



Recommended Pile Capacity

Project: Geo-technical investigation pertaining to associated civil works for retrofitting of ESPs for ESP R & M 4X210 MW (U#1,2,3&4) Kahalgaon STPP, NTPC, Bhagalpur, Bihar.

Location: Kahalgaon STPP, NTPC, Bhagalpur, Bihar.

Sl.No	Pile Dia , D	Pile-Depth of termination wrt FGL	Skin friction from layer 1	Skin friction from layer 2	Skin friction from layer 3	Skin friction from layer 4	End Bearing	Total	F.O.S	Allowable Pile Capacity	Recommended Pile Capacity in Compression	Recommended Pile Capacity in Pull-Out	Recommended Pile Capacity in Horizontal Shear
	m	m	T	T	T	T	T	T		T	T	T	T
1	0.600	29.000	65.023	59.376	68.612	33.929	38.170	265.111	2.5	106.045	106	49	5.89
2	0.760	29.000	82.363	75.210	86.909	42.977	61.242	348.701	2.5	139.480	139	63	8.25



ESP UNIT AREA

Total fourteen (14) boreholes were sunk in this area, viz borehole marked BH-1, BH-2, BH-3 BH-4, BH-5, BH-6, BH-7, BH-8, BH-9, BH-13, BH-14, BH-19, BH-20 & BH-22. From the general sub soil profile it has been observed that the top soil is filled up followed by the first layer (i.e. Layer-I) consisting medium to stiff brownish grey clayey silt/ silty clay. The second layer (i.e. Layer-II) is very stiff to hard brownish grey clayey silt/ silty clay with traces of kankar and continues up to the explored depth.

Discussion and Recommendation:

From the general profile of the subsoil it has been observed that the maximum thickness of top layer is 18.5m and minimum thickness is 10.00m. For lightly to medium loaded structures, shallow foundation has been proposed to rest in layer-I i.e. medium to stiff brownish grey clayey silt/ silty clay. Table-2A may be referred for adopting safe bearing capacity.

Table 2A
Recommended Bearing Capacity from Shear and Settlement Criteria

Depth of Foundation below NGL (Mtr)	Net Allowable Bearing Pressure (T/Sqm)		
	Isolated / Strip for a permissible settlement of 40 mm		Rafts (width > & = 6m) for a permissible settlement of 75mm
	width upto 3.0m	width >3 & < 6m	
2.50	8.00	5.00	6.00
3.00	9.00	5.00	6.00
4.00	10.00	5.00	6.00
5.00	12.00	6.00	7.00



Pile foundation has also been recommended for foundation system of heavily loaded structures. Pile capacities in compression, pull-out and horizontal shear for different diameter of pile are indicated in the Table-2B. It is further recommended to check the Settlement of the pile groups during design of structure and carry out initial pile load test for load under compression, pull-out and horizontal shear, in order to confirm the recommended pile capacities and to take corrective measures, if required.

Table-2B
Recommended Pile Capacity

Sl.No	Pile Dia , D	Total Length of Pile, L	Cut-off Level	Recommended Pile Capacity in Compression	Recommended Pile Capacity in Pull-Out	Recommended Pile Capacity in Horizontal Shear
	Mtr	Mtr.	Mtr.	T	T	T
1	0.600	29.000	2.000	109	45	6.55
2	0.760	29.000	2.000	146	57	8.88

Recommended pile capacity in pull-out for 600mm dia pile has been restricted up to 20T as per the technical specification.



BORE LOG SHEET		Centre for Advanced Engineering				Bore Hole No.: BH-1 (Sheet 1)	
Project: SOIL_BHEL_NTPC-KAHALGAON_ESP UNIT AREA						Job No.: Soil - 1582	
Co-ord: E= 3036.20, S= 2041.00		E.G.L.: 33.02		Unit:		Bore Hole Dia. : 150 MM.	
Type of Boring	Shell & Auger	FIELDTEST	NOS.	SAMPLES	NOS.	SAMPLES	NOS.
Depth of Boring	40.000 M.	SPT	21	UDS	8	WS	
Type of Drilling		DCPT		DS	24	RCS	
Depth of Drilling		VST		SCPT			
						Commenced on : 17.03.2018	
						Completed on : 18.03.2018	
						Water Struck At : 1.60 M.	
						Standing Water Table : 1.55 M.	

D E S C R I P T I O N	SYMBOL	DEPTH	N-V A L U E	S A M P L E	
				NO.	DEPTH
Filled up soil with clayey silt, fly ash, sand, brick bats etc.		01		DS1	0.50 M
		02		DS2	1.00M
Medium to stiff brownish grey clayey silt/ silty clay.		03		DS3	1.50M
		04	N = 5	UDS1	2.00-2.45M
		05		SPT1	3.00-3.45M
		06		DS4	3.00-3.45M
		07	N = 8	UDS2	4.00-4.45M
		08		SPT2	5.00-5.45M
		09		DS5	5.00-5.45M
		10	N = 7	UDS3	6.00-6.45M
		11		SPT3	7.00-7.45M
		12		DS6	7.00-7.45M
		13	N = 10	UDS4	8.00-8.45M
		14		SPT4	9.00-9.45M
		15		DS7	9.00-9.45M
		16	N = 13	UDS5	10.00-10.45M
		17		SPT5	11.50-11.95M
		18		DS8	11.50-11.95M
		19	N = 15	UDS6	13.00-13.45M
		20		SPT6	14.50-14.95M
		21		DS9	14.50-14.95M
		22	N = 23	UDS7	16.00-16.45M
		23		SPT7	17.50-17.95M
		24		DS10	17.50-17.95M
		25	N = 24	UDS8	19.00-19.45M
		26		SPT8	20.50-20.95M
		27		DS11	20.50-20.95M
		28	N = 25	SPT9	22.00-22.45M
		29		DS12	22.00-22.45M
		30		SPT10	23.50-23.95M
		31		DS13	23.50-23.95M

SPT - Standard Penetration Test	VST- Vane Shear Test	DS - Disturbed Sample	WS - Water Sample
DCPT - Dynamic Cone Penetration Test.	UDS - Undisturbed Sample	SCPT-Static Cone Penetration Test.	RCS - Rock Core Sample



BORE LOG SHEET		Centre for Advanced Engineering						Bore Hole No.:BH-1 (Sheet 2)	
								Job No.: Soil - 1582	
Project: SOIL_BHEL_NTPC-KAHALGAON_ESP UNIT AREA									
Co-ord: E= 3036.20, S= 2041.00		E.G.L.: 33.02		Unit:				Bore Hole Dia. :150 MM.	
Type of Boring	Shell & Auger	FIELDTEST	NOS.	SAMPLES	NOS.	SAMPLES	NOS.	Commenced on : 17.03.2018	
Depth of Boring	40.000 M.	SPT	21	UDS	8	WS		Completed on : 18.03.2018	
Type of Drilling		DCPT		DS	24	RCS		Water Struck At :1.60 M.	
Depth of Drilling		VST		SCPT				Standing Water Table : 1.55 M.	

DESCRIPTION	SYMBOL	DEPTH	N-V A L U E	S A M P L E	
				NO.	DEPTH
Very stiff to hard brownish grey clayey silt/ silty clay with traces of kankar.		26	N = 28	SPT11	25.00-25.45M
				DS14	25.00-25.45M
		27	N = 30	SPT12	26.50-26.95M
				DS15	26.50-26.95M
		28	N = 32	SPT13	28.00-28.45M
				DS16	28.00-28.45M
		29			
		30	N = 35	SPT14	29.50-29.95M
				DS17	29.50-29.95M
		31	N = 35	SPT15	31.00-31.45M
				DS18	31.00-31.45M
		32			
Very dense yellowish grey silty sand.		33	N = 39	SPT16	32.50-32.95M
				DS19	32.50-32.95M
		34	N = 41	SPT17	34.00-34.45M
				DS20	34.00-34.45M
		35			
		36	N = 44	SPT18	35.50-35.95M
				DS21	35.50-35.95M
		37	N = 48	SPT19	37.00-37.45M
				DS22	37.00-37.45M
		38			
		39	N = 52	SPT20	38.50-38.95M
				DS23	38.50-38.95M
Termination Depth 40.000 Mtr.		40	N = 56	SPT21	39.55-40.00M
				DS24	39.55-40.00M
		41			
		42			
		43			
		44			
		45			
		46			
		47			
		48			
		49			

SPT - Standard Penetration Test	VST- Vane Shear Test	DS - Disturbed Sample	WS - Water Sample
DCPT - Dynamic Cone Penetration Test.	UDS - Undisturbed Sample	SCPT-Static Cone Penetration Test.	RCS - Rock Core Sample



BORE LOG SHEET		Centre for Advanced Engineering						Bore Hole No.:BH-2 (Sheet 1)
Project: SOIL_BHEL_NTPC-KAHALGAON_ESP AREA								Job No.: Soil - 1582
Co-ord: E= 3025.00, S= 2061.00		E.G.L.: 33.02		Unit:				Bore Hole Dia. :150 MM.
Type of Boring	Shell & Auger	FIELDTEST	NOS.	SAMPLES	NOS.	SAMPLES	NOS.	Commenced on : 20.03.2018
Depth of Boring	40.000 M.	SPT	21	UDS	8	WS		Completed on : 21.03.2018
Type of Drilling		DCPT		DS	24	RCS		Water Struck At :1.20 M.
Depth of Drilling		VST		SCPT				Standing Water Table : 1.10 M.

D E S C R I P T I O N	SYMBOL	DEPTH	N-V A L U E	S A M P L E	
				NO.	DEPTH
Filled up soil with clayey silt, fly ash, sand, brick bats etc.		01	G.W.T.	DS1	0.50 M
				DS2	1.00M
Medium to stiff brownish grey clayey silt/ silty clay.		02		DS3	1.50M
				UDS1	2.00-2.45M
		03	N = 5	SPT1	3.00-3.45M
				DS4	3.00-3.45M
		04		UDS2	4.00-4.45M
		05	N = 7	SPT2	5.00-5.45M
				DS5	5.00-5.45M
		06		UDS3	6.00-6.45M
		07	N = 10	SPT3	7.00-7.45M
				DS6	7.00-7.45M
		08		UDS4	8.00-8.45M
		09	N = 11	SPT4	9.00-9.45M
				DS7	9.00-9.45M
		10		UDS5	10.00-10.45M
		11			
		12	N = 14	SPT5	11.50-11.95M
				DS8	11.50-11.95M
		13		UDS6	13.00-13.45M
		14			
		15	N = 16	SPT6	14.50-14.95M
				DS9	14.50-14.95M
		16		UDS7	16.00-16.45M
		17			
Very stiff to hard brownish grey clayey silt/ silty clay with traces of kankar.		18	N = 18	SPT7	17.50-17.95M
				DS10	17.50-17.95M
		19		UDS8	19.00-19.45M
		20			
		21	N = 21	SPT8	20.50-20.95M
				DS11	20.50-20.95M
		22	N = 22	SPT9	22.00-22.45M
				DS12	22.00-22.45M
		23			
		24	N = 25	SPT10	23.50-23.95M
				DS13	23.50-23.95M
Contd.....					

SPT - Standard Penetration Test	VST- Vane Shear Test	DS - Disturbed Sample	WS - Water Sample
DCPT - Dynamic Cone Penetration Test.	UDS - Undisturbed Sample	SCPT-Static Cone Penetration Test.	RCS - Rock Core Sample



BORE LOG SHEET		Centre for Advanced Engineering				Bore Hole No.:BH-2 (Sheet 2)	
Project: SOIL_BHEL_NTPC-KAHALGAON_ESP AREA						Job No.: Soil - 1582	
Co-ord: E= 3025.00, S= 2061.00		E.G.L.: 33.02		Unit:		Bore Hole Dia. :150 MM.	
Type of Boring	Shell & Auger	FIELDTEST	NOS.	SAMPLES	NOS.	Commenced on : 20.03.2018	
Depth of Boring	40.000 M.	SPT	21	UDS	8	Completed on : 21.03.2018	
Type of Drilling		DCPT		DS	24	Water Struck At : 1.20 M.	
Depth of Drilling		VST		SCPT		Standing Water Table : 1.10 M.	

D E S C R I P T I O N	SYMBOL	DEPTH	N-V A L U E	S A M P L E	
				NO.	DEPTH
Very stiff to hard brownish grey clayey silt/ silty clay with traces of kankar.			N = 30	SPT11	25.00-25.45M
				DS14	25.00-25.45M
			N = 32	SPT12	26.50-26.95M
				DS15	26.50-26.95M
			N = 36	SPT13	28.00-28.45M
				DS16	28.00-28.45M
			N = 38	SPT14	29.50-29.95M
				DS17	29.50-29.95M
			N = 38	SPT15	31.00-31.45M
				DS18	31.00-31.45M
			N = 36	SPT16	32.50-32.95M
				DS19	32.50-32.95M
			N = 42	SPT17	34.00-34.45M
				DS20	34.00-34.45M
			N = 41	SPT18	35.50-35.95M
				DS21	35.50-35.95M
N = 44	SPT19	37.00-37.45M			
	DS22	37.00-37.45M			
N = 49	SPT20	38.50-38.95M			
Very dense yellowish grey silty sand.			N = 51	DS23	38.50-38.95M
				SPT21	39.55-40.00M
Termination Depth 40.000 Mtr.				DS24	39.55-40.00M

SPT - Standard Penetration Test	VST- Vane Shear Test	DS - Disturbed Sample	WS - Water Sample
DCPT - Dynamic Cone Penetration Test.	UDS - Undisturbed Sample	SCPT-Static Cone Penetration Test.	RCS - Rock Core Sample



BORE LOG SHEET		Centre for Advanced Engineering						Bore Hole No.: BH-3 (Sheet 1)	
Project: SOIL_BHEL_NTPC-KAHALGAON_ESP AREA								Job No.: Soil - 1582	
Co-ord: E= 3157.50, S= 2048.55		E.G.L.: 33.41		Unit:		Bore Hole Dia. : 150 MM.			
Type of Boring	Shell & Auger	FIELDTEST	NOS.	SAMPLES	NOS.	SAMPLES	NOS.	Commenced on : 31.03.2018	
Depth of Boring	40.000 M.	SPT	21	UDS	8	WS		Completed on : 02.04.2018	
Type of Drilling		DCPT		DS	24	RCS		Water Struck At : 0.65 M.	
Depth of Drilling		VST		SCPT				Standing Water Table : 0.60 M.	

D E S C R I P T I O N	SYMBOL	DEPTH	N-V A L U E	S A M P L E	
				NO.	DEPTH
Filled up soil with clayey silt, sand, brick bats etc.		01		DS1	0.50 M
Medium to stiff brownish grey clayey silt/ silty clay.		02		DS2	1.00M
		03		DS3	1.50M
		04		UDS1	2.00-2.45M
		05	N = 6	SPT1	3.00-3.45M
		06		DS4	3.00-3.45M
		07		UDS2	4.00-4.45M
		08	N = 8	SPT2	5.00-5.45M
		09		DS5	5.00-5.45M
		10		UDS3	6.00-6.45M
		11	N = 11	SPT3	7.00-7.45M
			DS6	7.00-7.45M	
			UDS4	8.00-8.45M	
		N = 14	SPT4	9.00-9.45M	
			DS7	9.00-9.45M	
			UDS5	10.00-10.45M	
Very stiff to hard brownish/ yellowish grey clayey silt/ silty clay with traces of kankar.		12	N = 16	SPT5	11.50-11.95M
		13		DS8	11.50-11.95M
		14		UDS6	13.00-13.45M
		15	N = 20	SPT6	14.50-14.95M
		16		DS9	14.50-14.95M
		17		UDS7	16.00-16.45M
		18	N = 22	SPT7	17.50-17.95M
		19		DS10	17.50-17.95M
		20		UDS8	19.00-19.45M
		21	N = 25	SPT8	20.50-20.95M
			DS11	20.50-20.95M	
		N = 29	SPT9	22.00-22.45M	
			DS12	22.00-22.45M	
		N = 33	SPT10	23.50-23.95M	
			DS13	23.50-23.95M	
Contd.....					

SPT - Standard Penetration Test	VST- Vane Shear Test	DS - Disturbed Sample	WS - Water Sample
DCPT - Dynamic Cone Penetration Test.	UDS - Undisturbed Sample	SCPT-Static Cone Penetration Test.	RCS - Rock Core Sample



BORE LOG SHEET		Centre for Advanced Engineering						Bore Hole No.:BH-3 (Sheet 2)	
								Job No.: Soil - 1582	
Project: SOIL_BHEL_NTPC-KAHALGAON_ESP AREA									
Co-ord: E= 3157.50, S= 2048.55		E.G.L.: 33.41		Unit:				Bore Hole Dia. :150 MM.	
Type of Boring	Shell & Auger	FIELDTEST	NOS.	SAMPLES	NOS.	SAMPLES	NOS.	Commenced on : 31.03.2018	
Depth of Boring	40.000 M.	SPT	21	UDS	8	WS		Completed on : 02.04.2018	
Type of Drilling		DCPT		DS	24	RCS		Water Struck At :0.65 M.	
Depth of Drilling		VST		SCPT				Standing Water Table : 0.60 M.	

D E S C R I P T I O N	SYMBOL	DEPTH	N-V A L U E	S A M P L E	
				NO.	DEPTH
Very stiff to hard brownish/ yellowish grey clayey silt/ silty clay with traces of kankar.		26	N = 36	SPT11	25.00-25.45M
				DS14	25.00-25.45M
		27	N = 39	SPT12	26.50-26.95M
				DS15	26.50-26.95M
		28	N = 42	SPT13	28.00-28.45M
				DS16	28.00-28.45M
		29			
		30	N = 45	SPT14	29.50-29.95M
				DS17	29.50-29.95M
		31	N = 48	SPT15	31.00-31.45M
				DS18	31.00-31.45M
		32			
		33	N = 51	SPT16	32.50-32.95M
				DS19	32.50-32.95M
		34	N = 53	SPT17	34.00-34.45M
				DS20	34.00-34.45M
		35			
		36	N = 57	SPT18	35.50-35.95M
				DS21	35.50-35.95M
		37	N = 59	SPT19	37.00-37.45M
				DS22	37.00-37.45M
		38			
		39	N = 63	SPT20	38.50-38.95M
				DS23	38.50-38.95M
		40	N = 65	SPT21	39.55-40.00M
Termination Depth 40.000 Mtr.				DS24	39.55-40.00M
		41			
		42			
		43			
		44			
		45			
		46			
		47			
		48			
		49			

SPT - Standard Penetration Test	VST- Vane Shear Test	DS - Disturbed Sample	WS - Water Sample
DCPT - Dynamic Cone Penetration Test.	UDS - Undisturbed Sample	SCPT-Static Cone Penetration Test.	RCS - Rock Core Sample



BORE LOG SHEET		Centre for Advanced Engineering						Bore Hole No.:BH-4 (Sheet 1)
Project: SOIL_BHEL_NTPC-KAHALGAON_ESP AREA								Job No.: Soil - 1582
Co-ord: E= 3158.00, S= 2691.10		E.G.L.: 33.41		Unit:				Bore Hole Dia. :150 MM.
Type of Boring	Shell & Auger	FIELDTEST	NOS.	SAMPLES	NOS.	SAMPLES	NOS	Commenced on : 30.03.2018
Depth of Boring	40.000 M.	SPT	21	UDS	8	WS		Completed on : 31.03.2018
Type of Drilling		DCPT		DS	24	RCS		Water Struck At : 0.60 M.
Depth of Drilling		VST		SCPT				Standing Water Table : 0.65 M.

D E S C R I P T I O N	SYMBOL	DEPTH	N-V A L U E	S A M P L E	
				NO.	DEPTH
Filled up soil with clayey silt, sand, brick bats etc.		01		DS1	0.50 M
Medium to stiff brownish grey clayey silt/ silty clay.		02		DS2	1.00M
		03		DS3	1.50M
		04		UDS1	2.00-2.45M
		05	N = 5	SPT1	3.00-3.45M
		06		DS4	3.00-3.45M
		07		UDS2	4.00-4.45M
		08	N = 7	SPT2	5.00-5.45M
		09		DS5	5.00-5.45M
		10		UDS3	6.00-6.45M
		11	N = 12	SPT3	7.00-7.45M
Very stiff to hard brownish grey clayey silt/ silty clay with traces of kankar.		12		DS6	7.00-7.45M
		13		UDS4	8.00-8.45M
		14	N = 16	SPT4	9.00-9.45M
		15		DS7	9.00-9.45M
		16		UDS5	10.00-10.45M
		17	N = 18	SPT5	11.50-11.95M
		18		DS8	11.50-11.95M
		19		UDS6	13.00-13.45M
		20	N = 22	SPT6	14.50-14.95M
		21		DS9	14.50-14.95M
Contd.....		22		UDS7	16.00-16.45M
		23	N = 26	SPT7	17.50-17.95M
		24		DS10	17.50-17.95M
		25		UDS8	19.00-19.45M
		26	N = 28	SPT8	20.50-20.95M
		27		DS11	20.50-20.95M
		28	N = 31	SPT9	22.00-22.45M
		29		DS12	22.00-22.45M
		30	N = 33	SPT10	23.50-23.95M
		31		DS13	23.50-23.95M

SPT - Standard Penetration Test	VST- Vane Shear Test	DS - Disturbed Sample	WS - Water Sample
DCPT - Dynamic Cone Penetration Test.	UDS - Undisturbed Sample	SCPT-Static Cone Penetration Test.	RCS - Rock Core Sample



BORE LOG SHEET		Centre for Advanced Engineering				Bore Hole No.:BH-5 (Sheet 1)	
Project: SOIL_BHEL_NTPC-KAHALGAON_ESP AREA						Job No.: Soil - 1582	
Co-ord: E= 3217.55, S= 2041.00		E.G.L.: 33.43		Unit:		Bore Hole Dia. :150 MM.	
Type of Boring	Shell & Auger	FIELDTEST	NOS.	SAMPLES	NOS.	SAMPLES	NOS.
Depth of Boring	40.000 M.	SPT	21	UDS	8	WS	
Type of Drilling		DCPT		DS	24	RCS	
Depth of Drilling		VST		SCPT			
						Commenced on : 27.03.2018	
						Completed on : 29.03.2018	
						Water Struck At : 0.80 M.	
						Standing Water Table : 0.79 M.	

D E S C R I P T I O N	SYMBOL	DEPTH	N-V A L U E	S A M P L E	
				NO.	DEPTH
Filled up soil with clayey silt, sand, rubbish etc.		01		DS1	0.50 M
Medium to stiff brownish grey clayey silt/ silty clay.		02		DS2	1.00M
		03		DS3	1.50M
		04		UDS1	2.00-2.45M
		05	N = 7	SPT1	3.00-3.45M
		06		DS4	3.00-3.45M
		07		UDS2	4.00-4.45M
		08	N = 10	SPT2	5.00-5.45M
		09		DS5	5.00-5.45M
		10		UDS3	6.00-6.45M
		11	N = 13	SPT3	7.00-7.45M
Very stiff to hard brownish/ yellowish grey clayey silt/ silty clay with traces of kankar.	12		DS6	7.00-7.45M	
	13		UDS4	8.00-8.45M	
	14	N = 15	SPT4	9.00-9.45M	
	15		DS7	9.00-9.45M	
	16		UDS5	10.00-10.45M	
	17	N = 17	SPT5	11.50-11.95M	
	18		DS8	11.50-11.95M	
	19		UDS6	13.00-13.45M	
	20	N = 21	SPT6	14.50-14.95M	
	21		DS9	14.50-14.95M	
	22		UDS7	16.00-16.45M	
	23	N = 25	SPT7	17.50-17.95M	
	24		DS10	17.50-17.95M	
Contd.....	25		UDS8	19.00-19.45M	
	26	N = 26	SPT8	20.50-20.95M	
	27		DS11	20.50-20.95M	
	28	N = 28	SPT9	22.00-22.45M	
		DS12	22.00-22.45M		
	N = 30	SPT10	23.50-23.95M		
		DS13	23.50-23.95M		

SPT - Standard Penetration Test	VST- Vane Shear Test	DS - Disturbed Sample	WS - Water Sample
DCPT - Dynamic Cone Penetration Test.	UDS - Undisturbed Sample	SCPT-Static Cone Penetration Test.	RCS - Rock Core Sample



BORE LOG SHEET		Centre for Advanced Engineering						Bore Hole No.:BH-5 (Sheet 2)
								Job No.: Soil - 1582
Project: SOIL_BHEL_NTPC-KAHALGAON_ESP AREA								
Co-ord: E= 3217.55, S= 2041.00		E.G.L.: 33.43		Unit:			Bore Hole Dia. :150 MM.	
Type of Boring	Shell & Auger	FIELDTEST	NOS.	SAMPLES	NOS.	SAMPLES	NOS.	Commenced on : 27.03.2018
Depth of Boring	40.000 M.	SPT	21	UDS	8	WS		Completed on : 29.03.2018
Type of Drilling		DCPT		DS	24	RCS		Water Struck At :0.80 M.
Depth of Drilling		VST		SCPT				Standing Water Table : 0.79 M.

D E S C R I P T I O N	SYMBOL	DEPTH	N-V A L U E	S A M P L E	
				NO.	DEPTH
Very stiff to hard brownish/ yellowish grey clayey silt/ silty clay with traces of kankar.		26	N = 31	SPT11	25.00-25.45M
				DS14	25.00-25.45M
		27	N = 34	SPT12	26.50-26.95M
				DS15	26.50-26.95M
		28	N = 36	SPT13	28.00-28.45M
				DS16	28.00-28.45M
		29			
		30	N = 39	SPT14	29.50-29.95M
				DS17	29.50-29.95M
		31	N = 42	SPT15	31.00-31.45M
				DS18	31.00-31.45M
		32			
Termination Depth 40.000 Mtr.		33	N = 44	SPT16	32.50-32.95M
				DS19	32.50-32.95M
		34	N = 47	SPT17	34.00-34.45M
				DS20	34.00-34.45M
		35			
		36	N = 49	SPT18	35.50-35.95M
				DS21	35.50-35.95M
		37	N = 53	SPT19	37.00-37.45M
				DS22	37.00-37.45M
		38			
		39	N = 60	SPT20	38.50-38.95M
				DS23	38.50-38.95M
		40	N = 67	SPT21	39.55-40.00M
				DS24	39.55-40.00M
		41			
		42			
		43			
		44			
		45			
		46			
		47			
		48			
		49			

SPT - Standard Penetration Test	VST- Vane Shear Test	DS - Disturbed Sample	WS - Water Sample
DCPT - Dynamic Cone Penetration Test.	UDS - Undisturbed Sample	SCPT-Static Cone Penetration Test.	RCS - Rock Core Sample



BORE LOG SHEET		Centre for Advanced Engineering				Bore Hole No.:BH-6 (Sheet 1)	
Project: SOIL_BHEL_NTPC-KAHALGAON_ESP AREA						Job No.: Soil - 1582	
Co-ord: E= 3218.00, S= 2066.90		E.G.L.: 33.43		Unit:		Bore Hole Dia. :150 MM.	
Type of Boring	Shell & Auger	FIELDTEST	NOS.	SAMPLES	NOS.	SAMPLES	NOS.
Depth of Boring	40.000 M.	SPT	21	UDS	8	WS	
Type of Drilling		DCPT		DS	24	RCS	
Depth of Drilling		VST		SCPT			
						Commenced on : 25.03.2018	
						Completed on : 27.03.2018	
						Water Struck At : 0.80 M.	
						Standing Water Table : 0.83 M.	

D E S C R I P T I O N	SYMBOL	DEPTH	N-V A L U E	S A M P L E	
				NO.	DEPTH
Filled up soil with clayey silt, sand, rubbish etc.		01		DS1	0.50 M
Medium to stiff brownish grey clayey silt/ silty clay.		02		DS2	1.00M
		03		DS3	1.50M
		04		UDS1	2.00-2.45M
		05	N = 5	SPT1	3.00-3.45M
		06		DS4	3.00-3.45M
		07		UDS2	4.00-4.45M
		08	N = 7	SPT2	5.00-5.45M
		09		DS5	5.00-5.45M
		10		UDS3	6.00-6.45M
		11	N = 10	SPT3	7.00-7.45M
		12		DS6	7.00-7.45M
		13		UDS4	8.00-8.45M
		14	N = 12	SPT4	9.00-9.45M
		15		DS7	9.00-9.45M
Very stiff to hard brownish grey clayey silt/ silty clay with traces of kankar.		16		UDS5	10.00-10.45M
		17	N = 15	SPT5	11.50-11.95M
		18		DS8	11.50-11.95M
		19		UDS6	13.00-13.45M
		20	N = 17	SPT6	14.50-14.95M
		21		DS9	14.50-14.95M
		22		UDS7	16.00-16.45M
		23	N = 22	SPT7	17.50-17.95M
		24		DS10	17.50-17.95M
		25		UDS8	19.00-19.45M
Contd.....		26	N = 21	SPT8	20.50-20.95M
		27		DS11	20.50-20.95M
		28	N = 24	SPT9	22.00-22.45M
		29		DS12	22.00-22.45M
		30	N = 28	SPT10	23.50-23.95M
				DS13	23.50-23.95M

SPT - Standard Penetration Test	VST- Vane Shear Test	DS - Disturbed Sample	WS - Water Sample
DCPT - Dynamic Cone Penetration Test.	UDS - Undisturbed Sample	SCPT-Static Cone Penetration Test.	RCS - Rock Core Sample



BORE LOG SHEET		Centre for Advanced Engineering				Bore Hole No.: BH-6 (Sheet 2)	
Project: SOIL_BHEL_NTPC-KAHALGAON_ESP AREA						Job No.: Soil - 1582	
Co-ord: E= 3218.00, S= 2066.90		E.G.L.: 33.43		Unit:		Bore Hole Dia. :150 MM.	
Type of Boring	Shell & Auger	FIELDTEST	NOS.	SAMPLES	NOS.	SAMPLES	NOS.
Depth of Boring	40.000 M.	SPT	21	UDS	8	WS	
Type of Drilling		DCPT		DS	24	RCS	
Depth of Drilling		VST		SCPT			
						Commenced on : 25.03.2018	
						Completed on : 27.03.2018	
						Water Struck At : 0.80 M.	
						Standing Water Table : 0.83 M.	

D E S C R I P T I O N	SYMBOL	DEPTH	N-V A L U E	S A M P L E	
				NO.	DEPTH
Very stiff to hard brownish grey clayey silt/ silty clay with traces of kankar.		26	N = 30	SPT11	25.00-25.45M
				DS14	25.00-25.45M
		27	N = 32	SPT12	26.50-26.95M
				DS15	26.50-26.95M
		28	N = 35	SPT13	28.00-28.45M
				DS16	28.00-28.45M
		29			
		30	N = 38	SPT14	29.50-29.95M
				DS17	29.50-29.95M
		31	N = 38	SPT15	31.00-31.45M
				DS18	31.00-31.45M
		32			
		33	N = 40	SPT16	32.50-32.95M
				DS19	32.50-32.95M
		34	N = 47	SPT17	34.00-34.45M
				DS20	34.00-34.45M
	35				
	36	N = 51	SPT18	35.50-35.95M	
			DS21	35.50-35.95M	
	37	N = 54	SPT19	37.00-37.45M	
			DS22	37.00-37.45M	
	38				
	39	N = 57	SPT20	38.50-38.95M	
			DS23	38.50-38.95M	
	40	N = 61	SPT21	39.55-40.00M	
Termination Depth 40.000 Mtr.				DS24	39.55-40.00M
		41			
		42			
		43			
		44			
		45			
		46			
		47			
		48			
		49			

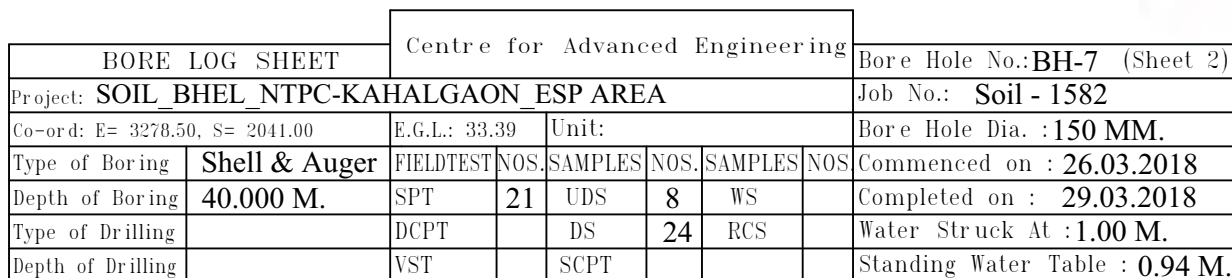
SPT - Standard Penetration Test	VST- Vane Shear Test	DS - Disturbed Sample	WS - Water Sample
DCPT - Dynamic Cone Penetration Test.	UDS - Undisturbed Sample	SCPT-Static Cone Penetration Test.	RCS - Rock Core Sample



BORE LOG SHEET		Centre for Advanced Engineering				Bore Hole No.: BH-7 (Sheet 1)	
Project: SOIL BHEL NTPC-KAHALGAON ESP AREA						Job No.: Soil - 1582	
Co-ord: E= 3278.50, S= 2041.00		E.G.L.: 33.39		Unit:		Bore Hole Dia. : 150 MM.	
Type of Boring	Shell & Auger	FIELDTEST	NOS.	SAMPLES	NOS.	SAMPLES	NOS.
Depth of Boring	40.000 M.	SPT	21	UDS	8	WS	
Type of Drilling		DCPT		DS	24	RCS	
Depth of Drilling		VST		SCPT			
						Commenced on : 26.03.2018	
						Completed on : 29.03.2018	
						Water Struck At : 1.00 M.	
						Standing Water Table : 0.94 M.	

D E S C R I P T I O N	SYMBOL	DEPTH	N-V A L U E	S A M P L E	
				NO.	DEPTH
Filled up soil with clayey silt, sand, rubbish etc.		01		DS1	0.50 M
Medium to stiff brownish grey clayey silt/ silty clay.		02		DS2	1.00M
		03		DS3	1.50M
		04	N = 6	UDS1	2.00-2.45M
		05		SPT1	3.00-3.45M
		06		DS4	3.00-3.45M
		07	N = 5	UDS2	4.00-4.45M
		08		SPT2	5.00-5.45M
		09		DS5	5.00-5.45M
		10		UDS3	6.00-6.45M
		11	N = 7	SPT3	7.00-7.45M
		12		DS6	7.00-7.45M
		13		UDS4	8.00-8.45M
		14	N = 9	SPT4	9.00-9.45M
		15		DS7	9.00-9.45M
		16		UDS5	10.00-10.45M
		17	N = 11	SPT5	11.50-11.95M
		18		DS8	11.50-11.95M
		19		UDS6	13.00-13.45M
Very stiff to hard brownish grey clayey silt/ silty clay with traces of kankar.	20	N = 13	SPT6	14.50-14.95M	
	21		DS9	14.50-14.95M	
	22		UDS7	16.00-16.45M	
	23	N = 16	SPT7	17.50-17.95M	
	24		DS10	17.50-17.95M	
	25		UDS8	19.00-19.45M	
Contd.....	26	N = 21	SPT8	20.50-20.95M	
	27		DS11	20.50-20.95M	
	28	N = 24	SPT9	22.00-22.45M	
			DS12	22.00-22.45M	
	N = 27	SPT10	23.50-23.95M		
		DS13	23.50-23.95M		

SPT - Standard Penetration Test	VST- Vane Shear Test	DS - Disturbed Sample	WS - Water Sample
DCPT - Dynamic Cone Penetration Test.	UDS - Undisturbed Sample	SCPT-Static Cone Penetration Test.	RCS - Rock Core Sample



SPT - Standard Penetration Test	VST- Vane Shear Test	DS - Disturbed Sample	WS - Water Sample
DCPT - Dynamic Cone Penetration Test.	UDS - Undisturbed Sample	SCPT-Static Cone Penetration Test.	RCS - Rock Core Sample



BORE LOG SHEET		Centre for Advanced Engineering				Bore Hole No.:BH-8 (Sheet 1)	
Project: SOIL_BHEL_NTPC-KAHALGAON_ESP AREA						Job No.: Soil - 1582	
Co-ord: E= 3279.00, S= 2061.00		E.G.L.: 33.39		Unit:		Bore Hole Dia. :150 MM.	
Type of Boring	Shell & Auger	FIELDTEST	NOS.	SAMPLES	NOS.	SAMPLES	NOS.
Depth of Boring	40.000 M.	SPT	21	UDS	8	WS	
Type of Drilling		DCPT		DS	24	RCS	
Depth of Drilling		VST		SCPT			
						Commenced on : 24.03.2018	
						Completed on : 26.03.2018	
						Water Struck At : 1.00 M.	
						Standing Water Table : 0.95 M.	

D E S C R I P T I O N	SYMBOL	DEPTH	N-V A L U E	S A M P L E	
				NO.	DEPTH
Filled up soil with clayey silt, sand, rubbish etc.		01		DS1	0.50 M
				DS2	1.00M
Medium to stiff brownish grey clayey silt/ silty clay.		02		DS3	1.50M
		03	N = 4	UDS1	2.00-2.45M
		04		SPT1	3.00-3.45M
		05		DS4	3.00-3.45M
		06	N = 7	UDS2	4.00-4.45M
		07		SPT2	5.00-5.45M
		08		DS5	5.00-5.45M
		09	N = 8	UDS3	6.00-6.45M
		10		SPT3	7.00-7.45M
		11		DS6	7.00-7.45M
		12	N = 10	UDS4	8.00-8.45M
		13		SPT4	9.00-9.45M
		14		DS7	9.00-9.45M
		15	N = 13	UDS5	10.00-10.45M
		16		SPT5	11.50-11.95M
		17		DS8	11.50-11.95M
	18	N = 16	UDS6	13.00-13.45M	
	19		SPT6	14.50-14.95M	
	20		DS9	14.50-14.95M	
Very stiff to hard brownish grey clayey silt/ silty clay with traces of kankar.		21		UDS7	16.00-16.45M
		22	N = 17	SPT7	17.50-17.95M
		23		DS10	17.50-17.95M
		24		UDS8	19.00-19.45M
		25	N = 20	SPT8	20.50-20.95M
		26		DS11	20.50-20.95M
		27		SPT9	22.00-22.45M
		28	N = 21	DS12	22.00-22.45M
		29		SPT10	23.50-23.95M
		30		DS13	23.50-23.95M
Contd.....					

SPT - Standard Penetration Test	VST- Vane Shear Test	DS - Disturbed Sample	WS - Water Sample
DCPT - Dynamic Cone Penetration Test.	UDS - Undisturbed Sample	SCPT-Static Cone Penetration Test.	RCS - Rock Core Sample



BORE LOG SHEET		Centre for Advanced Engineering						Bore Hole No.:BH-8 (Sheet 2)	
								Job No.: Soil - 1582	
Project: SOIL_BHEL_NTPC-KAHALGAON_ESP AREA									
Co-ord: E= 3279.00, S= 2061.00		E.G.L.: 33.39		Unit:				Bore Hole Dia. :150 MM.	
Type of Boring	Shell & Auger	FIELDTEST	NOS.	SAMPLES	NOS.	SAMPLES	NOS.	Commenced on : 24.03.2018	
Depth of Boring	40.000 M.	SPT	21	UDS	8	WS		Completed on : 26.03.2018	
Type of Drilling		DCPT		DS	24	RCS		Water Struck At :1.00 M.	
Depth of Drilling		VST		SCPT				Standing Water Table : 0.95 M.	

D E S C R I P T I O N	SYMBOL	DEPTH	N-V A L U E	S A M P L E	
				NO.	DEPTH
Very stiff to hard brownish grey clayey silt/ silty clay with traces of kankar.		26	N = 31	SPT11	25.00-25.45M
				DS14	25.00-25.45M
		27	N = 34	SPT12	26.50-26.95M
				DS15	26.50-26.95M
		28	N = 40	SPT13	28.00-28.45M
				DS16	28.00-28.45M
		29	N = 45	SPT14	29.50-29.95M
				DS17	29.50-29.95M
		30	N = 50	SPT15	31.00-31.45M
				DS18	31.00-31.45M
		31	N = 51	SPT16	32.50-32.95M
				DS19	32.50-32.95M
Termination Depth 40.000 Mtr.		32	N = 54	SPT17	34.00-34.45M
				DS20	34.00-34.45M
		33	N = 56	SPT18	35.50-35.95M
				DS21	35.50-35.95M
		34	N = 59	SPT19	37.00-37.45M
				DS22	37.00-37.45M
		35	N = 62	SPT20	38.50-38.95M
				DS23	38.50-38.95M
		36	N = 66	SPT21	39.55-40.00M
				DS24	39.55-40.00M
		37			
		38			
		39			
		40			
		41			
		42			
		43			
		44			
		45			
		46			
		47			
		48			
		49			

SPT - Standard Penetration Test	VST- Vane Shear Test	DS - Disturbed Sample	WS - Water Sample
DCPT - Dynamic Cone Penetration Test.	UDS - Undisturbed Sample	SCPT-Static Cone Penetration Test.	RCS - Rock Core Sample



BORE LOG SHEET		Centre for Advanced Engineering						Bore Hole No.:BH-09 (Sheet 1)
Project: SOIL_BHEL_NTPC-KAHALGAON_ESP AREA								Job No.: Soil - 1582
Co-ord: E= 3301.60, S= 2159.00		E.G.L.: 33.39		Unit:				Bore Hole Dia. :150 MM.
Type of Boring	Shell & Auger	FIELDTEST	NOS.	SAMPLES	NOS.	SAMPLES	NOS.	Commenced on : 22.03.2018
Depth of Boring		40.000 M.	SPT	21	UDS	8	WS	Completed on : 24.03.2018
Type of Drilling		DCPT		DS	24	RCS		Water Struck At :1.00 M.
Depth of Drilling		VST		SCPT				Standing Water Table : 0.90 M.

DESCRIPTION	SYMBOL	DEPTH	N-V A L U E	S A M P L E	
				NO.	DEPTH
Filled up soil with clayey silt, coal dust, sand, stone pieces etc.		01		DS1	0.50 M
Medium to stiff brownish grey clayey silt/ silty clay.		02		DS2	1.00M
		03		DS3	1.50M
		04		UDS1	2.00-2.45M
		05	N = 4	SPT1	3.00-3.45M
		06		DS4	3.00-3.45M
		07		UDS2	4.00-4.45M
		08	N = 6	SPT2	5.00-5.45M
		09		DS5	5.00-5.45M
		10		UDS3	6.00-6.45M
		11	N = 9	SPT3	7.00-7.45M
		12		DS6	7.00-7.45M
		13		UDS4	8.00-8.45M
Very stiff to hard brownish grey clayey silt/ silty clay with traces of kankar.		14	N = 15	SPT4	9.00-9.45M
		15		DS7	9.00-9.45M
		16		UDS5	10.00-10.45M
		17	N = 18	SPT5	11.50-11.95M
		18		DS8	11.50-11.95M
		19		UDS6	13.00-13.45M
		20	N = 20	SPT6	14.50-14.95M
		21		DS9	14.50-14.95M
		22		UDS7	16.00-16.45M
		23	N = 28	SPT7	17.50-17.95M
		24		DS10	17.50-17.95M
		25		UDS8	19.00-19.45M
Contd.....		26	N = 30	SPT8	20.50-20.95M
		27		DS11	20.50-20.95M
		28	N = 32	SPT9	22.00-22.45M
		29		DS12	22.00-22.45M
		30	N = 35	SPT10	23.50-23.95M
		31		DS13	23.50-23.95M

SPT - Standard Penetration Test	VST- Vane Shear Test	DS - Disturbed Sample	WS - Water Sample
DCPT - Dynamic Cone Penetration Test.	UDS - Undisturbed Sample	SCPT-Static Cone Penetration Test.	RCS - Rock Core Sample



BORE LOG SHEET		Centre for Advanced Engineering						Bore Hole No.:BH-09 (Sheet 2)	
								Job No.: Soil - 1582	
Project: SOIL_BHEL_NTPC-KAHALGAON_ESP AREA									
Co-ord: E= 3301.60, S= 2159.00		E.G.L.: 33.39		Unit:			Bore Hole Dia. :150 MM.		
Type of Boring	Shell & Auger	FIELDTEST	NOS.	SAMPLES	NOS.	SAMPLES	NOS.	Commenced on : 22.03.2018	
Depth of Boring	40.000 M.	SPT	21	UDS	8	WS		Completed on : 24.03.2018	
Type of Drilling		DCPT		DS	24	RCS		Water Struck At :1.00 M.	
Depth of Drilling		VST		SCPT				Standing Water Table : 0.90 M.	

D E S C R I P T I O N	SYMBOL	DEPTH	N-V A L U E	S A M P L E	
				NO.	DEPTH
Very stiff to hard brownish grey clayey silt/ silty clay with traces of kankar.		26	N = 37	SPT11	25.00-25.45M
				DS14	25.00-25.45M
		27	N = 38	SPT12	26.50-26.95M
				DS15	26.50-26.95M
		28	N = 42	SPT13	28.00-28.45M
				DS16	28.00-28.45M
		29			
		30	N = 46	SPT14	29.50-29.95M
				DS17	29.50-29.95M
		31	N = 48	SPT15	31.00-31.45M
				DS18	31.00-31.45M
		32			
		33	N = 51	SPT16	32.50-32.95M
				DS19	32.50-32.95M
Termination Depth 40.000 Mtr.		34	N = 52	SPT17	34.00-34.95M
				DS20	34.00-34.95M
		35			
		36	N = 56	SPT18	35.50-35.95M
				DS21	35.50-35.95M
		37	N = 59	SPT19	37.00-37.45M
				DS22	37.00-37.45M
		38			
		39	N = 59	SPT20	38.50-38.95M
				DS23	38.50-38.95M
		40	N = 63	SPT21	39.55-40.00M
				DS24	39.55-40.00M
		41			
		42			
		43			
		44			
		45			
		46			
		47			
		48			
		49			

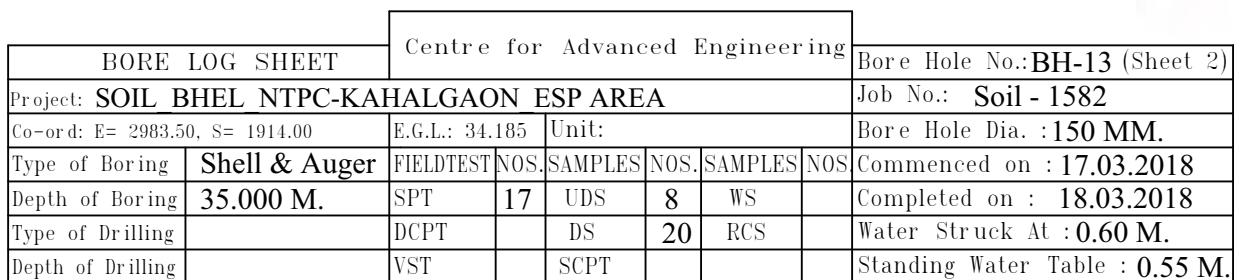
SPT - Standard Penetration Test	VST- Vane Shear Test	DS - Disturbed Sample	WS - Water Sample
DCPT - Dynamic Cone Penetration Test.	UDS - Undisturbed Sample	SCPT-Static Cone Penetration Test.	RCS - Rock Core Sample



BORE LOG SHEET		Centre for Advanced Engineering						Bore Hole No.:BH-13 (Sheet 1)
Project: SOIL_BHEL_NTPC-KAHALGAON_ESP AREA								Job No.: Soil - 1582
Co-ord: E= 2983.50, S= 1914.00		E.G.L.: 34.185		Unit:				Bore Hole Dia. :150 MM.
Type of Boring	Shell & Auger	FIELDTEST	NOS.	SAMPLES	NOS.	SAMPLES	NOS.	Commenced on :17.03.2018
Depth of Boring	35.000 M.	SPT	17	UDS	8	WS		Completed on : 18.03.2018
Type of Drilling		DCPT		DS	20	RCS		Water Struck At :0.60 M.
Depth of Drilling		VST		SCPT				Standing Water Table : 0.55 M.

D E S C R I P T I O N	SYMBOL	DEPTH	N-V A L U E	S A M P L E	
				NO.	DEPTH
Filled up soil with clayey silt, fly ash, sand, brick bats etc.		01 		DS1	0.50 M
Medium to stiff brownish grey clayey silt/ silty clay.		02	N = 5	DS2	1.00M
		03		DS3	1.50M
		04		UDS1	2.00-2.45M
		05		SPT1	3.00-3.45M
		06	N = 7	DS4	3.00-3.45M
		07		UDS2	4.00-4.45M
		08		SPT2	5.00-5.45M
		09	N = 5	DS5	5.00-5.45M
		10		UDS3	6.00-6.45M
		11		SPT3	7.00-7.45M
Very stiff to hard brownish grey clayey silt/ silty clay with traces of kankar.		12	N = 16	DS6	7.00-7.45M
		13		UDS4	8.00-8.45M
		14		SPT4	9.00-9.45M
		15	N = 21	DS7	9.00-9.45M
		16		UDS5	10.00-10.45M
		17		SPT5	11.50-11.95M
		18	N = 22	DS8	11.50-11.95M
		19		UDS6	13.00-13.45M
		20		SPT6	14.50-14.95M
		21	N = 24	DS9	14.50-14.95M
Contd.....		22		UDS7	16.00-16.45M
		23	N = 26	SPT7	17.50-17.95M
		24		DS10	17.50-17.95M
			N = 27	UDS8	19.00-19.45M
				SPT8	20.50-20.95M
				DS11	20.50-20.95M
				SPT9	22.00-22.45M
				DS12	22.00-22.45M
				SPT10	23.50-23.95M
				DS13	23.50-23.95M

SPT - Standard Penetration Test	VST- Vane Shear Test	DS - Disturbed Sample	WS - Water Sample
DCPT - Dynamic Cone Penetration Test.	UDS - Undisturbed Sample	SCPT-Static Cone Penetration Test.	RCS - Rock Core Sample



SPT - Standard Penetration Test	VST- Vane Shear Test	DS - Disturbed Sample	WS - Water Sample
DCPT - Dynamic Cone Penetration Test.	UDS - Undisturbed Sample	SCPT-Static Cone Penetration Test.	RCS - Rock Core Sample



BORE LOG SHEET		Centre for Advanced Engineering						Bore Hole No.: BH-14 (Sheet 1)	
Project: SOIL_BHEL_NTPC-KAHALGAON_ESP AREA								Job No.: Soil - 1582	
Co-ord: E= 2846.00, S= 1939.00		E.G.L.: 35.365		Unit:		Bore Hole Dia. : 150 MM.			
Type of Boring	Shell & Auger	FIELDTEST	NOS.	SAMPLES	NOS.	SAMPLES	NOS.	Commenced on : 14.03.2018	
Depth of Boring	35.000 M.	SPT	17	UDS	8	WS		Completed on : 15.03.2018	
Type of Drilling		DCPT		DS	20	RCS		Water Struck At : 1.30 M.	
Depth of Drilling		VST		SCPT				Standing Water Table : 1.25 M.	

D E S C R I P T I O N	SYMBOL	DEPTH	N-V A L U E	S A M P L E	
				NO.	DEPTH
Filled up soil with clayey silt, fly ash, sand, brick bats etc.		01		DS1	0.50 M
Medium to stiff brownish grey clayey silt/ silty clay.		02		DS2	1.00M
		03		DS3	1.50M
		04		UDS1	2.00-2.45M
		05	N = 5	SPT1	3.00-3.45M
		06		DS4	3.00-3.45M
		07		UDS2	4.00-4.45M
		08	N = 7	SPT2	5.00-5.45M
		09		DS5	5.00-5.45M
		10		UDS3	6.00-6.45M
		11	N = 9	SPT3	7.00-7.45M
12			DS6	7.00-7.45M	
13			UDS4	8.00-8.45M	
Very stiff to hard brownish grey clayey silt/ silty clay with traces of kankar.		14	N = 12	SPT4	9.00-9.45M
	15		DS7	9.00-9.45M	
	16		UDS5	10.00-10.45M	
	17	N = 15	SPT5	11.50-11.95M	
	18		DS8	11.50-11.95M	
	19		UDS6	13.00-13.45M	
	20	N = 16	SPT6	14.50-14.95M	
	21		DS9	14.50-14.95M	
	22		UDS7	16.00-16.45M	
	23	N = 19	SPT7	17.50-17.95M	
24		DS10	17.50-17.95M		
Contd.....	25		UDS8	19.00-19.45M	
	26	N = 22	SPT8	20.50-20.95M	
	27		DS11	20.50-20.95M	
	28	N = 23	SPT9	22.00-22.45M	
	29		DS12	22.00-22.45M	
		30	N = 25	SPT10	23.50-23.95M
		31		DS13	23.50-23.95M

SPT - Standard Penetration Test	VST- Vane Shear Test	DS - Disturbed Sample	WS - Water Sample
DCPT - Dynamic Cone Penetration Test.	UDS - Undisturbed Sample	SCPT-Static Cone Penetration Test.	RCS - Rock Core Sample

BORE LOG SHEET		Centre for Advanced Engineering						Bore Hole No.:BH-14 (Sheet 2)	
								Job No.: Soil - 1582	
Project: SOIL_BHEL_NTPC-KAHALGAON ESP AREA								Job No.: Soil - 1582	
Co-ord: E= 2846.00, S= 1939.00		E.G.L.: 35.365		Unit:			Bore Hole Dia. :150 MM.		
Type of Boring	Shell & Auger	FIELDTEST	NOS.	SAMPLES	NOS.	SAMPLES	NOS.	Commenced on : 14.03.2018	
Depth of Boring	35.000 M.	SPT	17	UDS	8	WS		Completed on : 15.03.2018	
Type of Drilling		DCPT		DS	20	RCS		Water Struck At :1.30 M.	
Depth of Drilling		VST		SCPT				Standing Water Table : 1.25 M.	



BORE LOG SHEET		Centre for Advanced Engineering						Bore Hole No.:BH-19 (Sheet 1)
Project: SOIL_BHEL_NTPC-KAHALGAON_ESP AREA								Job No.: Soil - 1582
Co-ord: E= 3419.00, S= 1889.00		E.G.L.: 34.19		Unit:			Bore Hole Dia. :150 MM.	
Type of Boring	Shell & Auger	FIELDTEST	NOS.	SAMPLES	NOS.	SAMPLES	NOS.	Commenced on : 02.04.2018
Depth of Boring	35.000 M.	SPT	17	UDS	8	WS		Completed on : 04.04.2018
Type of Drilling		DCPT		DS	20	RCS		Water Struck At :1.40 M.
Depth of Drilling		VST		SCPT				Standing Water Table : 1.30 M.

D E S C R I P T I O N	SYMBOL	DEPTH	N-V A L U E	S A M P L E	
				NO.	DEPTH
Filled up soil with clayey silt, coal dust, sand etc.		01		DS1	0.50 M
Medium to stiff brownish grey clayey silt/ silty clay.		02		DS2	1.00M
		03		DS3	1.50M
		04		UDS1	2.00-2.45M
		05	N = 5	SPT1	3.00-3.45M
		06		DS4	3.00-3.45M
		07		UDS2	4.00-4.45M
		08	N = 8	SPT2	5.00-5.45M
		09		DS5	5.00-5.45M
		10		UDS3	6.00-6.45M
		11	N = 12	SPT3	7.00-7.45M
Very stiff to hard brownish grey clayey silt/ silty clay with traces of kankar.		12		DS6	7.00-7.45M
		13		UDS4	8.00-8.45M
		14	N = 14	SPT4	9.00-9.45M
		15		DS7	9.00-9.45M
		16		UDS5	10.00-10.45M
		17	N = 16	SPT5	11.50-11.95M
		18		DS8	11.50-11.95M
		19		UDS6	13.00-13.45M
		20	N = 20	SPT6	14.50-14.95M
		21		DS9	14.50-14.95M
Contd.....		22		UDS7	16.00-16.45M
		23	N = 25	SPT7	17.50-17.95M
		24		DS10	17.50-17.95M
		25		UDS8	19.00-19.45M
		26	N = 27	SPT8	20.50-20.95M
		27		DS11	20.50-20.95M
		28	N = 29	SPT9	22.00-22.45M
		29		DS12	22.00-22.45M
		30	N = 31	SPT10	23.50-23.95M
		31		DS13	23.50-23.95M

SPT - Standard Penetration Test	VST- Vane Shear Test	DS - Disturbed Sample	WS - Water Sample
DCPT - Dynamic Cone Penetration Test.	UDS - Undisturbed Sample	SCPT-Static Cone Penetration Test.	RCS - Rock Core Sample



BORE LOG SHEET		Centre for Advanced Engineering						Bore Hole No.:BH-19 (Sheet 2)	
								Project: SOIL_BHEL_NTPC-KAHALGAON_ESP AREA	
Co-ord: E= 3419.00, S= 1889.00		E.G.L.: 34.19		Unit:			Bore Hole Dia. :150 MM.		
Type of Boring	Shell & Auger	FIELDTEST	NOS.	SAMPLES	NOS.	SAMPLES	NOS.	Commenced on : 02.04.2018	
Depth of Boring	35.000 M.	SPT	17	UDS	8	WS		Completed on : 04.04.2018	
Type of Drilling		DCPT		DS	20	RCS		Water Struck At :1.40 M.	
Depth of Drilling		VST		SCPT				Standing Water Table : 1.30 M.	

D E S C R I P T I O N	SYMBOL	DEPTH	N-V A L U E	S A M P L E	
				NO.	DEPTH
Very stiff to hard brownish grey clayey silt/ silty clay with traces of kankar.		26 27 28 29 30 31 32 33 34	N = 33	SPT11	25.00-25.45M
				DS14	25.00-25.45M
			N = 36	SPT12	26.50-26.95M
				DS15	26.50-26.95M
			N = 39	SPT13	28.00-28.45M
				DS16	28.00-28.45M
			N = 44	SPT14	29.50-29.95M
				DS17	29.50-29.95M
			N = 48	SPT15	31.00-31.45M
				DS18	31.00-31.45M
Termination Depth 35.000 Mtr.		35 36 37 38 39 40 41 42 43 44 45 46 47 48 49	N = 52	SPT16	32.50-32.95M
				DS19	32.50-32.95M
			N = 54	SPT17	34.55-35.00M
				DS20	34.55-35.00M

SPT - Standard Penetration Test	VST- Vane Shear Test	DS - Disturbed Sample	WS - Water Sample
DCPT - Dynamic Cone Penetration Test.	UDS - Undisturbed Sample	SCPT-Static Cone Penetration Test.	RCS - Rock Core Sample