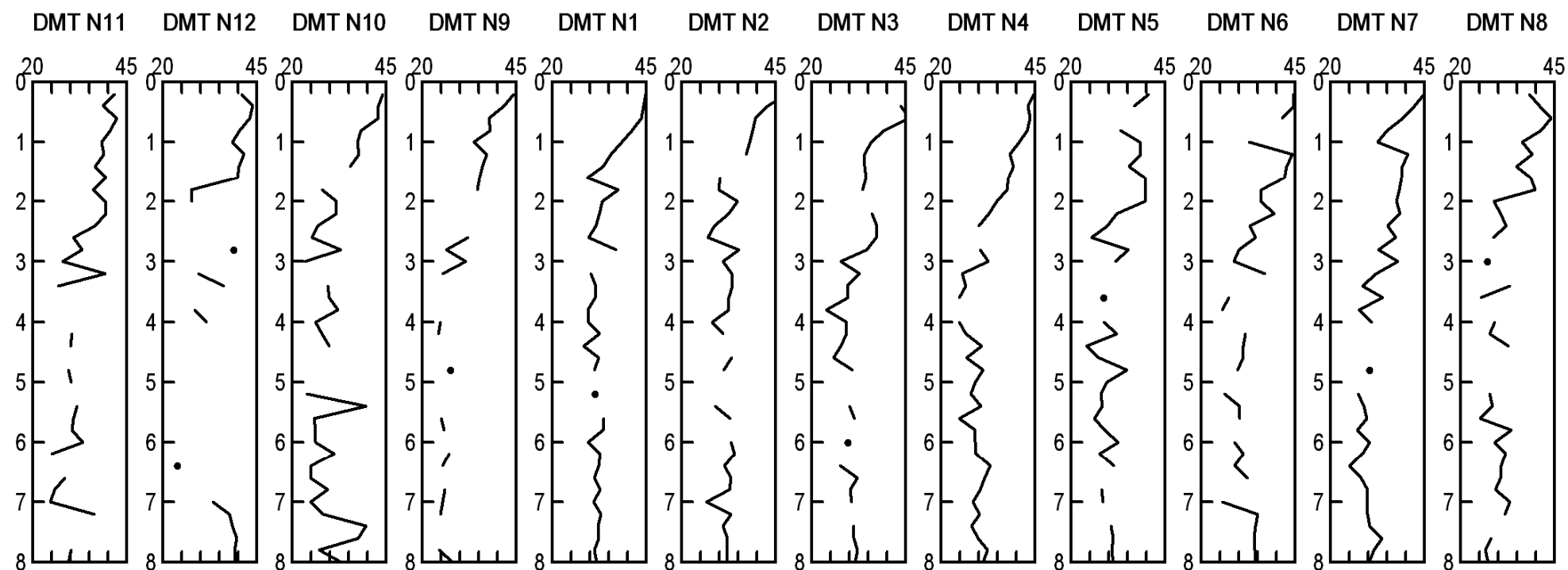


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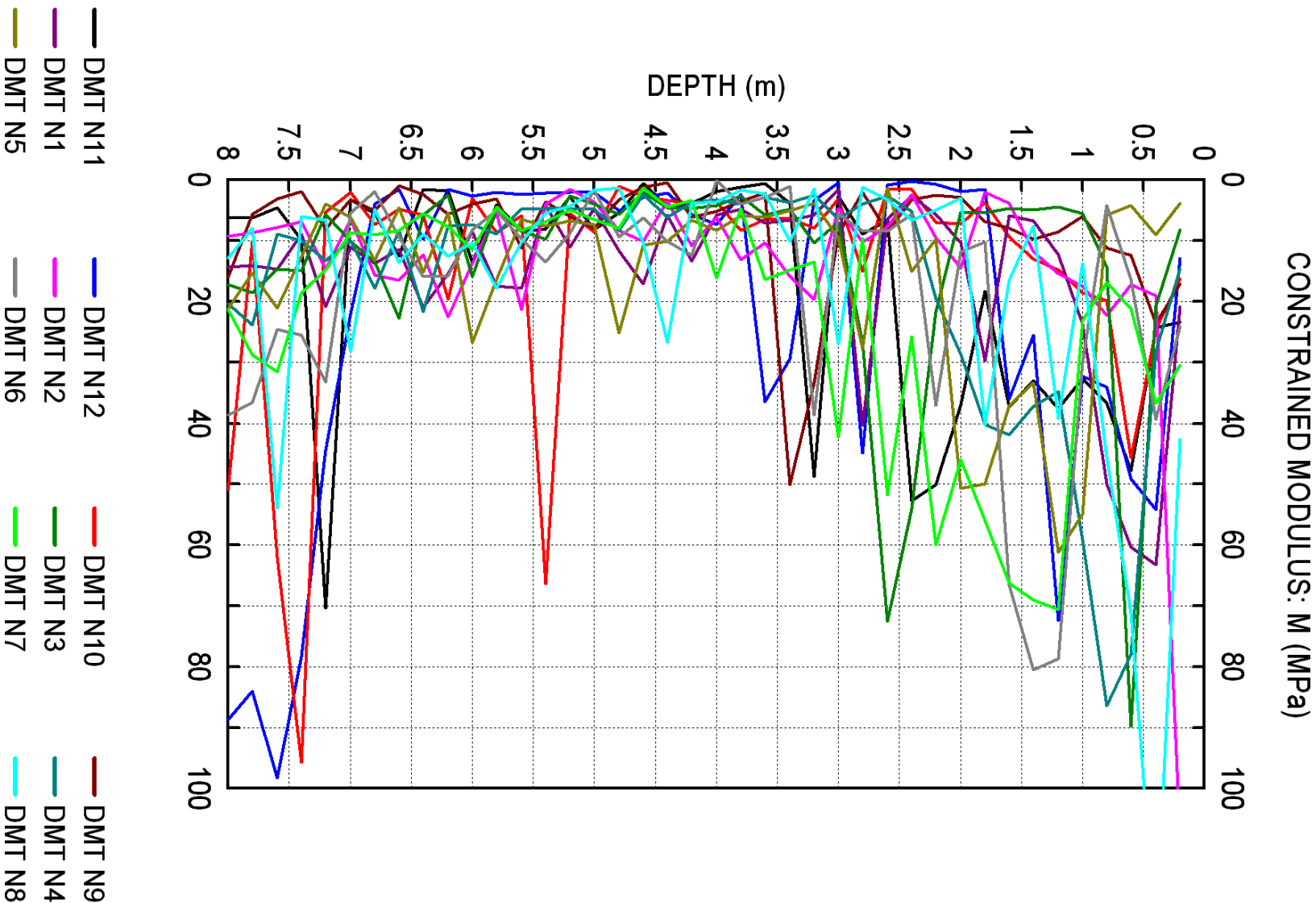
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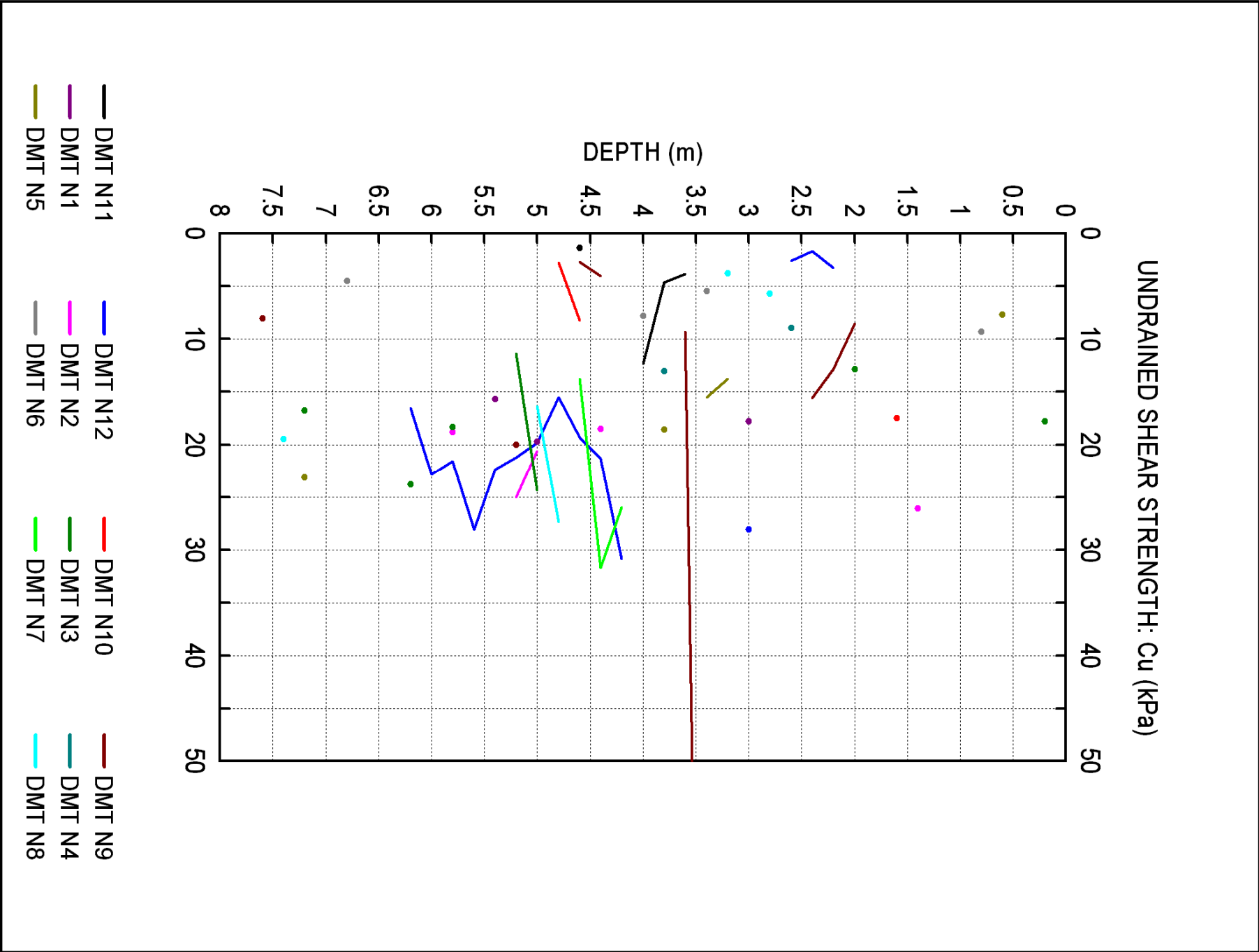
Popl. varnost JZ dela LJ,1A, PGD

CROSS SECTION OF FRICTION ANGLE (cohesionless) Phi (deg)

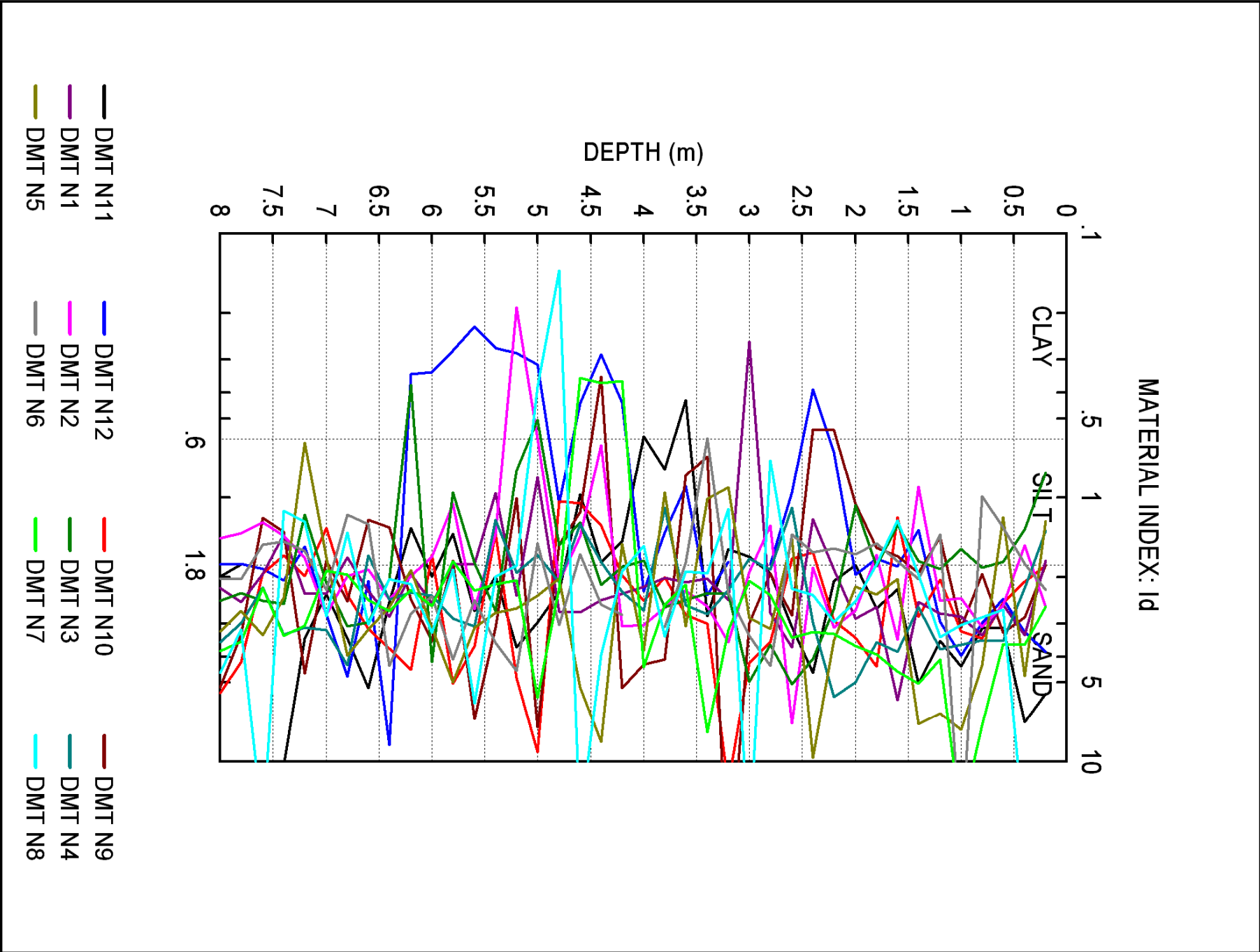


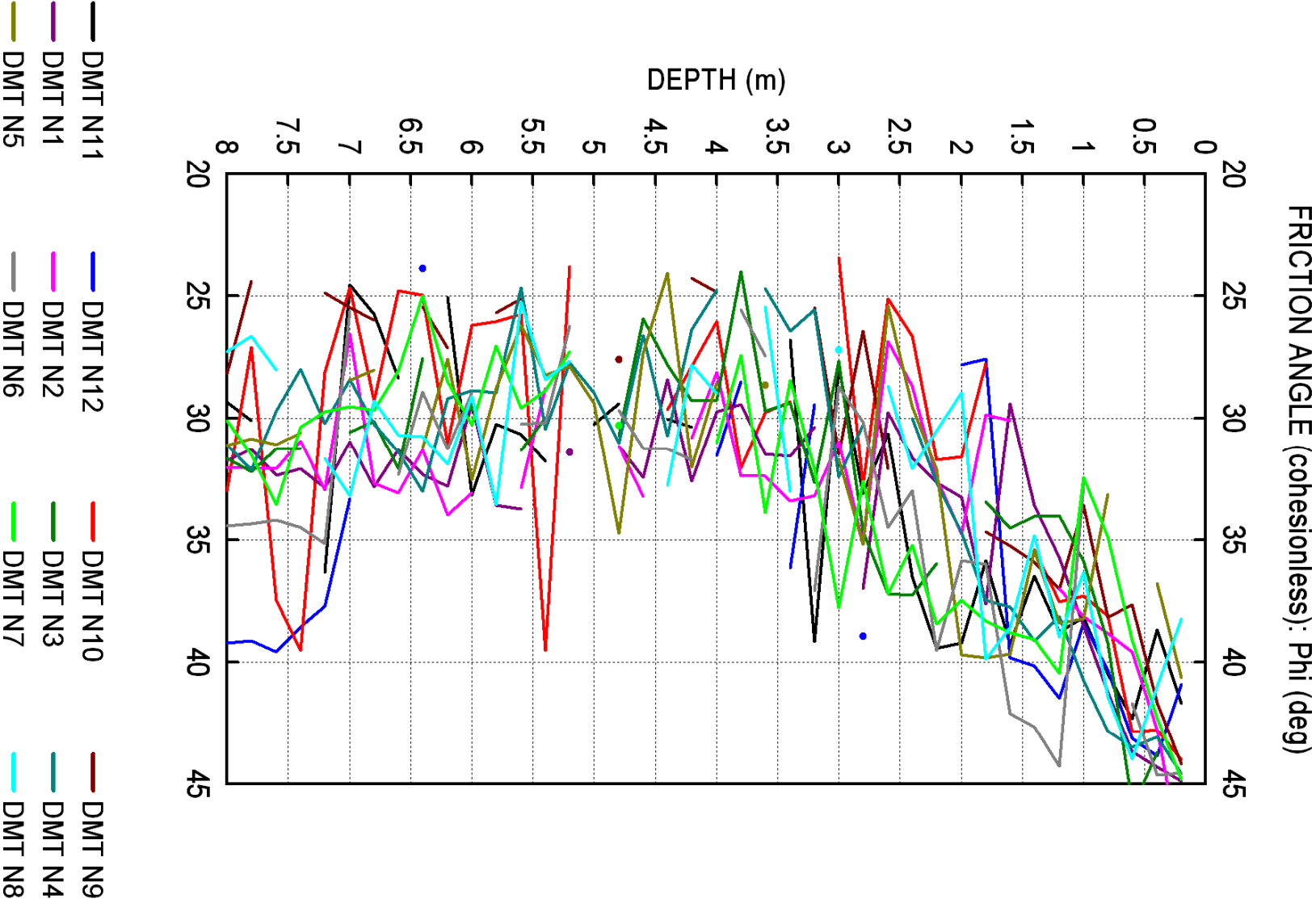
IRGO Consulting d.o.o.	Izvo-r d.o.o.	
Popl. varnost JZ dela LJ,1A, PGD		
SUPERIMPOSED TEST RESULTS		





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Popl. varnost JZ dela LJ,1A, PGD	
SUPERIMPOSED TEST RESULTS	





DMT N1	LEGEND	INTERPRETED PARAMETERS	GENERAL PARAMETERS
1.9.2015	Z = Depth Below Ground Level Po,P1,P2 = Corrected A,B,C readings	Phi = Safe floor value of Friction Angle Ko = In situ earth press. coeff. M = Constrained modulus (at Sigma')	DeltaA = 19 kPa DeltaB = 45 kPa GammaTop = 17.0 kN/m ³ FactorEd = 34.7
IRGO Consulting d.o.o. Izvo-r d.o.o. Popl. varnost JZ dela LJ,1A, PGD DMT N1	Id = Material Index Ed = Dilatometer Modulus Ud = Pore Press. Index = (P2-Uo)/(Po-Uo) Gamma = Bulk unit weight Sigma' = Effective overb. stress Uo = Pore pressure	Cu = Undrained shear strength Ocr = Overconsolidation ratio (OCR = 'relative OCR'- generally realistic. If accurate independent OCR available, apply suitable factor)	ZMCal = 0.0 kPa ZMAB = 0.0 kPa ZMC = 0.0 kPa Zabs = 0.0 m Zw = 5.0 m

WaterTable at 5.00 m

Reduction formulae according to Marchetti, ASCE Geot.Jnl.Mar. 1980, Vol.109, 299-321; Phi according to TC16 ISSMGE, 2001

Z (m)	A (kPa)	B (kPa)	C (kPa)	Po (kPa)	P1 (kPa)	P2 (kPa)	Gamma (kN/m ³)	Sigma' (kPa)	Uo (kPa)	Id	Kd	Ed (MPa)	Ud	Ko	Ocr	Phi (Deg)	M (MPa)	Cu (kPa)	DMT N1 DESCRIPTION
0.2	88	315		99	270		15.7	3	0	1.73	29.1	5.9				45	20.8		SANDY SILT
0.4	170	750		163	705		17.7	7	0	3.32	25.0	18.8				44	63.3		SAND
0.6	220	800		213	755		18.6	10	0	2.54	21.2	18.8				44	60.4		SILTY SAND
0.8	170	750		163	705		17.7	14	0	3.32	11.8	18.8				41	50.0		SAND
1.0	110	480		114	435		17.7	17	0	2.83	6.6	11.1				39	23.7		SILTY SAND
1.2	70	340		79	295		16.7	21	0	2.75	3.8	7.5				36	12.3		SILTY SAND
1.4	50	260		62	215		16.7	24	0	2.48	2.5	5.3				34	6.7		SILTY SAND
1.6	25	280		34	235		16.7	28	0	5.82	1.3	7.0				29	5.9		SAND
1.8	170	650		168	605		17.7	31	0	2.60	5.4	15.2				38	29.7		SILTY SAND
2.0	75	365		83	320		16.7	34	0	2.87	2.4	8.2				33	10.3		SILTY SAND
2.2	70	280		82	235		16.7	38	0	1.88	2.2	5.3				33	5.6		SILTY SAND
2.4	60	210		75	165		15.7	41	0	1.21	1.8	3.1				32	2.7		SANDY SILT
2.6	50	320		59	275		16.7	44	0	3.68	1.3	7.5				30	6.4		SAND
2.8	240	900		229	855		18.6	48	0	2.73	4.8	21.7				37	40.2		SILTY SAND
3.0	130	230		147	185		15.7	51	0	0.26	2.9	1.3		0.76	1.8		1.6	18	CLAY
3.2	70	320		80	275		16.7	54	0	2.45	1.5	6.8				30	5.8		SILTY SAND
3.4	95	360		104	315		16.7	58	0	2.03	1.8	7.3				32	6.6		SILTY SAND
3.6	100	380		108	335		16.7	61	0	2.10	1.8	7.9				31	7.0		SILTY SAND
3.8	70	290		81	245		16.7	64	0	2.02	1.3	5.7				29	4.8		SILTY SAND
4.0	80	330		90	285		16.7	68	0	2.18	1.3	6.8				30	5.8		SILTY SAND
4.2	150	550		152	505		17.7	71	0	2.32	2.1	12.2				33	13.4		SILTY SAND
4.4	70	320		80	275		16.7	75	0	2.45	1.1	6.8				28	5.8		SILTY SAND
4.6	165	650		163	605		17.7	78	0	2.71	2.1	15.3				32	17.0		SILTY SAND
4.8	135	550		136	505		17.7	81	0	2.70	1.7	12.8				31	11.7		SILTY SAND
5.0	165	370		177	325		16.7	85	0	0.84	2.1	5.1		0.57	1.1		4.7	20	SILT
5.2	150	550		152	505		17.7	86	2	2.35	1.7	12.2				31	11.1		SILTY SAND
5.4	140	340		152	295		15.7	88	4	0.96	1.7	5.0		0.46	<0.8		4.2	16	SILT
5.6	240	700	12	239	655	31	16.7	89	6	1.78	2.6	14.4	0.11			34	17.7		SANDY SILT
5.8	240	700		239	655		16.7	91	8	1.80	2.6	14.4				34	17.4		SANDY SILT
6.0	120	460		125	415		17.7	92	10	2.51	1.3	10.1				29	8.5		SILTY SAND
6.2	220	670		220	625		17.7	93	12	1.95	2.2	14.1				33	15.4		SILTY SAND
6.4	215	800		208	755		17.7	95	14	2.82	2.0	19.0				32	20.9		SILTY SAND
6.6	180	600	22	181	555	41	17.7	97	16	2.26	1.7	13.0	0.15			31	11.4		SILTY SAND
6.8	235	650		236	605		16.7	98	18	1.68	2.2	12.8				33	13.7		SANDY SILT
7.0	180	600		181	555		17.7	100	20	2.31	1.6	13.0				31	11.0		SILTY SAND
7.2	255	820		249	775		18.6	101	22	2.31	2.2	18.3				33	20.8		SILTY SAND
7.4	220	550		226	505		16.7	103	24	1.38	2.0	9.7				32	8.9		SANDY SILT
7.6	240	700	35	239	655	54	17.7	104	26	1.95	2.0	14.4	0.13			32	14.6		SILTY SAND
7.8	210	700		208	655		17.7	106	27	2.48	1.7	15.5				31	14.0		SILTY SAND
8.0	230	710		228	665		17.7	107	29	2.20	1.9	15.2				32	14.3		SILTY SAND

DMT N2	LEGEND	INTERPRETED PARAMETERS	GENERAL PARAMETERS
1.9.2015	Z = Depth Below Ground Level Po,P1,P2 = Corrected A,B,C readings	Phi = Safe floor value of Friction Angle Ko = In situ earth press. coeff. M = Constrained modulus (at Sigma')	DeltaA = 19 kPa DeltaB = 42 kPa GammaTop = 17.0 kN/m ³ FactorEd = 34.7
IRGO Consulting d.o.o. Izvo-r d.o.o. Popl. varnost JZ dela LJ,1A, PGD DMT N2	Id = Material Index Ed = Dilatometer Modulus Ud = Pore Press. Index = (P2-Uo)/(Po-Uo) Gamma = Bulk unit weight Sigma' = Effective overb. stress Uo = Pore pressure	Cu = Undrained shear strength Ocr = Overconsolidation ratio (OCR = 'relative OCR'- generally realistic. If accurate independent OCR available, apply suitable factor)	ZMCal = 0.0 kPa ZMAB = 0.0 kPa ZMC = 0.0 kPa Zabs = 0.0 m Zw = 5.0 m

WaterTable at 5.00 m

Reduction formulae according to Marchetti, ASCE Geot.Jnl.Mar. 1980, Vol.109, 299-321; Phi according to TC16 ISSMGE, 2001

Z (m)	A (kPa)	B (kPa)	C (kPa)	Po (kPa)	P1 (kPa)	P2 (kPa)	Gamma (kN/m ³)	Sigma' (kPa)	Uo (kPa)	Id	Kd	Ed (MPa)	Ud	Ko	Ocr	Phi (Deg)	M (MPa)	Cu (kPa)	DMT N2 DESCRIPTION
0.2	280	1000		266	958		18.6	3	0	2.60	78.2	24.0				48	106.8		SILTY SAND
0.4	110	345		120	303		15.7	7	0	1.52	16.9	6.3				43	19.0		SANDY SILT
0.6	75	340		84	298		16.7	10	0	2.56	8.2	7.4				40	17.2		SILTY SAND
0.8	90	430		95	388		16.7	14	0	3.08	7.0	10.2				39	22.2		SILTY SAND
1.0	95	390		102	348		16.7	17	0	2.40	6.0	8.5				38	17.4		SILTY SAND
1.2	90	380		98	338		16.7	20	0	2.46	4.8	8.3				37	15.3		SILTY SAND
1.4	160	370		172	328		16.7	24	0	0.91	7.3	5.4		1.5	7.5		11.8	26	SILT
1.6	25	210		38	168		16.7	27	0	3.44	1.4	4.5				30	3.8		SAND
1.8	25	150		41	108		15.7	30	0	1.65	1.3	2.3				30	2.0		SANDY SILT
2.0	100	430		106	388		17.7	33	0	2.68	3.2	9.8				35	14.5		SILTY SAND
2.2	70	360		78	318		16.7	37	0	3.10	2.1	8.3				32	9.5		SILTY SAND
2.4	30	170		45	128		16.7	40	0	1.84	1.1	2.9				29	2.4		SILTY SAND
2.6	30	340		37	298		16.7	44	0	7.15	0.8	9.1				27	7.7		SAND
2.8	150	405		159	363		16.7	47	0	1.28	3.4	7.1				35	10.2		SANDY SILT
3.0	70	280		82	238		16.7	50	0	1.92	1.6	5.4				31	4.6		SILTY SAND
3.2	130	620		128	578		17.7	54	0	3.53	2.4	15.6				33	19.6		SAND
3.4	140	550		142	508		17.7	57	0	2.59	2.5	12.7				33	15.9		SILTY SAND
3.6	120	450		126	408		17.7	61	0	2.25	2.1	9.8				32	10.3		SILTY SAND
3.8	130	520		133	478		17.7	64	0	2.61	2.1	12.0				32	13.1		SILTY SAND
4.0	60	320		69	278		16.7	68	0	3.03	1.0	7.3				28	6.2		SILTY SAND
4.2	110	500		113	458		17.7	71	0	3.07	1.6	12.0				31	10.8		SILTY SAND
4.4	150	310		164	268		15.7	75	0	0.63	2.2	3.6		0.60	1.2		3.4	18	CLAYEY SILT
4.6	180	490		187	448		16.7	78	0	1.40	2.4	9.1				33	10.1		SANDY SILT
4.8	130	460		136	418		17.7	81	0	2.08	1.7	9.8				31	8.3		SILTY SAND
5.0	170	335	80	184	293	99	15.7	85	0	0.59	2.2	3.8	0.54	0.59	1.1		3.5	21	SILTY CLAY
5.2	200	300		217	258		15.7	86	2	0.19	2.5	1.4		0.67	1.4		1.5	25	CLAY
5.4	90	280		103	238		15.7	87	4	1.37	1.1	4.7				29	4.0		SANDY SILT
5.6	210	770		204	728		17.7	88	6	2.64	2.2	18.2				33	21.3		SILTY SAND
5.8	170	405		180	363		16.7	90	8	1.06	1.9	6.3		0.52	0.94		5.4	19	SILT
6.0	220	620	20	222	578	39	16.7	91	10	1.68	2.3	12.4	0.14			33	13.7		SANDY SILT
6.2	270	810		265	768		18.6	92	12	1.99	2.7	17.5				34	22.5		SILTY SAND
6.4	175	610		175	568		17.7	94	14	2.43	1.7	13.6				31	12.3		SILTY SAND
6.6	240	700		239	658		17.7	96	16	1.88	2.3	14.5				33	16.4		SILTY SAND
6.8	230	690		229	648		17.7	97	18	1.98	2.2	14.5				33	15.6		SILTY SAND
7.0	90	360	28	99	318	47	16.7	99	20	2.78	0.8	7.6	0.35			27	6.5		SILTY SAND
7.2	250	680		251	638		16.7	100	22	1.69	2.3	13.4				33	14.7		SANDY SILT
7.4	180	460		188	418		16.7	102	24	1.40	1.6	8.0				31	6.8		SANDY SILT
7.6	220	520		227	478		16.7	103	26	1.25	2.0	8.7				32	7.8		SANDY SILT
7.8	225	550		231	508		16.7	104	27	1.36	1.9	9.6				32	8.7		SANDY SILT
8.0	230	570	30	235	528	49	16.7	106	29	1.42	1.9	10.2	0.10			32	9.2		SANDY SILT

DMT N3	LEGEND	INTERPRETED PARAMETERS	GENERAL PARAMETERS
8.9.2015	Z = Depth Below Ground Level Po,P1,P2 = Corrected A,B,C readings	Phi = Safe floor value of Friction Angle Ko = In situ earth press. coeff. M = Constrained modulus (at Sigma')	DeltaA = 19 kPa DeltaB = 35 kPa GammaTop = 17.0 kN/m ³ FactorEd = 34.7
IRGO Consulting d.o.o. Izvo-r d.o.o. Popl. varnost JZ dela LJ,1A, PGD DMT N3	Id = Material Index Ed = Dilatometer Modulus Ud = Pore Press. Index = (P2-Uo)/(Po-Uo) Gamma = Bulk unit weight Sigma' = Effective overb. stress Uo = Pore pressure	Cu = Undrained shear strength Ocr = Overconsolidation ratio (OCR = 'relative OCR'- generally realistic. If accurate independent OCR available, apply suitable factor)	ZMCal = 0.0 kPa ZMAB = 0.0 kPa ZMC = 0.0 kPa Zabs = 0.0 m Zw = 6.0 m

WaterTable at 6.00 m

Reduction formulae according to Marchetti, ASCE Geot.Jnl.Mar. 1980, Vol.109, 299-321; Phi according to TC16 ISSMGE, 2001

Z (m)	A (kPa)	B (kPa)	C (kPa)	Po (kPa)	P1 (kPa)	P2 (kPa)	Gamma (kN/m ³)	Sigma' (kPa)	Uo (kPa)	Id	Kd	Ed (MPa)	Ud	Ko	Ocr	Phi (Deg)	M (MPa)	Cu (kPa)	DMT N3 DESCRIPTION
0.2	70	190		86	155		15.7	3	0	0.81	25.2	2.4		3.2	52.2		8.1	18	SILT
0.4	130	360		140	325		15.7	7	0	1.32	21.4	6.4				44	20.7		SANDY SILT
0.6	400	1100		387	1065		17.7	10	0	1.75	40.0	23.5				46	89.7		SANDY SILT
0.8	90	320		100	285		16.7	13	0	1.84	7.6	6.4				39	14.4		SILTY SAND
1.0	50	200		64	165		15.7	17	0	1.57	3.9	3.5				36	5.6		SANDY SILT
1.2	40	190		54	155		16.7	20	0	1.86	2.8	3.5				34	4.5		SILTY SAND
1.4	50	210		64	175		15.7	23	0	1.75	2.8	3.9				34	4.9		SANDY SILT
1.6	65	215		79	180		15.7	26	0	1.27	3.0	3.5				35	4.6		SANDY SILT
1.8	60	240		73	205		16.7	29	0	1.82	2.5	4.6				33	5.4		SILTY SAND
2.0	90	250		104	215		15.7	33	0	1.07	3.2	3.9		0.82	2.1		5.3	13	SILT
2.2	140	550		141	515		17.7	36	0	2.65	3.9	13.0				36	21.7		SILTY SAND
2.4	220	1050		200	1015		18.6	39	0	4.07	5.1	28.3				37	54.1		SAND
2.6	250	1350		217	1315		18.6	43	0	5.07	5.0	38.1				37	72.6		SAND
2.8	150	700		144	665		17.7	47	0	3.61	3.1	18.1				35	26.7		SAND
3.0	40	320		48	285		16.7	50	0	4.97	0.9	8.2				28	7.0		SAND
3.2	110	420		116	385		17.7	54	0	2.31	2.2	9.3				33	10.3		SILTY SAND
3.4	60	270		71	235		16.7	57	0	2.30	1.2	5.7				29	4.8		SILTY SAND
3.6	70	310		80	275		16.7	60	0	2.45	1.3	6.8				30	5.8		SILTY SAND
3.8	20	160		35	125		16.7	64	0	2.60	0.5	3.1				24	2.7		SILTY SAND
4.0	70	260		82	225		15.7	67	0	1.74	1.2	5.0				29	4.2		SANDY SILT
4.2	75	280		86	245		16.7	70	0	1.83	1.2	5.5				29	4.7		SILTY SAND
4.4	60	260		72	225		16.7	74	0	2.14	1.0	5.3				28	4.5		SILTY SAND
4.6	40	160		56	125		15.7	77	0	1.24	0.7	2.4				26	2.0		SANDY SILT
4.8	115	350		125	315		15.7	80	0	1.52	1.6	6.6				31	5.6		SANDY SILT
5.0	195	350		209	315		16.7	83	0	0.51	2.5	3.7		0.67	1.4		4.0	24	SILTY CLAY
5.2	100	240		115	205		15.7	87	0	0.79	1.3	3.1		0.34	<0.8		2.7	11	CLAYEY SILT
5.4	120	490		123	455		17.7	90	0	2.69	1.4	11.5				30	9.8		SILTY SAND
5.6	155	480		160	445		16.7	93	0	1.77	1.7	9.9				31	8.4		SANDY SILT
5.8	160	370		171	335		16.7	97	0	0.96	1.8	5.7		0.48	0.83		4.8	18	SILT
6.0	135	700		128	665		17.7	100	0	4.18	1.3	18.6				30	15.8		SAND
6.2	200	330		215	295		15.7	102	2	0.37	2.1	2.8		0.57	1.1		2.5	24	SILTY CLAY
6.4	90	330	10	100	295	29	16.7	103	4	2.04	0.9	6.8	0.26			28	5.8		SILTY SAND
6.6	220	850		210	815		18.6	104	6	2.96	2.0	21.0				32	22.7		SILTY SAND
6.8	160	650		157	615		17.7	106	8	3.07	1.4	15.9				30	13.5		SILTY SAND
7.0	170	550		173	515		17.7	107	10	2.10	1.5	11.9				31	10.1		SILTY SAND
7.2	165	400		175	365		16.7	109	12	1.16	1.5	6.6		0.40	<0.8		5.6	17	SILT
7.4	205	710	35	201	675	54	17.7	110	14	2.52	1.7	16.4	0.21			31	14.9		SILTY SAND
7.6	210	710		207	675		17.7	112	16	2.45	1.7	16.3				31	14.6		SILTY SAND
7.8	250	800		244	765		18.6	113	18	2.30	2.0	18.1				32	18.6		SILTY SAND
8.0	235	780		229	745		17.7	115	20	2.46	1.8	17.9				32	17.2		SILTY SAND

DMT N4	LEGEND	INTERPRETED PARAMETERS	GENERAL PARAMETERS
8.9.2015	Z = Depth Below Ground Level Po,P1,P2 = Corrected A,B,C readings	Phi = Safe floor value of Friction Angle Ko = In situ earth press. coeff. M = Constrained modulus (at Sigma')	DeltaA = 17 kPa DeltaB = 37 kPa GammaTop = 17.0 kN/m ³ FactorEd = 34.7
IRGO Consulting d.o.o. Izvo-r d.o.o. Popl. varnost JZ dela LJ,1A, PGD DMT N4	Id = Material Index Ed = Dilatometer Modulus Ud = Pore Press. Index = (P2-Uo)/(Po-Uo) Gamma = Bulk unit weight Sigma' = Effective overb. stress Uo = Pore pressure	Cu = Undrained shear strength Ocr = Overconsolidation ratio (OCR = 'relative OCR'- generally realistic. If accurate independent OCR available, apply suitable factor)	ZMCal = 0.0 kPa ZMAB = 0.0 kPa ZMC = 0.0 kPa Zabs = 0.0 m Zw = 5.0 m

WaterTable at 5.00 m

Reduction formulae according to Marchetti, ASCE Geot.Jnl.Mar. 1980, Vol.109, 299-321; Phi according to TC16 ISSMGE, 2001

Z (m)	A (kPa)	B (kPa)	C (kPa)	Po (kPa)	P1 (kPa)	P2 (kPa)	Gamma (kN/m ³)	Sigma' (kPa)	Uo (kPa)	Id	Kd	Ed (MPa)	Ud	Ko	Ocr	Phi (Deg)	M (MPa)	Cu (kPa)	DMT N4 DESCRIPTION
0.2	80	250		91	213		15.7	3	0	1.34	26.8	4.2				45	14.5		SANDY SILT
0.4	115	420		119	383		17.7	7	0	2.21	18.3	9.1				43	28.1		SILTY SAND
0.6	220	950		203	913		18.6	10	0	3.49	20.2	24.6				43	77.9		SAND
0.8	260	1100		238	1063		18.6	14	0	3.47	17.2	28.6				43	86.3		SAND
1.0	200	890		185	853		18.6	18	0	3.61	10.6	23.2				41	59.1		SAND
1.2	135	650		129	613		17.7	21	0	3.75	6.1	16.8				38	34.7		SAND
1.4	190	700		184	663		17.7	25	0	2.60	7.4	16.6				39	37.1		SILTY SAND
1.6	170	800		158	763		17.7	28	0	3.82	5.6	21.0				38	41.9		SAND
1.8	180	800		169	763		17.7	32	0	3.52	5.3	20.6				37	40.2		SAND
2.0	120	700		111	663		17.7	35	0	4.99	3.1	19.2				35	28.6		SAND
2.2	90	600		84	563		17.7	39	0	5.69	2.2	16.6				33	19.4		SAND
2.4	50	270		59	233		16.7	42	0	2.97	1.4	6.0				30	5.1		SILTY SAND
2.6	70	210		83	173		15.7	46	0	1.09	1.8	3.1		0.49	0.86		2.7	9	SILT
2.8	60	240		71	203		16.7	49	0	1.87	1.4	4.6				30	3.9		SILTY SAND
3.0	100	330		108	293		15.7	52	0	1.71	2.1	6.4				32	6.4		SANDY SILT
3.2	25	160		38	123		16.7	55	0	2.24	0.7	3.0				26	2.5		SILTY SAND
3.4	35	210		46	173		16.7	59	0	2.76	0.8	4.4				26	3.7		SILTY SAND
3.6	25	170		37	133		16.7	62	0	2.55	0.6	3.3				25	2.8		SILTY SAND
3.8	110	290		121	253		15.7	65	0	1.10	1.8	4.6		0.50	0.88		3.9	13	SILT
4.0	30	190		42	153		16.7	69	0	2.67	0.6	3.9				25	3.3		SILTY SAND
4.2	45	220		56	183		16.7	72	0	2.27	0.8	4.4				26	3.7		SILTY SAND
4.4	110	360		117	323		15.7	75	0	1.76	1.6	7.1				31	6.1		SANDY SILT
4.6	50	180		63	143		15.7	78	0	1.26	0.8	2.8				27	2.4		SANDY SILT
4.8	130	450		134	413		17.7	81	0	2.09	1.6	9.7				31	8.2		SILTY SAND
5.0	90	300		99	263		15.7	85	0	1.65	1.2	5.7				29	4.8		SANDY SILT
5.2	75	280		84	243		16.7	86	2	1.92	1.0	5.5				28	4.7		SILTY SAND
5.4	125	330	30	134	293	47	15.7	88	4	1.21	1.5	5.5	0.33			30	4.7		SANDY SILT
5.6	50	260		59	223		16.7	89	6	3.07	0.6	5.7				25	4.8		SILTY SAND
5.8	110	450		113	413		17.7	90	8	2.86	1.2	10.4				29	8.9		SILTY SAND
6.0	110	400		115	363		16.7	92	10	2.35	1.1	8.6				29	7.3		SILTY SAND
6.2	120	420		125	383		17.7	93	12	2.29	1.2	9.0				29	7.6		SILTY SAND
6.4	240	800		232	763		18.6	95	14	2.44	2.3	18.4				33	21.6		SILTY SAND
6.6	180	500		184	463		16.7	96	16	1.66	1.7	9.7				31	8.2		SANDY SILT
6.8	170	800	25	158	763	42	17.7	98	18	4.30	1.4	21.0	0.17			30	17.8		SAND
7.0	125	500		126	463		17.7	99	20	3.17	1.1	11.7				28	9.9		SILTY SAND
7.2	170	650		166	613		17.7	101	22	3.10	1.4	15.5				30	13.2		SILTY SAND
7.4	125	500		126	463		17.7	102	24	3.29	1.0	11.7				28	9.9		SILTY SAND
7.6	160	500		163	463		17.7	104	26	2.19	1.3	10.4				30	8.9		SILTY SAND
7.8	250	900		237	863		18.6	106	27	2.98	2.0	21.7				32	23.8		SILTY SAND
8.0	220	870		207	833		17.7	107	29	3.52	1.7	21.7				31	20.4		SAND

DMT N5	LEGEND	INTERPRETED PARAMETERS	GENERAL PARAMETERS
9.9.2015	Z = Depth Below Ground Level Po,P1,P2 = Corrected A,B,C readings	Phi = Safe floor value of Friction Angle Ko = In situ earth press. coeff. M = Constrained modulus (at Sigma')	DeltaA = 17 kPa DeltaB = 37 kPa GammaTop = 17.0 kN/m ³ FactorEd = 34.7
IRGO Consulting d.o.o. Izvo-r d.o.o. Popl. varnost JZ dela LJ,1A, PGD DMT N5	Id = Material Index Ed = Dilatometer Modulus Ud = Pore Press. Index = (P2-Uo)/(Po-Uo) Gamma = Bulk unit weight Sigma' = Effective overb. stress Uo = Pore pressure	Cu = Undrained shear strength Ocr = Overconsolidation ratio (OCR = 'relative OCR'- generally realistic. If accurate independent OCR available, apply suitable factor)	ZMCal = 0.0 kPa ZMAB = 0.0 kPa ZMC = 0.0 kPa Zabs = 0.0 m Zw = 6.5 m

WaterTable at 6.50 m

Reduction formulae according to Marchetti, ASCE Geot.Jnl.Mar. 1980, Vol.109, 299-321; Phi according to TC16 ISSMGE, 2001

Z (m)	A (kPa)	B (kPa)	C (kPa)	Po (kPa)	P1 (kPa)	P2 (kPa)	Gamma (kN/m ³)	Sigma' (kPa)	Uo (kPa)	Id	Kd	Ed (MPa)	Ud	Ko	Ocr	Phi (Deg)	M (MPa)	Cu (kPa)	DMT N5 DESCRIPTION
0.2	20	115		35	78		15.7	3	0	1.23	10.3	1.5				41	3.8		SANDY SILT
0.4	20	210		30	173		16.7	7	0	4.73	4.6	5.0				37	9.1		SAND
0.6	40	155		54	118		15.7	10	0	1.19	5.5	2.2		1.2	4.8		4.2	8	SILT
0.8	20	200		31	163		16.7	13	0	4.31	2.4	4.6				33	5.7		SAND
1.0	120	900		101	863		17.7	16	0	7.57	6.2	26.5				38	55.0		SAND
1.2	150	1000		127	963		17.7	20	0	6.57	6.4	29.0				38	61.3		SAND
1.4	95	720		83	683		17.7	23	0	7.18	3.6	20.8				35	33.4		SAND
1.6	230	720		225	683		17.7	27	0	2.03	8.4	15.9				40	37.1		SILTY SAND
1.8	275	910		263	873		18.6	30	0	2.32	8.6	21.2				40	50.1		SILTY SAND
2.0	300	950		287	913		18.6	34	0	2.18	8.4	21.7				40	50.8		SILTY SAND
2.2	70	370		75	333		16.7	38	0	3.46	2.0	9.0				32	9.8		SAND
2.4	60	600		53	563		16.7	41	0	9.68	1.3	17.7				30	15.1		SAND
2.6	15	110		30	73		15.7	45	0	1.44	0.7	1.5				25	1.3		SANDY SILT
2.8	170	710		163	673		17.7	48	0	3.14	3.4	17.7				35	27.7		SILTY SAND
3.0	90	400		94	363		16.7	51	0	2.85	1.8	9.3				32	9.4		SILTY SAND
3.2	110	270		122	233		15.7	55	0	0.91	2.2	3.9		0.60	1.2		3.8	14	SILT
3.4	125	310		135	273		15.7	58	0	1.02	2.3	4.8		0.63	1.3		5.0	16	SILT
3.6	60	310		67	273		16.7	61	0	3.06	1.1	7.1				29	6.1		SILTY SAND
3.8	150	350		160	313		15.7	64	0	0.96	2.5	5.3		0.67	1.4		5.9	19	SILT
4.0	70	390		74	353		16.7	67	0	3.79	1.1	9.7				29	8.2		SAND
4.2	130	380		137	343		16.7	71	0	1.50	1.9	7.1				32	6.5		SANDY SILT
4.4	40	420		41	383		16.7	74	0	8.41	0.5	11.9				24	10.1		SAND
4.6	70	470		70	433		16.7	77	0	5.21	0.9	12.6				27	10.7		SAND
4.8	260	800		253	763		18.6	81	0	2.02	3.1	17.7				35	25.1		SILTY SAND
5.0	100	390		105	353		16.7	84	0	2.36	1.2	8.6				29	7.3		SILTY SAND
5.2	80	350		86	313		16.7	88	0	2.63	1.0	7.9				28	6.7		SILTY SAND
5.4	90	390		95	353		16.7	91	0	2.73	1.0	9.0				28	7.6		SILTY SAND
5.6	65	330		71	293		16.7	94	0	3.10	0.8	7.7				26	6.5		SILTY SAND
5.8	120	700		111	663		17.7	98	0	4.99	1.1	19.2				29	16.3		SAND
6.0	230	920		215	883		18.6	101	0	3.10	2.1	23.2				33	26.8		SILTY SAND
6.2	90	320		98	283		16.7	105	0	1.88	0.9	6.4				28	5.5		SILTY SAND
6.4	190	700		184	663		17.7	108	0	2.60	1.7	16.6				31	15.2		SILTY SAND
6.6	40	240		50	203		16.7	111	1	3.15	0.4	5.3					4.5		SILTY SAND
6.8	120	600	5	116	563	22	17.7	112	3	3.97	1.0	15.5	0.17			28	13.2		SAND
7.0	120	370		127	333		15.7	114	5	1.68	1.1	7.1				28	6.1		SANDY SILT
7.2	210	390		221	353		16.7	115	7	0.62	1.9	4.6		0.51	0.89		3.9	23	CLAYEY SILT
7.4	190	650		187	613		17.7	116	9	2.40	1.5	14.8				31	12.6		SILTY SAND
7.6	220	890		206	853		18.6	118	11	3.31	1.7	22.4				31	21.1		SAND
7.8	210	750	5	203	713	22	17.7	120	13	2.69	1.6	17.7	0.05			31	15.3		SILTY SAND
8.0	230	900		216	863		18.6	121	15	3.21	1.7	22.4				31	21.1		SILTY SAND

DMT N6	LEGEND	INTERPRETED PARAMETERS	GENERAL PARAMETERS
9.9.2015	Z = Depth Below Ground Level	Phi = Safe floor value of Friction Angle	DeltaA = 20 kPa
IRGO Consulting d.o.o.	Po,P1,P2 = Corrected A,B,C readings	Ko = In situ earth press. coeff.	DeltaB = 37 kPa
Izvo-r d.o.o.	Id = Material Index	M = Constrained modulus (at Sigma')	GammaTop = 17.0 kN/m ³
Popl. varnost JZ dela LJ,1A, PGD	Ed = Dilatometer Modulus	Cu = Undrained shear strength	FactorEd = 34.7
DMT N6	Ud = Pore Press. Index = (P2-Uo)/(Po-Uo)	Ocr = Overconsolidation ratio	Zm = 0.0 kPa
	Gamma = Bulk unit weight	(OCR = 'relative OCR'- generally realistic. If accurate independent OCR available, apply suitable factor)	Zabs = 0.0 m
	Sigma' = Effective overb. stress		Zw = 8.0 m
	Uo = Pore pressure		

Water Level below end of sounding

Reduction formulae according to Marchetti, ASCE Geot.Jnl.Mar. 1980, Vol.109, 299-321; Phi according to TC16 ISSMGE, 2001

Z (m)	A (kPa)	B (kPa)	C (kPa)	Po (kPa)	P1 (kPa)	P2 (kPa)	Gamma (kN/m ³)	Sigma' (kPa)	Uo (kPa)	Id	Kd	Ed (MPa)	Ud	Ko	Ocr	Phi (Deg)	M (MPa)	Cu (kPa)	DMT N6 DESCRIPTION
0.2	80	330		90	293		16.7	3	0	2.24	26.6	7.0				45	24.1		SILTY SAND
0.4	180	550		184	513		16.7	7	0	1.78	27.4	11.4				45	39.4		SANDY SILT
0.6	120	340		132	303		15.7	10	0	1.30	13.1	5.9				42	16.4		SANDY SILT
0.8	50	170		67	133		15.7	13	0	0.99	5.1	2.3		1.2	4.3		4.2	9	SILT
1.0	40	800		36	763		16.7	16	0	20.19	2.2	25.2				33	29.9		SAND
1.2	500	1200		488	1163		17.7	20	0	1.38	24.8	23.4				44	78.7		SANDY SILT
1.4	400	1200		383	1163		18.6	23	0	2.04	16.5	27.1				43	80.5		SILTY SAND
1.6	400	1100		388	1063		17.7	27	0	1.74	14.4	23.4				42	66.6		SANDY SILT
1.8	110	340		121	303		15.7	30	0	1.50	4.0	6.3				36	10.1		SANDY SILT
2.0	120	380		130	343		16.7	34	0	1.64	3.9	7.4				36	11.8		SANDY SILT
2.2	300	800		298	763		17.7	37	0	1.56	8.1	16.1				40	37.0		SANDY SILT
2.4	80	280		93	243		15.7	40	0	1.62	2.3	5.2				33	5.7		SANDY SILT
2.6	120	350		131	313		15.7	44	0	1.38	3.0	6.3				35	8.4		SANDY SILT
2.8	60	390		66	353		16.7	47	0	4.32	1.4	9.9				30	8.5		SAND
3.0	45	280		56	243		16.7	50	0	3.33	1.1	6.5				29	5.5		SAND
3.2	270	900		261	863		18.6	53	0	2.30	4.9	20.9				37	38.5		SILTY SAND
3.4	40	130		58	93		15.7	57	0	0.59	1.0	1.2		< 0.3	<0.8		1.0	5	SILTY CLAY
3.6	40	190		55	153		15.7	60	0	1.76	0.9	3.4				27	2.9		SANDY SILT
3.8	30	215		44	178		16.7	63	0	3.08	0.7	4.7				26	4.0		SILTY SAND
4.0	60	120		80	83		13.7	67	0	0.04	1.2	0.1		< 0.3	<0.8		0.1	8	MUD AND/OR PEAT
4.2	125	520		128	483		17.7	70	0	2.77	1.8	12.3				32	12.4		SILTY SAND
4.4	120	480		125	443		17.7	73	0	2.55	1.7	11.0				31	10.1		SILTY SAND
4.6	120	380		130	343		16.7	77	0	1.64	1.7	7.4				31	6.3		SANDY SILT
4.8	100	460		105	423		17.7	80	0	3.03	1.3	11.0				30	9.4		SILTY SAND
5.0	20	130		37	93		15.7	83	0	1.49	0.4	1.9					1.6		SANDY SILT
5.2	60	400		66	363		16.7	87	0	4.51	0.8	10.3				26	8.8		SAND
5.4	130	620		128	583		17.7	90	0	3.54	1.4	15.8				30	13.4		SAND
5.6	130	500		134	463		17.7	93	0	2.45	1.4	11.4				30	9.7		SILTY SAND
5.8	30	250		42	213		16.7	97	0	4.09	0.4	5.9					5.0		SAND
6.0	110	430		117	393		17.7	100	0	2.36	1.2	9.6				29	8.1		SILTY SAND
6.2	180	700		177	663		17.7	104	0	2.75	1.7	16.9				31	15.7		SILTY SAND
6.4	130	700		124	663		17.7	107	0	4.33	1.2	18.7				29	15.9		SAND
6.6	220	550		226	513		16.7	111	0	1.27	2.0	9.9				32	9.4		SANDY SILT
6.8	40	160		57	123		15.7	114	0	1.16	0.5	2.3		< 0.3	<0.8		2.0	4	SILT
7.0	70	300		81	263		16.7	117	0	2.23	0.7	6.3				26	5.4		SILTY SAND
7.2	420	1100		409	1063		17.7	121	0	1.60	3.4	22.7				35	33.2		SANDY SILT
7.4	380	960		374	923		17.7	124	0	1.47	3.0	19.1				35	25.5		SANDY SILT
7.6	370	950		364	913		17.7	128	0	1.51	2.8	19.1				34	24.5		SANDY SILT
7.8	400	1200		383	1163		18.6	131	0	2.04	2.9	27.1				34	36.6		SILTY SAND
8.0	420	1250		401	1213		18.6	135	0	2.02	3.0	28.2				34	38.6		SILTY SAND

DMT N7	LEGEND	INTERPRETED PARAMETERS	GENERAL PARAMETERS
9.9.2015	Z = Depth Below Ground Level	Phi = Safe floor value of Friction Angle	DeltaA = 19 kPa
IRGO Consulting d.o.o.	Po,P1,P2 = Corrected A,B,C readings	Ko = In situ earth press. coeff.	DeltaB = 32 kPa
Izvo-r d.o.o.	Id = Material Index	M = Constrained modulus (at Sigma')	GammaTop = 17.0 kN/m ³
Popl. varnost JZ dela LJ,1A, PGD	Ed = Dilatometer Modulus	Cu = Undrained shear strength	FactorEd = 34.7
DMT N7	Ud = Pore Press. Index = (P2-Uo)/(Po-Uo)	Ocr = Overconsolidation ratio	ZMCal = 0.0 kPa
	Gamma = Bulk unit weight	(OCR = 'relative OCR'- generally	ZMAB = 0.0 kPa
	Sigma' = Effective overb. stress	realistic. If accurate independent OCR	ZMC = 0.0 kPa
	Uo = Pore pressure	available, apply suitable factor)	Zabs = 0.0 m
			Zw = 7.5 m

WaterTable at 7.50 m

Reduction formulae according to Marchetti, ASCE Geot.Jnl.Mar. 1980, Vol.109, 299-321; Phi according to TC16 ISSMGE, 2001

Z (m)	A (kPa)	B (kPa)	C (kPa)	Po (kPa)	P1 (kPa)	P2 (kPa)	Gamma (kN/m ³)	Sigma' (kPa)	Uo (kPa)	Id	Kd	Ed (MPa)	Ud	Ko	Ocr	Phi (Deg)	M (MPa)	Cu (kPa)	DMT N7 DESCRIPTION
0.2	90	380		97	348		16.7	3	0	2.59	28.5	8.7				45	30.4		SILTY SAND
0.4	100	500		102	468		17.7	7	0	3.61	15.1	12.7				42	36.7		SAND
0.6	70	380		76	348		16.7	10	0	3.58	7.4	9.4				39	21.1		SAND
0.8	40	395		44	363		16.7	14	0	7.29	3.2	11.1				35	16.8		SAND
1.0	40	650		35	618		16.7	17	0	16.46	2.1	20.2				32	23.1		SAND
1.2	220	1050		200	1018		18.6	20	0	4.09	9.9	28.4				40	70.6		SAND
1.4	200	1100		177	1068		18.6	24	0	5.05	7.4	30.9				39	69.1		SAND
1.6	215	1100		192	1068		18.6	28	0	4.55	6.9	30.4				39	66.3		SAND
1.8	215	1000		197	968		18.6	31	0	3.91	6.3	26.7				38	56.0		SAND
2.0	200	900		187	868		18.6	35	0	3.65	5.3	23.6				37	46.1		SAND
2.2	270	1100		250	1068		18.6	39	0	3.27	6.4	28.4				38	60.1		SILTY SAND
2.4	150	650		147	618		17.7	43	0	3.22	3.4	16.4				35	25.7		SILTY SAND
2.6	250	1050		232	1018		18.6	46	0	3.40	5.0	27.3				37	51.9		SAND
2.8	100	390		107	358		16.7	50	0	2.34	2.1	8.7				33	9.6		SILTY SAND
3.0	310	950		300	918		18.6	53	0	2.06	5.6	21.5				38	42.2		SILTY SAND
3.2	110	500		112	468		17.7	57	0	3.18	2.0	12.4				32	13.4		SILTY SAND
3.4	70	600		65	568		16.7	60	0	7.73	1.1	17.5				28	14.8		SAND
3.6	170	570		172	538		17.7	64	0	2.14	2.7	12.7				34	16.3		SILTY SAND
3.8	50	250		62	218		16.7	67	0	2.54	0.9	5.4				27	4.6		SILTY SAND
4.0	120	650		115	618		17.7	71	0	4.37	1.6	17.5				31	16.1		SAND
4.2	200	325		215	293		15.7	74	0	0.36	2.9	2.7		0.76	1.8		3.3	26	SILTY CLAY
4.4	240	380		255	348		16.7	77	0	0.37	3.3	3.2		0.85	2.2		4.4	32	SILTY CLAY
4.6	115	210		132	178		15.7	81	0	0.35	1.6	1.6		0.44	<0.8		1.4	14	SILTY CLAY
4.8	115	420		121	388		17.7	84	0	2.20	1.4	9.3				30	7.9		SILTY SAND
5.0	30	290		39	258		16.7	87	0	5.69	0.4	7.6					6.5		SAND
5.2	70	280		81	248		16.7	91	0	2.06	0.9	5.8				27	4.9		SILTY SAND
5.4	100	370		108	338		16.7	94	0	2.13	1.1	8.0				29	6.8		SILTY SAND
5.6	120	440		126	408		17.7	97	0	2.25	1.3	9.8				30	8.3		SILTY SAND
5.8	75	270		87	238		15.7	101	0	1.74	0.9	5.2				27	4.5		SANDY SILT
6.0	150	570		151	538		17.7	104	0	2.57	1.4	13.4				30	11.4		SILTY SAND
6.2	110	410		117	378		17.7	108	0	2.24	1.1	9.1				29	7.7		SILTY SAND
6.4	60	290		70	258		16.7	111	0	2.68	0.6	6.5				25	5.5		SILTY SAND
6.6	110	430		116	398		17.7	114	0	2.44	1.0	9.8				28	8.3		SILTY SAND
6.8	150	490		155	458		17.7	118	0	1.96	1.3	10.5				30	9.0		SILTY SAND
7.0	150	480		155	448		17.7	122	0	1.89	1.3	10.2				30	8.6		SILTY SAND
7.2	170	700		165	668		17.7	125	0	3.05	1.3	17.5				30	14.8		SILTY SAND
7.4	200	850		189	818		18.6	129	0	3.33	1.5	21.8				30	18.6		SAND
7.6	350	1100		334	1068		18.6	131	1	2.20	2.5	25.5				34	31.5		SILTY SAND
7.8	260	1100	5	240	1068	24	18.6	133	3	3.50	1.8	28.7	0.09			32	28.7		SAND
8.0	210	950		195	918		18.6	135	5	3.81	1.4	25.1				30	21.3		SAND

DMT N8	LEGEND	INTERPRETED PARAMETERS	GENERAL PARAMETERS
16.9.2015	Z = Depth Below Ground Level	Phi = Safe floor value of Friction Angle	DeltaA = 15 kPa
IRGO Consulting d.o.o.	Po,P1,P2 = Corrected A,B,C readings	Ko = In situ earth press. coeff.	DeltaB = 40 kPa
Izvo-r d.o.o.	Id = Material Index	M = Constrained modulus (at Sigma')	GammaTop = 17.0 kN/m ³
Popl. varnost JZ dela LJ,1A, PGD	Ed = Dilatometer Modulus	Cu = Undrained shear strength	FactorEd = 34.7
DMT N8	Ud = Pore Press. Index = (P2-Uo)/(Po-Uo)	Ocr = Overconsolidation ratio	Zm = 0.0 kPa
	Gamma = Bulk unit weight	(OCR = 'relative OCR'- generally realistic. If accurate independent OCR available, apply suitable factor)	Zabs = 0.0 m
	Sigma' = Effective overb. stress		Zw = 5.0 m
	Uo = Pore pressure		

WaterTable at 5.00 m

Reduction formulae according to Marchetti, ASCE Geot.Jnl.Mar. 1980, Vol.109, 299-321; Phi according to TC16 ISSMGE, 2001

Z (m)	A (kPa)	B (kPa)	C (kPa)	Po (kPa)	P1 (kPa)	P2 (kPa)	Gamma (kN/m^3)	Sigma' (kPa)	Uo (kPa)	Id	Kd	Ed (MPa)	Ud	Ko	Ocr	Phi (Deg)	M (MPa)	Cu (kPa)	DMT N8 DESCRIPTION	
0.2	20	650		21	610		16.7	3	0	28.05	6.2	20.4					38	42.5		SAND
0.4	110	1500		75	1460		17.7	7	0	18.47	11.1	48.1					41	125.0		SAND
0.6	250	900		235	860		18.6	10	0	2.66	22.9	21.7					44	71.2		SILTY SAND
0.8	180	700		172	660		17.7	14	0	2.84	12.3	16.9					41	45.6		SILTY SAND
1.0	70	340		74	300		16.7	18	0	3.04	4.2	7.8					36	13.7		SILTY SAND
1.2	160	700		151	660		17.7	21	0	3.38	7.2	17.7					39	39.2		SAND
1.4	70	270		78	230		16.7	24	0	1.96	3.2	5.3					35	7.6		SILTY SAND
1.6	180	450		184	410		16.7	28	0	1.23	6.6	7.8					39	16.4		SANDY SILT
1.8	280	800		272	760		17.7	31	0	1.80	8.7	16.9					40	40.2		SANDY SILT
2.0	30	180		40	140		16.7	35	0	2.48	1.2	3.5					29	2.9		SILTY SAND
2.2	50	265		57	225		16.7	38	0	2.95	1.5	5.8					31	5.0		SILTY SAND
2.4	75	310		81	270		16.7	41	0	2.33	2.0	6.6					32	6.7		SILTY SAND
2.6	40	200		50	160		16.7	45	0	2.22	1.1	3.8					29	3.3		SILTY SAND
2.8	45	140		58	100		15.7	48	0	0.72	1.2	1.5		0.30	<0.8		1.2	6		CLAYEY SILT
3.0	60	1000		45	960		16.7	51	0	20.33	0.9	31.8					27	27.0		SAND
3.2	30	130		43	90		15.7	54	0	1.11	0.8	1.6		< 0.3	<0.8		1.4	4		SILT
3.4	130	430		133	390		17.7	58	0	1.94	2.3	8.9					33	10.0		SILTY SAND
3.6	30	160		41	120		16.7	61	0	1.91	0.7	2.7					25	2.3		SILTY SAND
3.8	5	115		17	75		16.7	64	0	3.35	0.3	2.0						1.7		SAND
4.0	70	240		79	200		15.7	68	0	1.52	1.2	4.2					29	3.6		SANDY SILT
4.2	60	240		69	200		16.7	71	0	1.91	1.0	4.6					28	3.9		SILTY SAND
4.4	180	850		164	810		17.7	74	0	3.93	2.2	22.4					33	26.7		SAND
4.6	20	410		21	370		16.7	78	0	16.62	0.3	12.1						10.3		SAND
4.8	215	300		229	260		14.7	81	0	0.14	2.8	1.1		0.74	1.7		1.3	27		MUD
5.0	140	250		152	210		15.7	84	0	0.38	1.8	2.0		0.49	0.86		1.7	16		SILTY CLAY
5.2	75	270		83	230		16.7	85	2	1.81	1.0	5.1					28	4.3		SILTY SAND
5.4	90	320		96	280		16.7	87	4	1.99	1.1	6.4					28	5.4		SILTY SAND
5.6	65	450		64	410		16.7	88	6	6.01	0.7	12.0					25	10.2		SAND
5.8	240	700		235	660		17.7	89	8	1.87	2.5	14.8					34	17.8		SILTY SAND
6.0	120	510		118	470		17.7	91	10	3.24	1.2	12.2					29	10.4		SILTY SAND
6.2	190	600		187	560		17.7	92	12	2.12	1.9	12.9					32	12.4		SILTY SAND
6.4	160	500		161	460		17.7	94	14	2.04	1.6	10.4					31	8.8		SILTY SAND
6.6	170	650		164	610		17.7	96	16	3.01	1.5	15.5					31	13.6		SILTY SAND
6.8	130	340		137	300		15.7	97	18	1.36	1.2	5.6					29	4.8		SANDY SILT
7.0	270	950		254	910		18.6	98	20	2.80	2.4	22.8					33	28.1		SILTY SAND
7.2	200	470		204	430		16.7	100	22	1.24	1.8	7.8					32	6.7		SANDY SILT
7.4	200	450		205	410		16.7	102	24	1.13	1.8	7.1		0.49	0.84		6.0	19		SILT
7.6	200	2000		129	1960		18.6	103	26	17.69	1.0	63.5					28	54.0		SAND
7.8	110	420		112	380		16.7	105	27	3.16	0.8	9.3					27	7.9		SILTY SAND
8.0	130	600		124	560		17.7	106	29	4.60	0.9	15.1					27	12.9		SAND

DMT N9	LEGEND	INTERPRETED PARAMETERS	GENERAL PARAMETERS
1.9.2015	Z = Depth Below Ground Level Po,P1,P2 = Corrected A,B,C readings	Phi = Safe floor value of Friction Angle Ko = In situ earth press. coeff. M = Constrained modulus (at Sigma')	DeltaA = 19 kPa DeltaB = 35 kPa GammaTop = 17.0 kN/m ³ FactorEd = 34.7
IRGO Consulting d.o.o. Izvo-r d.o.o. Popl. varnost JZ dela LJ,1A, PGD DMT N9	Id = Material Index Ed = Dilatometer Modulus Ud = Pore Press. Index = (P2-Uo)/(Po-Uo) Gamma = Bulk unit weight Sigma' = Effective overb. stress Uo = Pore pressure	Cu = Undrained shear strength Ocr = Overconsolidation ratio (OCR = 'relative OCR'- generally realistic. If accurate independent OCR available, apply suitable factor)	ZMCal = 0.0 kPa ZMAB = 0.0 kPa ZMC = 0.0 kPa Zabs = 0.0 m Zw = 5.0 m

WaterTable at 5.00 m

Reduction formulae according to Marchetti, ASCE Geot.Jnl.Mar. 1980, Vol.109, 299-321; Phi according to TC16 ISSMGE, 2001

Z (m)	A (kPa)	B (kPa)	C (kPa)	Po (kPa)	P1 (kPa)	P2 (kPa)	Gamma (kN/m ³)	Sigma' (kPa)	Uo (kPa)	Id	Kd	Ed (MPa)	Ud	Ko	Ocr	Phi (Deg)	M (MPa)	Cu (kPa)	DMT N9 DESCRIPTION
0.2	70	265		82	230		16.7	3	0	1.81	24.1	5.1				44	17.1		SILTY SAND
0.4	80	370		87	335		16.7	7	0	2.84	12.9	8.6				42	23.6		SILTY SAND
0.6	45	270		55	235		16.7	10	0	3.24	5.5	6.2				38	12.3		SILTY SAND
0.8	70	275		81	240		16.7	13	0	1.95	6.1	5.5				38	11.2		SILTY SAND
1.0	30	210		43	175		16.7	17	0	3.10	2.6	4.6				34	6.0		SILTY SAND
1.2	85	270		97	235		15.7	20	0	1.41	4.9	4.8				37	8.6		SANDY SILT
1.4	80	300		91	265		16.7	23	0	1.92	3.9	6.0				36	9.8		SILTY SAND
1.6	80	280		92	245		15.7	27	0	1.67	3.5	5.3				35	7.9		SANDY SILT
1.8	80	270		92	235		15.7	30	0	1.55	3.1	5.0				35	6.8		SANDY SILT
2.0	60	190		75	155		15.7	33	0	1.06	2.3	2.8		0.62	1.2		2.9	9	SILT
2.2	90	200		106	165		15.7	36	0	0.55	3.0	2.0		0.77	1.8		2.5	13	SILTY CLAY
2.4	110	230		126	195		15.7	39	0	0.55	3.2	2.4		0.83	2.1		3.2	16	SILTY CLAY
2.6	75	350		83	315		16.7	42	0	2.80	2.0	8.1				32	8.6		SILTY SAND
2.8	20	140		36	105		16.7	46	0	1.94	0.8	2.4				26	2.0		SILTY SAND
3.0	80	380		87	345		16.7	49	0	2.98	1.8	9.0				31	8.9		SILTY SAND
3.2	40	1200		35	1165		16.7	52	0	31.91	0.7	39.2				25	33.3		SAND
3.4	750	1300		744	1265		19.1	56	0	0.70	13.4	18.1		2.2	19.5		50.2	132	CLAYEY SILT
3.6	75	200		90	165		15.7	59	0	0.82	1.5	2.6		0.41	<0.8		2.2	9	SILT
3.8	15	180		28	145		16.7	63	0	4.10	0.5	4.0					3.4		SAND
4.0	30	250		41	215		16.7	66	0	4.28	0.6	6.0				25	5.1		SAND
4.2	30	280		39	245		16.7	69	0	5.25	0.6	7.1				24	6.1		SAND
4.4	30	100		48	65		14.7	73	0	0.35	0.7	0.6		< 0.3	<0.8		0.5	4	MUD
4.6	18	110		35	75		15.7	76	0	1.14	0.5	1.4		< 0.3	<0.8		1.2	3	SILT
4.8	60	220		74	185		15.7	79	0	1.51	0.9	3.9				28	3.3		SANDY SILT
5.0	30	340		36	305		16.7	82	0	7.43	0.4	9.3					7.9		SAND
5.2	170	395		180	360		16.7	83	2	1.01	2.1	6.2		0.58	1.1		6.0	20	SILT
5.4	30	200		43	165		16.7	85	4	3.10	0.5	4.2					3.6		SILTY SAND
5.6	60	475		61	440		16.7	86	6	6.88	0.6	13.2				25	11.2		SAND
5.8	55	210		69	175		15.7	87	8	1.74	0.7	3.7				26	3.1		SANDY SILT
6.0	35	215	10	48	180	29	16.7	88	10	3.49	0.4	4.6	0.51				3.9		SAND
6.2	80	315		90	280		16.7	90	12	2.43	0.9	6.6				27	5.6		SILTY SAND
6.4	60	190		75	155		15.7	91	14	1.30	0.7	2.8				25	2.4		SANDY SILT
6.6	25	110		42	75		14.7	92	16	1.22	0.3	1.1					1.0		MUD
6.8	75	290		86	255		16.7	93	18	2.48	0.7	5.9				26	5.0		SILTY SAND
7.0	70	230		84	195		15.7	95	20	1.74	0.7	3.9				25	3.3		SANDY SILT
7.2	75	390		81	355		16.7	96	22	4.62	0.6	9.5				25	8.1		SAND
7.4	55	170		71	135		15.7	97	24	1.35	0.5	2.2					1.9		SANDY SILT
7.6	100	255		114	220		15.7	98	26	1.20	0.9	3.7		< 0.3	<0.8		3.1	8	SILT
7.8	75	310	25	85	275	44	16.7	100	27	3.31	0.6	6.6	0.29			24	5.6		SAND
8.0	140	710		133	675		17.7	101	29	5.22	1.0	18.8				28	16.0		SAND

DMT N10	LEGEND	INTERPRETED PARAMETERS	GENERAL PARAMETERS
31.8.2015	Z = Depth Below Ground Level Po,P1,P2 = Corrected A,B,C readings	Phi = Safe floor value of Friction Angle Ko = In situ earth press. coeff. M = Constrained modulus (at Sigma')	DeltaA = 15 kPa DeltaB = 40 kPa GammaTop = 17.0 kN/m ³ FactorEd = 34.7
IRGO Consulting d.o.o. Izvo-r d.o.o. Popl. varnost JZ dela LJ,1A, PGD DMT N10	Id = Material Index Ed = Dilatometer Modulus Ud = Pore Press. Index = (P2-Uo)/(Po-Uo) Gamma = Bulk unit weight Sigma' = Effective overb. stress Uo = Pore pressure	Cu = Undrained shear strength Ocr = Overconsolidation ratio (OCR = 'relative OCR'- generally realistic. If accurate independent OCR available, apply suitable factor)	ZMCal = 0.0 kPa ZMAB = 0.0 kPa ZMC = 0.0 kPa Zabs = 0.0 m Zw = 4.0 m

WaterTable at 4.00 m

Reduction formulae according to Marchetti, ASCE Geot.Jnl.Mar. 1980, Vol.109, 299-321; Phi according to TC16 ISSMGE, 2001

Z (m)	A (kPa)	B (kPa)	C (kPa)	Po (kPa)	P1 (kPa)	P2 (kPa)	Gamma (kN/m ³)	Sigma' (kPa)	Uo (kPa)	Id	Kd	Ed (MPa)	Ud	Ko	Ocr	Phi (Deg)	M (MPa)	Cu (kPa)	DMT N10 DESCRIPTION
0.2	70	260		78	220		16.7	3	0	1.81	23.0	4.9				44	16.2		SILTY SAND
0.4	110	390		114	350		16.7	7	0	2.08	16.9	8.2				43	24.6		SILTY SAND
0.6	180	650		174	610		17.7	10	0	2.50	17.3	15.1				43	45.7		SILTY SAND
0.8	80	400		82	360		16.7	14	0	3.40	6.0	9.7				38	19.9		SAND
1.0	85	405		87	365		16.7	17	0	3.21	5.1	9.7				37	18.5		SILTY SAND
1.2	104	370		108	330		16.7	20	0	2.04	5.3	7.7				38	14.7		SILTY SAND
1.4	80	360		84	320		16.7	24	0	2.82	3.5	8.2				35	13.0		SILTY SAND
1.6	120	320		128	280		15.7	27	0	1.19	4.7	5.3		1.1	3.9		9.3	17	SILT
1.8	20	195		29	155		16.7	30	0	4.34	1.0	4.4				28	3.7		SAND
2.0	55	305		60	265		16.7	33	0	3.40	1.8	7.1				32	7.2		SAND
2.2	62	305		68	265		16.7	37	0	2.92	1.8	6.8				32	7.0		SILTY SAND
2.4	20	125		33	85		15.7	40	0	1.62	0.8	1.8				27	1.5		SANDY SILT
2.6	15	115		28	75		15.7	43	0	1.70	0.6	1.6				25	1.4		SANDY SILT
2.8	105	505		103	465		17.7	46	0	3.53	2.2	12.6				33	15.0		SAND
3.0	15	170		25	130		16.7	50	0	4.20	0.5	3.6				23	3.1		SAND
3.2	20	330		22	290		16.7	53	0	12.03	0.4	9.3					7.9		SAND
3.4	65	320		70	280		16.7	57	0	3.00	1.2	7.3				29	6.2		SILTY SAND
3.6	75	340		79	300		16.7	60	0	2.77	1.3	7.7				30	6.5		SILTY SAND
3.8	120	410		123	370		17.7	63	0	2.00	1.9	8.6				32	8.3		SILTY SAND
4.0	40	210		49	170		16.7	67	0	2.45	0.7	4.2				26	3.6		SILTY SAND
4.2	60	240	5	69	200	20	16.7	68	2	1.97	1.0	4.6	0.27			28	3.9		SILTY SAND
4.4	85	250		94	210		15.7	70	4	1.28	1.3	4.0				30	3.4		SANDY SILT
4.6	80	220		91	180		15.7	71	6	1.05	1.2	3.1		0.30	<0.8		2.6	8	SILT
4.8	30	120		43	80		15.7	72	8	1.04	0.5	1.3		< 0.3	<0.8		1.1	3	SILT
5.0	40	370	5	41	330	20	16.7	73	10	9.18	0.4	10.0	0.32				8.5		SAND
5.2	45	280		51	240		16.7	74	12	4.82	0.5	6.6				24	5.6		SAND
5.4	650	1500		625	1460		19.1	76	14	1.37	8.1	29.0				40	66.4		SANDY SILT
5.6	65	310		71	270		16.7	78	16	3.64	0.7	6.9				26	5.9		SAND
5.8	75	410		76	370		16.7	79	18	5.04	0.7	10.2				26	8.7		SAND
6.0	70	220	15	80	180	30	15.7	80	20	1.65	0.8	3.5	0.17			26	2.9		SANDY SILT
6.2	170	800		156	760		17.7	82	22	4.48	1.7	21.0				31	19.6		SAND
6.4	70	310		76	270		16.7	83	24	3.72	0.6	6.7				25	5.7		SAND
6.6	70	280		77	240		16.7	85	26	3.15	0.6	5.6				25	4.8		SILTY SAND
6.8	130	420		133	380		16.7	86	27	2.33	1.2	8.6				29	7.3		SILTY SAND
7.0	70	190	25	82	150	40	15.7	87	29	1.30	0.6	2.4	0.20			25	2.0		SANDY SILT
7.2	115	340		122	300		16.7	88	31	1.98	1.0	6.2				28	5.3		SILTY SAND
7.4	800	2000		758	1960		19.1	90	33	1.66	8.1	41.7				40	95.7		SANDY SILT
7.6	550	1500		520	1460		19.6	92	35	1.94	5.3	32.6				37	62.0		SILTY SAND
7.8	120	500		119	460		16.7	94	37	4.19	0.9	11.8				27	10.1		SAND
8.0	300	1500	28	258	1460	43	18.6	95	39	5.50	2.3	41.7	0.02			33	51.0		SAND

DMT N11	LEGEND	INTERPRETED PARAMETERS	GENERAL PARAMETERS
31.8.2015	Z = Depth Below Ground Level	Phi = Safe floor value of Friction Angle	DeltaA = 16 kPa
IRGO Consulting d.o.o.	Po,P1,P2 = Corrected A,B,C readings	Ko = In situ earth press. coeff.	DeltaB = 61 kPa
Izvo-r d.o.o.	Id = Material Index	M = Constrained modulus (at Sigma')	GammaTop = 17.0 kN/m^3
Popl. varnost JZ dela LJ,1A, PGD	Ed = Dilatometer Modulus	Cu = Undrained shear strength	FactorEd = 34.7
DMT N11	Ud = Pore Press. Index = (P2-Uo)/(Po-Uo)	Ocr = Overconsolidation ratio	ZMCal = 0.0 kPa
	Gamma = Bulk unit weight	(OCR = 'relative OCR'- generally	ZMAB = 0.0 kPa
	Sigma' = Effective overb. stress	realistic. If accurate independent OCR	ZMC = 0.0 kPa
	Uo = Pore pressure	available, apply suitable factor)	Zabs = 0.0 m
			Zw = 3.0 m

WaterTable at 3.00 m

Reduction formulae according to Marchetti, ASCE Geot.Jnl.Mar. 1980, Vol.109, 299-321; Phi according to TC16 ISSMGE, 2001

Z (m)	A (kPa)	B (kPa)	C (kPa)	Po (kPa)	P1 (kPa)	P2 (kPa)	Gamma (kN/m^3)	Sigma' (kPa)	Uo (kPa)	Id	Kd	Ed (MPa)	Ud	Ko	Ocr	Phi (Deg)	M (MPa)	Cu (kPa)	DMT N11 DESCRIPTION
0.2	40	350		44	289		16.7	3	0	5.52	13.0	8.5				42	23.4		SAND
0.4	45	430		46	369		16.7	7	0	7.09	6.8	11.2				39	24.3		SAND
0.6	160	690		153	629		17.7	10	0	3.10	15.2	16.5				42	47.8		SILTY SAND
0.8	140	620		136	559		17.7	14	0	3.11	10.0	14.7				40	36.7		SILTY SAND
1.0	110	620		104	559		17.7	17	0	4.36	6.1	15.8				38	32.6		SAND
1.2	150	700		142	639		17.7	21	0	3.49	6.9	17.2				39	37.5		SAND
1.4	115	700		106	639		17.7	24	0	5.05	4.4	18.5				36	32.9		SAND
1.6	220	750		213	689		17.7	28	0	2.23	7.7	16.5				39	37.3		SILTY SAND
1.8	120	500		121	439		17.7	31	0	2.63	3.9	11.0				36	18.2		SILTY SAND
2.0	270	800		263	739		18.6	35	0	1.81	7.6	16.5				39	36.9		SILTY SAND
2.2	320	1000		306	939		18.6	39	0	2.07	7.9	22.0				39	50.2		SILTY SAND
2.4	210	1100		185	1039		18.6	42	0	4.61	4.4	29.6				37	52.9		SAND
2.6	65	350		71	289		16.7	46	0	3.09	1.5	7.6				31	6.6		SILTY SAND
2.8	110	400		115	339		16.7	49	0	1.94	2.3	7.8				33	8.8		SILTY SAND
3.0	40	200		52	139		15.7	53	0	1.68	1.0	3.0				28	2.6		SANDY SILT
3.2	420	1100		406	1039		17.7	54	2	1.57	7.5	22.0				39	48.9		SANDY SILT
3.4	40	240		50	179		16.7	55	4	2.81	0.8	4.5				27	3.8		SILTY SAND
3.6	35	130		50	69		14.7	57	6	0.43	0.8	0.7		< 0.3	<0.8		0.6	4	MUD
3.8	45	160		59	99		15.7	58	8	0.78	0.9	1.4		< 0.3	<0.8		1.2	5	CLAYEY SILT
4.0	110	250		123	189		15.7	59	10	0.59	1.9	2.3		0.52	0.94		2.0	12	SILTY CLAY
4.2	90	290	10	100	229	26	15.7	60	12	1.47	1.5	4.5	0.16			30	3.8		SANDY SILT
4.4	90	310		99	249		15.7	61	14	1.76	1.4	5.2				30	4.4		SANDY SILT
4.6	20	115		35	54		14.7	62	16	0.97	0.3	0.7		< 0.3	<0.8		0.6	1	MUD
4.8	90	340		97	279		16.7	63	18	2.28	1.3	6.3				29	5.4		SILTY SAND
5.0	110	450		113	389		16.7	65	20	2.96	1.4	9.6				30	8.1		SILTY SAND
5.2	35	200		47	139		16.7	66	22	3.69	0.4	3.2					2.7		SAND
5.4	145	460		149	399		17.7	68	24	1.99	1.9	8.7				32	8.0		SILTY SAND
5.6	130	480		132	419		17.7	69	26	2.68	1.5	9.9				31	8.5		SILTY SAND
5.8	120	330		129	269		15.7	71	27	1.37	1.4	4.8				30	4.1		SANDY SILT
6.0	200	600		200	539		17.7	72	29	1.99	2.4	11.8				33	13.6		SILTY SAND
6.2	65	200		78	139		15.7	73	31	1.30	0.6	2.1				25	1.8		SANDY SILT
6.4	40	165	15	54	104	31	16.7	75	33	2.49	0.3	1.7	-0.12				1.5		SILTY SAND
6.6	120	600		116	539		17.7	76	35	5.25	1.1	14.7				28	12.5		SAND
6.8	85	340		92	279		16.7	78	37	3.41	0.7	6.5				26	5.5		SAND
7.0	75	255	20	86	194	36	16.7	79	39	2.32	0.6	3.8	-0.07			25	3.2		SILTY SAND
7.2	420	1600		381	1539		18.6	80	41	3.41	4.2	40.2				36	70.4		SAND
7.4	75	470		75	409		16.7	82	43	10.46	0.4	11.6					9.8		SAND
7.6	27	260		45	199		16.7	83	45			5.3					4.5		SAND
7.8	160	440	14	166	379	30	15.7	85	47	1.79	1.4	7.4	-0.14			30	6.3		SANDY SILT
8.0	150	430		156	369		16.7	86	49	2.00	1.2	7.4				29	6.3		SILTY SAND

DMT N12	LEGEND	INTERPRETED PARAMETERS	GENERAL PARAMETERS
31.8.2015	Z = Depth Below Ground Level Po,P1,P2 = Corrected A,B,C readings	Phi = Safe floor value of Friction Angle Ko = In situ earth press. coeff. M = Constrained modulus (at Sigma')	DeltaA = 12 kPa DeltaB = 70 kPa GammaTop = 17.0 kN/m ³ FactorEd = 34.7
IRGO Consulting d.o.o. Izvo-r d.o.o. Popl. varnost JZ dela LJ,1A, PGD DMT N12	Id = Material Index Ed = Dilatometer Modulus Ud = Pore Press. Index = (P2-Uo)/(Po-Uo) Gamma = Bulk unit weight Sigma' = Effective overb. stress Uo = Pore pressure	Cu = Undrained shear strength Ocr = Overconsolidation ratio (OCR = 'relative OCR'- generally realistic. If accurate independent OCR available, apply suitable factor)	ZMCal = 0.0 kPa ZMAB = 0.0 kPa ZMC = 0.0 kPa Zabs = 0.0 m Zw = 3.0 m

WaterTable at 3.00 m

Reduction formulae according to Marchetti, ASCE Geot.Jnl.Mar. 1980, Vol.109, 299-321; Phi according to TC16 ISSMGE, 2001

Z (m)	A (kPa)	B (kPa)	C (kPa)	Po (kPa)	P1 (kPa)	P2 (kPa)	Gamma (kN/m ³)	Sigma' (kPa)	Uo (kPa)	Id	Kd	Ed (MPa)	Ud	Ko	Ocr	Phi (Deg)	M (MPa)	Cu (kPa)	DMT N12 DESCRIPTION
0.2	32	250		37	180		16.7	3	0	3.84	10.9	5.0				41	12.8		SAND
0.4	160	700		149	630		17.7	7	0	3.23	22.1	16.7				44	54.3		SILTY SAND
0.6	200	720		190	650		17.7	10	0	2.42	18.5	16.0				43	49.2		SILTY SAND
0.8	140	600		133	530		17.7	14	0	2.98	9.6	13.8				40	34.0		SILTY SAND
1.0	120	620		111	550		17.7	17	0	3.95	6.4	15.2				38	32.2		SAND
1.2	285	1100		260	1030		18.6	21	0	2.96	12.5	26.7				41	72.4		SILTY SAND
1.4	230	600		228	530		16.7	25	0	1.33	9.3	10.5				40	25.4		SANDY SILT
1.6	250	750		241	680		18.6	28	0	1.82	8.6	15.2				40	36.0		SILTY SAND
1.8	20	150		30	80		15.7	32	0	1.70	0.9	1.7				28	1.5		SANDY SILT
2.0	25	170		34	100		16.7	35	0	1.95	1.0	2.3				28	2.0		SILTY SAND
2.2	25	130		36	60		14.7	38	0	0.67	0.9	0.8		< 0.3	<0.8		0.7	3	MUD
2.4	10	100		22	30		14.7	41	0	0.39	0.5	0.3		< 0.3	<0.8		0.2	2	MUD
2.6	20	130		31	60		14.7	44	0	0.96	0.7	1.0		< 0.3	<0.8		0.9	3	MUD
2.8	350	1000		334	930		17.7	47	0	1.79	7.1	20.7				39	45.0		SANDY SILT
3.0	200	290		212	220		13.7	50	0	0.04	4.2	0.3		1.0	3.2		0.5	28	MUD AND/OR PEAT
3.2	60	250		67	180		15.7	51	2	1.75	1.3	3.9				29	3.3		SANDY SILT
3.4	230	790		218	720		17.7	52	4	2.34	4.1	17.4				36	29.3		SILTY SAND
3.6	500	1000		491	930		17.7	54	6	0.90	9.0	15.2		1.7	10.4		36.4	78	SILT
3.8	60	220	5	68	150	17	15.7	56	8	1.36	1.1	2.8	0.15			29	2.4		SANDY SILT
4.0	110	410		111	340		16.7	57	10	2.26	1.8	7.9				32	7.3		SILTY SAND
4.2	240	420		247	350		16.7	58	12	0.44	4.0	3.6		0.99	3.0		5.6	31	SILTY CLAY
4.4	180	310		190	240		15.7	60	14	0.29	3.0	1.7		0.77	1.8		2.2	21	CLAY
4.6	170	320		179	250		15.7	61	16	0.44	2.7	2.5		0.71	1.6		2.9	19	SILTY CLAY
4.8	150	370		155	300		15.7	62	18	1.05	2.2	5.0		0.60	1.2		5.0	16	SILT
5.0	178	310	95	188	240	107	15.7	63	20	0.31	2.7	1.8	0.52	0.71	1.6		2.1	20	CLAY
5.2	190	320		200	250		15.7	64	22	0.28	2.8	1.7		0.73	1.7		2.1	21	CLAY
5.4	200	330		210	260		15.7	65	24	0.27	2.8	1.7		0.75	1.7		2.1	22	CLAY
5.6	240	370		250	300		15.7	67	26	0.22	3.4	1.7		0.86	2.3		2.4	28	CLAY
5.8	200	330		210	260		15.7	68	27	0.28	2.7	1.7		0.71	1.6		2.0	22	CLAY
6.0	212	355	140	221	285	152	15.7	69	29	0.33	2.8	2.2	0.64	0.74	1.7		2.6	23	SILTY CLAY
6.2	170	300		180	230		15.7	70	31	0.34	2.1	1.7		0.57	1.1		1.6	17	SILTY CLAY
6.4	75	470		71	400		16.7	71	33	8.65	0.5	11.4				24	9.7		SAND
6.6	50	180		60	110		16.7	73	35	2.08	0.3	1.7					1.5		SILTY SAND
6.8	60	270		66	200		16.7	74	37	4.75	0.4	4.7					4.0		SAND
7.0	235	800	5	223	730	17	17.7	75	39	2.76	2.4	17.6	-0.12			33	22.0		SILTY SAND
7.2	490	1200		471	1130		17.7	77	41	1.54	5.6	22.9				38	44.3		SANDY SILT
7.4	600	1700		561	1630		19.6	79	43	2.06	6.6	37.1				39	78.4		SILTY SAND
7.6	750	2000		704	1930		19.6	81	45	1.86	8.2	42.6				40	98.3		SILTY SAND
7.8	700	1820	95	660	1750	107	19.1	82	47	1.78	7.4	37.8	0.10			39	83.9		SANDY SILT
8.0	730	1900		688	1830		19.1	84	49	1.79	7.6	39.6				39	88.7		SANDY SILT

Priloga 2

Grafični prikaz in obdelava rezultatov meritev modula stilsjivosti

