



ORBITAL INFRASTRUCTURE CONSULTANCY & RESEARCH PRIVATE LTD

PLOT NO. 1134, MAHANADI BIHAR, CUTTAK - 753 004

PH: 0671- 2443588 Tele Fax: 0671 - 2443408

N: ____

PROJECT NAME Geotechnical Investigation for NTPC Talcher Thermal Stage III (2 x 660 MW)

GROUND SURFACE ELEVATION: 71.467 m

EAST: E or X = 752.75

NORTH: N or Y = 4745.75

TYPE OF BORING: Rotary

BORING NO: BH 116

DIAMETER OF BORING: 150mm upto 5.80m & Nx from 5.80 to 25m BGL

TYPE OF BIT USED: Double tube

TOTAL HOLE DEPTH: 25 m

SOIL SAMPLER USED: _____

LOCATION: Water Treatment Plant

DATE STARTED: 4/12/10

COMPLETED: 15/4/10

DEPTH (m)	Reduced Level (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE			BLOWS/15cm			"N" Field	Water Level	Bulk Density gmc/cc	Recovery Length/ Recovery (%)	RQD (%)	Fracture Frequency per Meter	Serial Number of Recovered
				Sample Depth (m)	SAMPLE TYPE	Sample Number	15 cm	15 cm	15 cm							
20			Moderately weathered greyish coloured Siltstone. (continued)													
													75	0		
21				20.8	RC		---	---	---				70	0		
22				21.8	RC		---	---	---				68	10		
23				22.8	RC		---	---	---				74	0		
24				23.8	RC		---	---	---				76	11		
25	46.467			24.8			---	---	---				75	0		
				25			---	---	---					---		
26																
27																
28																
29																
30																

Remarks: Boring, field test and sample collection conducted as per B.I.S Specification only.
Ref. I.S : 1892; 1498; 2131 & 2132.
SPT : Standard Penetration Test & UDS : Undisturbed soil sample.

Borehole termination at 25 m

For O.I.C & R. PVT. LTD



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N: ____

PROJECT NAME Geotechnical Investigation for NTPC Talcher Thermal Stage III (2 x 660 MW)

GROUND SURFACE ELEVATION: 73.811 m

EAST: E or X = 853.43

NORTH: N or Y = 4752.53

TYPE OF BORING: Rotary

BORING NO: BH 117

DIAMETER OF BORING: 150mm upto 8.60m & Nx from 8.60 to 25m BGL

TYPE OF BIT USED: Double tube

TOTAL HOLE DEPTH: 25 m

SOIL SAMPLER USED: _____

LOCATION: Water Treatment Plant

DATE STARTED: 4/12/10

COMPLETED: 16/4/10

DEPTH (m)	Reduced Level (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE			BLOWS/15cm			"N" Field	Water Level	Bulk Density gmc/cc	Recovery Length/ Recovery (%)	RQD (%)	Fracture Frequency per Meter	Serial Number of Recovered
				Sample Depth (m)	SAMPLE TYPE	Sample Number	15 cm	15 cm	15 cm							
0			Filled up soil													
1																
2				1.5	SPT	1	2	2	3	5				---		
3	70.911		Greyish coloured clay	3	UDS	1	---	---	---	Recovered				---		
4																
5				4.5	SPT	2	4	5	6	11				---		
6	67.811		Brownish coloured clay	6	UDS	2	---	---	---	Recovered				---		
7																
8				7.5	SPT	3	5	5	7	12				---		
9	65.211		Moderately weathered yellowish brown coloured Siltstone.	8.6	RC		---	---	---				70	24		
10				9.6	RC		---	---	---				70	14		

Remarks: Boring, field test and sample collection conducted as per B.I.S Specification only.
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BORING NO: BH 117

DIAMETER OF BORING: 150mm upto 8.60m & Nx from 8.60 to 25m BGL

TYPE OF BIT USED: Double tube

TOTAL HOLE DEPTH: 25 m

SOIL SAMPLER USED: _____

LOCATION: Water Treatment Plant

DATE STARTED: 4/12/10

COMPLETED: 16/4/10

DEPTH (m)	Reduced Level (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE			BLOWS/15cm			"N" Field	Water Level	Bulk Density gmc/cc	Recovery Length/ Recovery (%)	RQD (%)	Fracture Frequency per Meter	Serial Number of Recovered
				Sample Depth (m)	SAMPLE TYPE	Sample Number	15 cm	15 cm	15 cm							
10																
			Moderately weathered yellowish brown coloured Siltstone. (continued)	10.6	RC		---	---	---				70	14		
11													68	37		
				11.6	RC		---	---	---							
12													72	49		
				12.6	RC		---	---	---							
13													66	50		
				13.6	RC		---	---	---							
14			Moderately weathered greyish coloured Siltstone grading to fine grained Sandstone.										67	43		
				14.6	RC		---	---	---							
15													70	70		
				15.6	RC		---	---	---							
16													64	44		
				16.6	RC		---	---	---							
17													70	60		
				17.6	RC		---	---	---							
18													67	30		
				18.6	RC		---	---	---							
19			Moderately weathered greyish coloured Shale.										62	23		
				19.6	RC		---	---	---							
20													68	40		

Remarks: Boring, field test and sample collection conducted as per B.I.S Specification only.
Ref. I.S : 1892; 1498; 2131 & 2132.
SPT : Standard Penetration Test & UDS : Undisturbed soil sample.

Borehole termination at 25 m

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TYPE OF BIT USED: Double tube

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SOIL SAMPLER USED: _____

LOCATION: Water Treatment Plant

DATE STARTED: 4/12/10

COMPLETED: 16/4/10

DEPTH (m)	Reduced Level (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE			BLOWS/15cm			"N" Field	Water Level	Bulk Density gmc/cc	Recovery Length/ Recovery (%)	RQD (%)	Fracture Frequency per Meter	Serial Number of Recovered
				Sample Depth (m)	SAMPLE TYPE	Sample Number	15 cm	15 cm	15 cm							
20																
			Moderately weathered greyish coloured Siltstone. <i>(continued)</i>	20.6	RC		---	---	---				68	40		
21													70	53		
	52.211			21.6	RC		---	---	---							
22			Moderately to slightly weathered greyish coloured fine grained Sandstone.										77	65		
				22.6	RC		---	---	---							
23													73	64		
				23.6	RC		---	---	---							
24													85	36		
				24.6	RC		---	---	---							
25	48.811			25			---	---	---				95	50		
26																
27																
28																
29																
30																

Remarks: Boring, field test and sample collection conducted as per B.I.S Specification only.
Ref: I.S : 1892; 1498; 2131 & 2132.
SPT : Standard Penetration Test & UDS : Undisturbed soil sample.

Borehole termination at 25 m

For O.I.C & R. PVT. LTD

Table G-4 (iv)
PHYSICAL AND GEOTECHNICAL PROPERTIES OF SOIL

WORK REFERENCE: Geo - technical Investigation for NTPC ,Talcher Thermal Stage-III (2 X 660 MW)

BORE HOLE NO	LOCATION	TYPE OF SAMPLE	DEPTH(M)	BULK DENSITY (N) in gm/cc.	NATURAL MOISTURE CONTENT (%)	PARTICLE SIZE (%)						CONSISTENCY PROPERTIES				CLASSIFICATION	DIFFERENTIAL FREE SWELL INDEX IN %	SPECIFIC GRAVITY	VOID RATIO	STRENGTH TEST (Triaxial shear test)			COMPRESSION INDEX	(C _u)	CHEMICAL TEST OF SOIL			CHEMICAL TEST OF WATER					
						FINE GRAVEL IN % (20MM TO 4.75MM)	COARSE SAND IN % (4.75MM TO 2.00MM)	MEDIUM SAND IN% (2.00MM TO 0.425MM)	FINE SAND IN % (0.425MM TO 0.075MM)	SILT & CLAY IN % (<0.075MM)	SILT SIZE IN % (0.075MM TO 0.002MM)	CLAY SIZE IN % (<0.002MM)	LIQUID LIMIT IN % (LL)	PLASTIC LIMIT IN % (PL)	PLASTICITY INDEX IN % (PI)					SHRINKAGE LIMIT IN %	APPARENT COHESION "C" IN Kg/cm ²	ANGLE OF INTERNAL RESISTANCE "φ" IN DEGREE			UNCONFINED COMPRESSIVE STRENGTH IN Kg/cm ²	pH Value	Sulphates in PPM	Chloride in PPM	pH Value	Sulphates in mg/ltr.	Chloride in mg/ltr.		
3	E : 1306.11 & N : 3967.14	SPT	2.75-3.20	-	-	0.03	0.99	17.09	50.73	31.16	-	-	30	17	13	-	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	E : 1384.37 & N : 3966.57	SPT	3.00	2.048	4.61	82.38	3.70	0.96	6.46	6.50	-	-	21.1	-	NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	E : 1292.96 & N : 4012.71	UDS	1.50-2.10	2.083	14.32	5.25	6.62	10.12	29.86	48.15	25.90	22.25	32	18	14	-	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	E : 1327.16 & N : 4038.11	SPT	3.00-3.45	1.920	13.78	0.00	0.65	7.04	51.91	40.40	-	-	23.6	-	NP	-	SM	-	-	-	-	-	0.30	-	-	-	-	-	-	-	-	-	-
12	E : 1283.28 & N : 4075.82	UDS	1.00-1.15	2.066	15.41	0.28	2.84	13.88	39.28	43.72	23.22	20.50	31	18	13	-	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	E : 1363.83 & N : 4078.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
81	E : 1227.45 & N : 4090.27	UDS	1.50	1.793	14.81	2.84	3.01	6.57	41.09	46.49	28.24	18.25	31.1	17	21	9.2	SC	-	2.64	0.69	-	-	0.15	-	-	-	-	-	-	-	-	-	-

Table G-5 (iv)
PHYSICAL AND GEOTECHNICAL PROPERTIES OF SOIL

WORK REFERENCE:

Geo - technical Investigation for NTPC ,Talcher Thermal Stage-III (2 X 660 MW)

BORE HOLE NO	LOCATION	TYPE OF SAMPLE	DEPTH(M)	BULK DENSITY (k) in g/mc.	NATURAL MOISTURE CONTENT (%)	PARTICLE SIZE (%)							CONSISTENCY PROPERTIES				CLASSIFICATION	DIFFERENTIAL FREE SWELL INDEX IN %	SPECIFIC GRAVITY	VOID RATIO	STRENGTH TEST (Triaxial shear test)			(C _c)	CHEMICAL TEST OF SOIL			CHEMICAL TEST OF WATER																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
						FINE GRAVEL IN % (20MM TO 4.75MM)	COARSE SAND IN % (4.75MM TO 2.50MM)	MEDIUM SAND IN% (2.50MM TO 0.425MM)	FINE SAND IN % (0.425MM TO 0.075MM)	SILT & CLAY IN % (<0.075MM)	SILT SIZE IN % (0.075MM TO 0.002MM)	CLAY SIZE IN % (<0.002MM)	LIQUID LIMIT IN % (LL)	PLASTIC LIMIT IN % (PL)	PLASTICITY INDEX IN % (PI)	SHRINKAGE LIMIT IN %					APPARENT COHESION "C" IN kg/cm ²	ANGLE OF INTERNAL RESISTANCE "φ" IN DEGREE	UNCONFINED COMPRESSIVE STRENGTH IN Kg/cm ²		COMPRESSION INDEX	pH Value	Sulphates in PPM	Chloride in PPM	pH Value	Sulphates in mg/ltr.	Chloride in mg/ltr.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
1	E - 1413.2 & N - 3923.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

WORK REFERENCE:

[illegible]

Table G-3 (iv)
PHYSICAL AND GEOTECHNICAL PROPERTIES OF SOIL

WORK REFERENCE:

Geo - technical Investigation for NTPC ,Talcher Thermal Stage-III (2 X 660 MW)

BORE HOLE NO	LOCATION	TYPE OF SAMPLE	DEPTH(M)	BULK DENSITY (γ _b) in gm/cc.	NATURAL MOISTURE CONTENT (%)	PARTICLE SIZE (%)							CONSISTENCY PROPERTIES				CLASSIFICATION	DIFFERENTIAL FREE SWELL INDEX IN %	SPECIFIC GRAVITY	VOID RATIO	STRENGTH TEST (Triaxial shear test)			COMPRESSION INDEX	CHEMICAL TEST OF SOIL			CHEMICAL TEST OF WATER			
						FINE GRAVEL IN % (20mm TO 4.75mm)	COARSE SAND IN % (4.75mm TO 2.00mm)	MEDIUM SAND IN% (2.00mm TO 0.425mm)	FINE SAND IN % (0.425mm TO 0.075mm)	SILT & CLAY IN % (<0.075mm)	SILT SIZE IN % (0.075mm TO 0.002mm)	CLAY SIZE IN % (<0.002mm)	LIQUID LIMIT IN % (LL)	PLASTIC LIMIT IN % (PL)	PLASTICITY INDEX IN % (PI)	SHRINKAGE LIMIT IN %					APPARENT COHESION "c" IN Kg/cm2.	ANGLE OF INTERNAL RESISTANCE φ IN DEGREE	UNCONFINED COMPRESSIVE STRENGTH IN Kg/cm2.		pH Value	Sulphates in PPM	Chloride in PPM	pH Value	Sulphates in mg/ltr.	Chloride in mg/ltr.	
18	E : 1413.04 & N 4115.92	UDS	1.50-1.95	1.985	14.38	5.82	10.65	15.32	30.56	37.65	24.15	13.50	29	18	11	-	SC	-	-	-	0.25	8.5	-	-	-	-	-	-	-	-	-
22	E : 1413.04 & N 4115.92	UDS	1.50-1.95	1.985	14.38	5.82	10.65	15.32	30.56	37.65	24.15	13.50	29	18	11	-	SC	-	-	-	0.25	8.5	-	-	-	-	-	-	-	-	-
23	E : 1452.04 & N 4181.92	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	E : 1476.59 & N 4225.03	UDS	1.50-2.00	2.093	13.15	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	0.25	9.50	-	-	-	-	-	-	-	-
27	E : 1549.06 & N 4231.53	UDS	1.50-2.10	1.900	18.64	0.27	0.39	5.96	49.46	43.92	25.67	18.25	30.00	18	12.00	11.2	SC	10	2.69	0.68	-	-	-	-	-	-	-	-	-	-	-
28	E : 1569.7 & N 4140.01	UDS	0.80-1.00	-	-	62.42	11.57	5.37	14.00	6.64	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

[illegible]

Bore Hole	Sample Number	Depth M	Sample Description	Bulk	Dry	Spec.	Nat.	Void	Strength Test Results				Atter. Limits			IS Classifi cation	Grain Size				Test Method
				Dens.	Dens.	Grav.	Mois.	Ratio	Pc/Pn	Shear	Cohesn	Frictn	LL	PL	SL		Gravl	Sand	Silt	Clay	
				gms/cc	gms/cc		%		kg/sqcm	kg/sqcm	kg/sqcm	Deg.	%	%	%	%	%	%	%		
BH01	DS01	0.50	Yellowish grey, silty sand with traces of boulders and kankars.													SM	26	55	19(Silt+Clay)	**See the Note	
BH02	UDS01	1.00	Brownish grey, clayey silty sand / sandy silt.						DRSH-CU		0.09	30				SM*				Do	
										0.5	0.385										
										1.0	0.663										
										2.0	1.245										
BH02	SPT02	3.00	Yellowish grey, clayey silt with sand mixture and calcareous nodules.										35	24	14	CI				Do	
BH02	SPT03	5.45	Brownish grey, clayey sandy silt.													CI*		43	57(Silt+Clay)	Do	
BH03	SPT01	1.55	Brownish grey silty clay with sand mixture.										45	21		CI				Do	
BH03	SPT02	2.10	Brownish grey, clayey silt with sand mixture			2.67										CI*		23	60	17	Do
BH03	DS02	2.50	Brownish grey, silty sand with traces of decomposed rockdust.													SM		77	23(Silt+Clay)	Do	
BH04	UDS01	1.00	Brownish grey, clayey silty sand / sandy silt.	1.76	1.44		22 S		DRSH-CU		0.07	33				SM*				Do	
							22DR		0.5	0.388											
									1.0	0.729											
									2.0	1.356											
BH04	SPT02	3.00	Yellowish grey, clayey silty sand.													SM		60	40(Silt+Clay)	Do	
BH06	SPT01	2.30	Light grey, clayey silt with decomposed rock & sand mixture													CI*		38	46	16	Do
BH06	DS03	3.00	Light grey, clayey silt with sand mixture & decomposed rockdust.										38	24		CI				Do	

Bore Hole	Sample Number	Depth M	Sample Description	Bulk	Dry	Spec.	Nat.	Void	Strength Test Results				Atter. Limits			IS Classification	Grain Size				Test Method
				Dens.	Dens.	Grav.	Mois.	Ratio	Pc/Pn	Shear	Cohesn	Frictn	LL	PL	SL		Gravl	Sand	Silt	Clay	
				gms/cc	gms/cc		%		kg/sqcm	kg/sqcm	kg/sqcm	Deg.	%	%	%		%	%	%	%	
BH07	SPT01	1.60	Brownish grey, silty clay / clayey silt with traces of sand mixture.													CI*		15	61	24	Do
BH07	SPT02	3.00	Brownish grey, silty clay with traces of sand mixture.										46	20		CI					Do
BH07	SPT03	4.00	Brownish grey, silty sand.	1.78	1.52		17DR		DRSH-CU		0.03	39				SM*					Do
									0.5	0.439											
									1.0	0.829											
									2.0	1.658											Do
BH08	SPT01	1.45	Brownish grey, silty sand. Observed clay binders.	1.76	1.53		15 S									SM*					
BH09	UDS01	0.70	Brownish grey, clayey silt with brick bats, sand mixture and kankars.	1.78	1.42		23 S	0.802	UNCONFD		0.38	0				CI*	2	38	53	7	Do
							25 T		0.0	0.395											
							26 C		0.0	0.364											
									0.0	0.378											
									REMOULD		0.30	0									
									0.0	0.307											
									0.0	0.303											
BH09	DS02	2.00	Brownish grey, silty sand.										N.P.			SM*					Do
BH09	SPT02	2.50	Brownish grey, silty sand.													SM-SP	90	10(Silt+Clay)			Do
BH10	SPT01	1.50	Brownish grey, silty sand.													SM	70	30(Silt+Clay)			Do
BH11	DS01	0.50	Deep grey, clayey silt with sand mixture.										36	23		CI					Do
BH11	SPT01	1.60	Deep grey, silty clay / clayey silt with sand mixture.			2.63										CI*					Do

Bore Hole	Sample Number	Depth M	Sample Description	Bulk	Dry	Spec.	Nat.	Void	Strength Test Results				Atter. Limits			IS Classifi cation	Grain Size				Test Method
				Dens.	Dens.	Grav.	Mois.	Ratio	Pc/Pn	Shear	Cohesn	Frictn	LL	PL	SL		Gravl	Sand	Silt	Clay	
				gms/cc	gms/cc		%		kg/sqcm	kg/sqcm	kg/sqcm	Deg.	%	%	%		%	%	%	%	
BH12	UDS01	1.00	Light grey, silty clay with traces of sand mixture.	1.84	1.44		28 S	0.836	TRSH-UU		0.58	0				CI*					Do
							28 T		3.0	0.604											
							27 C		2.0	0.578											
									1.0	0.562											
BH12	UDS02	4.00	Brownish grey, silty clay with traces of kankars.						UNCONFD		0.46	0				CI*					Do
									0.0	0.442											
									0.0	0.441											
									0.0	0.507											
									REMOULD		0.33	0									
									0.0	0.308											
									0.0	0.313											
									0.0	0.368											
BH12	SPT03	4.45	Brownish grey, silty sand. Observed decomposed rockdust.													SM		78	22(Silt+Clay)		Do
BH13	UDS01	1.00	Reddish brown, clayey sandy silt with brick bats and kankars.	1.87	1.52	2.59	23 S	0.668	UNCONFD		0.51	0	28	19	15	SC	3	48	44	5	Do
							23 T		0.0	0.524											
							24 C		0.0	0.503											
									0.0	0.509											
									REMOULD		0.39	0									
									0.0	0.398											
									0.0	0.394											
									0.0	0.380											
BH13	DS02	2.50	Brownish grey, clayey silt with sand mixture.													CI*		23	59	18	Do
BH14	UDS01	1.00	Brownish grey, clayey silt with sand mixture & brick bats.	1.78	1.39	2.64	29 S	0.824	UNCONFD		0.34	0	44	23		CI		35	53	12	Do
							28 T		0.0	0.337											
							30 C		0.0	0.355											
									0.0	0.332											
									REMOULD		0.28	0									
									0.0	0.287											
									0.0	0.270											
									0.0	0.285											
BH14	SPT02	3.00	Yellowish grey, clayey silt with fine sand mixture.													CI*		30	52	18	Do

Bore Hole	Sample Number	Depth M	Sample Description	Bulk	Dry	Spec.	Nat.	Void	Strength Test Results				Atter. Limits			IS Classification	Grain Size				Test Method
				Dens.	Dens.	Grav.	Mois.	Ratio	Pc/Pn	Shear	Cohesn	Frictn	LL	PL	SL		Gravl	Sand	Silt	Clay	
				gms/cc	gms/cc		%		kg/sqcm	kg/sqcm	kg/sqcm	Deg.	%	%	%		%	%	%	%	
BH15	UDS01	1.00	Brownish grey, silty clay with sand mix & calcareous nodules.	1.82	1.50		23 S	0.705	TRSH-UU		0.31	3	45	20	13	CI		46	37	17	Do
							20 T		3.0	0.494											
							23 C		2.0	0.414											
									1.0	0.376											
BH15	SPT01	1.45	Brownish grey, silty clay with sand mixture.										42	19		CI					Do
BH15	SPT02	3.00	Brownish grey, silty clay with sand mixture.													CI*		39	47	14	Do
BH16	UDS01	1.00	Brownish grey, silty clay with sand mixture & traces of kankars.						TRSH-UU		1.08	3	51	21		CH		22	50	28	Do
									3.0	1.298											
									2.0	1.254											
									1.0	1.193											
									UNCONFD		0.72	0									
									0.0	0.695											
									0.0	0.737											
									0.0	0.732											
									REMOULD		0.56	0									
									0.0	0.539											
BH16	UDS02	4.10	Brownish grey, silty clay with sand mixture, kankars and rustv spots.	1.92	1.63		17 S	0.571	TRSH-UU		0.97	9	39	24		CI		41	38	21	Do
							18 T		3.0	1.692											
							19 C		2.0	1.501											
									1.0	1.327											
									UNCONFD		0.86	0									
									0.0	0.857											
									0.0	0.882											
									0.0	0.845											
									REMOULD		0.64	0									
									0.0	0.651											
BH16	SPT04	5.80	Brownish grey, clayey silt with sand mixture and rockdust.													CI*		23	77(Silt+Clay)		Do

Bore Hole	Sample Number	Depth M	Sample Description	Bulk	Dry	Spec.	Nat.	Void	Strength Test Results				Atter. Limits			IS Classification	Grain Size				Test Method
				Dens.	Dens.	Grav.	Mois.	Ratio	Pc/Pn	Shear	Cohesn	Frictn	LL	PL	SL		Gravl	Sand	Silt	Clay	
				gms/cc	gms/cc		%		kg/sqcm	kg/sqcm	kg/sqcm	Deg.	%	%	%		%	%	%	%	
BH17	UDS01	1.00	Brownish grey, silty clay with traces of calcareous nodules and kankars.	1.88	1.53		26 S						52	17		CH		20	68	12	Do
BH17	UDS02	4.00	Brownish grey, silty clay with traces of kankars and sand mixture.			2.66			TRSH-UU	0.93	3		49	20		CI		19	50	31	Do
									3.0	1.146											
									2.0	1.091											
									1.0	1.027											
									UNCONFD	0.70	0										
									0.0	0.719											
									0.0	0.679											
									0.0	0.703											
									REMOULD	0.51	0										
									0.0	0.504											
									0.0	0.517											
									0.0	0.507											
BH17	SPT05	6.80	Brownish grey, clayey silt stone with sand mixture.													SM	9	50	41(Silt+Clay)		Do
BH18	UDS01	1.00	Greyish brown, silty clay with traces of kankars & sand mixture.	1.98	1.58	2.67	24 S		TRSH-UU	0.67	5		48	18		CI		19	49	32	Do
							25 T		3.0	1.010											
									2.0	0.950											
									1.0	0.820											
BH18	UDS02	4.20	Brownish grey, silty clay with calcareous nodules and sand mixture.					0.531	TRSH-UU	1.09	6		51	18	14	CH					Do
									3.0	1.561											
									2.0	1.444											
									1.0	1.327											
									UNCONFD	0.82	0										
									0.0	0.827											
									0.0	0.819											
									0.0	0.806											
									REMOULD	0.65	0										
									0.0	0.632											
									0.0	0.652											
									0.0	0.650											
BH18	SPT05	7.20	Brownish grey, silty sand. Observed decomposed rockdust.													SM		73	27(Silt+Clay)		Do

Bore	Sample	Depth	Sample Description	Bulk	Dry	Spec.	Nat.	Void	Strength Test Results				Atter. Limits			IS	Grain Size				Test
Hole	Number	M		Dens.	Dens.	Grav.	Mois.	Ratio	Pc/Pn	Shear	Cohesn	Frictn	LL	PL	SL	Classifi cation	Gravl	Sand	Silt	Clay	Method
				gms/cc	gms/cc		%		kg/sqcm	kg/sqcm	kg/sqcm	Deg.	%	%	%		%	%	%	%	
BH19	UDS02	4.00	Brownish grey silty clay with sand mixture.	2.03	1.66	2.62	23 S	0.656	TRSH-UU		0.56	7	43	25	16	CI		46	45	9	Do
							21 T		3.0	1.049											
							22 C		2.0	0.911											
									1.0	0.772											
									UNCONFD		0.65	0									
									0.0	0.653											
									0.0	0.681											
									0.0	0.614											
									REMOULD		0.52	0									
									0.0	0.531											
									0.0	0.514											
									0.0	0.527											
BH19	SPT04	6.00	Brownish grey, silty sand with traces of mica and kankars.													SM		67	33(Silt+Clay)		Do
BH20	UDS01	1.00	Brownish grey, clayey sandy silt / clayey silt with sand mixture.	1.91	1.57		22 S		DRSH-CU		0.15	27				SM		54	46(Silt+Clay)		Do
							21DR		0.5	0.399											
									1.0	0.663											
									2.0	1.156											
BH20	UDS02	4.10	Greyish brown, silty clay with high percentage of sand mixture.					0.792	TRSH-UU		0.56	6	40	23		CI		41	38	21	Do
									3.0	0.975											
									2.0	0.882											
									1.0	0.734											
									UNCONFD		0.62	0									
									0.0	0.631											
									0.0	0.669											
									0.0	0.562											
									REMOULD		0.49	0									
									0.0	0.495											
									0.0	0.530											
									0.0	0.447											
BH21	SPT01	1.60	Dark grey, silty sand with ash.													SM		73	27(Silt+Clay)		Do

Bore Hole	Sample Number	Depth M	Sample Description	Bulk	Dry	Spec.	Nat.	Void	Strength Test Results				Atter. Limits			IS Classifi cation	Grain Size				Test Method
				Dens.	Dens.	Grav.	Mois.	Ratio	Pc/Pn	Shear	Cohesn	Frictn	LL	PL	SL		Gravl	Sand	Silt	Clay	
				gms/cc	gms/cc		%		kg/sqcm	kg/sqcm	kg/sqcm	Deg.	%	%	%		%	%	%	%	
BH21	UDS02	3.00	Light grey, silty clay with traces of sand mixture and kankars.	1.83	1.49		22 S	0.524	TRSH-UU		0.63	6	43	24		SC		52	35	13	Do
							24 T		3.0	1.057											
							22 C		2.0	0.925											
									1.0	0.818											
									UNCONFD		0.44	0									
									0.0	0.457											
									0.0	0.420											
									0.0	0.446											
									REMOULD		0.37	0									
									0.0	0.380											
									0.0	0.363											
									0.0	0.369											
BH22	UDS02	4.00	Light grey, silty clay. Obs. sand mixture and kankars.	1.86	1.46	2.66	25 S	0.724	TRSH-UU		0.80	0	49	20		CI		10	62	28	Do
							28 T		3.0	0.817											
							27 C		2.0	0.797											
									1.0	0.781											
									UNCONFD		0.61	0									
									0.0	0.610											
									0.0	0.602											
									0.0	0.623											
									REMOULD		0.49	0									
									0.0	0.502											
									0.0	0.493											
									0.0	0.472											
BH22	SPT05	7.10	Grey, silty sand with decomposed rockdust.													SM		71	29(Silt+Clay)		Do
BH23	UDS01	1.00	Deep grey, silty clay. Obs. kankars & sand mixture.	1.82	1.41		30 S	0.756	TRSH-UU		0.65	0				CI*		9	58	33	Do
							29 T		3.0	0.659											
							28 C		2.0	0.651											
									1.0	0.643											
									UNCONFD		0.53	0									
									0.0	0.546											
									0.0	0.521											
									0.0	0.524											
									REMOULD		0.45	0									
									0.0	0.470											
									0.0	0.448											
									0.0	0.434											

Bore	Sample	Depth	Sample Description	Bulk	Dry	Spec.	Nat.	Void	Strength Test Results				Atter. Limits			IS	Grain Size				Test
Hole	Number	M		Dens.	Dens.	Grav.	Mois.	Ratio	Pc/Pn	Shear	Cohesn	Frictn	LL	PL	SL	Classifi	Gravl	Sand	Silt	Clay	Method
				gms/cc	gms/cc		%		kg/sqcm	kg/sqcm	kg/sqcm	Deg.	%	%	%	cation	%	%	%	%	
BH23	UDS02	4.00	Deep grey, silty clay. Obs.	1.85	1.46	2.65	27 S	0.685	TRSH-UU	0.79	0					CI*		12	69	19	Do
			kankars & sand mixture.				27 T		3.0	0.798											
							26 C		2.0	0.794											
									1.0	0.779											
									UNCONFD	0.59	0										
									0.0	0.604											
									0.0	0.577											
									0.0	0.587											
									REMOULD	0.48	0										
									0.0	0.477											
									0.0	0.504											
									0.0	0.457											
BH24	UDS02	4.00	Light grey, silty clay with	1.86	1.46	2.64	27 S	0.690	TRSH-UU	0.68	0		51	21	16	CH		13	62	25	Do
			traces of sand mixture. Obs.				28 T		3.0	0.702											
			kankars.				27 C		2.0	0.676											
									1.0	0.664											
									UNCONFD	0.51	0										
									0.0	0.517											
									0.0	0.509											
									0.0	0.507											
									REMOULD	0.43	0										
									0.0	0.455											
									0.0	0.424											
									0.0	0.409											
BH25	UDS01	1.00	Grey silty clay. Obs. sand	1.83	1.43		29 S	0.708	TRSH-UU	0.69	0		54	20	17	CH		8	68	24	Do
			mixture.				27 T		3.0	0.714											
							30 C		2.0	0.689											
									1.0	0.675											
									UNCONFD	0.57	0										
									0.0	0.601											
									0.0	0.553											
									0.0	0.567											
									REMOULD	0.48	0										
									0.0	0.485											
									0.0	0.491											
									0.0	0.458											
BH25	SPT02	3.00	Brownish grey, silty clay										52	19		CH					Do
			with traces of sand mixture.																		

Bore Hole	Sample Number	Depth M	Sample Description	Bulk	Dry	Spec.	Nat.	Void	Strength Test Results				Atter. Limits			IS Classification	Grain Size				Test Method
				Dens.	Dens.	Grav.	Mois.	Ratio	Pc/Pn	Shear	Cohesn	Frictn	LL	PL	SL		Gravl	Sand	Silt	Clay	
				gms/cc	gms/cc		%		kg/sqcm	kg/sqcm	kg/sqcm	Deg.	%	%	%		%	%	%	%	
BH25	SPT03	4.10	Brownish grey, silty sand with traces of decomposed rockdust.													SM		73	27(Silt+Clay)		Do
BH26	UDS01	1.00	Deep grey, silty clay. Obs. kankars & sand mixture.	1.80	1.40		28 S	0.801	TRSH-UU		0.61	0				CI*		9	69	22	Do
							30 T		3.0	0.634											
							30 C		2.0	0.608											
									1.0	0.601											
									UNCONFD		0.44	0									
									0.0	0.464											
									0.0	0.425											
									0.0	0.439											
									REMOULD		0.38	0									
									0.0	0.377											
									0.0	0.377											
									0.0	0.386											
BH26	UDS02	4.00	Light grey, silty clay with traces of sand mixture. Obs. kankars.	1.88	1.49		27 S	0.593	TRSH-UU		0.94	0	47	22	16	CI		15	64	21	Do
							26 T		3.0	0.976											
							26 C		2.0	0.938											
									1.0	0.911											
									UNCONFD		0.67	0									
									0.0	0.675											
									0.0	0.693											
									0.0	0.650											
									REMOULD		0.56	0									
									0.0	0.565											
									0.0	0.544											
									0.0	0.569											
BH27	UDS01	1.00	Deep grey, silty clay with traces of sand mixture. Obs. kankars.	1.89	1.48		28 S	0.649	TRSH-UU		0.83	0	50	19	14	CH		12	63	25	Do
							27 T		3.0	0.839											
							27 C		2.0	0.831											
									1.0	0.813											
									UNCONFD		0.64	0									
									0.0	0.639											
									0.0	0.646											
									0.0	0.635											
									REMOULD		0.55	0									
									0.0	0.570											
									0.0	0.535											
									0.0	0.554											

Bore	Sample	Depth	Sample Description	Bulk	Dry	Spec.	Nat.	Void	Strength Test Results				Atter. Limits			IS	Grain Size				Test
Hole	Number	M		Dens.	Dens.	Grav.	Mois.	Ratio	Pc/Pn	Shear	Cohesn	Frictn	LL	PL	SL	Classifi cation	Gravl	Sand	Silt	Clay	Method
				gms/cc	gms/cc		%		kg/sqcm	kg/sqcm	kg/sqcm	Deg.	%	%	%		%	%	%	%	
BH27	UDS02	4.00	Deep grey, silty clay with traces of sand mixture. Obs. kankars.	1.91	1.52		26 S	0.607	TRSH-UU		1.02	0	48	20		CI		15	65	20	Do
							26 T		3.0	1.047											
							26 C		2.0	1.033											
									1.0	0.985											
									UNCONFD		0.76	0									
									0.0	0.754											
									0.0	0.771											
									0.0	0.758											
									REMOULD		0.63	0									
									0.0	0.654											
									0.0	0.622											
									0.0	0.620											
BH28	UDS01	1.00	Brownish grey silty clay with sand mixture. Obs. kankars.	1.94	1.54	2.65	26 S	0.592	TRSH-UU		0.81	0	53	21	15	CH		24	59	17	Do
							27 T		3.0	0.821											
							25 C		2.0	0.808											
									1.0	0.803											
									UNCONFD		0.59	0									
									0.0	0.614											
									0.0	0.593											
									0.0	0.572											
									REMOULD		0.48	0									
									0.0	0.502											
									0.0	0.477											
									0.0	0.465											
BH28	SPT02	3.00	Brownish grey, silty clay with traces of sand mixture.										58	19		CH					Do
BH28	SPT03	4.60	Brownish grey, silty sand with traces of decomposed rockdust.													SM		64	36(Silt+Clay)		Do

Bore Hole	Sample Number	Depth M	Sample Description	Bulk	Dry	Spec.	Nat.	Void	Strength Test Results				Atter. Limits			IS Classification	Grain Size				Test Method
				Dens.	Dens.	Grav.	Mois.	Ratio	Pc/Pn	Shear	Cohesn	Frictn	LL	PL	SL		Gravl	Sand	Silt	Clay	
				gms/cc	gms/cc		%		kg/sqcm	kg/sqcm	kg/sqcm	Deg.	%	%	%		%	%	%	%	
BH29	UDS01	1.00	Brownish grey silty clay with traces of calcareous nodules	1.95	1.56	2.63	24 S	0.559	TRSH-UU		0.75	0			16	CI*		14	68	18	Do
							25 T		3.0	0.768											
							23 C		2.0	0.745											
									1.0	0.744											
									UNCONFD		0.70	0									
									0.0	0.718											
									0.0	0.700											
									0.0	0.679											
									REMOULD		0.55	0									
									0.0	0.559											
									0.0	0.544											
									0.0	0.543											
BH29	SPT02	3.00	Brownish grey silty clay with traces of sand mixture.										54	17		CH					Do
BH29	SPT03	4.00	Brownish grey, silty sand with traces of decomposed rockdust.													SM	7	67	26(Silt+Clay)		Do
BH30	UDS02	4.00	Reddish brown clayey silt with sand mixture	1.88	1.53	2.64	23 S	0.572	TRSH-UU		0.66	8			12	CI*		44	50	6	Do
							22 T		3.0	1.244											
							23 C		2.0	1.083											
									1.0	0.921											
									UNCONFD		0.50	0									
									0.0	0.515											
									0.0	0.491											
									0.0	0.497											
									REMOULD		0.37	0									
									0.0	0.379											
									0.0	0.364											
									0.0	0.362											
BH30	SPT03	4.45	Brownish grey, silty claywith sand mixture.										54	16		CH					Do
BH30	SPT04	5.30	Grey, silty sand with traces of decomposed rockdust.													SM		70	30(Silt+Clay)		Do
BH31	SPT02	3.00	Brownish grey, silty clay with sand mixture.										42	23		CI					Do

Bore Hole	Sample Number	Depth M	Sample Description	Bulk	Dry	Spec.	Nat.	Void	Strength Test Results				Atter. Limits			IS Classification	Grain Size				Test Method
				Dens.	Dens.	Grav.	Mois.	Ratio	Pc/Pn	Shear	Cohesn	Frictn	LL	PL	SL		Gravl	Sand	Silt	Clay	
				gms/cc	gms/cc		%		kg/sqcm	kg/sqcm	kg/sqcm	Deg.	%	%	%		%	%	%	%	
BH31	SPT03	4.55	Brownish grey, silty sand with traces of mica.													SM-SP		91	9(Silt+Clay)		Do
BH32	UDS01	1.00	Brownish grey silty clay with traces of sand mixture.	1.90	1.50		27 S	0.617	TRSH-UU		0.91	0	47	20		CI		27	56	17	Do
							27 T		3.0	0.920											
							26 C		2.0	0.918											
									1.0	0.892											
									UNCONFD		0.68	0									
									0.0	0.718											
									0.0	0.700											
									0.0	0.679											
									REMOULD		0.60	0									
									0.0	0.559											
									0.0	0.544											
									0.0	0.543											
BH32	SPT02	2.50	Brownish grey, clayey silt with sand mixture & calcareous nodules.													SM	5	45	50(Silt+Clay)		Do
BH33	UDS01	1.00	Brownish grey silty clay with traces of kankars & calcareous nodules	1.81	1.40		27 S	0.689	TRSH-UU		0.75	0	48	17	14	CI		16	68	16	Do
							29 T		3.0	0.784											
							27 C		2.0	0.739											
									1.0	0.731											
									UNCONFD		0.56	0									
									0.0	0.581											
									0.0	0.553											
									0.0	0.559											
									REMOULD		0.41	0									
									0.0	0.429											
									0.0	0.414											
									0.0	0.381											
BH33	SPT03	3.80	Brownish grey, silty sand with traces of decomposed rockdust.													SM	8	65	27(Silt+Clay)		Do
BH34	UDS01	1.00	Brownish grey, clayey sandy silt.	1.79	1.48		20 S		DRSH-CU		0.12	28				CI*					Do
							21DR		0.5	0.396											
									1.0	0.641											
									2.0	1.192											
BH34	SPT02	3.00	Brownish grey, silty sand with traces of clay binders and mica.													SM		67	33(Silt+Clay)		Do

Bore	Sample	Depth	Sample Description	Bulk	Dry	Spec.	Nat.	Void	Strength Test Results				Atter. Limits			IS	Grain Size				Test
Hole	Number	M		Dens.	Dens.	Grav.	Mois.	Ratio	Pc/Pn	Shear	Cohesn	Frictn	LL	PL	SL	Classifi cation	Gravl	Sand	Silt	Clay	Method
				gms/cc	gms/cc		%		kg/sqcm	kg/sqcm	kg/sqcm	Deg.	%	%	%		%	%	%	%	
BH35	UDS01	1.00	Brownish grey silty claywith calcareous nodules &sand mixture	1.84	1.48		24 S	0.706	TRSH-UU		0.47	6	47	24	17	CI		38	46	16	Do
							23 T		3.0	0.873											
							23 C		2.0	0.754											
									1.0	0.637											
									UNCONFD		0.52	0									
									0.0	0.532											
									0.0	0.512											
									0.0	0.517											
									REMOULD		0.46	0									
									0.0	0.456											
									0.0	0.472											
									0.0	0.455											
BH36	SPT02	3.10	Light grey, clayey silt with sand mixture.													CI*		25	65	10	Do
BH37	SPT02	2.80	Brownish grey, silty clay with traces of sand mixture.										44	22		CI					Do
BH37	SPT03	3.40	Brownish grey, clayey silt with sand, traces of calcareous nodules.													CI*		41	46	13	Do

LABORATORY ROCK TEST RESULTS

BH No.	Run No.	Depth (M)	Description	Density (gm/cc)		Water Content (%)	Porosity %	Specific Gravity	Unconfined Compressive strength (kg/sqcm)		Coefficient of softening	Point Load Strength Index (kg/sqcm)	Slake Durability Index (%)	Hardness (based on Mohs' Scale)	Soundness* (% Loss)	E (Kg/sqcm)	Impact Value	Test Method
				Bulk	Dry				In-situ	Saturated								
BH-01	1	1.10-1.85	Moderately weathered, yellowish grey, fine grained, highly fractured sand stone.	2.385	2.336	2.09	4.8928	2.456	--	--	--	1.64	--	--	--	--	--	** See the Note
BH-01	9	7.10-7.85	Slightly weathered, greyush, moderately fractured sandstone.	--	--	--	--	--	115	82	0.71	--	--	--	--	6592	--	Do
BH-01	16	12.35-13.10	Slightly weathered, greyush, moderately fractured sandstone.	--	--	--	--	--	--	--	--	--	96.05	Hard	15.62	--	--	Do
BH-02	7	9.30 - 10.05	Highly weathered, greyish yellow, fine to medium grained fractured sand stone.	--	--	--	--	--	--	--	--	--	76.46	--	--	--	--	Do
BH-02	10	11.50 - 12.25	Slightly weathered, deep grey, fine to medium grained, moderately fractured sand stone with inter-bedded shale.	2.396	2.348	2.054	4.822	--	--	183	--	--	--	--	--	3748	--	Do
BH-02	13	13.75 - 14.50	Slightly weathered, deep grey, fine to medium grained, moderately fractured sand stone with inter-bedded shale.	--	--	--	--	--	--	--	--	6.47	--	Hard	22.35	--	--	Do
BH-02	22	22.75 - 24.25	Fresh, deep grey, fine to medium grained, moderately fractured sand stone with inter-bedded shale in layer.	--	--	--	--	2.476	--	--	--	--	--	--	--	--	--	Do
BH-03	2	3.25-4.00	Highly weathered, yellowish brown, fine to medium grained, highly fractured sandstone.	2.440	2.395	1.86	4.4459	2.507	--	--	--	--	--	--	--	--	--	Do
BH-03	6	6.25-7.00	Moderately weathered, yellowish brown, fine to medium grained, highly fractured sandstone.	--	--	--	--	--	251	--	--	--	--	--	--	5178	--	Do
BH-03	9	8.50-9.25	Moderately weathered, yellowish brown, fine to medium grained, highly fractured sandstone.	--	--	--	--	--	--	87	--	--	--	Medium Soft	--	--	--	Do
BH-03	15	13.00-13.75	Moderately weathered, yellowish brown, fine to medium grained, highly fractured sandstone.	2.409	2.365	1.90	4.4907	--	--	--	--	1.83	--	--	--	--	--	Do
BH-03	20	16.75-17.50	Slightly weathered, brownish grey, medium grained, moderately fractured sandstone.	--	--	--	--	2.375	131	95	0.73	--	--	--	--	--	--	Do

BH No.	Run No.	Depth (M)	Description	Density (gm/cc)		Water Content (%)	Porosity %	Specific Gravity	Unconfined Compressive strength (kg/sqcm)		Coefficient of softening	Point Load Strength Index (kg/sqcm)	Slake Durability Index (%)	Hardness (based on Mohs' Scale)	Soundness* (% Loss)	E (Kg/sqcm)	Impact Value	Test Method
				Bulk	Dry				In-situ	Saturated								
BH-03	22	18.25-19.00	Slightly weathered, brownish grey, medium grained, moderately fractured sandstone.	2.340	2.289	2.21	5.0689	--	--	--	--	--	--	--	--	--	37.62	Do
BH-04	1	4.00 - 4.75	Slightly weathered, greyish yellow, fine to medium grained, fractured sand stone.	--	--	--	--	2.400	--	116	--	--	--	--	--	--	--	Do
BH-04	5	7.00 - 7.75	Slightly weathered, greyish yellow, fine to medium grained, fractured sand stone.	2.351	2.306	1.952	4.502	--	300	--	--	--	--	Hard	--	--	--	Do
BH-04	10	10.75 - 11.50	Fresh, deep grey, fine to medium grained, fractured sand stone.	--	--	--	--	--	--	251	--	--	--	--	--	--	36.23	Do
BH-04	14	16.00 - 17.50	Fresh, deep grey, fine to medium grained, fractured sand stone.	--	--	--	--	--	295	--	--	--	97.03	--	--	--	--	Do
BH-05	1	2.50- 3.25	Moderately weathered, brownish grey, fine grained, fractured sandstone.	2.400	2.357	1.81	4.2552	2.462	--	150	--	--	--	--	--	--	--	Do
BH-05	6	7.00- 8.50	Fresh, brownish grey, fine grained, fractured sandstone.	--	--	--	--	--	221	176	0.80	--	--	--	--	--	39.14	Do
BH-06	6	7.40- 8.15	Slightly weathered, grey, medium grained, fractured sand stone.	--	--	--	--	--	--	--	--	1.62	--	--	--	--	--	Do
BH-06	19	17.15- 17.90	Slightly weathered, grey, medium grained, fractured sand stone.	2.340	2.302	1.67	3.8366	2.394	263	179	0.68	--	--	--	--	--	--	Do
BH-07	4	6.75- 7.50	Slightly weathered, brownish grey, medium to fine grained, fractured sand stone.	--	--	--	--	--	145	--	--	--	--	--	--	--	--	Do
BH-07	7	9.00- 9.75	Fresh, deep grey, fine grained, fractured sandstone.	--	--	--	--	--	324	246	0.76	--	91.72	Hard	--	--	--	Do
BH-08	2	4.50- 5.25	Moderately weathered, yellowish grey, medium to fine grained, fractured sandstone.	--	--	--	--	--	--	--	--	2.13	--	--	--	--	--	Do
BH-08	7	8.25- 9.00	Fresh, deep grey, fine grained, fractured sandstone.	2.440	2.395	1.88	4.5110	2.508	--	--	--	--	--	--	--	--	--	Do

BH No.	Run No.	Depth (M)	Description	Density (gm/cc)		Water Content (%)	Porosity %	Specific Gravity	Unconfined Compressive strength (kg/sqcm)		Coefficient of softening	Point Load Strength Index (kg/sqcm)	Slake Durability Index (%)	Hardness (based on Mohs' Scale)	Soundness* (% Loss)	E (Kg/sqcm)	Impact Value	Test Method
				Bulk	Dry				In-situ	Saturated								
BH-09	2	3.40 - 4.15	Highly weathered, yellowish grey, medium grained, highly fractured sand stone.	2.396	2.342	2.305	5.399	--	--	--	--	0.93	--	--	--	--	--	Do
BH-09	4	4.90 - 5.65	Highly weathered, yellowish grey to grey, medium grained, highly fractured sand stone.	--	--	--	--	--	--	29	--	--	--	Medium Soft	--	--	--	Do
BH-09	13	12.20 - 13.70	Fresh, deep grey, medium grained, fractured sand stone.	--	--	--	--	--	178	--	--	--	--	--	--	2652	--	Do
BH-10	2	3.50 - 4.25	Moderately weathered, yellowish grey, medium grained, fractured sand stone.	2.368	2.316	2.213	5.125	--	--	126	--	--	54.15	--	--	--	--	Do
BH-10	5	5.75 - 6.50	Slightly weathered, grey, fine to medium grained, fractured sand stone.	--	--	--	--	2.404	396	--	--	--	--	Hard	17.52	--	--	Do
BH-10	8	8.00 - 9.50	Fresh, grey, fine to medium grained, slightly fractured sand stone.	--	--	--	--	--	--	346	--	--	--	--	--	--	--	Do
BH-11	1	2.40 - 3.00	Slightly weathered, yellowish grey, medium grained, fractured sand stone.	2.465	2.421	1.815	4.393	--	167	98	0.59	9.29	--	--	--	--	--	Do
BH-11	4	4.50 - 5.25	Slightly weathered, light grey, medium grained, fractured sand stone.	--	--	--	--	--	254	191	0.75	--	76.82	--	--	5078	--	Do
BH-11	9	8.25 - 9.75	Fresh, light grey, medium grained, fractured sand stone.	--	--	--	--	2.863	514	473	0.92	--	--	--	--	--	--	Do
BH-12	3	6.50 - 7.25	Fresh, light grey, fine grained, fractured sand stone.	2.422	2.381	1.701	4.052	--	--	187	--	--	--	--	--	--	39.58	Do
BH-12	7	9.50 - 10.25	Fresh, light grey, fine grained, fractured sand stone.	--	--	--	--	--	296	--	--	--	--	Hard	--	--	--	Do
BH-12	16	18.50 - 20.00	Fresh, light grey, fine grained, fractured sand stone.	--	--	--	--	--	361	322	0.89	--	88.62	--	--	5234	--	Do
BH-13	5	7.75 - 8.50	Fresh, grey, fine grained, fractured sandstone.	--	--	--	--	--	225	168	0.75	--	--	--	18.52	--	--	Do

BH No.	Run No.	Depth (M)	Description	Density (gm/cc)		Water Content (%)	Porosity %	Specific Gravity	Unconfined Compressive strength (kg/sqcm)		Coefficient of softening	Point Load Strength Index (kg/sqcm)	Slake Durability Index (%)	Hardness (based on Mohs' Scale)	Soundness* (% Loss)	E (Kg/sqcm)	Impact Value	Test Method
				Bulk	Dry				In-situ	Saturated								
BH-14	3	6.50 - 7.25	Slightly weathered, grey, medium grained, fractured sand stone.	2.378	2.328	2.160	5.028	--	--	166	--	--	--	Hard	--	--	--	Do
BH-14	4	7.25 - 8.00	Slightly weathered, grey, medium grained, fractured sand stone.	--	--	--	--	2.459	--	--	--	6.47	--	--	19.59	--	--	Do
BH-14	7	9.50 - 11.00	Fresh, grey, medium grained, fractured sand stone.	2.356	2.312	1.926	4.453	--	263	--	--	--	94.95	--	--	--	--	Do
BH-15	2	5.00 - 5.75	Slightly weathered, greyish yellow, medium grained, fractured sand stone.	--	--	--	--	--	226	--	--	--	91.77	Hard	--	2448	--	Do
BH-15	4	6.50 - 7.25	Fresh, yellowish grey, medium grained, fractured sand stone.	--	--	--	--	2.416	--	320	--	--	--	--	--	--	--	Do
BH-15	6	8.00 - 9.50	Fresh, yellowish grey, medium grained, fractured sand stone.	2.343	2.303	1.716	3.954	--	--	307	--	1.79	--	--	--	--	--	Do
BH-16	1	6.50 - 7.00	Moderately weathered, yellowish brown, medium grained, fractured sand stone.	2.369	2.321	2.090	4.850	--	--	--	--	2.02	--	--	--	--	--	Do
BH-16	3	7.75 - 8.50	Slightly weathered, yellowish brown, medium grained, fractured sand stone.	--	--	--	--	2.379	166	--	--	--	--	Medium Soft	--	--	--	Do
BH-16	11	13.75 - 14.50	Slightly weathered, grey, medium to fine grained, fractured sand stone.	--	--	--	--	--	139	84	0.60	--	89.63	--	--	--	--	Do
BH-16	17	18.25 - 19.00	Slightly weathered, grey, medium to fine grained, fractured sand stone.	--	--	--	--	2.439	--	--	--	--	--	--	--	--	--	Do
BH-17	1	7.40 - 8.00	Moderately weathered, brownish grey, fine to medium grained, highly fractured sand stone.	--	--	--	--	2.293	--	89	--	--	--	--	26.32	--	--	Do
BH-17	4	9.50 - 10.25	Slightly weathered, brownish grey to deep grey, fine to medium grained, highly fractured sand stone.	2.336	2.304	1.360	3.135	--	--	--	--	0.99	--	--	--	--	38.65	Do
BH-17	6	11.00 - 11.75	Slightly weathered, deep grey, fine to medium grained, highly fractured sand stone.	--	--	--	--	--	222	--	--	--	71.29	--	--	--	--	Do

BH No.	Run No.	Depth (M)	Description	Density (gm/cc)		Water Content (%)	Porosity %	Specific Gravity	Unconfined Compressive strength (kg/sqcm)		Coefficient of softening	Point Load Strength Index (kg/sqcm)	Slake Durability Index (%)	Hardness (based on Mohs' Scale)	Soundness* (% Loss)	E (Kg/sqcm)	Impact Value	Test Method
				Bulk	Dry				In-situ	Saturated								
BH-17	10	14.00 - 15.50	Fresh, deep / light grey, fine to medium grained, fractured sand stone.	--	--	--	--	2.471	371	321	0.87	--	--	Hard	--	--	--	Do
BH-18	1	7.50 - 8.25	Slightly weathered, yellowish grey, medium grained, fractured sand stone.	2.352	2.294	2.529	5.803	--	--	93	--	4.26	--	--	--	--	--	Do
BH-18	4	9.75 - 10.50	Slightly weathered, yellowish grey, medium grained, fractured sand stone.	--	--	--	--	2.436	166	--	--	--	--	--	23.22	--	--	Do
BH-18	10	14.25 - 15.00	Fresh, grey, medium to fine grained, fractured sand stone.	--	--	--	--	2.434	297	245	0.83	--	--	--	--	--	--	Do
BH-19	1	6.20- 7.00	Highly weathered, yellowish brown, fine to medium grained, fractured sandstone.	--	--	--	--	--	--	112	--	--	--	--	--	--	--	Do
BH-19	10	13.00- 13.75	Fresh, light grey, medium to fine grained, moderately fractured sandstone.	--	--	--	--	--	251	214	0.85	--	90.27	Hard	--	--	--	Do
BH-20	2	8.00 - 8.75	Moderately weathered, grey, medium grained, fractured sand stone.	2.371	2.326	1.958	4.555	--	175	--	--	0.99	--	--	--	--	--	Do
BH-20	9	13.25 - 14.00	Highly weathered, grey, medium grained, fractured sand stone.	--	--	--	--	--	--	--	--	7.65	--	Medium Soft	--	--	--	Do
BH-21	2	6.50 - 7.25	Moderately weathered, yellowish grey, fine grained, fractured sand stone.	2.350	2.296	2.337	5.366	2.426	227	130	0.57	--	--	--	--	--	--	Do
BH-21	3	7.25 - 8.00	Moderately weathered, yellowish grey to grey, fine grained, fractured sand stone.	--	--	--	--	--	--	132	--	2.46	--	--	--	--	--	Do
BH-21	6	9.50 - 10.00	Highly weathered, grey, fine grained, fractured sand stone.	--	--	--	--	--	--	--	--	0.97	--	--	--	--	--	Do
BH-22	1	8.10- 8.75	Moderately weathered, deep grey, fine grained, fractured sandstone.	--	--	--	--	--	187	--	--	--	--	--	--	--	--	Do
BH-22	3	9.50- 10.00	Slightly weathered, deep grey, fine grained, fractured sandstone.	2.381	2.330	2.18	5.0849	2.455	277	197	0.71	--	--	--	--	--	--	Do

BH No.	Run No.	Depth (M)	Description	Density (gm/cc)		Water Content	Porosity %	Specific Gravity	Unconfined Compressive strength (kg/sqcm)		Coefficient of softening	Point Load Strength Index (kg/sqcm)	Slake Durability Index (%)	Hardness (based on Mohs' Scale)	Soundness* (% Loss)	E (Kg/sqcm)	Impact Value	Test Method
				Bulk	Dry	(%)			In-situ	Saturated								
BH-23	5	10.25-11.00	Slightly weathered, brownish grey, medium to fine grained, fractured sandstone.	--	--	--	--	--	341	210	0.62	--	--	--	--	--	--	Do
BH-24	3	7.75-8.50	Moderately weathered, brownish grey, fine grained, fractured sandstone.	--	--	--	--	--	--	215	--	--	84.36	Medium Soft	--	4894	--	Do
BH-24	10	13.00-13.75	Fresh, grey, fine grained, fractured sandstone.	2.386	2.335	2.15	5.0245	2.459	102	78	0.76	--	--	--	--	--	--	Do
BH-25	5	7.75-8.50	Moderately weathered, yellowish grey, medium to fine grained, fractured sandstone.	--	--	--	--	--	134	--	--	--	--	--	--	--	--	Do
BH-25	7	9.25-10.00	Slightly weathered, yellowish grey, medium to fine grained, fractured sandstone.	--	--	--	--	--	318	261	0.82	--	--	--	--	--	--	Do
BH-26	2	6.25-7.00	Slightly weathered, yellowish grey, fine grained, fractured sandstone.	2.322	2.283	1.68	3.8248	2.374	--	--	--	1.14	78.41	Medium Soft	--	--	--	Do
BH-26	6	9.25-10.00	Slightly weathered, yellowish grey, fine grained, fractured sandstone.	--	--	--	--	--	167	117	0.70	--	--	--	--	--	--	Do
BH-27	2	7.00-7.75	Moderately weathered, brownish grey, medium to fine grained, fractured sandstone.	--	--	--	--	--	--	71	--	--	67.5	--	--	--	--	Do
BH-27	4	8.50-9.25	Moderately weathered, brownish grey, medium to fine grained, fractured sandstone.	2.355	2.300	2.39	5.5039	--	149	89	0.60	--	--	--	--	6135	--	Do
BH-27	7	10.75-11.50	Slightly weathered, brownish grey, medium to fine grained, fractured sandstone.	--	--	--	--	2.429	--	--	--	5.21	--	--	22.14	--	--	Do
BH-27	9	12.25-13.00	Slightly weathered, brownish grey, medium to fine grained, fractured sandstone.	2.421	2.369	2.18	5.1648	--	--	--	--	--	--	--	--	--	--	Do
BH-27	10	13.00-13.75	Fresh, brownish grey, medium to fine grained, fractured sandstone.	--	--	--	--	2.498	355	--	--	8.74	--	Hard	--	--	--	Do
BH-28	7	10.75-11.50	Slightly weathered, brownish grey, medium to fine grained, fractured sandstone.	--	--	--	--	--	131	87	0.66	--	82.61	--	--	--	--	Do

BH No.	Run No.	Depth (M)	Description	Density (gm/cc)		Water Content (%)	Porosity %	Specific Gravity	Unconfined Compressive strength (kg/sqcm)		Coefficient of softening	Point Load Strength Index (kg/sqcm)	Slake Durability Index (%)	Hardness (based on Mohs' Scale)	Soundness* (% Loss)	E (Kg/sqcm)	Impact Value	Test Method
				Bulk	Dry				In-situ	Saturated								
BH-28	10	13.00-13.75	Slightly weathered, deep grey, medium to fine grained, fractured sandstone.	--	--	--	--	--	--	--	--	2.47	--	--	26.47	--	--	Do
BH-29	1	4.50-5.25	Moderately weathered, light grey, medium grained, fractured sand stone.	2.334	2.290	1.93	4.4266	2.396	--	84	--	--	--	--	--	--	--	Do
BH-29	7	9.00-9.75	Moderately weathered, light grey, medium grained, fractured sand stone.	--	--	--	--	--	321	283	0.88	--	--	--	--	--	--	Do
BH-30	3	7.25-8.00	Slightly weathered, yellowish grey, fine grained, fractured sandstone.	--	--	--	--	--	234	--	--	--	94.35	Medium Soft	--	--	--	Do
BH-30	5	8.75-9.50	Slightly weathered, yellowish grey, fine grained, fractured sandstone.	2.371	2.320	2.21	5.1219	2.445	314	149	0.48	--	--	--	--	--	--	Do
BH-31	5	8.50-9.25	Moderately weathered, brownish grey, medium to fine grained, fractured sand stone.	--	--	--	--	--	--	--	--	3.54	--	--	--	--	--	Do
BH-31	8	10.75-11.50	Slightly weathered, grey, medium to fine grained, fractured sandstone.	--	--	--	--	--	349	271	0.78	--	--	--	16.47	7.148	--	Do
BH-32	3	4.75-5.50	Slightly weathered, brownish grey, fine grained, fractured sandstone.	2.309	2.255	2.40	5.4139	2.384	201	112	0.56	--	--	--	--	--	41.63	Do
BH-33	4	6.50-7.25	Moderately weathered, yellowish brown, medium grained, fractured sand stone.	--	--	--	--	--	211	--	--	--	87.62	Medium Soft	--	--	--	Do
BH-33	10	11.00-11.75	Slightly weathered, light grey, medium grained, fractured sandstone.	--	--	--	--	--	--	184	--	--	--	--	--	--	--	Do
BH-34	1	4.00-4.75	Highly weathered, yellowish brown, medium grained, fractured sandstone.	--	--	--	--	--	134	--	--	--	--	--	--	--	--	Do
BH-34	6	7.75-8.50	Slightly weathered, whitish grey, medium grained, moderately fractured sandstone.	2.283	2.213	3.15	6.9780	2.379	98	39	0.40	--	--	--	--	--	--	Do
BH-35	4	6.50-7.25	Highly weathered, yellowish brown, medium grained, fractured sandstone.	--	--	--	--	--	--	--	--	0.97	--	--	--	--	--	Do

BH No.	Run No.	Depth (M)	Description	Density (gm/cc)		Water Content (%)	Porosity %	Specific Gravity	Unconfined Compressive strength (kg/sqcm)		Coefficient of softening	Point Load Strength Index (kg/sqcm)	Slake Durability Index (%)	Hardness (based on Mohs' Scale)	Soundness* (% Loss)	E (Kg/sqcm)	Impact Value	Test Method
				Bulk	Dry				In-situ	Saturated								
BH-35	8	9.50-10.00	Slightly weathered, brownish grey, medium grained, moderately fractured sandstone.	--	--	--	--	--	145	91	0.63	--	83.76	Medium Soft	--	--	--	Do
BH-36	5	7.50-8.25	Highly weathered, yellowish brown, fine grained, highly fractured sandstone.	--	--	--	--	--	--	--	--	2.64	--	--	19.24	--	--	Do
BH-36	7	9.00-10.00	Moderately weathered, yellowish brown, fine grained, highly fractured sandstone.	2.447	2.408	1.62	3.8899	2.505	--	179	--	--	--	--	--	13466	--	Do
BH-37	2	4.25-5.00	Moderately weathered, yellowish brown, medium grained, highly fractured sandstone.	--	--	--	--	--	88	--	--	--	--	--	--	--	--	Do
BH-37	8	8.75-9.50	Slightly weathered, grey, fine grained, moderately fractured sandstone.	--	--	--	--	--	--	38	--	--	--	--	--	--	--	Do

TEST RESULTS OF ROCK CORES

Name of Work :	Geotechnical Investigation for N.T.P.C Talcher Thermal Stage -III (2x660) MW.

Sr. No.	Bore Hole No.	Core No.	Depth, m		Diameter, cm	Height, cm	H : D (1:H/D)	Correction Factor	Condition of Test	Failure Load	Uniaxial Compressive Strength	Modulus of Elasticity	Point Load Index	Slake Durability Index *	Porosity	Water Absorption	Dry Density	Specific Gravity	Soundness	Hardness by Schmidt Hammer value	Remarks
			From	To	cm	cm				kN	kg/cm ²	kg/cm ²	kg/cm ²	%	%	%	gm/cm ³		%		

Table G-5 (v)

[illegible]

TEST RESULTS OF ROCK CORES

Name of Work :																					
Geotechnical Investigation for N.T.P.C Talcher Thermal Stage -III (2x660) MW.																					
Sr. No.	Bore Hole No.	Core No.	Depth, m		Diameter, cm	Height, cm	H : D (1:H/D)	Correction Factor	Condition of Test	Failure Load	Uniaxial Compressive Strength	Modulus of Elasticity	Point Load Index	Slake Durability Index *	Porosity	Water Absorption	Dry Density	Specific Gravity	Soundness	Hardness by Schmidt Hammer value	Remarks
			From	To																	

Table G-4 (v)

1	4	18	3.15	4.50											10.30	4.60	2.243	2.64			
2		44	6.50	7.50	5.30	10.25	1.93	0.992	Soaked	36.3	167.00								8.15		
3		118	11.50	12.50	5.38	7.05	1.31		Soaked	0.30			0.22								
4	9	13	4.70	5.70	4.90	5.20	1.06	0.836	Soaked	33.40	151.00										
5		67	11.70	12.70	5.00	5.30	1.06	0.836	Soaked	43.8	190.00										
6		208	18.70	19.70	5.30	7.80	1.47		Soaked	0.40			0.29								
7	13	184	16.90	17.90	5.40	10.62	1.97	0.996	Soaked	20.70	92.00										
8		207	18.90	20.00	5.40	8.00	1.48		Soaked	0.30			0.22								
9	81	15	6.20	7.20	5.40	10.30	1.91	0.989	Soaked	41.00	180.60										
10		35	10.20	11.20	5.39	10.32	1.91	0.990	Soaked	81.0	358.40								6.54		
11		86	18.20	19.20	5.42	8.02	1.48	0.928	Soaked	30.00	123.00										

TEST RESULTS OF ROCK CORES

Name of Work : Geotechnical Investigation for N.T.P.C Talcher Thermal Stage -III (2x660) MW.

Sr. No.	Bore Hole No.	Core No.	Depth, m		Diameter, cm	Height, cm	H : D (1:H/D)	Correction Factor	Condition of Test	Failure Load	Uniaxial Compressive Strength	Modulus of Elasticity	Point Load Index	Slake Durability Index *	Porosity	Water Absorption	Dry Density	Specific Gravity	Soundness	Hardness by Schmidt Hammer value	Remarks
			From	To																	
18		233	19.40	20.00	5.23	6.83	1.31		Soaked	0.90			0.67								
19	10	15	4.00	5.00					Soaked						6.10	2.70	2.315	2.61	9.03		
20		22	5.00	6.00																	
21		167	15.00	16.00	5.37	7.91	1.47		Soaked	0.60			0.44								
22		232	19.00	20.00	5.20	5.40	1.04	0.829	Soaked	46.90	187.00										
23		367	25.00	26.00	5.20	5.20	1.00	0.982	Soaked	45.90	180.0										
24		385	26.00	27.00	5.20	10.40	2.00	1.000	Soaked	20.20	97.0										
25		403	27.00	28.00																22.00	
26		11	2	3.20	4.20	5.30	5.50	1.04	0.829	Soaked	29.60	113.0				9.30	4.1	2.29			
27	21		6.20	7.20	5.30	10.30	1.94	0.994	Soaked	29.70	136.0										
28	106		13.20	14.20															9.12		
29	131		16.20	17.20	5.40	5.50	1.02	0.824	Soaked	21.20	78.0										
30	14	25	5.00	6.00	5.10	9.75	1.91	0.990	Soaked	44.10	218.0										
31		34	6.00	7.00	4.30	6.70	1.56		Soaked	0.00			0.00								
32		159	19.10	20.00	5.24	10.27	1.97	0.995	Soaked	38.10	179.00										
33	15	47	11.00	12.00											8.00	2.4	2.34				
34		50	11.00	12.00	5.40	5.46	1.01	0.822	Soaked	32.60	119.0										
35		101	16.00	17.00																24.00	
36	73	4	2.20	3.20	5.09	9.62	1.89	0.987	Soaked	43.00	212.7										
37		178	14.20	15.20	5.24	9.57	1.83	0.979	Soaked	36.00	166.70										

TEST RESULTS OF ROCK CORES

Name of Work :			Geotechnical Investigation for N.T.P.C Talcher Thermal Stage -III (2x660) MW.																		
Sr. No.	Bore Hole No.	Core No.	Depth, m		Diameter, cm	Height, cm	H : D (1:H/D)	Correction Factor	Condition of Test	Failure Load	Uniaxial Compressive Strength	Modulus of Elasticity	Point Load Index	Slake Durability Index *	Porosity	Water Absorption	Dry Density	Specific Gravity	Soundness	Hardness by Schmidt Hammer value	Remarks
			From	To	cm	cm				kN	kg/cm ²	kg/cm ²	kg/cm ²	%	%	%	gm/cm ³		%		

Table G-2 (v)

1	16	10	3.70	4.70	5.20	10.40	2.00	1.000	Soaked	45.0	216.04									
2	17	29	3.75	4.75											11.30	5.1	2.197			
3		21	3.45	4.45	5.37	7.00				0.20			0.27							
4		59	3.75	8.75	5.35	10.50	1.96	0.996	Soaked	56.70	256.08							6.96		
5		98	14.75	15.75	5.40	10.70	1.98	0.998	Soaked	54.50	242.18									
6		85	11.75	12.75	5.40	10.00						2.97 E + 05							30.00	
7	20	23	3.80	4.80	5.40	10.00	1.85	0.983	Soaked	37.0	161.84									
8		42	9.80	10.80	5.40	10.40				63.5	280.4									
9		43	9.80	10.80	5.40	10.00						2.62 E + 05								
10	21	9	2.10	3.10										9.63	4.29	2.244				
11		169	15.10	16.10	5.40	10.00						1.15 E + 05							20.00	
12	24	5	2.00	3.00	5.35	10.45	1.95	0.995	Soaked	45.6	205.73									
13	25	20	3.65	4.65										11.27	5.10	2.210				
14		40	4.65	6.65	5.10	9.70	1.90	0.989	Soaked	29.2	144.00									
15		123	11.65	12.65	5.13	10.10				0.6			0.45							
16		138	12.65	13.65	5.30	10.40	2.00	0.996	Soaked	63.00	289.92									

TEST RESULTS OF ROCK CORES

Name of Work : Geotechnical Investigation for N.T.P.C Talcher Thermal Stage -III (2x660) MW.

Sr. No.	Bore Hole No.	Core No.	Depth, m		Diameter, cm	Height, cm	H : D (1:H/D)	Correction Factor	Condition of Test	Failure Load kN	Uniaxial Compressive Strength kg/cm ²	Modulus of Elasticity kg/cm ²	Point Load Index kg/cm ²	Slake Durability Index * %	Porosity %	Water Absorption %	Dry Density gm/cm ³	Specific Gravity	Soundness %	Hardness by Schmidt Hammer value	Remarks
			From	To	cm	cm															

Table G-3 (v)

1	19	20	5.15	6.15	5.30	10.50	2.00	0.998	Soaked	40.00	184.47									
2		48	9.15	10.15	5.25	5.50	1.05	0.832	Soaked	20.20	79.16									
3		15	3.20	4.20											8.75	3.85	2.275			
4	23	51	5.20	6.20	5.50	5.70	1.04	0.829	Soaked	43.3	154.02									
5		100	8.20	9.20	5.60	7.40				0.20			0.14							
6		147	11.20	12.20															21.00	
7	26	72	9.00	10.00	5.40	10.67	1.98	0.997	Soaked	8.70	38.63									
8		108	12.00	13.00	4.91	9.50				0.20			0.16							
9	27	3	2.25	3.25	5.30	10.60	2.00	1.000	Soaked	31.80	147.00									
10		30	5.25	6.25	5.24	5.46	1.04	0.830	Soaked	17.0	67.00							9.42		
11		127	13.25	14.25	5.16	9.14	1.77	0.972	Soaked	25.00	118.0									
12	28	108	9.00	10.00													2.62			
13		117	9.00	10.00	4.73	5.05				0.4			0.32							
14		157	12.00	13.00													2.53			
15		162	12.00	13.00	5.02	9.79	1.95	0.994	Soaked	36.20	185.00									
16		188	14.00	15.00													2.54			
17		249	17.00	18.00													2.59			

5.9. CHEMICAL TESTS:

Chemical tests were performed on few soil and water samples for determining the pH value, Sulphate, Chloride, organic matter content etc. The results are given in a tabular form below:

CHEMICAL TEST RESULTS ON SOIL SAMPLES:-

BH/Sample No.	Depth (m)	pH value	Sulphate as SO ₃ (%)	Chloride as Cl (%)	Organic Matter (%)
BH-20 / UDS01	1.00-1.45	8.06	B.D.L.*	0.0070	0.196
BH-25 / UDS01	1.00-1.45	7.41	B.D.L.*	0.0080	0.208
BH-27 / UDS01	1.00-1.45	7.84	B.D.L.*	0.0080	0.226
BH-35 / UDS01	1.00-1.45	6.20	B.D.L.*	0.0080	0.225

*B.D.L. = Below Detection Limit (i.e. below 0.050%)

CHEMICAL TEST RESULTS ON WATER SAMPLES:-

BH/Sample No.	Depth (m)	pH value	Sulphate as SO ₃ (mg/Ltr.)	Chloride as Cl (mg/Ltr.)	Organic Matter (mg/Ltr.)
BH-02 / WS01	1.20	6.38	60	10	21.82
BH-21 / WS01	2.45	6.65	60	16	16.36
BH-33 / WS01	1.10	6.82	60	24	19.09

2.11. ELECTRICAL RESISTIVITY TEST:

Twenty one (21) nos. Electrical Resistivity Tests were carried out at the following locations around Plant Area. The test procedure and results are presented under Section-8.

ERT No.	Co-ordinates (M)		Reduced Level (M)	ERT No.	Co-ordinates (M)		Reduced Level (M)
	Easting	Northing			Easting	Northing	
ERT-1	572	4788	67.242	ERT-12	1112	3790	69.612
ERT-2	673	4909	70.454	ERT-13	1110	3635	70.619
ERT-3	844	4781	74.382	ERT-14	1380	3785	68.711
ERT-4	1216	4530	69.352	ERT-15	1448	3690	68.612
ERT-5	604	4638	68.743	ERT-16	1253	3732	69.517
ERT-6	1344	4370	71.619	ERT-17	1405	3429	68.219
ERT-7	1473	4245	71.042	ERT-18	1060	3206	67.412
ERT-8	1632	4230	70.514	ERT-19	893	3079	67.912
ERT-9	1277	4281	70.811	ERT-20	1156	3690	71.649
ERT-10	1566	4151	71.716	ERT-21	632	4180	76.177
ERT-11	1134	3976	72.713				

ERT No. 01

SI No.	S (M)	Apparent Electrical Resistivity (Ohm-m)				Mean
		(N - S)	(E - W)	(NE - SW)	(NW - SE)	
1	0.50	22.929	22.944	22.913	22.928	22.93
2	1.0	11.183	11.246	11.309	11.152	11.22
3	2.0	7.979	8.104	8.042	8.167	8.07
4	3.0	7.916	7.539	7.822	7.916	7.80
5	4.0	9.424	9.424	9.298	9.047	9.30
6	5.0	9.581	9.267	9.424	9.738	9.50
7	6.0	10.555	11.497	11.309	10.932	11.07
8	7.0	10.995	11.874	12.314	11.655	11.71
9	8.0	11.057	12.063	11.058	11.058	11.31
10	10.0	12.251	12.880	11.623	13.058	12.45

Mean Resistivity at ERT-01 is 11.54 Ohm - m.

ERT No. 02

SI No.	S (M)	Apparent Electrical Resistivity (Ohm-m)				Mean
		(N - S)	(E - W)	(NE - SW)	(NW - SE)	
1	0.50	35.022	34.865	34.708	35.179	34.94
2	1.0	23.529	23.592	23.529	23.498	23.54
3	2.0	13.256	13.445	13.382	13.445	13.38
4	3.0	15.833	15.833	16.304	16.115	16.02
5	4.0	17.592	18.220	17.969	17.717	17.87
6	5.0	17.906	18.377	18.849	18.377	18.38
7	6.0	17.341	18.849	18.472	17.718	18.10
8	7.0	17.592	15.613	15.833	16.053	16.27
9	8.0	17.592	17.341	16.838	17.592	17.34
10	10.0	19.163	18.848	18.534	19.791	19.08

Mean Resistivity at ERT-02 is 19.49 Ohm - m.

ERT No. 03

SI No.	S (M)	Apparent Electrical Resistivity (Ohm-m)				Mean
		(N - S)	(E - W)	(NE - SW)	(NW - SE)	
1	0.50	28.488	28.410	28.457	28.457	28.45
2	1.0	33.016	33.111	33.079	33.111	33.08
3	2.0	38.702	39.079	38.828	39.080	38.92
4	3.0	39.771	40.336	40.242	40.242	40.15
5	4.0	37.195	37.195	37.321	37.823	37.38
6	5.0	36.127	36.284	35.812	36.598	36.21
7	6.0	34.117	33.740	34.683	34.117	34.16
8	7.0	32.106	31.447	33.206	32.106	32.22
9	8.0	30.649	30.410	30.159	30.912	30.53
10	10.0	32.357	32.986	32.357	31.415	32.28

Mean Resistivity at ERT-03 is 34.34 Ohm - m.

ERT No. 04

SI No.	S (M)	Apparent Electrical Resistivity (Ohm-m)				Mean
		(N - S)	(E - W)	(NE - SW)	(NW - SE)	
1	0.50	43.345	43.345	43.345	43.345	43.35
2	1.0	42.724	43.038	44.295	43.352	43.35
3	2.0	28.964	29.090	29.152	29.153	29.09
4	3.0	25.634	25.634	26.011	25.728	25.75
5	4.0	21.990	22.492	22.115	22.367	22.24
6	5.0	21.048	21.519	21.833	21.519	21.48
7	6.0	19.037	19.226	19.226	19.603	19.27
8	7.0	18.692	19.571	19.132	18.692	19.02
9	8.0	20.608	21.111	20.106	20.357	20.55
10	10.0	23.561	22.933	23.875	23.875	23.56

Mean Resistivity at ERT-04 is 26.77 Ohm - m.

ERT No. 05

SI No.	S (M)	Apparent Electrical Resistivity (Ohm-m)				Mean
		(N - S)	(E - W)	(NE - SW)	(NW - SE)	
1	0.50	19.442	19.426	19.474	19.458	19.45
2	1.0	6.376	6.345	6.314	6.220	6.31
3	2.0	4.963	5.152	5.340	5.277	5.18
4	3.0	5.560	5.748	6.031	5.937	5.82
5	4.0	7.036	7.288	7.664	7.664	7.41
6	5.0	8.324	9.267	9.895	8.481	8.99
7	6.0	9.424	9.989	10.555	9.989	9.99
8	7.0	10.115	10.555	11.215	9.895	10.45
9	8.0	11.058	10.555	10.304	10.304	10.56
10	10.0	12.880	12.251	19.937	12.565	14.41

Mean Resistivity at ERT-05 is 9.86 Ohm - m.

ERT No. 06

SI No.	S (M)	Apparent Electrical Resistivity (Ohm-m)				Mean
		(N - S)	(E - W)	(NE - SW)	(NW - SE)	
1	0.50	34.865	34.865	35.022	35.179	34.98
2	1.0	28.022	28.053	28.022	27.990	28.02
3	2.0	30.283	30.095	30.284	30.346	30.25
4	3.0	30.157	29.969	30.063	30.252	30.11
5	4.0	34.933	35.561	35.310	35.058	35.22
6	5.0	37.383	37.540	37.697	37.855	37.62
7	6.0	39.583	40.337	40.337	40.337	40.15
8	7.0	41.782	42.442	42.222	41.122	41.89
9	8.0	42.976	42.222	43.227	42.724	42.79
10	10.0	47.122	46.494	47.123	46.180	46.73

Mean Resistivity at ERT-06 is 36.78 Ohm - m.

ERT No. 07

SI No.	S (M)	Apparent Electrical Resistivity (Ohm-m)				Mean
		(N - S)	(E - W)	(NE - SW)	(NW - SE)	
1	0.50	52.140	52.140	52.925	52.140	52.34
2	1.0	45.896	45.803	45.896	45.834	45.86
3	2.0	36.441	36.504	36.818	36.626	36.60
4	3.0	37.792	38.074	38.168	38.074	38.03
5	4.0	48.253	48.630	48.755	48.504	48.54
6	5.0	50.578	50.106	50.253	49.949	50.22
7	6.0	45.803	46.557	46.557	46.369	46.32
8	7.0	52.778	52.778	52.778	52.118	52.61
9	8.0	55.793	55.794	56.799	55.542	55.98
10	10.0	46.180	47.437	47.122	46.808	46.89

Mean Resistivity at ERT-07 is 47.34 Ohm - m.

ERT No. 08

SI No.	S (M)	Apparent Electrical Resistivity (Ohm-m)				Mean
		(N - S)	(E - W)	(NE - SW)	(NW - SE)	
1	0.50	44.131	44.445	44.602	44.288	44.37
2	1.0	36.692	36.535	36.598	36.692	36.63
3	2.0	36.880	36.566	36.944	36.944	36.83
4	3.0	45.049	45.520	45.331	45.802	45.43
5	4.0	52.902	53.530	53.028	53.028	53.12
6	5.0	57.960	57.332	56.861	57.018	57.29
7	6.0	67.669	68.046	67.858	67.481	67.76
8	7.0	76.748	76.968	77.188	76.968	76.97
9	8.0	81.429	80.926	80.675	79.921	80.74
10	10.0	93.617	94.874	93.618	93.932	94.01

Mean Resistivity at ERT-08 is 59.31 Ohm - m.

ERT No. 09

SI No.	S (M)	Apparent Electrical Resistivity (Ohm-m)				Mean
		(N - S)	(E - W)	(NE - SW)	(NW - SE)	
1	0.50	119.672	119.829	119.358	119.672	119.63
2	1.0	42.158	42.096	42.252	42.189	42.17
3	2.0	40.022	40.399	40.399	40.211	40.26
4	3.0	56.358	56.641	56.075	56.452	56.38
5	4.0	65.091	65.468	65.594	65.719	65.47
6	5.0	62.830	63.144	62.358	62.201	62.63
7	6.0	69.743	70.120	70.308	70.120	70.07
8	7.0	78.947	79.167	78.947	79.387	79.11
9	8.0	75.899	78.664	75.899	77.156	76.90
10	10.0	94.560	96.131	96.445	94.560	95.42

Mean Resistivity at ERT-09 is 70.81 Ohm - m.

ERT No. 10

SI No.	S (M)	Apparent Electrical Resistivity (Ohm-m)				Mean
		(N - S)	(E - W)	(NE - SW)	(NW - SE)	
1	0.50	113.233	113.076	113.390	113.547	113.31
2	1.0	46.180	46.085	46.117	46.180	46.14
3	2.0	17.278	17.529	17.529	17.780	17.53
4	3.0	17.152	16.681	17.246	17.152	17.06
5	4.0	12.188	12.942	12.314	12.691	12.53
6	5.0	13.508	14.136	12.880	13.037	13.39
7	6.0	14.325	14.702	14.702	15.267	14.75
8	7.0	13.194	14.074	14.074	14.294	13.91
9	8.0	13.068	13.822	14.325	14.827	14.01
10	10.0	13.822	12.251	12.880	13.194	13.04

Mean Resistivity at ERT-10 is 27.57 Ohm - m.

ERT No. 11

SI No.	S (M)	Apparent Electrical Resistivity (Ohm-m)				Mean
		(N - S)	(E - W)	(NE - SW)	(NW - SE)	
1	0.50	49.156	49.313	48.685	48.528	48.92
2	1.0	75.710	76.338	76.024	76.338	76.10
3	2.0	63.269	63.269	63.269	63.080	63.22
4	3.0	54.473	54.756	54.756	54.285	54.57
5	4.0	45.739	45.991	45.865	46.242	45.96
6	5.0	41.153	40.996	40.525	42.095	41.19
7	6.0	39.583	40.148	40.525	39.583	39.96
8	7.0	35.625	36.065	36.065	36.065	35.96
9	8.0	30.661	31.163	30.159	30.158	30.54
10	10.0	35.185	35.813	35.813	34.871	35.42

Mean Resistivity at ERT-11 is 47.18 Ohm - m.

ERT No. 12

SI No.	S (M)	Apparent Electrical Resistivity (Ohm-m)				Mean
		(N - S)	(E - W)	(NE - SW)	(NW - SE)	
1	0.50	73.342	73.499	73.499	73.813	73.54
2	1.0	43.729	43.760	43.697	43.760	43.74
3	2.0	20.859	20.984	20.733	20.922	20.87
4	3.0	14.607	14.984	14.701	14.796	14.77
5	4.0	15.832	16.084	16.084	16.084	16.02
6	5.0	12.251	12.880	12.723	12.565	12.60
7	6.0	11.120	11.309	11.120	11.874	11.36
8	7.0	9.895	10.335	11.215	11.655	10.78
9	8.0	8.042	8.042	8.796	9.801	8.67
10	10.0	8.482	9.110	9.738	10.052	9.35

Mean Resistivity at ERT-12 is 22.17 Ohm - m.

ERT No. 13

SI No.	S (M)	Apparent Electrical Resistivity (Ohm-m)				Mean
		(N - S)	(E - W)	(NE - SW)	(NW - SE)	
1	0.50	47.429	47.272	46.957	47.115	47.19
2	1.0	36.535	36.441	36.598	36.441	36.50
3	2.0	13.822	14.010	13.822	14.136	13.95
4	3.0	8.576	9.047	9.518	8.953	9.02
5	4.0	7.664	7.413	8.167	8.041	7.82
6	5.0	8.167	8.953	8.796	8.482	8.60
7	6.0	9.047	9.801	9.801	9.801	9.61
8	7.0	9.016	8.576	7.696	8.796	8.52
9	8.0	8.544	9.299	9.801	8.796	9.11
10	10.0	12.251	13.508	13.508	13.822	13.27

Mean Resistivity at ERT-13 is 16.36 Ohm - m.

ERT No. 14

SI No.	S (M)	Apparent Electrical Resistivity (Ohm-m)				Mean
		(N - S)	(E - W)	(NE - SW)	(NW - SE)	
1	0.50	37.377	36.592	36.435	36.592	36.75
2	1.0	32.765	32.702	32.734	32.639	32.71
3	2.0	22.744	22.869	22.744	22.870	22.81
4	3.0	14.513	14.796	14.890	14.984	14.80
5	4.0	13.947	13.571	13.947	13.947	13.85
6	5.0	15.078	15.079	15.550	15.393	15.28
7	6.0	16.587	17.152	17.341	16.964	17.01
8	7.0	18.032	18.252	18.032	18.472	18.20
9	8.0	18.597	19.100	18.849	18.346	18.72
10	10.0	21.676	22.304	21.362	20.734	21.52

Mean Resistivity at ERT-14 is 21.16 Ohm - m.

ERT No. 15

SI No.	S (M)	Apparent Electrical Resistivity (Ohm-m)				Mean
		(N - S)	(E - W)	(NE - SW)	(NW - SE)	
1	0.50	9.972	9.988	10.003	10.051	10.00
2	1.0	6.314	6.251	6.314	6.220	6.27
3	2.0	6.220	6.345	6.534	6.471	6.39
4	3.0	5.937	6.031	5.842	5.937	5.94
5	4.0	6.534	6.282	6.408	6.408	6.41
6	5.0	7.382	7.539	7.696	7.068	7.42
7	6.0	7.916	8.104	8.670	7.916	8.15
8	7.0	8.576	8.356	8.356	8.576	8.47
9	8.0	9.801	9.550	10.304	9.047	9.68
10	10.0	10.995	10.680	10.995	11.309	10.99

Mean Resistivity at ERT-15 is 7.97 Ohm - m.

ERT No. 16

SI No.	S (M)	Apparent Electrical Resistivity (Ohm-m)				Mean
		(N - S)	(E - W)	(NE - SW)	(NW - SE)	
1	0.50	12.359	12.375	12.375	12.375	12.37
2	1.0	5.968	6.062	5.999	5.937	5.99
3	2.0	6.157	6.220	6.157	6.345	6.22
4	3.0	7.256	7.350	7.256	7.445	7.33
5	4.0	8.544	8.419	8.795	8.670	8.61
6	5.0	10.995	11.152	10.995	10.995	11.03
7	6.0	12.251	11.497	12.063	12.063	11.97
8	7.0	13.634	14.074	14.284	14.733	14.18
9	8.0	14.827	15.079	15.330	16.335	15.39
10	10.0	20.105	20.419	20.419	21.047	20.50

Mean Resistivity at ERT-16 is 11.36 Ohm - m.

ERT No. 17

SI No.	S (M)	Apparent Electrical Resistivity (Ohm-m)				Mean
		(N - S)	(E - W)	(NE - SW)	(NW - SE)	
1	0.50	47.586	47.272	47.743	47.429	47.51
2	1.0	45.551	45.645	45.645	45.677	45.63
3	2.0	25.822	25.885	25.885	25.697	25.82
4	3.0	18.189	18.566	18.471	18.660	18.47
5	4.0	17.340	17.340	17.717	17.717	17.53
6	5.0	16.335	16.335	16.021	16.492	16.30
7	6.0	17.152	17.341	17.906	17.906	17.58
8	7.0	15.833	16.053	16.492	16.053	16.11
9	8.0	17.592	16.838	17.341	17.341	17.28
10	10.0	20.733	20.105	20.734	20.734	20.58

Mean Resistivity at ERT-17 is 24.28 Ohm - m.

ERT No. 18

SI No.	S (M)	Apparent Electrical Resistivity (Ohm-m)				Mean
		(N - S)	(E - W)	(NE - SW)	(NW - SE)	
1	0.50	18.092	18.107	18.060	18.092	18.09
2	1.0	14.984	15.016	15.016	15.047	15.02
3	2.0	10.052	10.115	10.052	10.052	10.07
4	3.0	10.272	10.366	10.555	10.460	10.41
5	4.0	12.566	12.314	13.193	12.188	12.57
6	5.0	14.450	14.450	14.607	14.136	14.41
7	6.0	16.964	16.210	16.398	16.210	16.45
8	7.0	18.692	18.692	18.032	18.692	18.53
9	8.0	19.854	20.859	20.105	19.603	20.11
10	10.0	23.561	25.446	23.561	22.304	23.72

Mean Resistivity at ERT-18 is 15.94 Ohm - m.

ERT No. 19

SI No.	S (M)	Apparent Electrical Resistivity (Ohm-m)				Mean
		(N - S)	(E - W)	(NE - SW)	(NW - SE)	
1	0.50	23.321	23.290	23.260	23.227	23.27
2	1.0	27.770	27.676	27.739	27.582	27.69
3	2.0	26.136	26.137	26.325	26.576	26.29
4	3.0	21.298	21.581	21.958	22.241	21.77
5	4.0	16.712	17.089	17.340	17.843	17.25
6	5.0	13.351	14.136	14.607	14.922	14.25
7	6.0	12.251	13.005	13.382	13.571	13.05
8	7.0	13.414	15.173	16.493	14.294	14.84
9	8.0	12.566	13.319	14.074	14.074	13.51
10	10.0	15.079	15.079	16.021	15.393	15.39

Mean Resistivity at ERT-19 is 18.73 Ohm - m.

ERT No. 20

SI No.	S (M)	Apparent Electrical Resistivity (Ohm-m)				Mean
		(N - S)	(E - W)	(NE - SW)	(NW - SE)	
1	0.50	30.310	30.467	30.153	30.624	30.39
2	1.0	24.440	24.471	24.534	24.471	24.48
3	2.0	12.314	12.566	12.314	12.503	12.42
4	3.0	8.104	8.293	8.010	8.199	8.15
5	4.0	8.293	7.916	7.664	7.539	7.85
6	5.0	9.581	9.424	9.581	9.581	9.54
7	6.0	10.555	10.932	10.932	11.120	10.88
8	7.0	12.534	13.414	14.294	13.634	13.47
9	8.0	13.068	13.068	13.822	13.068	13.26
10	10.0	14.765	16.021	15.707	15.393	15.47

Mean Resistivity at ERT-20 is 14.59 Ohm - m.

ERT No. 21

SI No.	S (M)	Apparent Electrical Resistivity (Ohm-m)				Mean
		(N - S)	(E - W)	(NE - SW)	(NW - SE)	
1	0.50	10.962	11.008	10.993	11.040	11.00
2	1.0	14.984	15.047	15.047	15.110	15.05
3	2.0	22.932	22.932	22.681	22.870	22.85
4	3.0	19.602	19.885	19.791	19.696	19.74
5	4.0	19.225	19.351	20.230	19.100	19.48
6	5.0	22.932	22.461	23.561	23.718	23.17
7	6.0	33.240	33.929	34.683	35.814	34.42
8	7.0	31.667	31.227	33.206	34.085	32.55
9	8.0	32.923	32.923	33.928	35.436	33.80
10	10.0	32.043	31.729	32.357	34.242	32.59

Mean Resistivity at ERT-21 is 24.46 Ohm - m.

ELECTRICAL RESISTIVITY TEST

Project : Geotechnical Investigation for NTPC Talcher Thermal Stage 3rd (2 x 660 MW)

Test No. : ERT 1

Location : Near BH 1

Co ordinate : E = 1413.20; N = 3923.08

Date : 20.08.09

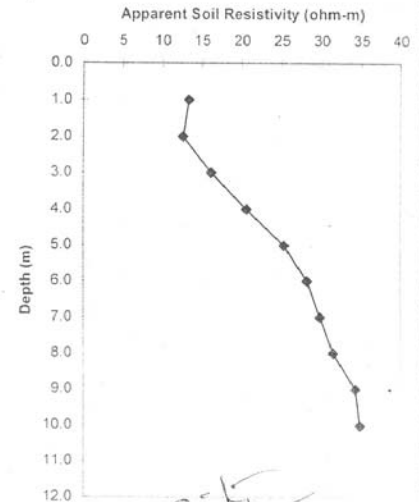
Current : 7Amp

Voltage : 50 V

Reduced Level :

Survey Method :

Sr. No	Electrode Spacing, a m	Direction - N - S	Direction - NE - SW	Direction - E - W	Direction - SE-NW	Average Apparent Soil Resistivity $\rho = 2 \pi a R$ ohm - m
		Apparent resistivity ohm-m	Apparent resistivity ohm-m	Apparent resistivity ohm-m	Apparent resistivity ohm-m	
1	1.0	13.58	--	13.00	--	13.29
2	2.0	12.76	--	12.37	--	12.57
3	3.0	15.87	--	16.35	--	16.11
4	4.0	20.00	--	21.20	--	20.60
5	5.0	23.40	--	27.20	--	25.30
6	6.0	25.20	--	31.10	--	28.15
7	7.0	29.10	--	30.50	--	29.80
8	8.0	25.40	--	37.50	--	31.45
9	9.0	30.50	--	38.00	--	34.25
10	10.0	33.80	--	35.80	--	34.80



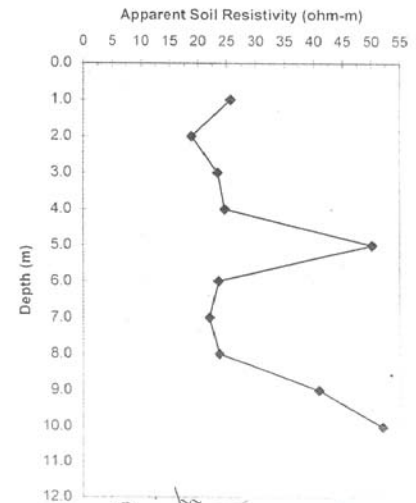
ELECTRICAL RESISTIVITY TEST

Project : Geotechnical Investigation for NTPC Talcher Thermal Stage 3rd (2 x 660 MW)
 Test No. : ERT 2
 Location : Near BH 3
 Co ordinate : E= 1806.11; N = 3967.14

Date : 08.10.2009
 Current : 7Amp
 Voltage : 50 V

Reduced Level :
 Survey Method :

Sr. No	Electrode Spacing, a m	Direction - N - S	Direction - NE - SW	Direction - E - W	Direction - SE-NW	Average Apparent Soil Resistivity $\rho = 2\pi a R$ ohm - m
		Apparent resistivity ohm-m	Apparent resistivity ohm-m	Apparent resistivity ohm-m	Apparent resistivity ohm-m	
1	1.0	16.85	--	34.60	--	25.73
2	2.0	24.20	--	13.61	--	18.91
3	3.0	32.40	--	14.51	--	23.46
4	4.0	36.20	--	13.18	--	24.69
5	5.0	38.10	--	62.20	--	50.15
6	6.0	22.80	--	24.30	--	23.55
7	7.0	20.50	--	23.40	--	21.95
8	8.0	33.70	--	13.60	--	23.65
9	9.0	65.80	--	15.84	--	40.82
10	10.0	67.50	--	36.40	--	51.95



ELECTRICAL RESISTIVITY TEST

Project : Geotechnical Investigation for NTPC Talcher Thermal Stage 3rd (2 x 660 MW)

Test No. : ERT 3

Location : Near BH 5

Co ordinate : E= 1415.33; N = 3966.91

Date : 20.08.09

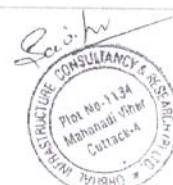
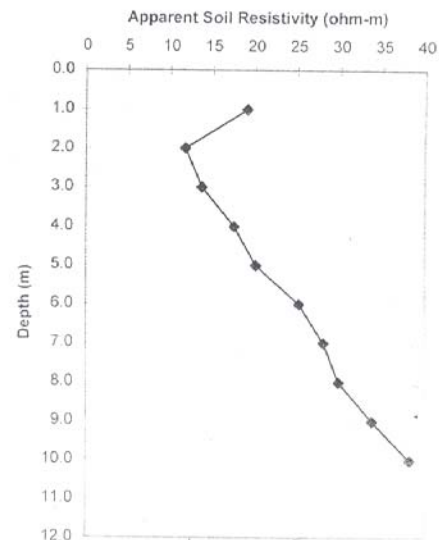
Current : 7Amp

Voltage : 50 V

Reduced Level :

Survey Method :

Sr. No	Electrode Spacing, a m	Direction - N - S	Direction - NE - SW	Direction - E - W	Direction - SE-NW	Average Apparent Soil Resistivity $\rho = 2 \pi a R$ ohm - m
		Apparent resistivity	Apparent resistivity	Apparent resistivity	Apparent resistivity	
		ohm-m	ohm-m	ohm-m	ohm-m	
1	1.0	18.43	--	19.63	--	19.03
2	2.0	11.40	--	12.09	--	11.75
3	3.0	13.70	--	13.71	--	13.71
4	4.0	16.74	--	18.30	--	17.52
5	5.0	20.30	--	19.92	--	20.11
6	6.0	24.30	--	26.10	--	25.20
7	7.0	26.50	--	29.60	--	28.05
8	8.0	30.40	--	29.10	--	29.75
9	9.0	32.90	--	34.50	--	33.70
10	10.0	37.40	--	38.80	--	38.10



ELECTRICAL RESISTIVITY TEST

Project : Geotechnical Investigation for NTPC Talcher Thermal Stage 3rd (2 x 660 MW)

Test No. : ERT 4

Location : Near BH 13

Co ordinate : E= 1363.83; N = 4078.14

Date : 08.10.2009

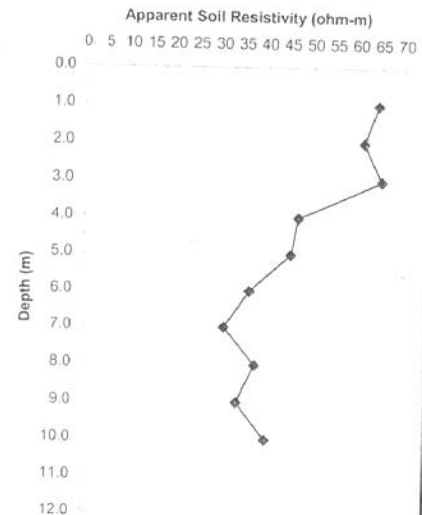
Current : 7Amp

Voltage : 50 V

Reduced Level :

Survey Method :

Sr. No	Electrode Spacing, a m	Direction - N - S	Direction - NE - SW	Direction - E - W	Direction - SE-NW	Average Apparent Soil Resistivity $\rho = 2 \pi a R$ ohm - m
		Apparent resistivity	Apparent resistivity	Apparent resistivity	Apparent resistivity	
		ohm-m	ohm-m	ohm-m	ohm-m	
1	1.0	43.90	--	84.60	--	64.25
2	2.0	52.00	--	70.50	--	61.25
3	3.0	53.80	--	76.70	--	65.25
4	4.0	43.40	--	50.60	--	47.00
5	5.0	44.20	--	46.60	--	45.40
6	6.0	37.50	--	35.10	--	36.30
7	7.0	29.20	--	32.40	--	30.80
8	8.0	36.40	--	38.70	--	37.55
9	9.0	31.30	--	35.80	--	33.55
10	10.0	33.40	--	46.40	--	39.90



ELECTRICAL RESISTIVITY TEST

Project : Geotechnical Investigation for NTPC Talcher Thermal Stage 3rd (2 x 660 MW)
 Test No. : ERT 5
 Location : Near BH 21
 Co ordinate : E= 1374.24; N = 4180.08

Date : 08.10.2009

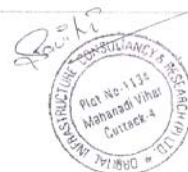
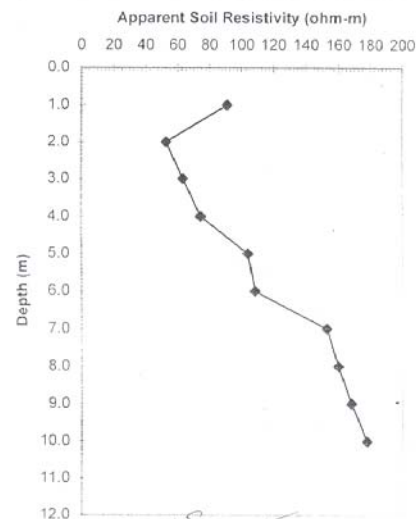
Current : 7Amp

Voltage : 50 V

Reduced Level :

Survey Method :

Sr. No	Electrode Spacing, a	Direction - N - S	Direction - NE - SW	Direction - E - W	Direction - SE-NW	Average Apparent Soil Resistivity $\rho = 2 \pi a R$
		Apparent resistivity	Apparent resistivity	Apparent resistivity	Apparent resistivity	
		m ohm-m	m ohm-m	m ohm-m	m ohm-m	
1	1.0	84.30	--	97.40	--	90.85
2	2.0	50.60	--	54.50	--	52.55
3	3.0	66.00	--	60.60	--	63.30
4	4.0	74.70	--	74.30	--	74.50
5	5.0	82.40	--	125.70	--	104.05
6	6.0	71.10	--	145.20	--	108.15
7	7.0	117.90	--	186.30	--	152.10
8	8.0	134.10	--	184.20	--	159.15
9	9.0	149.30	--	185.60	--	167.45
10	10.0	164.40	--	190.50	--	177.45



ELECTRICAL RESISTIVITY TEST

Project : Geotechnical Investigation for NTPC Talcher Thermal Stage 3rd (2 x 660 MW)

Test No. : ERT 6

Location : Near BH 25

Co ordinate : E= 1386.16; N = 4247.92

Date : 08.10.2009

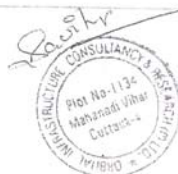
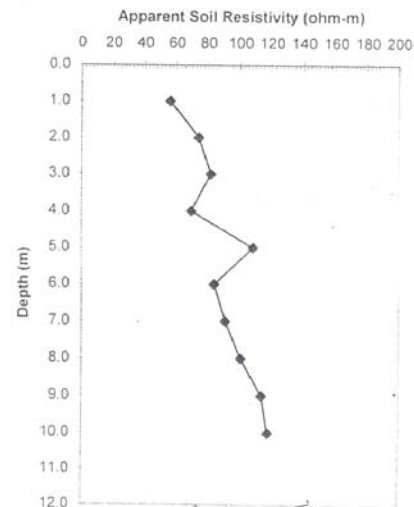
Current : 7Amp

Voltage : 50 V

Reduced Level :

Survey Method :

Sr. No	Electrode Spacing, a m	Direction - N - S	Direction - NE - SW	Direction - E - W	Direction - SE-NW	Average Apparent Soil Resistivity $\rho = 2 \pi a R$ ohm - m
		Apparent resistivity ohm-m	Apparent resistivity ohm-m	Apparent resistivity ohm-m	Apparent resistivity ohm-m	
1	1.0	39.60	--	71.90	--	55.75
2	2.0	62.60	--	85.50	--	74.05
3	3.0	86.10	--	77.10	--	81.60
4	4.0	66.00	--	72.60	--	69.30
5	5.0	141.90	--	74.70	--	108.30
6	6.0	77.30	--	90.10	--	83.70
7	7.0	88.90	--	92.60	--	90.75
8	8.0	103.30	--	97.60	--	100.45
9	9.0	116.20	--	111.00	--	113.60
10	10.0	112.00	--	122.90	--	117.45



5.9. CHEMICAL TESTS:

Chemical tests were performed on few soil and water samples for determining the pH value, Sulphate, Chloride, organic matter content etc. The results are given in a tabular form below:

CHEMICAL TEST RESULTS ON SOIL SAMPLES:-

BH/Sample No.	Depth (m)	pH value	Sulphate as SO ₃ (%)	Chloride as Cl (%)	Organic Matter (%)
BH-20 / UDS01	1.00-1.45	8.06	B.D.L.*	0.0070	0.196
BH-25 / UDS01	1.00-1.45	7.41	B.D.L.*	0.0080	0.208
BH-27 / UDS01	1.00-1.45	7.84	B.D.L.*	0.0080	0.226
BH-35 / UDS01	1.00-1.45	6.20	B.D.L.*	0.0080	0.225

*B.D.L. = Below Detection Limit (i.e. below 0.050%)

CHEMICAL TEST RESULTS ON WATER SAMPLES:-

BH/Sample No.	Depth (m)	pH value	Sulphate as SO ₃ (mg/Ltr.)	Chloride as Cl (mg/Ltr.)	Organic Matter (mg/Ltr.)
BH-02 / WS01	1.20	6.38	60	10	21.82
BH-21 / WS01	2.45	6.65	60	16	16.36
BH-33 / WS01	1.10	6.82	60	24	19.09

Bore Hole	Sample Number	Depth	Sample Description	Bulk		Dry Dens. gms/cc	Spec. Grav.	Nat. Mois. %	Void Ratio	Strength Test Results					Atter. Limits				IS Classification	Grain Size				Test Method
				Dens. gms/cc	Pc/Pn kg/sqcm					Shear kg/sqcm	Cohesn kg/sqcm	Frictn Deg.	LL %	PL %	SL %	Gravl %	Sand %	Silt %		Clay %				
ABH01	SPT01	1.30	Brownish grey, silty clay.										51	24		CH					**See the Note			
ABH01	UDS02	3.00	Brownish grey, silty clay with calcareous nodules and sand mixture.	1.95	1.52	2.68	29 S 27 T 28 C	0.738	TRSH-UU 3.0 2.0 1.0 UNCONFD	0.841 0.815 0.808	0.82	0	45	22	16	CI		20	54	26	Do			

Bore Hole	Sample Number	Depth M	Sample Description	Bulk		Dry Dens. gms/cc	Spec. Grav.	Nat. Mois. %	Void Ratio	Strength Test Results				Atter. Limits				IS Classification	Grain Size			Test Method
				Dens. gms/cc						Pc/Pn kg/sqcm	Shear kg/sqcm	Cohesn kg/sqcm	Frictn Deg.	LL %	PL %	SL %			Gravl %	Sand %	Silt %	Clay %
ABH04	SPT02	3.00	Brownish grey, silty clay / clayey silt with traces of sand mixture.														CI*		27	53	20	Do
ABH05	SPT01	1.55	Brownish grey, clayey silty sand.														SM		58	42	(Silt+Clay)	Do
ABH05	SPT02	3.00	Brownish grey, clayey silt with sand mixture.											41	22		CI					Do
ABH06	UDS01	1.00	Brownish grey, silty clay with traces of kankars & calcareous nodules.	2.04	1.62			27 S	0.849	TRSH-UU		0.65	5				CI*					Do
								25 T		3.0	1.039											
								27 C		2.0	0.897											
										1.0	0.835											
										UNCONF		0.69	0									
										0.0	0.757											
										0.0	0.696											
										0.0	0.628											
										REMOULD		0.52	0									
										0.0	0.507											
										0.0	0.528											
										0.0	0.534											
ABH06	SPT02	3.00	Brownish grey, silty clay / clayey silt.											47	19		CI					Do
ABH06	SPT04	5.00	Light grey, clayey silt.														CI*		2	87	11	Do
ABH07	UDS01	1.00	Brownish grey, clayey silty sand.	1.91	1.66			14 S		DRSH-CU		0.07	35				SM*					Do
								16DR		0.5	0.438											
										1.0	0.768											
										2.0	1.473											
ABH07	SPT02	3.00	Brownish grey, silty clay / with sand mixture. Obs moorum.				2.65										CI*		24	57	19	Do
ABH07	SPT04	4.75	Brownish grey, silty clay / clayey silt with sand mixture.											40	22		CI					Do

Bore Hole	Sample Number	Depth	Sample Description	Bulk		Dry Dens. gms/cc	Spec. Grav.	Nat. Mois. %	Void Ratio	Strength Test Results					Atter. Limits				IS Classification	Grain Size				Test Method
				Dens. gms/cc	Dens. gms/cc					Pe/sqcm kg/sqcm	Shear kg/sqcm	Cohesn kg/sqcm	Frictn Deg.	LL %	PL %	SL %	Gravl %	Sand %		Silt %	Clay %			
ABH08	UDS01	1.00	Yellowish grey, clayey silty sand.	1.98	1.69			18 S 17DR		DRSH-CU	0.13	31						SM		64	36(Silt+Clay)	Do		
										0.5	0.440													
										1.0	0.711													
										2.0	1.341													
ABH08	UDS02	4.00	Brownish grey, silty clay with sand mixture.	1.89	1.49			28 S 26 T 25 C	0.723	UNCONF	0.79	0	41	24	19		CI					Do		
										0.0	0.805													
										0.0	0.792													
										0.0	0.783													
										REMOULD	0.65	0												
										0.0	0.649													
										0.0	0.673													
										0.0	0.621													
ABH08	SPT04	6.00	Brownish grey, clayey silt with sand mixture.				2.65										CI*		25	61	14	Do		
ABH09	UDS01	1.00	Light grey, silty sand with gravel, boulder & calcareous nodules.														SM	33	53	14(Silt+Clay)	Do			
ABH09	UDS02	4.00	Yellowish grey, clayey silty sand.							DRSH-CU	0.14	29					SM*					Do		
										0.5	0.425													
										1.0	0.692													
										2.0	1.247													
ABH09	SPT06	8.00	Brownish grey, silty sand.				2.64										SM*					Do		
ABH10	SPT02	2.50	Brownish grey, silty sand with gravels.														SM	5	63	32(Silt+Clay)	Do			
ABH10	SPT05	7.40	Yellowish grey, clayey silt with decomposed rock dust and sand mixture.	1.71	1.51			14DR		DRSH-CU	0.05	34					SM*					Do		
										0.5	0.379													
										1.0	0.729													
										2.0	1.384													
ABH11	UDS01	1.00	Brownish grey, clayey silty sand.														SM	69	20	11	Do			

Bore Hole	Sample Number	Depth M	Sample Description	Bulk Dens. gms/cc	Dry Dens. gms/cc	Spec. Grav.	Nat. Mois. %	Void Ratio	Strength Test Results					Atter. Limits				IS Classification	Grain Size				Test Method
									Pc/sqcm	Shear kg/sqcm	Cohesn kg/sqcm	Frictn Deg.	LL %	PL %	SL %	Gravl %	Sand %		Silt %	Clay %			
ABH11	UDS02	4.00	Reddish brown, clayey silt with sand mixture.	1.98	1.58		24 S	0.731	UNCONFD	0.78	0					Cl*				Do			
					0.0	0.806																	
					0.0	0.733																	
					0.0	0.798																	
					REMOULD	0.69	0																
ABH11	SPT04	6.00	Brownish grey, silty sand with treaes of kankars.													SM	81	19(Silt+Clay)	Do				
ABH12	UDS01	1.00	Reddish brown, silty clay with sand mixture and kankars.					0.543	TRSH-UU	1.16	6	31	22	19	CL				Do				
										3.0	1.631												
										2.0	1.528												
										1.0	1.405												
										UNCONFD	0.82	0											
									0.0	0.867													
									0.0	0.810													
									0.0	0.799													
									REMOULD	0.75	0												
									0.0	0.760													
									0.0	0.746													
									0.0	0.735													
ABH12	SPT03	4.50	Yellowish grey, clayey silty sand / sandy silt with kankars.												SM	5	60	24	11	Do			
ABH13	SPT01	1.55	Reddish Brown, clayey silt with sand mixture / clayey silty sand.	1.72	1.50		14DR		DRSH-CU	0.05	33				SM*					Do			
										0.5	0.379												
										1.0	0.689												
ABH13	SPT05	7.00	Brownish grey, silty sand.																				
																SM	80	20(Silt+Clay)	Do				
ABH14	UDS02	4.00	Reddish brown, clayey sandy silt with gravel and boulders.						TRSH-UU	0.74	7	26	15	13	CL					Do			
										3.0	1.258												
										2.0	1.114												
										1.0	0.972												
										UNCONFD	0.53	0											
									0.0	0.514													
									0.0	0.530													
									0.0	0.547													

Bore Hole	Sample Number	Depth M	Sample Description	Bulk		Dry Dens. gms/cc	Spec. Grav.	Nat. Mois. %	Void Ratio	Strength Test Results					Atter. Limits				IS Classification	Grain Size				Test Method	
				Dens. gms/cc	Dens. gms/cc					Pc/Pn kg/sqcm	Shear kg/sqcm	Cohesn kg/sqcm	Frictn Deg.	LL %	PL %	SL %	Gravl %	Sand %		Silt %	Clay %				
										REMOULD	0.46	0													
										0.0	0.450														
										0.0	0.458														
										0.0	0.463														
ABH14	SPT03	4.45	Brownish grey, silty sand with rock pieces and clay binders.																SM	18	49	33(Silt+Clay)			Do
ABH14	SPT06	8.00	Brownish grey, silty sand/decomposed rock dust with clay binders.							DRSH-CU	0.03	37						SM*							Do
										0.5	0.415														
										1.0	0.776														
										1.5	1.541														
ABH15	UDS01	1.00	Blackish clayey silt with sand. Obs. rock pieces, gravel, coal dust etc.	1.96	1.69			16 S	0.522	TRSH-UU	0.80	12	32	18				CL							Do
								17 T		3.0	1.772														
								18 C		2.0	1.519														
										1.0	1.252														
ABH15	SPT01	1.45	Greyish brown, silty sand with gravels.										N.P.												
ABH15	SPT02	3.00	Greyish brown, silty sand with kankars and moorum.				2.66											SM	11	60	25	4			Do
ABH16	SPT01	1.15	Dark grey, clayey silty sand with kankars and coal pieces.															SM	13	57	22	8			Do
ABH16	SPT02	2.50	Greyish brown, clayey silt with sand mixture and rock pieces.										24	14	12			CL							Do
ABH17	DS01	0.50	Brownish grey, silty sand with gravels.				2.63											SM	42	40	15	3			Do
ABH17	SPT02	3.00	Reddish brown, clayey moorum with decomposed rock dust and rock pieces.	1.77	1.53			16DR		DRSH-CU	0.02	36						SM*							Do
										0.5	0.378														
										1.0	0.753														
										1.5	1.466														

Bore Hole	Sample Number	Depth M	Sample Description	Bulk Dens. gms/cc	Dry Dens. gms/cc	Spec. Grav.	Nat. Mois. %	Void Ratio	Strength Test Results					Atter. Limits			IS Classification	Grain Size				Test Method
									Pc/sqcm kg/sqcm	Shear kg/sqcm	Cohesn kg/sqcm	Frictn Deg.	LL %	PL %	SL %	Gravl %		Sand %	Silt %	Clay %		
ABH18	SPT01	1.60	Blackish grey, clayey sandy silt with rock fragments.													SM	23	37	30	10	Do	
ABH19	SPT02	2.50	Yellowish grey silty clay with sand. Obs. gravels.										32	22		CL					Do	
ABH18	SPT03	4.50	Blackish grey, silty sand with coal dust, coal pieces and rock fragments.										NP								Do	
ABH20	SPT01	1.10	Yellowish grey, clayey silt with sand mixture													CI*		38	52	10	Do	
ABH20	SPT03	4.00	Yellowish grey silty clay with sand.										39	18		CI					Do	
ABH21	SPT01	1.50	Reddish brown, clayey moorum.													CI*		34	29	20	17	Do
ABH21	UDS02	4.00	Brownish grey silty clay with sand mixture. Obs. traces of moorum.	1.95	1.57		25 S 24 T 23 C	0.857	TRSH-UU 3.00 1.422 2.00 1.319 1.00 1.234	1.04	5				18	CI*					Do	
									UNCONFD 0.00 1.133 0.00 1.106 0.00 1.091	1.11	0											
									REMOULD 0.00 0.853 0.00 0.833 0.00 0.804	0.83	0											
ABH21	SPT04	5.00	Whitish brown silty clay,									38	19		CI						Do	
ABH22	SPT01	1.05	Brownish grey, clayey silt with sand mixture and kankars.													CI*		39	38	23	Do	

Bore Hole	Sample Number	Depth M	Sample Description	Bulk		Dry Dens. gms/cc	Spec. Grav.	Nat. Mois. %	Void Ratio	Strength Test Results					Atter. Limits			IS Classification	Grain Size				Test Method
				Dens. gms/cc						Pc/Pn kg/sqcm	Shear kg/sqcm	Cohesn kg/sqcm	Frictn Deg.	LL %	PL %	SL %	Gravl %		Sand %	Silt %	Clay %		
ABH23	SPT01	1.08	Brownish grey, silty clay with traces of sand mixture.											42	15		CI					Do	
ABH24	SPT01	1.55	Blackish grey, clayey silty sand. Obs. traces of coal pieces.											35	23							Do	
ABH25	SPT01	1.50	Yellowish grey, clayey silt with rock fragments.											46	21		CI					Do	
ABH25	SPT02	3.00	Whitish grey, clayey silt with sand mixture.				2.63										CI*					Do	

LABORATORY ROCK TEST RESULTS

BH No.	Run No.	Depth (M)	Description	Density (gm/cc)		Water Content (%)	Porosity %	Specific Gravity	Unconfined Compressive Strength (kg/sqcm)		Coefficient of softening	Point Load Strength Index (kg/sqcm)	Slake Durability Index (%)	Hardness (based on Mohs' Scale)	Soundness * (% Loss)	E (Kg/sqcm)	Impact Value	Test Method
				Bulk	Dry				In-situ	Saturated								
ABH-01	1	6.50 - 7.25	Highly weathered, brownish grey, medium grained fractured sandstone.	--	--	--	--	--	204	--	--	--	--	--	--	--	--	* See the Note
ABH-01	2	7.25 - 8.00	Moderately weathered, brownish grey, medium grained fractured sandstone.	2.3335	2.2726	2.68	6.090	2.420	282	165	0.59	--	--	--	--	--	--	Do
ABH-02	2	2.50 - 3.25	Moderately weathered, brownish grey, fine grained fractured sandstone.	--	--	--	--	--	--	--	--	0.93	--	--	23.14	--	--	Do
ABH-02	4	4.00 - 4.75	Moderately weathered, brownish grey, fine grained fractured sandstone.	--	--	--	--	--	--	--	--	1.91	--	--	--	--	--	Do
ABH-02	5	4.75 - 5.50	Moderately weathered, brownish grey, fine grained fractured sandstone.	--	--	--	--	--	--	--	--	1.89	--	--	--	--	--	Do
ABH-02	7	6.25 - 7.00	Slightly weathered, grey, fine grained, fractured sandstone.	--	--	--	--	--	--	--	--	1.83	94.72	Hard	--	--	--	Do
ABH-02	8	7.00 - 8.00	Fresh, grey, fine grained, fractured sandstone.	--	--	--	--	--	311	190	0.61	--	--	--	--	--	--	Do
ABH-03	1	2.80 - 3.50	Highly weathered, yellowish brown, medium grained fractured sandstone.	2.3365	2.2927	1.91	4.384	2.398	--	--	--	0.99	--	--	--	--	--	Do
ABH-03	3	4.25 - 5.00	Moderately weathered, light grey, medium grained fractured sandstone.	--	--	--	--	--	--	204	--	--	--	--	--	--	--	Do
ABH-03	6	6.50 - 7.25	Moderately weathered, light grey, medium grained fractured sandstone.	--	--	--	--	--	--	--	--	--	--	--	17.61	--	--	Do
ABH-04	1	3.70 - 4.50	Moderately weathered, brownish yellow, medium grained, fractured sand stone.	--	--	--	--	--	--	--	--	0.98	--	--	29.69	--	--	Do
ABH-04	2	4.50 - 5.25	Highly weathered, light grey, medium grained, fractured sand stone.	--	--	--	--	--	--	--	--	--	--	Hard	--	--	--	Do
ABH-05	2	4.00 - 4.75	Highly weathered, brownish yellow, fine grained, fractured sand stone.	--	--	--	--	2.455	--	--	--	0.95	78.52	--	--	--	--	Do
ABH-05	5	6.25 - 7.00	Moderately weathered, brownish yellow to light grey, fine grained, fractured sand stone.	2.749	2.736	0.451	1.235	--	465	--	--	--	--	--	--	--	--	Do
ABH-05	7	7.50 - 8.00	Moderately weathered, light grey, fine grained, fractured sand stone.	--	--	--	--	--	238	176	0.74	--	--	--	--	--	--	Do

LABORATORY ROCK TEST RESULTS

BH No.	Run No.	Depth (M)	Description	Density (gm/cc)		Water Content (%)	Porosity %	Specific Gravity	Unconfined Compressive Strength (kg/sqcm)		Coefficient of softening	Point Load Strength Index (kg/sqcm)	Slake Durability Index (%)	Hardness (based on Mohs' Scale)	Soundness * (% Loss)	E (Kg/sqcm)	Impact Value	Test Method
				Bulk	Dry				In-situ	Saturated								
ABH-06	1	5.70 - 6.25	Moderately weathered, grey, fine grained, highly fractured sand stone.	--	--	--	--	--	--	--	--	--	71.62	Very Soft	--	--	--	Do
ABH-15	3	7.25 - 8.00	Completely weathered, yellowish brown, medium grained, fractured sand stone.	--	--	--	--	2.713	--	--	--	--	--	--	15.84	--	--	Do
ABH-24	2	7.25 - 8.00	Highly weathered, whitish grey, medium grained, fractured sandstone.	--	--	--	--	--	--	--	--	0.91	--	--	--	--	37.34	Do
ABH-24	5	9.50 - 10.00	Highly weathered, whitish grey, medium grained, fractured sandstone.	2.3107	2.2535	2.54	5.719	2.390	--	--	--	--	--	--	--	--	--	Do
ABH-25	2	8.00 - 8.75	Highly weathered, yellowish brown medium grained, fractured sandstone.	--	--	--	--	--	--	--	--	--	--	--	--	3415	--	Do

SWELLING TEST RESULTS

Bore Hole No.	Sample No.	Depth (M)	Description	Free Swell Index, (%)	Swelling Pressure, (kg/sqcm)	Water Content (%)	PI (%)	Test Method
ABH01	UDS-02	3.00	Brownish grey, silty clay with calcareous nodules.	13.26	0.11	28	23	**See the Note
ABH04	UDS-01	1.00	Brownish grey, clayey silt with sand mixture.	47.50	0.32	29	20	Do
ABH08	UDS-02	4.00	Brownish grey, clayey silt with sand mixture.	9.09	0.01	26	17	Do
ABH11	UDS-01	1.00	Brownish grey, silty clay with calcareous nodules.	5.25	0.05	22	--	Do
ABH14	UDS-02	4.00	Brownish grey, clayey silt with sand mixture.	0.00	0.00	24	11	Do

***Note: Test Methods**

Bulk Density & Dry Density: Ref. CET/SOP/01, Issue No. 01-(Page 27 & 39 of 40)

Natural Moisture Content: IS 2720 (Part 2)

Specific Gravity: IS 2720 (Part 3).

Grain size analysis: IS 2720 (Part 4)

Liquid Limit & Plastic Limit: IS 2720 (Part 5)

Shrinkage Limit: IS 2720 (Part 6)

Standard Proctor Compaction Test (Light Compaction): IS 2720 (Part 7)

Unconfined Compressive Strength Test: IS 2720 (Part 10)

Triaxial Test (TRSH-UU): IS 2720 (Part 11)

Direct Shear Test (DRSH-CQ): IS 2720 (Part 13)

Consolidation Properties (Void Ratio): IS 2720 (Part 15)

Free Swell Index: IS 2720 (Part 40)

Swelling Pressure: IS 2720 (Part 41)

Point Load Index: IS 8764.

Water Content, Bulk & Dry Density and Porosity: IS 13030

Slake Durability Index : IS 10050.

Unconfined Compressive Strength: IS 9143.

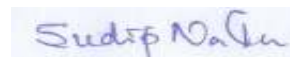
C.E. Testing Company Pvt. Ltd.

Prepared By



(I. Chowdhury)
Sr. Geotechnical Engineer

Checked & Approved By



Sudip Nath
Technical Manager

****End of Report****

2.6. ROTARY CORE DRILLING:

This drilling technique is regarded as the most satisfactory method of assessing the characteristics of rock formations, which lie at a depth below the ground surface. Specimens of rock in the form of cylindrical cores are recovered from the drill holes by means of a core barrel. Double barrel technique is adopted according to field condition. The core barrel is provided at its lower end with a detachable shoe or core bit, which is of diamond. All rotary core bits were of NX size.

2.7. ELECTRICAL RESISTIVITY TEST:

Four (04) nos. Electrical Resistivity Tests were carried out at the following locations. The test procedure and results are presented under Section-8.

ERT No.	Co-ordinates (M)		Reduced Level (M)
	Easting	Northing	
ERT-22	(-)3488	4487	103.352
ERT-23	(-)5366	5054	106.942
ERT-24	(-)6980	5390	98.640
ERT-25	(-)7040	5470	96.750

ERT No. 22

SI No.	S (M)	Apparent Electrical Resistivity (Ohm-m)				Mean
		(N - S)	(E - W)	(NE - SW)	(NW - SE)	
1	0.50	29.069	29.022	29.101	29.085	29.07
2	1.0	22.963	22.932	22.744	22.995	22.91
3	2.0	16.775	16.649	16.838	16.775	16.76
4	3.0	21.110	21.487	21.487	21.581	21.42
5	4.0	27.016	27.519	27.393	27.896	27.46
6	5.0	30.786	30.629	30.943	31.100	30.86
7	6.0	32.044	32.232	32.609	32.609	32.37
8	7.0	31.886	31.667	32.766	31.667	32.00
9	8.0	31.415	32.169	32.169	31.666	31.85
10	10.0	33.928	34.871	34.871	34.871	34.64

Mean Resistivity at ERT-22 is 27.93 Ohm-m.

ERT No. 23

SI No.	S (M)	Apparent Electrical Resistivity (Ohm-m)				Mean
		(N - S)	(E - W)	(NE - SW)	(NW - SE)	
1	0.50	65.332	65.961	65.646	65.646	65.65
2	1.0	94.873	94.873	96.129	95.815	95.42
3	2.0	100.967	100.528	101.281	101.532	101.08
4	3.0	95.375	94.715	95.940	95.469	95.37
5	4.0	99.271	99.522	98.517	99.648	99.24
6	5.0	89.375	88.433	87.490	88.119	88.35
7	6.0	78.036	78.601	79.167	79.167	78.74
8	7.0	64.213	66.192	65.313	67.072	65.70
9	8.0	57.301	59.815	58.558	60.820	59.12
10	10.0	49.007	50.578	49.322	50.264	49.79

Mean Resistivity at ERT-23 is 79.85 Ohm-m.

ERT No. 24

SI No.	S (M)	Apparent Electrical Resistivity (Ohm-m)				Mean
		(N - S)	(E - W)	(NE - SW)	(NW - SE)	
1	0.50	117.159	117.473	116.845	116.688	117.04
2	1.0	94.873	95.187	94.244	95.501	94.95
3	2.0	87.836	88.150	87.961	87.962	87.98
4	3.0	95.186	95.092	94.904	94.998	95.05
5	4.0	107.941	108.067	107.941	108.318	108.07
6	5.0	117.649	118.434	116.706	116.706	117.37
7	6.0	100.467	99.336	101.787	101.221	100.70
8	7.0	88.623	88.183	87.084	88.183	88.02
9	8.0	74.391	75.899	75.899	74.392	75.15
10	10.0	68.171	70.056	68.799	67.857	68.72

Mean Resistivity at ERT-24 is 95.30 Ohm-m.

ERT No. 25

SI No.	S (M)	Apparent Electrical Resistivity (Ohm-m)				Mean
		(N - S)	(E - W)	(NE - SW)	(NW - SE)	
1	0.50	179.979	180.293	180.450	179.979	180.18
2	1.0	196.029	196.971	197.286	196.971	196.81
3	2.0	167.756	164.614	165.242	162.101	164.93
4	3.0	141.555	141.555	141.838	141.461	141.60
5	4.0	124.026	124.152	123.900	124.403	124.12
6	5.0	101.784	102.569	102.412	103.041	102.45
7	6.0	107.630	108.761	108.007	109.704	108.53
8	7.0	91.702	90.822	90.822	91.922	91.32
9	8.0	75.397	76.151	75.899	76.151	75.90
10	10.0	74.140	75.082	75.082	75.397	74.93

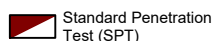
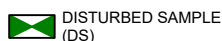
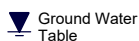
Mean Resistivity at ERT-25 is 126.08 Ohm-m.



BOREHOLE NO: BH-NBH1

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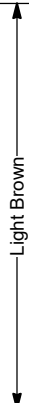
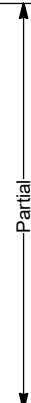
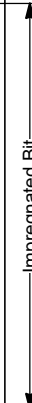
BOREHOLE NO : BH-NBH1				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 1.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.27							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.30							
COORDINATES : 1214 E, 3773 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 10							
DATE OF START : 06-Feb-2022				DATE OF FINISH : 06-Feb-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	11		5.00	Stiff brown clayey silt (CI)	64.3	DS-1	0.00-0.50								
2						UDS-1	0.50-0.80								
3						SPT-1	2.50-2.95								
4															
5															
6	Ref*/ 2m		10.00	Moderately strong brown SANDSTONE, moderately weathered	59.3	SPT-2	5.00-5.02			Light Brown	Partial	Impregnated Bit	100	78	45
7	RK-1					5.01-6.50	1-3						93	88	45
8	RK-2					6.50-8.00	4-5						100	98	48
9	RK-3					8.00-9.50	6						100	77	45
10	RK-4					9.50-10.00	7-9								
				Termination at 10.00 meters Depth.											

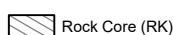
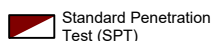
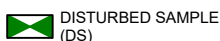
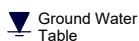




BOREHOLE NO: BH-NBH2

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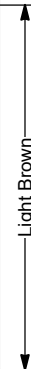
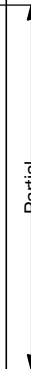
BOREHOLE NO : BH-NBH2				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 68.76							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.65							
COORDINATES : 1348 E, 3779 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 08-Feb-2022				DATE OF FINISH : 09-Feb-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	10		0.70	Fill: Dark grey road material	68.4	DS-1	0.00-0.70								
2				Stiff grey clayey silt (CI)		SPT-1	1.00-1.45								
3			3.00		65.8										
4	Ref*/ 5cm			Moderately strong, brown SANDSTONE, moderately weathered		SPT-2	3.00-3.05	1-2					100	86	45
RK-1						3.01-3.50		94					72	45	
RK-2						3.50-5.00	3-10	100					92	48	
RK-3						5.00-6.50	11-16	100					96	48	
7						RK-4	6.50-8.00	17-18							
8			8.00		60.8										
				Termination at 8.00 meters Depth.											

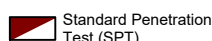
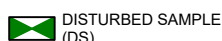




BOREHOLE NO: BH-NBH3

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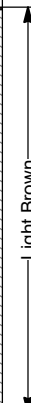
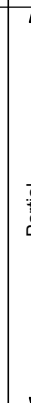
BOREHOLE NO : BH-NBH3				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 5.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 68.81							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.06							
COORDINATES : 1403 E, 3781 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 10							
DATE OF START : 07-Feb-2022				DATE OF FINISH : 08-Feb-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	27		0.50	Fill: Light brown silty sand with brickbats	68.3	DS-1	0.00-0.50								
2			5.50	Very stiff brown clayey silt (CI)		UDS-1	0.50-0.80								
3						SPT-1	2.50-2.95								
4						UDS-2	3.50-3.80								
5															
6	Ref*/ 3cm		10.00	Moderately strong, brown SANDSTONE, moderately weathered	63.3	SPT-2	5.50-5.53	1-4					100	75	45
7	RK-1					5.51-6.50	5-9						96	80	45
8	RK-2					6.50-8.00							87	75	45
9	RK-3					8.00-9.50							10-13	100	97
10										RK-4	9.50-10.00	14			
				Termination at 10.00 meters Depth.											

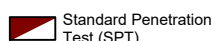
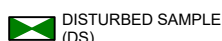




BOREHOLE NO: BH-NBH4

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BOREHOLE NO : BH-NBH4				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 68.50							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.00							
COORDINATES : 1510 E, 3806 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 7							
DATE OF START : 30-Jan-2022				DATE OF FINISH : 31-Jan-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
			0.50	Filled up	68.0	DS-1	0.00-0.50								
1				Hard brown sandy silt (CL)		UDS-1	0.50-0.70								
2			2.00		66.5										
3	Ref*/ 3cm			Moderately strong brown SANDSTONE, moderately weathered		SPT-1	2.00-2.03								
4					RK-1	2.01-3.50	1-9						97	71	40
5					RK-2	3.50-5.00	10-15						94	80	45
6					RK-3	5.00-6.50	16-24						100	72	45
7			7.00		61.5	RK-4	6.50-7.00	25					100	98	48
				Termination at 7.00 meters Depth.											

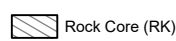
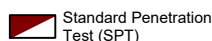
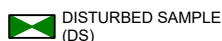
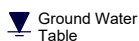




BOREHOLE NO: BH-NBH5

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BOREHOLE NO : BH-NBH5				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.50													
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 68.52													
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.60													
COORDINATES : 1477 E, 3814 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 10													
DATE OF START : 31-Jan-2022				DATE OF FINISH : 01-Feb-2022				LOGGED BY : Mr. Vijay Tiwari													
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)						
1	9		3.50	Stiff brown clayey silt (Cl)	65.0	DS-1	0.00-0.50														
						UDS-1	0.50-0.70														
2						SPT-1	1.00-1.45														
3																					
4	Ref*/ 8cm		10.00	Weak, brown SANDSTONE, very intensely fractured, severely weathered Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	58.5	SPT-2	3.50-3.58							36	0		22				
5						RK-1	3.51-5.00	1-6													
6						RK-2	5.00-6.50	7-12											88	64	40
7						RK-3	6.50-8.00	13-18											94	72	40
8						RK-4	8.00-9.50	19-22											100	60	40
9						RK-5	9.50-10.00	23											100	98	48
10																					
				Termination at 10.00 meters Depth.																	

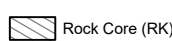
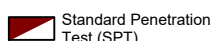
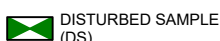




BOREHOLE NO: BH-NBH6

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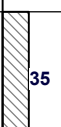
BOREHOLE NO : BH-NBH6				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 68.59							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.56							
COORDINATES : 1429 E, 3829 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8.5							
DATE OF START : 01-Feb-2022				DATE OF FINISH : 02-Feb-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1			2.00	Hard brown sandy silt (CL)	66.6	DS-1	0.00-0.50								
2						UDS-1	0.50-0.70								
3	Ref*/ 3cm		8.50	Moderately strong brown SANDSTONE, moderately weathered	60.1	SPT-1	2.00-2.03			Light Brown	Partial	Impregnated Bit			
4						RK-1	2.01-3.50	1-6					52	32	40
5						RK-2	3.50-5.00	7-10					97	95	45
6						RK-3	5.00-6.50	11-14					100	79	45
7						RK-4	6.50-8.00	15-19					100	98	48
8						RK-5	8.00-8.50	20-21					100	98	48
				Termination at 8.50 meters Depth.											

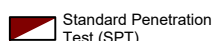
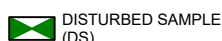




BOREHOLE NO: BH-NBH7

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BOREHOLE NO : BH-NBH7				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.17							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.60							
COORDINATES : 1379 E, 3836 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8.5							
DATE OF START : 02-Feb-2022				DATE OF FINISH : 03-Feb-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	10		0.50	Medium dense brown silty sand (SM)	69.7	DS-1	0.00-0.50								
			1.00	Stiff brown sandy silt (CL)	68.2	UDS-1	0.50-0.70								
2				Stiff grey clayey silt (CI)		SPT-1	1.00-1.45								
3															
4	Ref*/ 3cm			3.50		65.7									
5				Moderately strong brown SANDSTONE, moderately weathered		SPT-2	3.50-3.53			↑ Light Grey	↑ Partial	↑ Impregnated Bit			
6				RK-1	3.51-5.00	1-5									
7				RK-2	5.00-6.50	7-8									
8				RK-3	6.50-8.00	9-10									
				RK-4	8.00-8.50	11-12									
				Termination at 8.50 meters Depth.											

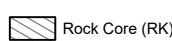
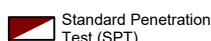
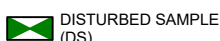




BOREHOLE NO: BH-NBH8

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BOREHOLE NO : BH-NBH8				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 68.55							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.52							
COORDINATES : 1330 E, 3823 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 10							
DATE OF START : 05-Feb-2022				DATE OF FINISH : 06-Feb-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	10		3.50	Medium dense brown silty sand (SM)	65.1	DS-1	0.00-0.50								
						UDS-1	0.50-0.80								
2						SPT-1	1.00-1.45								
3															
4	Ref*/ 3m		10.00	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	58.6	SPT-2	3.50-3.53			Light Brown	Partial	Impregnated Bit	51	16	30
5	RK-1					3.51-5.00	1-9								
6	RK-2					5.00-6.50	10-20	100					75	38	
7	RK-3					6.50-8.00	21-36	95					54	38	
8	RK-4					8.00-9.50	37-41	95					80	45	
9	RK-5					9.50-10.00	42	100					98	48	
10															
				Termination at 10.00 meters Depth.											

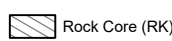
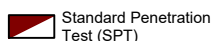
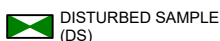
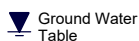




BOREHOLE NO: BH-NBH9

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BOREHOLE NO : BH-NBH9				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.03							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.42							
COORDINATES : 1291 E, 3815 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 07-Feb-2022				DATE OF FINISH : 07-Feb-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	16		0.50	Fill: Light brown sandy silt with gravel	69.5	DS-1	0.00-0.50								
2				Very stiff grey clayey silt with gravel (CI)		UDS-1	0.50-0.80								
3							SPT-1	2.50-2.95							
4	Ref*/ 7cm		8.00	Moderately strong, brown SANDSTONE, moderately weathered	66.0	SPT-2	3.00-3.07			Light Brown	Partial	Impregnated Bit	100	98	48
5	RK-1					3.01-4.50	1-4						100	95	48
6	RK-2					4.50-6.00	5-10						100	82	48
7	RK-3					6.00-7.50	11-18						100	98	48
8					61.0	RK-4	7.50-8.00	19					100	98	48
				Termination at 8.00 meters Depth.											

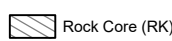
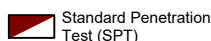
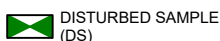
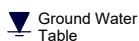




BOREHOLE NO: BH-NBH10

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BOREHOLE NO : BH-NBH10				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.96							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.45							
COORDINATES : 1184 E, 3816 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8.5							
DATE OF START : 07-Feb-2022				DATE OF FINISH : 08-Feb-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	12		2.00	Stiff brown clayey silt (CI)	68.0	DS-1	0.00-0.50								
						UDS-1	0.50-0.80								
2						SPT-1	1.00-1.45								
	Ref*/ 2cm			Weak brown SANDSTONE, very intensely fractured, moderately weathered Moderately strong, brown SANDSTONE, moderately weathered	61.5	SPT-2	2.00-2.02			Light Brown	Partial	Impregnated Bit			
3		RK-1	2.01-3.50			1-5		20					0	20	
4		RK-2	3.50-5.00			6		100					98	48	
5		RK-3	5.00-6.50			7-13		100					75	48	
6		RK-4	6.50-8.00			14-15		100					96	48	
7															
8															
			8.50	Termination at 8.50 meters Depth.											





BOREHOLE NO: BH-NBH11

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BOREHOLE NO : BH-NBH11	SOIL BORING METHOD : Rotary Drilling	CASING DEPTH, m : 2.00
LOCATION : Talcher, Odisha	ROCK DRILLING METHOD : Rotary Drilling	GROUND ELEVATION, m : RL 70.69
COORDINATES : 1135 E, 3854 N	BOREHOLE DIAMETER IN SOIL, mm : 150	GROUND WATER DEPTH, m : 0.55
DATE OF START : 07-Feb-2022	BOREHOLE DIAMETER IN ROCK, mm : NX	TERMINATION DEPTH, m : 8.5
DATE OF FINISH : 08-Feb-2022	LOGGED BY : Mr. Vijay Tiwari	

DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	10		0.50	Medium dense brown silty sand (SM)	70.2	DS-1	0.00-0.50								
2			2.00	Stiff brown clayey silt (CI)	68.7	UDS-1	0.50-0.80								
3	Ref*/ 3cm			Weak, brown SANDSTONE, very intensely fractured, moderately weathered		SPT-1	1.00-1.45								
4				Moderately strong, brown SANDSTONE, moderately fractured, moderately weathered		SPT-2	2.00-2.03								
5						RK-1	2.01-3.50	1-4					27	0	22
6						RK-2	3.50-5.00	5-10					96	75	40
7						RK-3	5.00-6.50	11-14					92	84	45
8						RK-4	6.50-8.00	15-20					100	84	45
			8.50	Termination at 8.50 meters Depth.	62.2	RK-5	8.00-8.50	21-22					100	96	48

Ground Water Table

DISTURBED SAMPLE (DS)

UNDISTURBED SAMPLE (UDS)

Standard Penetration Test (SPT)

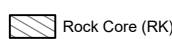
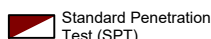
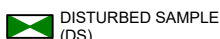
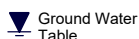
Rock Core (RK)



BOREHOLE NO: BH-NBH12

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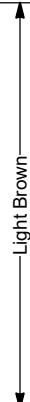
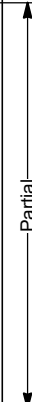
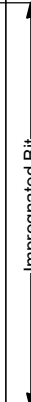
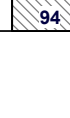
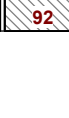
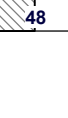
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LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.10							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.55							
COORDINATES : 1185 E, 3849 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8.5							
DATE OF START : 06-Feb-2022				DATE OF FINISH : 06-Feb-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1			2.50	Hard brown sandy silt (CL)		DS-1	0.00-0.50								
						UDS-1	0.50-0.80								
2															
3	Ref*/ 3m			Moderately strong, brown SANDSTONE, moderately fractured, moderately weathered	67.6	SPT-1	2.50-2.53			Light Brown	Partial	Impregnated Bit	49	10	25
4						RK-1	2.51-3.50	1-7					83	68	35
5						RK-2	3.50-5.00	8-10					91	56	35
6						RK-3	5.00-6.50	11-19					98	74	40
7						RK-4	6.50-8.00	20-25					90	82	40
8			8.50		61.6	RK-5	8.00-8.50	26-							
				Termination at 8.50 meters Depth.											

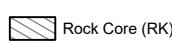
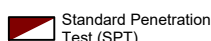
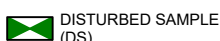




BOREHOLE NO: BH-NBH13

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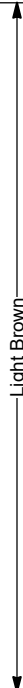
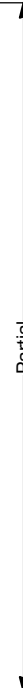
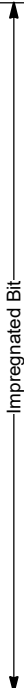
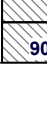
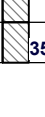
BOREHOLE NO : BH-NBH13				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.40							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.95							
COORDINATES : 1231 E, 3846 N				BOREHOLE DIAMETER IN ROCK, mm : NX				TERMINATION DEPTH, m : 8.5							
DATE OF START : 05-Feb-2022				DATE OF FINISH : 05-Feb-2022				LOGGED BY : Mr. Kumar Gaurav							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	12		3.50	Stiff brown clayey silt (CI)	65.9	DS-1	0.00-0.50								
						UDS-1	0.50-0.70								
2															
3						SPT-1	2.50-2.95								
4	Ref*/ 2cm		8.50	Moderately strong, brown SANDSTONE, moderately fractured, moderately weathered	60.9	SPT-2	3.50-3.52								
5	RK-1					3.51-5.00	1-6								
6	RK-2					5.00-6.50	7-12								
7	RK-3					6.50-8.00	13-16								
8	RK-4					8.00-8.50	17								
				Termination at 8.50 meters Depth.											

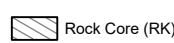
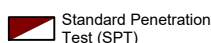
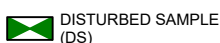
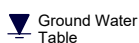




BOREHOLE NO: BH-NBH14

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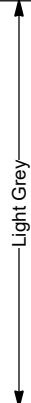
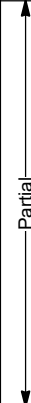
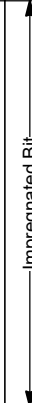
BOREHOLE NO : BH-NBH14				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.50														
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.14														
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.64														
COORDINATES : 1310 E, 3850 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 12														
DATE OF START : 04-Feb-2022				DATE OF FINISH : 05-Feb-2022				LOGGED BY : Mr. Kumar Gaurav														
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)							
1	12		3.50	Stiff brown clayey silt (CI)		DS-1	0.00-0.50															
						UDS-1	0.50-0.70															
2						SPT-1	1.00-1.45															
3																						
4	Ref*/ 2cm		12.00	Moderately strong, brown SANDSTONE, moderately fractured, moderately weathered	65.6	SPT-2	3.50-3.52															
5	RK-1					3.51-5.00	1-13															
6	RK-2					5.00-6.50	14-24															
7	RK-3					6.50-8.00	25-33															
8	RK-4					8.00-9.50	34-39															
9	RK-5					9.50-11.50	40-43															
10																						
11																						
12					57.1	RK-6	11.50-12.00	44-45														
				Termination at 12.00 meters Depth.																		

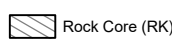
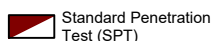
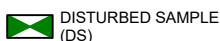
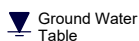




BOREHOLE NO: BH-NBH15

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BOREHOLE NO : BH-NBH15				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.50											
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.98											
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.80											
COORDINATES : 1348 E, 3848 N				BOREHOLE DIAMETER IN ROCK, mm : NX				TERMINATION DEPTH, m : 8.5											
DATE OF START : 03-Feb-2022				DATE OF FINISH : 04-Feb-2022				LOGGED BY : Mr. Kumar Gaurav											
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)				
1	14		2.50	Medium dense brown silty sand (SM)	67.5	DS-1	0.00-0.50												
						UDS-1	0.50-0.70												
2																			
3			3.50	Stiff brown clayey silt (CI)	66.5	SPT-1	2.50-2.95												
4	Ref*/ 2cm		8.50	Moderately strong brown SANDSTONE, moderately weathered	61.5	SPT-2	3.50-3.52												
5																			
6																			
7																			
8																			
				Termination at 8.50 meters Depth.															

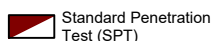
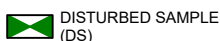
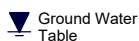




BOREHOLE NO: BH-NBH16

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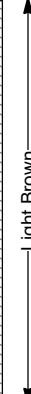
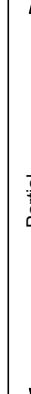
BOREHOLE NO : BH-NBH16				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.17							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.85							
COORDINATES : 1400 E, 3852 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 04-Feb-2022				DATE OF FINISH : 04-Feb-2022				LOGGED BY : Mr. Kumar Gaurav							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1			2.00	Hard brown clayey silt (CI)	67.2	DS-1	0.00-0.50								
2						UDS-1	0.50-0.70								
3	Ref*/ 3cm		8.00	Moderately strong brown SANDSTONE, moderately weathered	61.2	SPT-1	2.00-2.03			Light Brown	Partial	Impregnated Bit	64	56	35
4						RK-1	2.01-3.50	1-5					86	79	40
5						RK-2	3.50-5.00	6-9					100	96	48
6						RK-3	5.00-6.50	10-13					93	80	48
7						RK-4	6.50-8.00	14-17							
8				Termination at 8.00 meters Depth.											

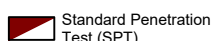
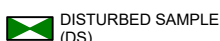




BOREHOLE NO: BH-NBH17

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BOREHOLE NO : BH-NBH17				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 68.72							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.97							
COORDINATES : 1451 E, 3852 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 7							
DATE OF START : 28-Jan-2022				DATE OF FINISH : 28-Jan-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1			2.00	Hard grey clayey silt (CI)	 66.7	DS-1	0.00-0.50								
2						UDS-1	0.50-0.70								
3	Ref*/ 3cm		7.00	Moderately strong brown SANDSTONE, moderately weathered		SPT-1 RK-1	2.00-2.03 2.01-2.50	1-3		 Light Brown	 Partial	 Impregnated Bit	84	54	35
4		RK-2				2.50-4.00	4-6	98					96	48	
5		RK-3				4.00-5.50	7-10	95					84	48	
6		RK-4				5.50-7.00	11	100					98	50	
7				Termination at 7.00 meters Depth.											

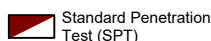
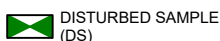
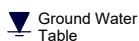




BOREHOLE NO: BH-NBH18

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BOREHOLE NO : BH-NBH18				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00										
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 68.84										
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.04										
COORDINATES : 1520 E, 3850 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 7.5										
DATE OF START : 30-Jan-2022				DATE OF FINISH : 30-Jan-2022				LOGGED BY : Mr. Vijay Tiwari										
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)			
1	13		1.00	Stiff brown sandy silt (CL)	67.8	DS-1	0.00-0.50											
			UDS-1	0.50-0.70														
2			2.50	Stiff grey clayey silt (CI)	66.3	SPT-1	1.00-1.45											
3	Ref*/ 2cm					Moderately strong brown SANDSTONE, moderately weathered		SPT-2								2.50-2.52	1-7	
4		RK-1			2.51-3.50			8-14	15-26	27-29	84	59	40					
5		RK-2			3.50-5.00						100	65	40					
6		RK-3			5.00-6.50						100	93	45					
7	RK-4	6.50-7.50																
			7.50	Termination at 7.50 meters Depth.	61.3													

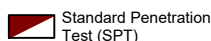
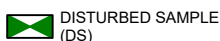
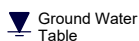




BOREHOLE NO: BH-NBH19

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BOREHOLE NO : BH-NBH19				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.48							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.06							
COORDINATES : 1509 E, 3887 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 10							
DATE OF START : 29-Jan-2022				DATE OF FINISH : 30-Jan-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	16		2.50	Very stiff brown sandy silt (CL)	 67.0	DS-1	0.00-0.50								
2		UDS-1				0.50-0.70									
3															
4	Ref*/11cm		3.50	Very stiff grey clayey silt (CI)	66.0	SPT-1	2.50-2.95								
5	Ref*/11cm		10.00	Weak, brown SANDSTONE, very intensely fractured, severely weathered	59.5	SPT-2	3.50-3.61								
6						RK-1	3.51-5.00	1-3		Light Brown	Partial	Impregnated Bit	20	0	20
7						RK-2	5.00-6.50	4-8					85	77	40
8						RK-3	6.50-8.00	9-16					100	69	40
9						RK-4	8.00-9.50	17-19					100	93	45
10						RK-5	9.50-10.00	20					97	95	45
				Termination at 10.00 meters Depth.											

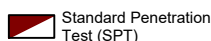
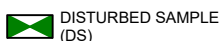
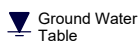




BOREHOLE NO: BH-NBH20

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BOREHOLE NO : BH-NBH20				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00								
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.47								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.93								
COORDINATES : 1487 E, 3901 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8.5								
DATE OF START : 02-Feb-2022				DATE OF FINISH : 03-Feb-2022				LOGGED BY : Mr. Vijay Tiwari								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)	
1	9		2.00	Stiff brown clayey silt (CI)	67.5	DS-1	0.00-0.50									
						UDS-1	0.50-0.70									
2						SPT-1	1.00-1.45									
	Ref*/ 3cm		8.50	Weak, brown SANDSTONE, very intensely fractured, severely weathered Moderately strong brown SANDSTONE, moderately weathered	61.0	SPT-2	2.00-2.03			Light Brown	Partial	Impregnated Bit	54	0	22	
3	RK-1					2.01-3.50	1-15	97					63			40
4	RK-2					3.50-5.00	16-24	97								
5	RK-3					5.00-6.50	25-30	97								
6	RK-4					6.50-8.00	31-36	97								
7	RK-5					8.00-8.50	37-39	100								
8																
				Termination at 8.50 meters Depth.												

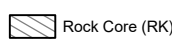
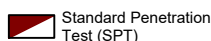
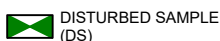
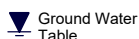




BOREHOLE NO: BH-NBH21

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BOREHOLE NO : BH-NBH21				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 1.50								
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.12								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.87								
COORDINATES : 1475 E, 3873 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 6.5								
DATE OF START : 29-Jan-2021				DATE OF FINISH : 29-Jan-2021				LOGGED BY : Mr. Vijay Tiwari								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)	
1	11		1.00	Stiff brown sandy silt (CL)	68.4	DS-1	0.00-0.50									
					UDS-1	0.50-0.70										
				1.50	Stiff grey clayey silt (CI)	67.6	SPT-1	1.00-1.45								
2		Ref*/ 2cm		6.50	Moderately strong brown SANDSTONE, moderately weathered		SPT-2	1.50-1.52								
3							RK-1	1.51-3.00	1-5							
4							RK-2	3.00-4.50	6-8							
5							RK-3	4.50-6.00	9-10							
6				RK-4	6.00-6.50	11						100	98	48		
				Termination at 6.50 meters Depth.												

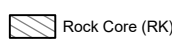
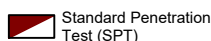
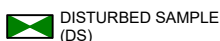
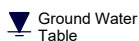




BOREHOLE NO: BH-NBH22

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BOREHOLE NO : BH-NBH22				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00															
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.54															
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.68															
COORDINATES : 1456 E, 3886 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 7															
DATE OF START : 29-Jan-2021				DATE OF FINISH : 30-Jan-2021				LOGGED BY : Mr. Vijay Tiwari															
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)								
1	15		2.00	Stiff grey sandy clay (SC)	67.5	DS-1	0.00-0.50																
						UDS-1	0.50-0.70																
2						SPT-1	1.00-1.45																
	Ref*/ 4cm		7.00	Moderately strong brown SANDSTONE, moderately weathered	62.5	SPT-2	2.00-2.04			Light Brown	Partial	Impregnated Bit											
3	RK-1					2.01-3.50	1-3						100	95	48								
4	RK-2					3.50-5.00	4-7						100	96	48								
5													RK-3	5.00-6.50	8		97	94	48				
6																	RK-4	6.00-7.00	9		100	98	48
7																							
				Termination at 7.00 meters Depth.																			

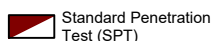
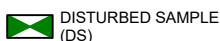
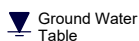




BOREHOLE NO: BH-NBH23

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BOREHOLE NO : BH-NBH23				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.24							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.40							
COORDINATES : 1368 E, 3887 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8.5							
DATE OF START : 31-Jan-2022				DATE OF FINISH : 01-Feb-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	19		2.00	Very stiff brown clayey silt (CI)	67.2	DS-1	0.00-0.50								
						UDS-1	0.50-0.70								
2						SPT-1	1.00-1.45								
	Ref*/ 3cm		8.50	Weak, brown SANDSTONE, very intensely fractured, severely weathered Moderately strong brown SANDSTONE, moderately weathered	60.7	SPT-2	2.00-2.03			Light Brown	Partial	Impregnated Bit			
3	RK-1					2.01-3.50	1-15						65	0	22
4	RK-2					3.50-5.00	16-25						88	54	40
5	RK-3					5.00-6.50	26-33						98	67	40
6	RK-4					6.50-8.00	34-37						100	98	45
7	RK-5					8.00-8.50	38-40						100	76	45
8				Termination at 8.50 meters Depth.											

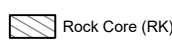
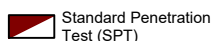
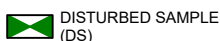
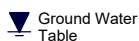




BOREHOLE NO: BH-NBH24

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BOREHOLE NO : BH-NBH24				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00								
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.08								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.76								
COORDINATES : 1342 E, 3872 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8								
DATE OF START : 03-Feb-2022				DATE OF FINISH : 04-Feb-2022				LOGGED BY : Mr. Kumar Gaurav								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)	
1			2.00	Very dense brown silty sand (SM)	67.1	DS-1	0.00-0.50									
2						UDS-1	0.50-0.70									
3	Ref*/ 6cm		8.00	Moderately strong brown SANDSTONE, moderately weathered	61.1	SPT-1	2.00-2.06	1-6		Light Brown	Partial	Impregnated Bit	100	58	35	
4						RK-1	2.01-3.50						7-10	100	88	45
5						RK-2	3.50-5.00						11-15	100	81	45
6						RK-3	5.00-6.50						16-19	100	90	45
7						RK-4	6.50-8.00									
8				Termination at 8.00 meters Depth.												

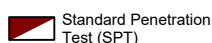
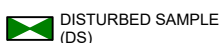
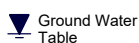




BOREHOLE NO: BH-NBH25

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BOREHOLE NO : BH-NBH25				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.50								
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.48								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.05								
COORDINATES : 1300 E, 3902 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8.5								
DATE OF START : 05-Feb-2022				DATE OF FINISH : 06-Feb-2022				LOGGED BY : Mr. Vijay Tiwari								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)	
1	18		0.60	Fill: Dark grey road material and gravel	68.9	DS-1	0.00-0.50									
2				Very stiff brown clayey silt with gravel(CI)		SPT-1	1.00-1.45									
3																
4	Ref*/ 3m		3.50	Moderately strong brown SANDSTONE, moderately weathered	66.0	SPT-2	3.50-3.53							100	95	48
5			RK-1		3.51-5.00	1-3										
6			RK-2		5.00-6.50	4-8										
7			RK-3		6.50-8.00	9-12										
8			RK-4		8.00-8.50	13-14										
			8.50	Termination at 8.50 meters Depth.	61.0											

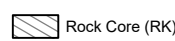
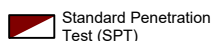
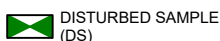
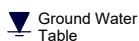




BOREHOLE NO: BH-NBH26

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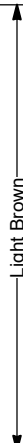
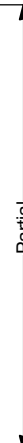
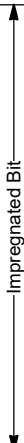
BOREHOLE NO : BH-NBH26				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 5.00									
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.50									
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.45									
COORDINATES : 1276 E, 3886 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 11									
DATE OF START : 01-Feb-2022				DATE OF FINISH : 02-Feb-2022				LOGGED BY : Mr. Vijay Tiwari									
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)		
1	15		0.65	Filled up	68.9	DS-1	0.00-0.50										
2			3.50	Very stiff grey clayey silt (CI)	66.0	SPT-1	2.50-2.95										
3						22		Very stiff brown sandy clay (SC)	64.5	UDS-1	3.50-3.70						
4	SPT-2									4.00-4.45							
5			5.00														
6	Ref*/ 3cm		11.00	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	58.5	SPT-3	5.00-5.03										
7						RK-1	5.01-6.50	1-10									
8						RK-2	6.50-8.00	11-20									
9						RK-3	8.00-9.50	21-30									
10						RK-4	9.50-11.00	31-33									
11																	
				Termination at 11.00 meters Depth.													

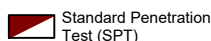
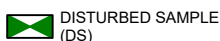
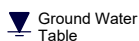




BOREHOLE NO: BH-NBH27

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BOREHOLE NO : BH-NBH27				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.50								
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.66								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.77								
COORDINATES : 1247 E, 3875 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8								
DATE OF START : 04-Feb-2022				DATE OF FINISH : 05-Feb-2022				LOGGED BY : Mr. Kumar Gaurav								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)	
1			2.50	Hard brown sandy silt (CL)		DS-1	0.00-0.50									
				UDS-1		0.50-0.70										
2																
3	Ref*/ 8cm			Moderately strong brown SANDSTONE, moderately weathered	67.2	SPT-1	2.50-2.58	1-2					83	77	40	
4						RK-1	2.51-3.50							92	84	45
5						RK-2	3.50-5.00						3-6			
6						RK-3	5.00-6.50						7-9			
7						RK-4	6.50-8.00	10-11					100	98	48	
8			8.00		61.7											
				Termination at 8.00 meters Depth.												





BOREHOLE NO: BH-NBH28

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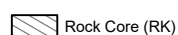
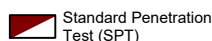
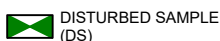
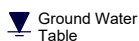
BOREHOLE NO : BH-NBH28				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.10							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.70							
COORDINATES : 1184 E, 3887 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 03-Feb-2022				DATE OF FINISH : 04-Feb-2022				LOGGED BY : Mr. Kumar Gaurav							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	11		0.70	Filled up	67.4	DS-1	0.00-0.50								
							UDS-1	0.50-0.70							
2			2.00	Stiff brown clayey silt (CI)	68.1	SPT-1	1.00-1.45								
3	Ref*/ 3cm			Moderately strong brown SANDSTONE, moderately weathered		SPT-2	2.00-2.03			Light Brown	Partial	Impregnated Bit	100	68	40
4						RK-1	2.01-3.50	1-4							
5						RK-2	3.50-5.00	5-14							
6						RK-3	5.00-6.50	15-20							
7						RK-4	6.50-8.00	21-26							
8			8.00		62.1										
				Termination at 8.00 meters Depth.											



BOREHOLE NO: BH-NBH29

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BOREHOLE NO : BH-NBH29				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00								
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.46								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.45								
COORDINATES : 1402 E, 3903 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 7								
DATE OF START : 30-Jan-2022				DATE OF FINISH : 31-Jan-2022				LOGGED BY : Mr. Vijay Tiwari								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)	
1			2.00	Hard grey sandy silt (CL)	67.5	DS-1	0.00-0.50									
2						UDS-1	0.50-0.70									
3	Ref*/ 3cm		7.00	Moderately strong brown SANDSTONE, moderately weathered	62.5	SPT-1	2.00-2.03	1-8		Light Brown	Partial	Impregnated Bit				
4		RK-1				2.01-3.50							100	82	45	
5		RK-2				3.50-5.00	9-11							100	91	45
6		RK-3				5.00-6.50	12-16							95	76	45
7		RK-4				6.50-7.00	17							100	98	48
				Termination at 7.00 meters Depth.												





BOREHOLE NO: BH-NBH30

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BOREHOLE NO : BH-NBH30				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.90							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.58							
COORDINATES : 1510 E, 3944 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 12.5							
DATE OF START : 15-Feb-2022				DATE OF FINISH : 16-Feb-2022				LOGGED BY : Mr. Kumar Gaurav							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	18		0.50	Medium dense brown silty sand (SM)	69.4	DS-1	0.00-0.50								
				Very stiff grey clayey silt (CI)		UDS-1	0.50-0.80								
						SPT-1	1.00-1.45								
2			2.00		67.9										
	Ref*/ 2m			Weak brown SANDSTONE, very intensely fractured, moderately weathered		SPT-2	2.00-2.02								
3						RK-1	2.01-3.50	1-5					24	0	20
4				Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		RK-2	3.50-5.00	6-18					57	7	25
5						RK-3	5.00-6.50	19-31					80	24	35
6						RK-4	6.50-8.00	32-38					98	84	45
7						RK-5	8.00-9.50	39-44					93	68	45
8						RK-6	9.50-11.00	45-46					88	84	45
9						RK-7	11.00-12.50	47-48					100	72	45
10															
11															
12															
			12.50	Termination at 12.50 meters Depth.	57.4										

Ground Water Table

DISTURBED SAMPLE (DS)

UNDISTURBED SAMPLE (UDS)

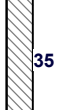
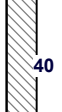
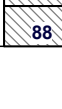
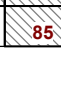
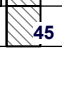
Standard Penetration Test (SPT)

Rock Core (RK)



BOREHOLE NO: BH-NBH31

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BOREHOLE NO : BH-NBH31				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.86							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.76							
COORDINATES : 1440 E, 3944 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 7							
DATE OF START : 28-Jan-2022				DATE OF FINISH : 28-Jan-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	13		1.00	Medium dense brown silty sand (SM)	68.9	DS-1	0.00-0.50								
							UDS-1	0.50-0.80							
2			2.00	Stiff grey sandy clay (SC)	67.9	SPT-1	1.00-1.45								
3	Ref*/ 3cm			Moderately strong brown SANDSTONE, moderately weathered		SPT-2	2.00-2.03			Light Brown	Partial	Impregnated Bit			
RK-1						2.01-3.50	1-5								
RK-2						3.50-5.00	6-13								
RK-3						5.00-6.50	14-15								
RK-4						6.50-7.00	16-17								
4															
5															
6															
7			7.00		62.9										
				Termination at 7.00 meters Depth.											

Ground Water Table

DISTURBED SAMPLE (DS)

UNDISTURBED SAMPLE (UDS)

Standard Penetration Test (SPT)

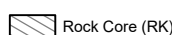
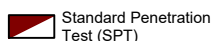
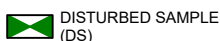
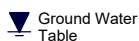
Rock Core (RK)



BOREHOLE NO: BH-NBH32

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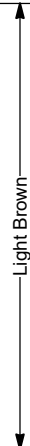
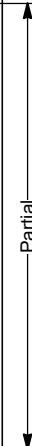
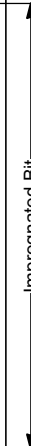
BOREHOLE NO : BH-NBH32				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00								
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.80								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.71								
COORDINATES : 1383 E, 3936 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 7								
DATE OF START : 28-Jan-2022				DATE OF FINISH : 29-Jan-2022				LOGGED BY : Mr. Vijay Tiwari								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)	
1			2.00	Very dense brown silty sand (SM)	67.8	DS-1	0.00-0.50									
2						UDS-1	0.50-0.70									
3	Ref*/ 2cm		7.00	Moderately strong brown SANDSTONE, moderately weathered	62.8	SPT-1	2.00-2.02			Light Brown	Partial	Impregnated Bit	100	98	48	
4						RK-1	2.01-3.50	1						97	93	48
5						RK-2	3.50-5.00	2								
6						RK-3	5.00-6.50	3						100	98	48
7						RK-4	6.50-7.00	4						99	98	48
				Termination at 7.00 meters Depth.												

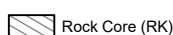
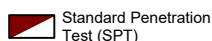
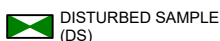
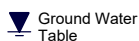




BOREHOLE NO: BH-NBH37

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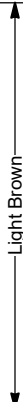
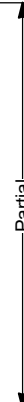
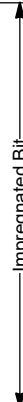
BOREHOLE NO : BH-NBH37				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.23							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.00							
COORDINATES : 1220 E, 4016 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8.5							
DATE OF START : 11-Mar-2022				DATE OF FINISH : 12-Mar-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	16		3.00	Very stiff brown sandy silt with gravel (CL)	 68.2	DS-1	0.00-0.50								
2						DS-2	0.50-1.00								
3						SPT-1	1.00-1.45								
4			8.50	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	62.7	RK-1	3.00-3.50	1-4					62	20	30
5	RK-2					3.50-5.00	5-10	96					86	45	
6	RK-3					5.00-6.50	11-15	100					82	45	
7	RK-4					6.50-8.00	16-23	100					78	45	
8	RK-5					8.00-8.50	24	100					99	50	
				Termination at 8.50 meters Depth.											

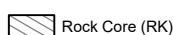
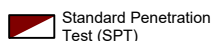
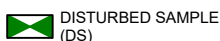
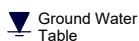




BOREHOLE NO: BH-NBH38

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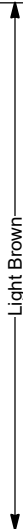
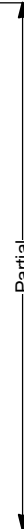
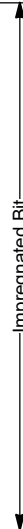
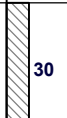
BOREHOLE NO : BH-NBH38				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.83							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.00							
COORDINATES : 1264 E, 3996 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8.5							
DATE OF START : 12-Mar-2022				DATE OF FINISH : 13-Mar-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	Ref*/ 5m		3.50	Hard grey clayey silt (Cl)		DS-1	0.00-0.50								
2						DS-2	0.50-1.00								
3						SPT-1	2.50-2.55								
4			8.50	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	67.3	RK-1	3.50-5.00	1-3		 Light Brown	 Partial	 Impregnated Bit	100	93	50
5						RK-2	5.00-6.50	4					98	96	50
6	RK-3					6.50-8.00	5-8	100					89	50	
7	RK-4					8.00-8.50	9	100					99	50	
8				Termination at 8.50 meters Depth.											

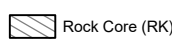
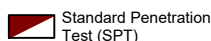
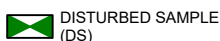
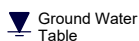




BOREHOLE NO: BH-NBH40

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BOREHOLE NO : BH-NBH40				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 1.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.52							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.45							
COORDINATES : 1371 E, 4018 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 02-Feb-2022				DATE OF FINISH : 02-Feb-2022				LOGGED BY : Mr. Kumar Gaurav							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	13		1.50	Medium dense brown silty sand (SM)	69.0	DS-1	0.00-0.50								
				UDS-1		0.50-0.80									
	Ref*/ 5cm					SPT-1	1.00-1.45								
2				Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	62.5	SPT-2	1.50-1.55								
3				RK-1		1.51-3.00	1-11						100	35	30
4				RK-2		3.00-4.50	12-16						100	80	45
5				RK-3		4.50-6.00	17-19						100	89	48
6				RK-4		6.00-7.50	20-23						100	88	48
7				RK-5		7.50-8.00	24						100	90	48
8															
				Termination at 8.00 meters Depth.											

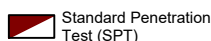
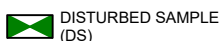
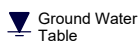




BOREHOLE NO: BH-NBH41

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BOREHOLE NO : BH-NBH41				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.27							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.90							
COORDINATES : 1440 E, 4015 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 7.5							
DATE OF START : 25-Jan-2022				DATE OF FINISH : 25-Jan-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	16		2.50	Very stiff brown clayey silt (CI)	67.8	DS-1	0.00-0.50								
						UDS-1	0.50-0.80								
2						SPT-1	1.00-1.45								
3	Ref*/ 3cm			Moderately strong brown SANDSTONE, moderately weathered		SPT-2	2.50-2.53								
4						RK-1	2.51-3.50	1-9		Light Brown	Partial	Impregnated Bit	90	60	35
5						RK-2	3.50-5.00	10-13					98	87	45
6						RK-3	5.00-6.50	14-16					93	86	45
7	RK-4	6.50-7.50	17-18	90	87	45									
				Termination at 7.50 meters Depth.											

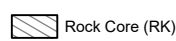
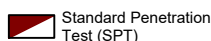
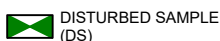
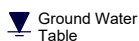




BOREHOLE NO: BH-NBH42

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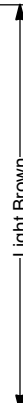
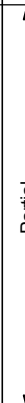
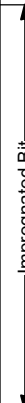
BOREHOLE NO : BH-NBH42				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.17							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.93							
COORDINATES : 1466 E, 3966 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 7.5							
DATE OF START : 25-Jan-2022				DATE OF FINISH : 25-Jan-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	29		2.50	Very stiff brown clayey silt (CI)		DS-1	0.00-0.50								
						UDS-1	0.50-0.80								
2						SPT-1	1.00-1.45								
3	Ref*/ 3cm		7.50	Moderately strong brown SANDSTONE, moderately weathered	67.7	SPT-2	2.50-2.53								
						RK-1	2.51-3.50	1-8		Light Brown	Partial	Impregnated Bit	100	60	40
4						RK-2	3.50-5.00	10-15					93	65	40
5						RK-3	5.00-6.50	16-25					97	57	40
6						RK-4	6.50-7.50	26					85	82	45
7															
				Termination at 7.50 meters Depth.											

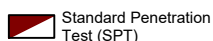
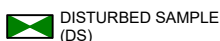
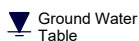




BOREHOLE NO: BH-NBH43

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BOREHOLE NO : BH-NBH43				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.50									
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.28									
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.81									
COORDINATES : 1472 E, 3995 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 7.5									
DATE OF START : 25-Jan-2022				DATE OF FINISH : 27-Jan-2022				LOGGED BY : Mr. Vijay Tiwari									
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)		
1			2.50	Hard brown clayey silt (CI)		DS-1	0.00-0.50										
2						UDS-1	0.50-0.80										
3	Ref*/ 5cm		7.50	Moderately strong brown SANDSTONE, moderately weathered	67.8	SPT-1	2.50-2.55	1-6					80	50	40		
4						RK-1	2.51-3.51							100	63	40	
5						RK-2	3.50-5.00						7-17		96	76	45
6						RK-3	5.00-6.50						18-21		98	79	45
7					62.8	RK-4	6.50-7.50	22-24									
				Termination at 7.50 meters Depth.													

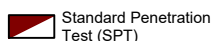
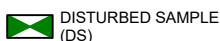
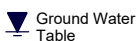




BOREHOLE NO: BH-NBH44

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BOREHOLE NO : BH-NBH44				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.50								
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.36								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.84								
COORDINATES : 1510 E, 3143 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8.5								
DATE OF START : 27-Jan-2022				DATE OF FINISH : 27-Jan-2022				LOGGED BY : Mr. Vijay Tiwari								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)	
1	13		2.50	Stiff brown clayey silt (CI)	67.9	DS-1	0.00-0.50									
						UDS-1	0.50-0.80									
2						SPT-1	1.00-1.45									
3	Ref*/ 3cm		8.50	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	61.9	SPT-2	2.50-2.53	1-10		Light Brown	Partial	Impregnated Bit	77	13	25	
4	RK-1					2.51-3.50	11-16						94	87	45	
5						RK-2							3.50-5.00	95	85	45
6						RK-3							5.00-6.50	100	96	48
7						RK-4							6.50-8.00	100	98	48
8							RK-5						8.00-8.50	24-25		
				Termination at 8.50 meters Depth.												

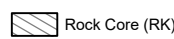
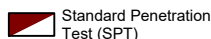
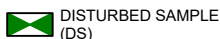




BOREHOLE NO: BH-NBH45

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BOREHOLE NO : BH-NBH45				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 1.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.79							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.40							
COORDINATES : 1467 E, 3931 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 7							
DATE OF START : 27-Jan-2022				DATE OF FINISH : 28-Jan-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	Ref*/ 3cm		1.50	Very dense brown silty sand (SM)	68.3	DS-1	0.00-0.50								
								UDS-1	0.50-0.80						
2	Ref*/ 3cm			Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		SPT-1	1.50-1.53	1-6		Light Brown	Partial	Impregnated Bit	80	10	25
3						RK-1	1.51-2.00						88	70	40
4						RK-2	2.00-3.00	7-9					94	86	45
5						RK-3	3.00-4.50	10-14					100	70	45
6						RK-4	4.50-6.00	15-24					100	97	45
7			7.00		62.8	RK-5	6.00-7.00	25-27							
				Termination at 7.00 meters Depth.											

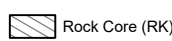
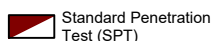
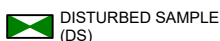
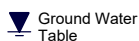




BOREHOLE NO: BH-NBH47

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BOREHOLE NO : BH-NBH47				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 1.50								
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.60								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.50								
COORDINATES : 1517 E, 4054 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 7								
DATE OF START : 23-Jan-2022				DATE OF FINISH : 23-Jan-2022				LOGGED BY : Mr. Jitendra								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)	
1	25		1.50	Very stiff brown clayey silt (CI)	69.1	DS-1	0.00-0.50									
						UDS-1	0.50-0.80									
						SPT-1	1.00-1.45									
2	Ref*/ 3cm			Weak, brown SANDSTONE, very intensely fractured, severely weathered Moderately strong brown SANDSTONE, moderately weathered		SPT-2 RK-1	1.50-1.53 1.51-2.00	1-6		Light Brown		Partial	Impregnated Bit	74	0	25
3								63						56	35	
4								100						98	48	
5								100						98	48	
6								100						98	48	
7			7.00		63.6	RK-5	6.50-7.00	13-14					100	98	48	
				Termination at 7.00 meters Depth.												

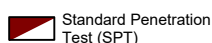
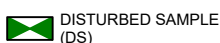
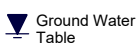




BOREHOLE NO: BH-NBH48

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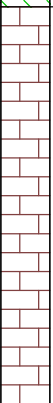
BOREHOLE NO : BH-NBH48				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 1.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.31							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.40							
COORDINATES : 1586 E, 4079 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 5.5							
DATE OF START : 25-Jan-2022				DATE OF FINISH : 25-Jan-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
			0.50	Very dense brown silty sand (SM)	69.8	DS-1	0.00-0.50								
1	Ref*/ 3cm			Moderately strong brown SANDSTONE, moderately weathered		SPT-1 RK-1	0.50-0.53 0.51-1.00	1-3		↑	↑	↑	96	94	48
2						RK-2	1.00-2.50	4-5					100	98	48
3						RK-3	2.50-4.00	6					100	97	48
4						RK-4	4.00-5.50	7-9					100	89	48
5			5.50		64.8										
				Termination at 5.50 meters Depth.											

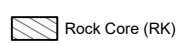
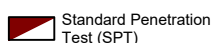
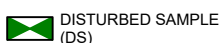
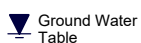




BOREHOLE NO: BH-NBH49

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BOREHOLE NO : BH-NBH49				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 1.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.83							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.55							
COORDINATES : 1528 E, 4093 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 6.5							
DATE OF START : 24-Jan-2022				DATE OF FINISH : 24-Jan-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	30		1.50	Hard brown clayey silt (CI)	69.3	DS-1	0.00-0.50								
						UDS-1	0.50-0.80								
						SPT-1	1.00-1.45								
2			6.50	Moderately strong brown SANDSTONE, moderately weathered		RK-1	1.50-2.00	1-3		Light Brown	Partial	Impregnated Bit	82	68	40
3						RK-2	2.00-3.50	4-11					96	68	40
4						RK-3	3.50-5.00	12-13					100	98	48
5						RK-4	5.00-6.50	14-16					100	98	48
6															
				Termination at 6.50 meters Depth.											

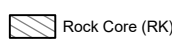
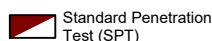
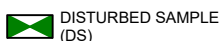
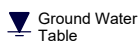




BOREHOLE NO: BH-NBH50

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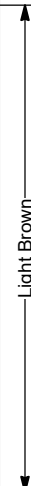
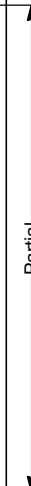
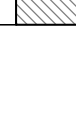
BOREHOLE NO : BH-NBH50				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.93							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.16							
COORDINATES : 1425 E, 4094 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 10							
DATE OF START : 21-Jan-2022				DATE OF FINISH : 22-Jan-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
			0.30	Fill: Light grey gravel and road material	70.6	DS-1	0.00-0.30								
1				Very dense brown silty sand (SM)		UDS-1	0.50-0.70								
2															
3	Ref*/ 8cm		2.50	Moderately strong brown SANDSTONE, moderately weathered	68.4	SPT-1	2.50-2.58								
4						RK-1	2.51-3.50	1-4					66	44	30
5						RK-2	3.50-5.00	5-6					44	24	30
6						RK-3	5.00-6.50	7-10					100	91	45
7						RK-4	6.50-8.00	11-19					89	65	45
8															
9						RK-5	8.00-9.50	20-23					89	78	45
10			10.00		60.9	RK-6	9.50-10.00	24					100	99	45
				Termination at 10.00 meters Depth.											

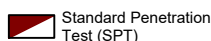
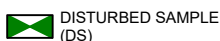
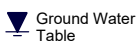




BOREHOLE NO: BH-NBH51

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BOREHOLE NO : BH-NBH51				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.92							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.41							
COORDINATES : 1385 E, 4057 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 02-Feb-2022				DATE OF FINISH : 03-Feb-2022				LOGGED BY : Mr. Kumar Gaurav							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	16		2.00	Very stiff brown clayey silt (CI)	68.9	DS-1	0.00-0.50								
						UDS-1	0.50-0.80								
2						SPT-1	1.00-1.45								
3	Ref*/ 5cm		8.00	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	62.9	SPT-2	2.00-2.05								
4						RK-1	2.01-3.50	1-7							
5						RK-2	3.50-5.00	8-14							
6						RK-3	5.00-6.50	15-17							
7						RK-4	6.50-8.00	18-19							
8															
				Termination at 8.00 meters Depth.											





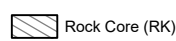
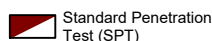
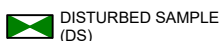
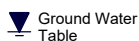
BOREHOLE NO: BH-NBH52

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BOREHOLE NO : BH-NBH52	SOIL BORING METHOD : Rotary Drilling	CASING DEPTH, m : 1.00
LOCATION : Talcher, Odisha	ROCK DRILLING METHOD : Rotary Drilling	GROUND ELEVATION, m : RL 70.97
COORDINATES : 1387 E, 4099 N	BOREHOLE DIAMETER IN SOIL, mm : 150	GROUND WATER DEPTH, m : 0.80
DATE OF START : 22-Jan-2022	BOREHOLE DIAMETER IN ROCK, mm : NX	TERMINATION DEPTH, m : 6
DATE OF FINISH : 23-Jan-2022	LOGGED BY : Mr. Vijay Tiwari	

DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1			1.00	Very dense brown silty sand (SM)	70.0	DS-1	0.00-0.50								
						UDS-1	0.50-0.80								
2	Ref*/ 4cm			Moderately strong brown SANDSTONE, moderately weathered		SPT-1	1.00-1.04	1-2					80	77	40
3						RK-1	1.01-2.00								
4						RK-2	2.00-3.50	3-5					76	69	40
5						RK-3	3.50-5.00	6-9					97	82	45
6			6.00		65.0	RK-4	5.00-6.00	10-11					100	98	48

Termination at 6.00 meters Depth.

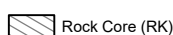
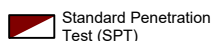
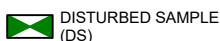
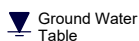




BOREHOLE NO: BH-NBH53

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BOREHOLE NO : BH-NBH53				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00															
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.16															
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.30															
COORDINATES : 1308 E, 4057 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 10.5															
DATE OF START : 12-Mar-2022				DATE OF FINISH : 12-Mar-2022				LOGGED BY : Mr. Jitendra															
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)								
1	15		3.50	Stiff brown sandy silt with gravel (CL)		DS-1	0.00-0.50																
2						DS-2	0.50-1.00																
3						SPT-1	1.00-1.45																
4			10.50	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	67.7	RK-1	3.50-5.00	1-5		Light Brown	Partial	Impregnated Bit		42	6	30							
5																							
6																							
7																							
8																							
9																							
10						RK-4	8.00-9.50	15-22						83	62	40							
						RK-5	9.50-10.50	23						84	83	45							
				Termination at 10.50 meters Depth.																			

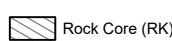
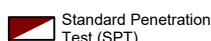
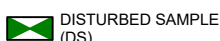




BOREHOLE NO: BH-NBH59

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BOREHOLE NO : BH-NBH59				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 1.00													
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.66													
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.90													
COORDINATES : 1360 E, 4136 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 7													
DATE OF START : 23-Jan-2022				DATE OF FINISH : 23-Jan-2022				LOGGED BY : Mr. Jitendra													
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)						
1	Ref*/ 5cm		1.00	Hard brown clayey silt (CI)	70.7	DS-1	0.00-0.50														
							UDS-1	0.50-0.80													
2					Weak, brown SANDSTONE, very intensely fractured, severely weathered		SPT-1	1.00-1.05	1-7						45	0	22				
3					Moderately strong brown SANDSTONE, moderately weathered		RK-1	1.01-2.00													
4							RK-2	2.00-3.50						8-10					96	86	45
5							RK-3	3.50-5.00						11-12					100	96	48
6					RK-4	5.00-6.50	13-16										96	90	48		
7			7.00		64.7	RK-5	6.50-7.00	17-18					100	98	48						
				Termination at 7.00 meters Depth.																	

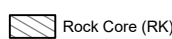
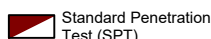
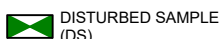
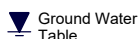




BOREHOLE NO: BH-NBH60

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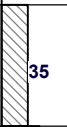
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LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.41								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.75								
COORDINATES : 1472 E, 4141 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8.5								
DATE OF START : 21-Jan-2022				DATE OF FINISH : 22-Jan-2022				LOGGED BY : Mr. Vijay Tiwari								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)	
1	73		2.60	Hard brown clayey silt (CI)	68.8	DS-1	0.00-0.50									
						UDS-1	0.50-0.80									
2						SPT-1	1.00-1.45									
3	Ref*/ 3cm		8.50	Weak, brown SANDSTONE, very intensely fractured, severely weathered Moderately strong brown SANDSTONE, moderately weathered	62.9	SPT-2	2.60-2.63	1-3		Light Brown	Partial	Impregnated Bit				
4						RK-1	2.61-3.50							28	0	20
5						RK-2	3.50-5.00						4-7	100	92	48
6						RK-3	5.00-6.50						8-13	100	92	48
7						RK-4	6.50-8.00						14-16	100	96	48
8						RK-5	8.00-8.50						17-18	100	99	48
				Termination at 8.50 meters Depth.												

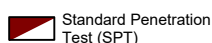
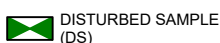
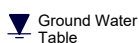




BOREHOLE NO: BH-NBH61

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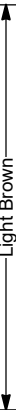
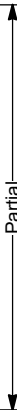
BOREHOLE NO : BH-NBH61				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 1.00										
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.68										
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.50										
COORDINATES : 1531 E, 4150 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 7										
DATE OF START : 28-Jan-2022				DATE OF FINISH : 29-Jan-2022				LOGGED BY : Mr. Jitendra										
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)			
	Ref*/ 2cm		0.50	Fill: Road Material	71.2	DS-1	0.00-0.50											
1				Moderately strong brown SANDSTONE, moderately weathered		SPT-1	0.50-0.52											
2						RK-1	0.51-2.00	1-9										
3						RK-2	2.00-3.50	10										
4						RK-3	3.50-5.00	11-12										
5						RK-4	5.00-6.50	13										
6						RK-5	6.50-7.00	14-15										
7			7.00		64.7								90	90	48			
				Termination at 7.00 meters Depth.														

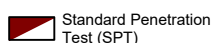
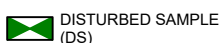
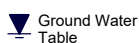




BOREHOLE NO: BH-NBH62

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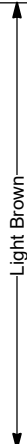
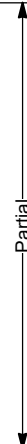
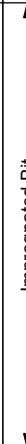
BOREHOLE NO : BH-NBH62				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : -													
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.48													
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.95													
COORDINATES : 1617 E, 4139 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 5.5													
DATE OF START : 27-Jan-2022				DATE OF FINISH : 27-Jan-2022				LOGGED BY : Mr. Jitendra													
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)						
			0.50	Very dense brown silty sand (SM)	70.0	DS-1	0.00-0.50														
1	Ref*/ 3cm			Moderately strong brown SANDSTONE, moderately weathered		SPT-1	0.50-0.53	1-8													
2		RK-1				0.51-2.00															
3		RK-2				2.00-3.50	9-12														
4		RK-3				3.50-5.00	13-16														
5		RK-4				5.00-5.50	17														
			5.50	Termination at 5.50 meters Depth.	65.0																

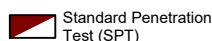
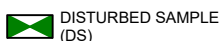
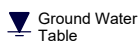




BOREHOLE NO: BH-NBH63

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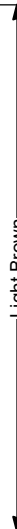
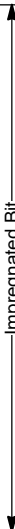
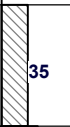
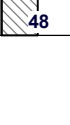
BOREHOLE NO : BH-NBH63				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 1.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.36							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.46							
COORDINATES : 1674 E, 4192 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 7							
DATE OF START : 30-Jan-2022				DATE OF FINISH : 30-Jan-2022				LOGGED BY : Mr. Kumar Gaurav							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	15		1.50	Medium dense brown silty sand (SM)	68.9	DS-1	0.00-0.50								
						UDS-1	0.50-0.80								
						SPT-1	1.00-1.45								
2	Ref*/ 3cm			Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		SPT-2 RK-1	1.50-1.53 1.51-2.00	1-5							
3	RK-2					2.00-3.50	6-11								
4	RK-3					3.50-5.00	12-20								
5	RK-4					5.00-6.50	21-24								
6	RK-5					6.50-7.00	25-26								
7			7.00		63.4										
				Termination at 7.00 meters Depth.											

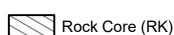
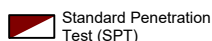
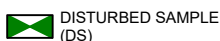
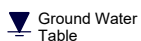




BOREHOLE NO: BH-NBH64

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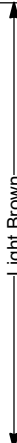
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LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.93							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.10							
COORDINATES : 1572 E, 4171 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 7							
DATE OF START : 28-Jan-2022				DATE OF FINISH : 28-Jan-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
			0.50	Very dense brown silty sand (SM)	70.4	DS-1	0.00-0.50								
1	Ref*/ 3cm			Moderately strong brown SANDSTONE, moderately weathered		SPT-1	0.50-0.53	1-11							
2															
3															
4															
5															
6						RK-4	5.00-6.50	14-15							
7			7.00		63.9	RK-5	6.50-7.00	16							
				Termination at 7.00 meters Depth.											

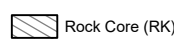
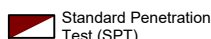
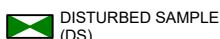
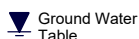




BOREHOLE NO: BH-NBH65

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BOREHOLE NO : BH-NBH65				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.71							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.43							
COORDINATES : 1521 E, 4224 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 31-Jan-2022				DATE OF FINISH : 31-Jan-2022				LOGGED BY : Mr. Kumar Gaurav							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1			2.50	Very dense brown silty sand (SM)	 68.2	DS-1	0.00-0.50								
						UDS-1	0.50-0.80								
2	Ref*/ 6cm			Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	62.7	SPT-1 RK-1	2.50-2.56 2.51-3.00	1-2		 Light Brown	 Partial	 Impregnated Bit	34	5	25
3						RK-2	3.00-4.50	3-8					100	74	40
4						RK-3	4.50-6.00	9-15					100	86	45
5						RK-4	6.00-7.50	16-19					100	84	45
6						RK-5	7.50-8.00	20-21					100	97	48
7															
8			8.00	Termination at 8.00 meters Depth.											

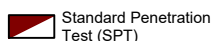
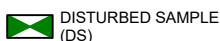
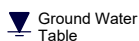




BOREHOLE NO: BH-NBH66

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BOREHOLE NO : BH-NBH66				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 1.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.13							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.41							
COORDINATES : 1151 E, 3516 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 7							
DATE OF START : 30-Jan-2022				DATE OF FINISH : 30-Jan-2022				LOGGED BY : Mr. Kumar Gaurav							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	13		1.50	Medium dense brown silty sand (SM)	69.6	DS-1	0.00-0.50								
						UDS-1	0.50-0.80								
						SPT-1	1.00-1.45								
2	Ref*/ 4cm			Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		SPT-2 RK-1	1.50-1.54 1.51-2.00	1-3		Light Brown	Partial	Impregnated Bit	56	38	35
3						RK-2	2.00-3.50	4-9					100	56	40
4						RK-3	3.50-5.00	10-14					100	91	45
5						RK-4	5.00-6.50	15-17					100	93	48
6						RK-5	6.50-7.00	18					100	98	48
7			7.00		64.1										
				Termination at 7.00 meters Depth.											

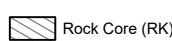
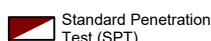
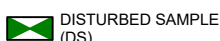




BOREHOLE NO: BH-NBH67

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BOREHOLE NO : BH-NBH67				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 1.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.60							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.51							
COORDINATES : 1453 E, 4186 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8.5							
DATE OF START : 31-Jan-2022				DATE OF FINISH : 31-Jan-2022				LOGGED BY : Mr. Kumar Gaurav							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	Ref*/ 4cm		1.50	Very dense brown silty sand (SM)	70.1	DS-1 UDS-1	0.00-0.50 0.50-0.80								
2			Weak, brown SANDSTONE, very intensely fractured, severely weathered Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	63.1	SPT-1 RK-1	1.50-1.54 1.51-2.00	1-4		Light Brown	Partial	Impregnated Bit	54	0	25	
3					RK-2	2.00-3.50	5-14					44	13	30	
4					RK-3	3.50-5.00	15-21					100	73	40	
5					RK-4	5.00-6.50	22-27					100	81	40	
6					RK-5	6.50-8.00	28-34					100	54	40	
7					RK-6	8.00-8.50	35-36					100	95	45	
8			8.50	Termination at 8.50 meters Depth.											





BOREHOLE NO: BH-NBH68

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BOREHOLE NO : BH-NBH68				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.50								
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 72.01								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.97								
COORDINATES : 1410 E, 4186 N				BOREHOLE DIAMETER IN ROCK, mm : NX				TERMINATION DEPTH, m : 20								
DATE OF START : 28-Jan-2022				DATE OF FINISH : 29-Jan-2022				LOGGED BY : Mr. Jitendra								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMIR)	
1	28		2.00	Very stiff brown clayey silt (CI)		DS-1	0.00-0.50									
						UDS-1	0.50-0.80									
2						SPT-1	1.00-1.45									
3	Ref*/ 3cm		2.00	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	70.0	SPT-2	2.00-2.03									
4						RK-1	2.01-3.50	1-6						80	40	35
5						RK-2	3.50-5.00	7-12						100	86	40
6						RK-3	5.00-6.50	13-17						100	72	40
7						RK-4	6.50-8.00	18-27						100	65	40
8						RK-5	8.00-9.50	28-35						100	72	40
9						RK-6	9.50-11.00	36-45						100	62	40
10						RK-7	11.00-12.50	46-54						100	57	40
11						RK-8	12.50-14.00	55-56						100	70	40
12						RK-9	14.00-15.50	57-67						100	48	40
13						RK-10	15.50-17.00	68-73								

Ground Water Table

DISTURBED SAMPLE (DS)

UNDISTURBED SAMPLE (UDS)

Standard Penetration Test (SPT)

Rock Core (RK)

(Continued Next Page)

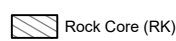
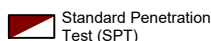
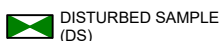
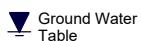


BOREHOLE NO: BH-NBH68

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BOREHOLE NO : BH-NBH68	SOIL BORING METHOD : Rotary Drilling	CASING DEPTH, m : 2.50
LOCATION : Talcher, Odisha	ROCK DRILLING METHOD : Rotary Drilling	GROUND ELEVATION, m : RL 72.01
COORDINATES : 1410 E, 4186 N	BOREHOLE DIAMETER IN SOIL, mm : 150	GROUND WATER DEPTH, m : 0.97
DATE OF START : 28-Jan-2022	BOREHOLE DIAMETER IN ROCK, mm : NX	TERMINATION DEPTH, m : 20
DATE OF FINISH : 29-Jan-2022	LOGGED BY : Mr. Jitendra	

DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
17				Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	52.0	RK-10	15.50-17.00	68-73		Light Brown	Partial	Impregnated Bit	100	62	40
18						RK-11	17.00-18.50	74-79					100	78	40
19						RK-12	18.50-20.00	80-82					100	86	45
20			20.00	Termination at 20.00 meters Depth.											

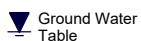




BOREHOLE NO: BH-NBH69

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BOREHOLE NO : BH-NBH69				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 1.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 72.21							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.78							
COORDINATES : 1339 E, 4182 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 13-Mar-2022				DATE OF FINISH : 13-Mar-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1			1.50	Very dense brown silty sand (SM)	70.7	DS-1	0.00-0.50								
2			DS-2	0.50-1.00											
3			8.00	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	64.2	RK-1	1.50-3.00	1-12		Light Brown	Partial	Impregnated Bit	98	50	40
4						RK-2	3.00-4.50	13-21					95	82	48
5						RK-3	4.50-6.00	22-29					100	80	48
6						RK-4	6.00-7.50	30-36					100	90	48
7	RK-5	7.50-8.00				37-40	100	76					48		
8															
				Termination at 8.00 meters Depth.											



DISTURBED SAMPLE (DS)



Rock Core (RK)



BOREHOLE NO: BH-NBH72

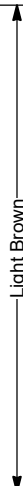
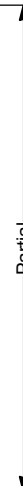
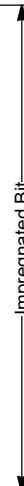
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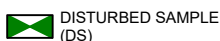
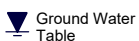
BOREHOLE NO : BH-NBH72				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 1.50								
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.23								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.60								
COORDINATES : 1335 E, 4215 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8								
DATE OF START : 14-Mar-2022				DATE OF FINISH : 15-Mar-2022				LOGGED BY : Mr. Jitendra								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)	
			0.50	Very dense brown silty sand (SM)	70.7	DS-1	0.00-0.50	1-10		↑ Light Brown ↓	↑ Partial ↓	↑ Impregnated Bit ↓				
1			Weak brown SANDSTONE, very intensely fractured, severely weathered		RK-1	0.50-2.00							31	0		20
2					RK-2	2.00-3.50							84	82		45
3					RK-3	3.50-5.00							91	90		48
4					RK-4	5.00-6.50							100	99		48
5					RK-5	6.50-8.00							100	90		48
6			8.00	Termination at 8.00 meters Depth.	63.2											
7																
8																



BOREHOLE NO: BH-NBH74

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BOREHOLE NO : BH-NBH74				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 72.52							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.45							
COORDINATES : 1364 E, 4242 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 15-Mar-2022				DATE OF FINISH : 16-Mar-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1			2.00	Filledup: Road Material		DS-1	0.00-0.50								
2						DS-2	0.50-0.80								
3			8.00	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		RK-1	2.00-3.50	1-7					88	66	40
4						RK-2	3.50-5.00	8-12					96	88	45
5						RK-3	5.00-6.50	13-19					100	72	45
6						RK-4	6.50-8.00	20					90	89	45
7															
8															
				Termination at 8.00 meters Depth.											



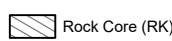
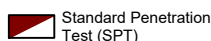
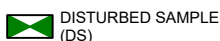
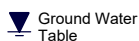


BOREHOLE NO: BH-NBH75

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BOREHOLE NO : BH-NBH75	SOIL BORING METHOD : Rotary Drilling	CASING DEPTH, m : 2.50
LOCATION : Talcher, Odisha	ROCK DRILLING METHOD : Rotary Drilling	GROUND ELEVATION, m : RL 72.93
COORDINATES : 1382 E, 4216 N	BOREHOLE DIAMETER IN SOIL, mm : 150	GROUND WATER DEPTH, m : 1.10
DATE OF START : 12-Feb-2022	BOREHOLE DIAMETER IN ROCK, mm : NX	TERMINATION DEPTH, m : 20
DATE OF FINISH : 13-Feb-2022	LOGGED BY : Mr. Vijay Tiwari	

DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1			0.50	Fill: Light grey PCC pieces and gravels	72.4	DS-1	0.00-0.50								
2				Hard grey sandy silt with gravel (CL)	70.4	UDS-1	0.50-0.70								
3			2.50	Weak brown SANDSTONE, very intensely fractured, moderately weathered		SPT-1 RK-1	2.50-2.85 2.51-3.50	1-3					20	0	20
4				Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		RK-2	3.50-5.00	4-8					29	13	25
5						RK-3	5.00-6.50	9-15					89	66	38
6						RK-4	6.50-8.00	16-18					88	73	40
7						RK-5	8.00-9.50	19-26					100	74	45
8						RK-6	9.50-11.00	27-33					88	73	45
9						RK-7	11.00-12.50	34-39					96	88	45
10						RK-8	12.50-14.00	40-44					51	16	30
11						RK-9	14.00-15.50	45-49					96	82	45
12						RK-10	15.50-17.00	50-53							



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BOREHOLE NO: BH-NBH75

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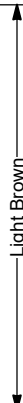
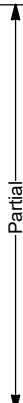
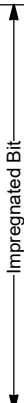
BOREHOLE NO : BH-NBH75	SOIL BORING METHOD : Rotary Drilling	CASING DEPTH, m : 2.50
LOCATION : Talcher, Odisha	ROCK DRILLING METHOD : Rotary Drilling	GROUND ELEVATION, m : RL 72.93
COORDINATES : 1382 E, 4216 N	BOREHOLE DIAMETER IN SOIL, mm : 150	GROUND WATER DEPTH, m : 1.10
DATE OF START : 12-Feb-2022	BOREHOLE DIAMETER IN ROCK, mm : NX	TERMINATION DEPTH, m : 20
DATE OF FINISH : 13-Feb-2022	LOGGED BY : Mr. Vijay Tiwari	

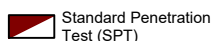
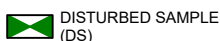
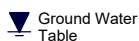
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
17				Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	52.9	RK-10	15.50-17.00	50-53		Light Brown	Partial	Impregnated Bit	98	96	48
18						RK-11	17.00-18.50	54-55					100	98	48
19						RK-12	18.50-20.00	56					100	98	48
20			20.00	Termination at 20.00 meters Depth.											



BOREHOLE NO: BH-NBH76

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BOREHOLE NO : BH-NBH76				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.50								
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 72.86								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.70								
COORDINATES : 1410 E, 4210 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 7.5								
DATE OF START : 24-Jan-2022				DATE OF FINISH : 24-Jan-2022				LOGGED BY : Mr. Vijay Tiwari								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)	
1			2.50	Hard grey clayey silt (CI)		DS-1	0.00-0.50									
2						UDS-1	0.50-0.80									
3	Ref*/ 2cm		7.50	Moderately strong brown SANDSTONE, moderately weathered	70.4	SPT-1	2.50-2.52	1-2					100	86	45	
4						RK-1	2.51-3.50						3-7	87	71	45
5						RK-2	3.50-5.00						8-17	93	71	45
6						RK-3	5.00-6.50						18-22	100	89	45
7					65.4	RK-4	6.50-7.50									
				Termination at 7.50 meters Depth.												



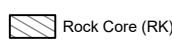
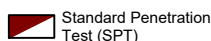
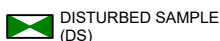
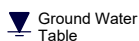


BOREHOLE NO: BH-NBH77

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BOREHOLE NO : BH-NBH77	SOIL BORING METHOD : Rotary Drilling	CASING DEPTH, m : 3.00
LOCATION : Talcher, Odisha	ROCK DRILLING METHOD : Rotary Drilling	GROUND ELEVATION, m : RL 72.47
COORDINATES : 1432 E, 4231 N	BOREHOLE DIAMETER IN SOIL, mm : 150	GROUND WATER DEPTH, m : 0.92
DATE OF START : 25-Jan-2022	BOREHOLE DIAMETER IN ROCK, mm : NX	TERMINATION DEPTH, m : 20
DATE OF FINISH : 27-Jan-2022	LOGGED BY : Mr. Jitendra	

DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	25			Very stiff brown clayey silt (CI)		DS-1	0.00-0.50								
2						UDS-1	0.50-0.80								
3			2.50	Weak, brown SANDSTONE, very intensely fractured, severely weathered	70.0	SPT-1	1.00-1.45								
4				Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		RK-1	2.50-3.50	1-2					32	0	20
5						RK-2	3.50-5.00	3-10					34	8	25
6						RK-3	5.00-6.50	11-21					100	62	40
7						RK-4	6.50-8.00	22-32					93	69	40
8						RK-5	8.00-9.50	33-42					87	69	40
9						RK-6	9.50-10.00	43-44					100	99	50
10						RK-7	10.00-11.00	45-49					75	36	40
11						RK-8	11.00-12.50	50-51					100	98	50
12						RK-9	12.50-14.00	52-55					100	93	48
13						RK-10	14.00-15.50	56-65					100	77	48
14						RK-11	15.50-17.00	66-68							



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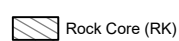
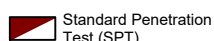
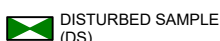


BOREHOLE NO: BH-NBH77

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BOREHOLE NO : BH-NBH77	SOIL BORING METHOD : Rotary Drilling	CASING DEPTH, m : 3.00
LOCATION : Talcher, Odisha	ROCK DRILLING METHOD : Rotary Drilling	GROUND ELEVATION, m : RL 72.47
COORDINATES : 1432 E, 4231 N	BOREHOLE DIAMETER IN SOIL, mm : 150	GROUND WATER DEPTH, m : 0.92
DATE OF START : 25-Jan-2022	BOREHOLE DIAMETER IN ROCK, mm : NX	TERMINATION DEPTH, m : 20
DATE OF FINISH : 27-Jan-2022	LOGGED BY : Mr. Jitendra	

DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
17				Moderately strong brown SANDSTONE, moderately weathered	52.5	RK-11	15.50-17.00	66-68		Light Brown	Partial	Impregnated Bit	100	95	48
18						RK-12	17.00-18.50	69-70					100	91	48
19						RK-13	18.50-20.00	71-74					100	75	48
20			20.00	Termination at 20.00 meters Depth.											

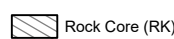
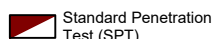
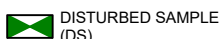
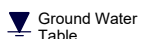




BOREHOLE NO: BH-NBH78

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BOREHOLE NO : BH-NBH78				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.17							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.05							
COORDINATES : 1453 E, 4242 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 10							
DATE OF START : 27-Jan-2022				DATE OF FINISH : 27-Jan-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	22		2.50	Very stiff brown clayey silt (CI)		DS-1	0.00-0.50								
2						UDS-1	0.50-0.80								
3						SPT-1	2.00-2.45								
4				Weak, brown SANDSTONE, very intensely fractured, severely weathered Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	68.7	RK-1	2.50-3.50	1-3					18	0	20
5						RK-2	3.50-5.00	4-5					60	38	35
6						RK-3	5.00-6.50	6-9					100	53	40
7						RK-4	6.50-8.00	10-19					100	63	40
8						RK-5	8.00-9.50	20-27					100	53	40
9						RK-6	9.50-10.00	28-32					100	72	45
10			10.00		61.2										
				Termination at 10.00 meters Depth.											

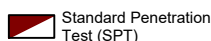
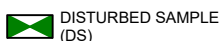
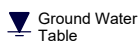




BOREHOLE NO: BH-NBH79

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BOREHOLE NO : BH-NBH79				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.72							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.45							
COORDINATES : 1504 E, 4236 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 13							
DATE OF START : 29-Jan-2022				DATE OF FINISH : 30-Jan-2022				LOGGED BY : Mr. Kumar Gaurav							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	Ref*/ 3cm		2.00	Very dense brown silty sand (SM)	 69.7	DS-1	0.00-0.50								
2						UDS-1	0.50-0.80								
3	Ref*/ 3cm		13.00	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered Moderately strong brown SANDSTONE, moderately weathered	58.7	SPT-1	2.00-2.03			Light Brown	Partial	Impregnated Bit			
4						RK-1	2.01-3.50	1-8					46	12	25
5						RK-2	3.50-5.00	9-15					48	18	25
6						RK-3	5.00-6.50	16-23					80	66	35
7						RK-4	6.50-8.00	24-44					93	20	35
8						RK-5	8.00-9.50	45-49					100	93	48
9						RK-6	9.50-11.00	50-52					100	94	48
10						RK-7	11.00-12.50	53-57					100	92	48
11						RK-8	12.00-13.00	58					100	100	50
12															
13				Termination at 13.00 meters Depth.											

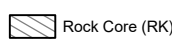
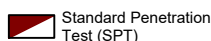
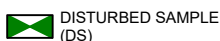
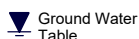




BOREHOLE NO: BH-NBH80

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BOREHOLE NO : BH-NBH80				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00														
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.80														
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.60														
COORDINATES : 1482 E, 4316 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8.5														
DATE OF START : 10-Feb-2022				DATE OF FINISH : 11-Feb-2022				LOGGED BY : Mr. Kumar Gaurav														
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)							
1	10		2.00	Stiff brown clayey silt with gravel (CI)	69.8	DS-1	0.00-0.50															
						UDS-1	0.50-0.80															
2						SPT-1	1.00-1.45															
3	Ref*/ 2m		8.50	Weak brown SANDSTONE, very intensely fractured, moderately weathered Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	63.3	SPT-2	2.00-2.02	1-2		Light Brown	Partial	Impregnated Bit	9	0	17							
4						RK-1	2.01-3.50									3-7	8-15	16-22	23-25	80	72	40
5						RK-2	3.50-5.00															
6						RK-3	5.00-6.50															
7						RK-4	6.50-8.00															
8						RK-5	8.00-8.50															
Termination at 8.50 meters Depth.																						

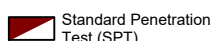
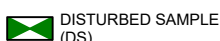




BOREHOLE NO: BH-NBH81

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BOREHOLE NO : BH-NBH81				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 72.19							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.50							
COORDINATES : 1431 E, 4285 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 7.5							
DATE OF START : 01-Feb-2022				DATE OF FINISH : 01-Feb-2022				LOGGED BY : Mr. Kumar Gaurav							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	11		2.00	Stiff brown clayey silt (CI)	70.2	DS-1	0.00-0.50								
						UDS-1	0.50-0.80								
2						SPT-1	1.00-1.45								
3	Ref*/ 4cm		7.50	Weak, brown SANDSTONE, very intensely fractured, severely weathered Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	64.7	SPT-2	2.00-2.04	1-6		Light Brown	Partial	Impregnated Bit	62	0	22
4						RK-1	2.01-2.50	7-12					100	71	40
5						RK-2	2.50-4.00	13-18					100	80	45
6						RK-3	4.00-5.50	19-24					100	75	45
7						RK-4	5.50-7.00	25-27					100	88	45
				Termination at 7.50 meters Depth.		RK-5	7.00-7.50	25-27					100	88	45





BOREHOLE NO: BH-NBH94

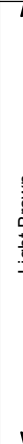
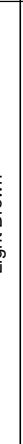
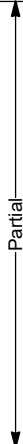
PAGE 1 OF 1

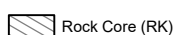
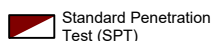
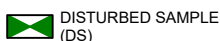
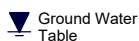
BOREHOLE NO : BH-NBH94				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 72.36							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.40							
COORDINATES : 1125 E, 4343 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 16-Mar-2022				DATE OF FINISH : 17-Mar-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	14		0.50	Filledup: Road Material	71.9	DS-1	0.00-0.50								
2			Stiff brown sandy silt with gravel (CL)			SPT-1	1.00-1.45								
3		3.00							69.4						
4				Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		RK-1	3.00-3.50	1-3		Light Brown	Partial	Impregnated Bit	86	30	38
5						RK-2	3.50-5.00	4-10					89	70	40
6						RK-3	5.00-6.50	11-16					100	94	45
7						RK-4	6.50-8.00	17-24					89	68	45
8			8.00	64.4											
				Termination at 8.00 meters Depth.											



BOREHOLE NO: BH-NBH95

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BOREHOLE NO : BH-NBH95				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.00								
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 72.32								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.45								
COORDINATES : 1067 E, 4343 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 9.5								
DATE OF START : 19-Mar-2022				DATE OF FINISH : 20-Mar-2022				LOGGED BY : Mr. Jitendra								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)	
1	15		4.00	Medium dense brown silty sand (SM)		DS-1	0.00-0.50									
2						DS-2	0.50-1.00									
3						SPT-1	2.50-2.95									
4																
5	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	RK-1	4.00-5.00	1-5					 80	 65	 40					
6		RK-2	5.00-6.50	6-9					 82	 76	 40					
7		RK-3	6.50-8.00	10-13					 79	 31	 40					
8		RK-4	8.00-9.50	14-20					 91	 62	 40					
9			9.50		62.8											
				Termination at 9.50 meters Depth.												

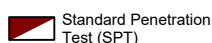
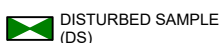
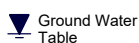




BOREHOLE NO: BH-NBH96

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BOREHOLE NO : BH-NBH96				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 73.34							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.20							
COORDINATES : 1038 E, 4400 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8.5							
DATE OF START : 20-Mar-2022				DATE OF FINISH : 20-Mar-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	14		3.00	Medium dense brown silty sand (SM)	70.3	DS-1	0.00-0.50								
						DS-2	0.50-1.00								
2						SPT-1	1.00-1.45								
3			8.50	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	64.8										
4						RK-1	3.50-5.00	1-4		Light Brown	Partial	Impregnated Bit	81	76	40
5															
6						RK-2	5.00-6.50	5-10					88	77	40
7															
8						RK-3	6.50-8.00	11-15	89	84	45				
	RK-4	8.00-8.50	16-18	100	90	45									
				Termination at 8.50 meters Depth.											

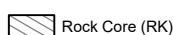
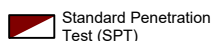
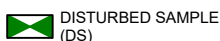
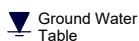




BOREHOLE NO: BH-NBH98

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BOREHOLE NO : BH-NBH98				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 74.35							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 2.00							
COORDINATES : 1043 E, 4533 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 21-Mar-2022				DATE OF FINISH : 21-Mar-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	36		4.00	Dense brown clayey sand with gravel (SC)	70.4	DS-1	0.00-0.50	1-6							
2						DS-2	0.50-1.00								
3						SPT-1	2.50-2.95								
4						DS-3	3.50-4.00								
5			8.00	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	66.4	RK-1	4.00-5.00	7-19		Light Brown	Partial	Impregnated Bit	42	13	30
6						RK-2	5.00-6.50	20-33					86	48	40
7						RK-3	6.50-8.00						91	40	40
8															
				Termination at 8.00 meters Depth.											

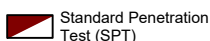
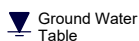




BOREHOLE NO: BH-NBH106

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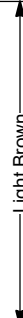
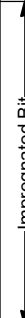
BOREHOLE NO : BH-NBH106				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 6.00									
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 73.61									
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.10									
COORDINATES : 829 E, 4566 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 9.5									
DATE OF START : 21-Mar-2022				DATE OF FINISH : 21-Mar-2022				LOGGED BY : Mr. Jitendra									
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)		
1	16		3.00	Filled up soil	70.6	-	0.00-2.50										
2																	
3																	
4	25		6.00	Stiff brown clayey silt (CI)	67.6	SPT-1	2.50-2.95										
5																	
6																	
7	Ref*/ 3cm		9.50	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	64.1	SPT-2	5.50-5.95	1-2									
8						SPT-3	6.00-6.03										
9																	

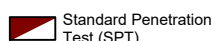
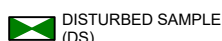




BOREHOLE NO: BH-NBH119

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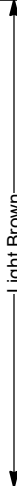
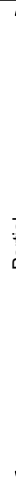
BOREHOLE NO : BH-NBH119				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 4.00										
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.65										
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.88										
COORDINATES : 674 E, 4865 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8										
DATE OF START : 05-Feb-2022				DATE OF FINISH : 06-Feb-2022				LOGGED BY : Mr. Kumar Gaurav										
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)			
1	12		4.00	Stiff brown clayey silt (CI)		DS-1	0.00-0.50											
2						UDS-1	0.50-0.70											
3							SPT-1	2.50-2.95										
4							UDS-2	3.50-3.81										
5	Ref*/ 2m		8.00	Weak, brown SANDSTONE, very intensely fractured, moderately weathered	66.6	SPT-2	4.00-4.02							30	0		20	
6						RK-1	4.01-5.50	1-4						42	18		25	
7						RK-2	5.50-7.00	5-11						96	50		35	
8						RK-3	7.00-8.00	12-27										
				Termination at 8.00 meters Depth.														

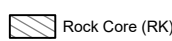
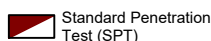
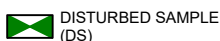
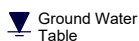




BOREHOLE NO: BH-NBH120

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BOREHOLE NO : BH-NBH120				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00									
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.81									
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.66									
COORDINATES : 661 E, 4939 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8									
DATE OF START : 05-Feb-2022				DATE OF FINISH : 06-Feb-2022				LOGGED BY : Mr. Kumar Gaurav									
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)		
1	13		0.50	Medium dense brown silty sand (SM)	70.3	DS-1	0.00-0.50										
				Stiff brown clayey silt (CI)	70.3	UDS-1	0.50-0.80										
2						SPT-1	1.00-1.45										
3	Ref*/ 3cm		2.00		68.8												
							SPT-2	2.00-2.03									
4							RK-1	2.01-3.50	1-6						28	0	22
5							RK-2	3.50-5.00	7-13						35	0	22
6							RK-3	5.00-6.50	14-17						40	32	30
7					RK-4	6.50-8.00	18-23		56					33	35		
8			8.00	Weak, brown SANDSTONE, very intensely fractured, severely weathered 													

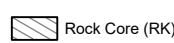
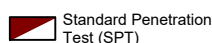
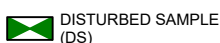
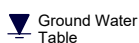




BOREHOLE NO: BH-NBH122

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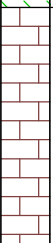
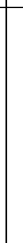
BOREHOLE NO : BH-NBH122				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00									
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.80									
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.70									
COORDINATES : 618 E, 4847 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8									
DATE OF START : 04-Feb-2022				DATE OF FINISH : 05-Feb-2022				LOGGED BY : Mr. Kumar Gaurav									
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)		
1			2.00	Very dense brown silty sand (SM)	67.8	DS-1	0.00-0.50										
2						UDS-1	0.50-0.80										
3	Ref*/ 3cm		8.00	Weak, brown SANDSTONE, very intensely fractured, severely weathered Moderately strong, brown SANDSTONE, moderately fractured, moderately weathered	61.8	SPT-1	2.00-2.03			Light Brown	Partial	Impregnated Bit		30	10		25
4						RK-1	2.01-3.50	1-5						41	0		22
5						RK-2	3.50-5.00	6-10						46	0		22
6						RK-3	5.00-6.50	11-20						58	43		35
7						RK-4	6.50-8.00	21-27									
8				Termination at 8.00 meters Depth.													

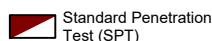
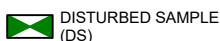
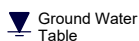




BOREHOLE NO: BH-NBH123

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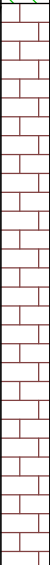
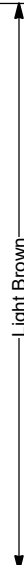
BOREHOLE NO : BH-NBH123				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.00										
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.71										
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.35										
COORDINATES : 610 E, 4916 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8										
DATE OF START : 30-Jan-2022				DATE OF FINISH : 31-Jan-2022				LOGGED BY : Mr. Jitendra										
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)			
1	33		3.50	Dense brown silty sand (SM)		DS-1	0.00-0.50											
						UDS-1	0.50-0.70											
2						SPT-1	1.00-1.45											
3	97		5.00	Hard brown clayey silt (CI)	67.2													
4						100/17cm	SPT-2	3.50-3.95										
5							SPT-3	4.00-4.32										
6			8.00	Weak, brown SANDSTONE, very intensely fractured, severely weathered		RK-1	5.00-6.50	1-15						24	0		20	
7							RK-2	6.50-8.00	16-20						30	25		30
8																		
				Termination at 8.00 meters Depth.														

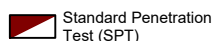
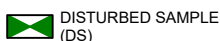
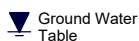




BOREHOLE NO: BH-NBH124

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BOREHOLE NO : BH-NBH124				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.98							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.38							
COORDINATES : 561 E, 4948 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 10							
DATE OF START : 31-Jan-2022				DATE OF FINISH : 01-Feb-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	27		3.00	Very stiff brown clayey silt (CI)	68.0	DS-1	0.00-0.50								
2						UDS-1	0.50-0.80								
3						SPT-1	1.00-1.45								
4	Ref*/ 4cm		10.00	Weak, brown SANDSTONE, very intensely fractured, severely weathered	61.0	SPT-2	3.00-3.04								
5				RK-1		3.01-4.50	1-9						26	0	20
6				RK-2		4.50-6.00	10-17						32	0	22
7				RK-3		6.00-7.50	18-21						50	35	35
8				RK-4		7.50-9.00	22-24						37	32	30
9															
10				Weak, brown SANDSTONE, very intensely fractured, severely weathered		RK-5	9.00-10.00	25-27					28	0	20
				Termination at 10.00 meters Depth.											

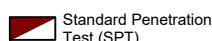
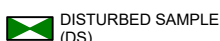




BOREHOLE NO: BH-NBH125

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BOREHOLE NO : BH-NBH125				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.37							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.39							
COORDINATES : 566 E, 4860 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 01-Feb-2022				DATE OF FINISH : 02-Feb-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1			2.00	Hard brown clayey silt (CI)	68.4	DS-1	0.00-0.50								
2						UDS-1	0.50-0.80								
3	Ref*/ 3cm		8.00	Moderately strong, brown SANDSTONE, moderately fractured, moderately weathered	62.4	SPT-1	2.00-2.03			Light Brown	Partial	Impregnated Bit	34	20	25
4						RK-1	2.01-3.50	1-5					41	16	25
5						RK-2	3.50-5.00	6-14					42	18	25
6						RK-3	5.00-6.50	15-21					54	34	30
7						RK-4	6.50-8.00	22-26							
8				Termination at 8.00 meters Depth.											

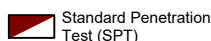
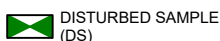
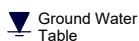




BOREHOLE NO: BH-NBH129

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BOREHOLE NO : BH-NBH129				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.00								
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.11								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.65								
COORDINATES : 396 E, 4765 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8								
DATE OF START : 09-Feb-2022				DATE OF FINISH : 10-Feb-2022				LOGGED BY : Mr. Kumar Gaurav								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)	
1	7		0.50	Loose brown silty sand (SM)	69.6	DS-1	0.00-0.50									
				Stiff brown clayey silt (CI)		UDS-1	0.50-0.80									
2						SPT-1	1.00-1.45									
3			3.00		67.1											
4	Ref*/ 2cm			Weak, brown SANDSTONE, very intensely fractured, moderately weathered	62.1	SPT-2	3.00-3.02	1-4					54	0	22	
5			RK-1			3.01-3.50	5-14						33	0	22	
6				Moderately strong, brown SANDSTONE, moderately fractured, moderately weathered		RK-2	3.50-5.00	15-24					47	7	30	
7						RK-3	5.00-6.50	25-30					48	28	35	
8						RK-4	6.50-8.00									
				Termination at 8.00 meters Depth.												

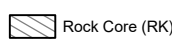
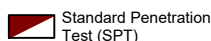
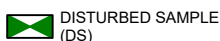
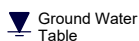




BOREHOLE NO: BH-NBH130

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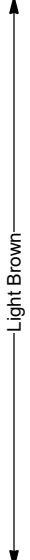
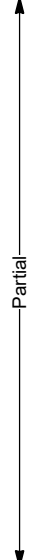
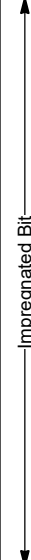
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LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.59									
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.46									
COORDINATES : 390 E, 4968 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8									
DATE OF START : 08-Feb-2022				DATE OF FINISH : 09-Feb-2022				LOGGED BY : Mr. Kumar Gaurav									
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)		
1	14		3.50	Stiff brown clayey silt (CI)	67.1	DS-1	0.00-0.50										
2						UDS-1	0.50-0.80										
3						SPT-1	2.50-2.95										
4	Ref*/ 2cm		8.00	Weak, brown SANDSTONE, very intensely fractured, moderately weathered Moderately strong, brown SANDSTONE, moderately fractured, moderately weathered	62.6	SPT-2	3.50-3.52							26	0		22
5	RK-1					3.51-5.00	1-7										
6	RK-2					5.00-6.50	8-12										
7	RK-3					6.50-8.00	13-14										
8				Termination at 8.00 meters Depth.													

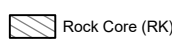
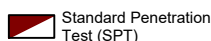
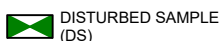
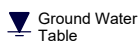




BOREHOLE NO: BH-NBH132

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BOREHOLE NO : BH-NBH132				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.18							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.66							
COORDINATES : 463 E, 4942 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 10							
DATE OF START : 09-Feb-2022				DATE OF FINISH : 10-Feb-2022				LOGGED BY : Mr. Kumar Gaurav							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	11		0.50	Loose brown silty sand (SM)	69.7	DS-1	0.00-0.50								
				Stiff brown clayey silt (CI)		UDS-1	0.50-0.80								
2						SPT-1	1.00-1.45								
3			3.00		67.2										
4	Ref*/ 2cm			Weak, brown SANDSTONE, very intensely fractured, moderately weathered		SPT-2	3.00-3.02								
5				RK-1	3.01-4.50	1-4		22					0	20	
6				RK-2	4.50-6.00	5-10		34					0	20	
7				RK-3	6.00-7.50	11-15		41					19	30	
8				RK-4	7.50-9.00	16-19		73					58	35	
9				RK-5	9.00-10.00	20		72					67	35	
10			10.00		60.2										
				Termination at 10.00 meters Depth.											

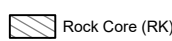
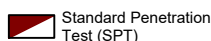
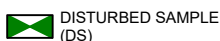
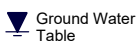




BOREHOLE NO: BH-NBH133

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BOREHOLE NO : BH-NBH133				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 4.50									
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.43									
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.52									
COORDINATES : 416 E, 4716 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8									
DATE OF START : 10-Feb-2022				DATE OF FINISH : 11-Feb-2022				LOGGED BY : Mr. Kumar Gaurav									
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)		
1	19		2.50	Medium dense brown silty sand (SM)	67.9	DS-1	0.00-0.50										
2						UDS-1	0.50-0.77										
3				4.50	Very stiff brown clayey silt (CI)	65.9	SPT-1	2.50-2.95									
4							UDS-2	3.50-3.82									
5	Ref*/ 2m		8.00	Weak, brown SANDSTONE, very intensely fractured, moderately weathered Moderately strong, brown SANDSTONE, moderately fractured, moderately weathered	62.4	SPT-2 RK-1	4.50-4.52 4.51-5.00	1-6		Light Brown	Partial	Impregnated Bit		38	0		20
6	RK-2					5.00-6.50	7-15						61	35	35		
7	RK-3					6.50-8.00	16-20						50	35	35		
8																	
				Termination at 8.00 meters Depth.													



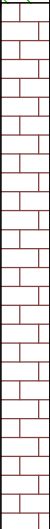
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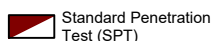
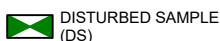
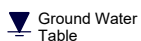
BOREHOLE NO : BH-NBH137				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.36							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.34							
COORDINATES : 1110 E, 4280 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 17-Mar-2022				DATE OF FINISH : 19-Mar-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	14		0.50	Filled up: Road Material	70.9	DS-1	0.00-0.50								
2			3.50	Stiif brown sandy silt (CL)		DS-2	0.50-1.00								
3				SPT-1	2.50-2.95										
4			8.00	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	67.9	RK-1	3.50-5.00	1-9		Light Brown	Partial	Impregnated Bit	68	48	40
5															
6															
7															
8					63.4	RK-3	6.50-8.00	20-27					92	64	45
				Termination at 8.00 meters Depth.											



BOREHOLE NO: BH-NBH138

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BOREHOLE NO : BH-NBH138				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 1.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 72.35							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.95							
COORDINATES : 789 E, 3816 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 14-Feb-2022				DATE OF FINISH : 15-Feb-2022				LOGGED BY : Mr. Kumar Gaurav							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	Ref*/ 2m		1.50	Hard grey clayey silt (CI)	 70.8	DS-1	0.00-0.50								
			UDS-1	0.50-0.80											
2	Ref*/ 2m			Moderately strong, brown SANDSTONE, moderately fractured, moderately weathered		SPT-1	1.50-1.52	1-6		 Light Brown	 Partial	 Impregnated Bit	78	20	30
3						RK-1	1.51-2.00						84	82	40
4						RK-2	2.00-3.50	7-8					100	83	45
5						RK-3	3.50-5.00	9-14					94	92	45
6						RK-4	5.00-6.50	15-16					100	98	48
7						RK-5	6.50-8.00	17-18							
8			8.00		64.3										
				Termination at 8.00 meters Depth.											

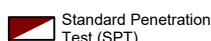
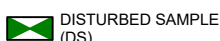
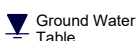




BOREHOLE NO: BH-NBH139

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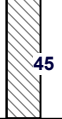
BOREHOLE NO : BH-NBH139				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.86							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.86							
COORDINATES : 757 E, 3749 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 13-Feb-2022				DATE OF FINISH : 13-Feb-2022				LOGGED BY : Mr. Kumar Gaurav							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	13		0.50	Very dense brown silty sand (SM)	71.4	DS-1	0.00-0.50								
2				Hard brown clayey silt (CI)		UDS-1	0.50-0.80								
3	Ref*/ 2m					SPT-1	1.00-1.45								
4			2.50	Moderately strong brown SANDSTONE, moderately weathered	69.4	SPT-2	2.50-2.52						85	78	45
RK-1						2.51-3.50	1-5	100					84	48	
RK-2						3.50-5.00	6-11	100					88	48	
RK-3						5.00-6.50	12-16	96					95	48	
8			8.00		63.9	RK-4	6.50-8.00	17-18							
				Termination at 8.00 meters Depth.											

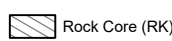
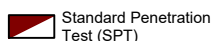
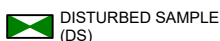
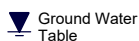




BOREHOLE NO: BH-NBH140

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BOREHOLE NO : BH-NBH140				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.58							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.05							
COORDINATES : 809 E, 3169 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 12-Feb-2022				DATE OF FINISH : 13-Feb-2022				LOGGED BY : Mr. Kumar Gaurav							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	13		0.50	Very dense brown silty sand (SM)	71.1	DS-1	0.00-0.50								
2				Hard brown clayey silt (CI)	▼	UDS-1	0.50-0.80								
3						SPT-1	2.50-2.95								
4	Ref*/ 2m		3.50	Moderately strong brown SANDSTONE, moderately weathered	68.1	SPT-2	3.50-3.52			 Light Grey	 Partial	 Impregnated Bit	 91	 80	 45
5					RK-1	3.51-5.00	1-5						 100	 85	 45
6					RK-2	5.00-6.50	6-7								
7						RK-3	6.50-8.00	8-10					91	84	45
8			8.00		63.6										
				Termination at 8.00 meters Depth.											

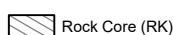
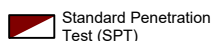
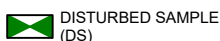
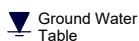




BOREHOLE NO: BH-NBH141

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BOREHOLE NO : BH-NBH141				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.81							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.84							
COORDINATES : 830 E, 3723 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8.5							
DATE OF START : 10-Feb-2022				DATE OF FINISH : 11-Feb-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1			2.00	Fill: Light grey clayey silt intermixed with brickbats	68.8	DS-1	0.00-0.50								
2	Ref*/ 2m		8.50	Moderately strong, brown SANDSTONE, moderately fractured, moderately weathered	62.3	SPT-1	2.00-2.03			Light Brown	Partial	Impregnated Bit	54	20	30
3						RK-1	2.01-3.50	1-10					100	80	45
4						RK-2	3.50-5.00	11-15					100	95	48
5						RK-3	5.00-6.50	16-20					100	96	48
6						RK-4	6.50-8.00	21-23					100	97	48
7															
8						RK-5	8.00-8.50	24-25					100	97	48
				Termination at 8.50 meters Depth.											

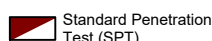
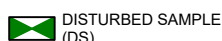




BOREHOLE NO: BH-NBH142

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BOREHOLE NO : BH-NBH142				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.55							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.15							
COORDINATES : 822 E, 3682 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 13-Feb-2022				DATE OF FINISH : 13-Feb-2022				LOGGED BY : Mr. Kumar Gaurav							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	11		0.50	Very dense brown silty sand (SM)	70.1	DS-1	0.00-0.50								
2				Hard brown clayey silt (CI)	68.1	UDS-1	0.50-0.80								
3	Ref*/ 2m		2.50			SPT-1	1.00-1.45								
4				Moderately strong brown SANDSTONE, moderately weathered		SPT-2	2.50-2.52	1-5					90	68	40
RK-1						2.51-3.50									
RK-2						3.50-5.00	6-11								
RK-3						5.00-6.50	12-14								
7						RK-4	6.50-8.00	15-16					84	80	45
8			8.00		62.6										
				Termination at 8.00 meters Depth.											





BOREHOLE NO: BH-NBH143

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BOREHOLE NO : BH-NBH143				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.50								
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.85								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.10								
COORDINATES : 741 E, 3668 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8								
DATE OF START : 12-Feb-2022				DATE OF FINISH : 12-Feb-2022				LOGGED BY : Mr. Kumar Gaurav								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)	
1	14		1.00	Medium dense brown silty sand (SM)	69.8	DS-1	0.00-0.50									
				UDS-1		0.50-0.80										
2				Stiff grey silty clay, high plastic (CH)		SPT-1	1.00-1.45									
3																
4	Ref*/ 2cm		3.50	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	67.3	SPT-2	3.50-3.52									
5							RK-1	3.51-5.00	1-11		Light Grey	Partial	Impregnated Bit	100	69	40
6							RK-2	5.00-6.50	12-13					100	96	48
7							RK-3	6.50-8.00	14-15					100	97	48
8			8.00		62.8											
				Termination at 8.00 meters Depth.												

Ground Water Table

DISTURBED SAMPLE (DS)

UNDISTURBED SAMPLE (UDS)

Standard Penetration Test (SPT)

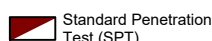
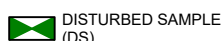
Rock Core (RK)



BOREHOLE NO: BH-NBH144

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BOREHOLE NO : BH-NBH144				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.23							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.86							
COORDINATES : 842 E, 3645 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 11-Feb-2022				DATE OF FINISH : 12-Feb-2022				LOGGED BY : Mr. Kumar Gaurav							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
			0.50	Very dense brown silty sand (SM)	68.7	DS-1	0.00-0.50								
1				Hard brown clayey silt (CI)		UDS-1	0.50-0.80								
2			2.00		67.2										
	Ref*/ 2m			Moderately strong brown SANDSTONE, moderately weathered		SPT-1	2.00-2.02								
3					RK-1	2.01-3.50	1-2								
4					RK-2	3.50-5.00	3-4								
5					RK-3	5.00-6.50	5								
6					RK-4	6.50-8.00	6-7								
7															
8			8.00		61.2										
				Termination at 8.00 meters Depth.											

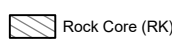
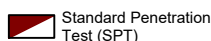
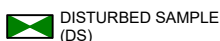
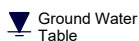




BOREHOLE NO: BH-NBH145

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BOREHOLE NO : BH-NBH145				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 1.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.20							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.75							
COORDINATES : 802 E, 3610 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 12-Feb-2022				DATE OF FINISH : 13-Feb-2022				LOGGED BY : Mr. Kumar Gaurav							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	11		0.50	Very dense brown silty sand (SM)	68.7	DS-1	0.00-0.50								
				Hard brown clayey silt (CI)		UDS-1	0.50-0.80								
				- with traces of gravel, 1.0 to 1.5 m		SPT-1	1.00-1.45								
2	Ref*/ 2m		8.00	Weak brown SANDSTONE, very intensely fractured, moderately weathered Moderately strong, brown SANDSTONE, moderately fractured, moderately weathered	67.7	SPT-2 RK-1	1.50-1.52 1.51-2.00	1-2		Light Brown	Partial	Impregnated Bit	36	0	20
RK-2	2.00-3.50					3-5	51	39					35		
RK-3	3.50-5.00					6	90	89					45		
RK-4	5.00-6.50					7-8	90	88					45		
RK-5	6.50-8.00					9-10	100	98					48		
Termination at 8.00 meters Depth.															

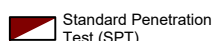
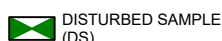




BOREHOLE NO: BH-NBH146

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BOREHOLE NO : BH-NBH146				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 68.22							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.86							
COORDINATES : 829 E, 3537 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 13-Feb-2022				DATE OF FINISH : 14-Feb-2022				LOGGED BY : Mr. Kumar Gaurav							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1			0.50	Very dense brown silty sand (SM)	67.7	DS-1	0.00-0.50								
				Hard brown clayey silt (CI)	66.2	UDS-1	0.50-0.70								
2			2.00												
3	Ref*/ 2m			Moderately strong brown SANDSTONE, moderately weathered		SPT-1	2.00-2.02			Light Grey	Partial	Impregnated Bit			
RK-1						2.01-3.50	1-3	54					48	35	
RK-2						3.50-5.00	4	97					96	48	
RK-3						5.00-6.50	5-11	100					83	48	
RK-4						6.50-8.00	12-15	89					88	48	
4															
5															
6															
7															
8			8.00		60.2										
				Termination at 8.00 meters Depth.											

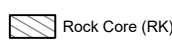
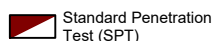
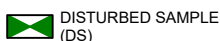
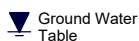




BOREHOLE NO: BH-NBH147

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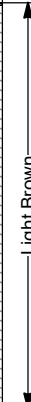
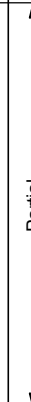
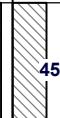
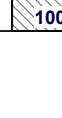
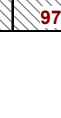
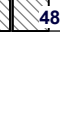
BOREHOLE NO : BH-NBH147				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.50									
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.82									
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.40									
COORDINATES : 1057 E, 3830 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 11.5									
DATE OF START : 09-Feb-2022				DATE OF FINISH : 09-Feb-2022				LOGGED BY : Mr. Vijay Tiwari									
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)		
1	10		0.50	Fill: Light brown sandy silt with gravel	71.3	DS-1	0.00-0.50										
				Stiff brown clayey silt (CI)		UDS-1	0.50-0.80										
2							SPT-1	1.00-1.45									
3																	
4	Ref*/ 3cm		3.50	Weak brown SANDSTONE, very intensely fractured, moderately weathered	68.3	SPT-2	3.50-3.53										
5						RK-1	3.51-5.00	1			Light Grey	Partial	Impregnated Bit	20	0	20	
6						RK-2	5.00-6.50	2-3						20	0	20	
7				Moderately strong brown SANDSTONE, moderately weathered		RK-3	6.50-8.00	4-13						94	65	40	
8						RK-4	8.00-9.50	14-18						90	84	45	
9						RK-5	9.50-11.00	19-21						100	96	48	
10																	
11																	
			11.50		60.3	RK-6	11.00-11.50	22									100
				Termination at 11.50 meters Depth.													

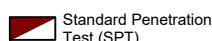
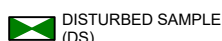




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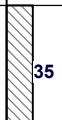
BOREHOLE NO : BH-NBH149				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.50								
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.63								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.40								
COORDINATES : 1040 E, 3706 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8.5								
DATE OF START : 08-Feb-2022				DATE OF FINISH : 09-Feb-2022				LOGGED BY : Mr. Vijay Tiwari								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)	
1	15		0.50	Fill: Light grey clayey silt intermixed with fly ash	70.1	DS-1	0.00-0.50									
2				Very stiff grey clayey silt (CI)			UDS-1	0.50-0.80								
3							SPT-1	2.50-2.95								
4	Ref*/ 3cm		3.50	Moderately strong, brown SANDSTONE, moderately weathered	67.1	SPT-2	3.50-3.53									
5							RK-1	3.51-5.00					1			
6							RK-2	5.00-6.50					2-9			
7							RK-3	6.50-8.00					10-18			
8							RK-4	8.00-8.50					19			
			8.50	Termination at 8.50 meters Depth.	62.1											

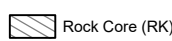
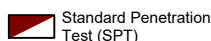
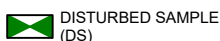
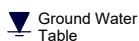




BOREHOLE NO: BH-NBH150

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BOREHOLE NO : BH-NBH150				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 4.00										
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.22										
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.40										
COORDINATES : 1111 E, 3713 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 10.5										
DATE OF START : 08-Feb-2022				DATE OF FINISH : 09-Feb-2022				LOGGED BY : Mr. Vijay Tiwari										
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)			
1	15		0.50	Fill: Dark grey fly ash with gravel	69.7	DS-1	0.00-0.50											
2				Hard grey clayey silt (CI)		UDS-1	0.50-0.70											
3						SPT-1	2.50-2.95											
4		Ref*/ 3cm		4.00		66.2	UDS-2	3.50-3.80										
5	Ref*/ 3cm		10.50	Moderately strong, brown SANDSTONE, moderately weathered	59.7	SPT-2	4.00-4.03			Light Brown	Partial	Impregnated Bit						
6													RK-1	4.01-5.50	1-10	74	38	35
7													RK-2	5.50-7.00	11-17	80	57	40
8													RK-3	7.00-8.50	18-20	100	96	48
9													RK-4	8.50-10.00	21-23	100	94	48
10													RK-5	10.00-10.50	24	98	96	48
				Termination at 10.50 meters Depth.														

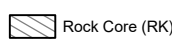
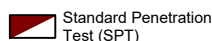
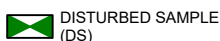
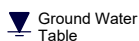




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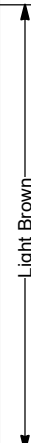
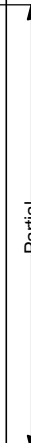
BOREHOLE NO : BH-NBH151				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 7.50													
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.66													
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 2.05													
COORDINATES : 1098 E, 3659 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 12.5													
DATE OF START : 10-Feb-2022				DATE OF FINISH : 11-Feb-2022				LOGGED BY : Mr. Vijay Tiwari													
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)						
1	11		0.50	Fill: Dark grey fly ash with gravel	70.2	DS-1	0.00-0.50														
2				Stiff to hard brown clayey silt (Cl) - stiff, 0.5 to 4.0 m		UDS-1	0.50-0.80														
3		SPT-1				1.00-1.45															
4	25						UDS-2	3.50-3.80													
5						SPT-2	4.00-4.45														
6																					
7	32					- very stiff, 4.0 to 7.0 m		UDS-3	6.50-6.80												
8							SPT-3	7.00-7.45													
9	Ref*/ 3m					7.50	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	63.2	SPT-4	7.50-7.53							80		66		38
10									RK-1	7.51-9.00	1-7						96		80		45
11									RK-2	9.00-10.50	8-13						96		85		45
12			RK-3	10.50-12.00	14-18					100						97		48			
			RK-4	12.00-12.50	19																
				Termination at 12.50 meters Depth.																	

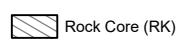
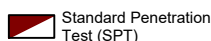
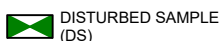
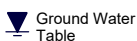




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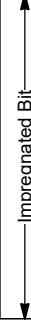
BOREHOLE NO : BH-NBH152				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.50											
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.18											
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 2.50											
COORDINATES : 1016 E, 3605 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8											
DATE OF START : 10-Feb-2022				DATE OF FINISH : 10-Feb-2022				LOGGED BY : Mr. Vijay Tiwari											
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)				
1	8		2.50	Stiff brown clayey silt (CI)	61.7	DS-1	0.00-0.50												
						UDS-1	0.50-0.80												
2							SPT-1	1.00-1.45											
3	Ref*/ 2cm		8.00	Moderately strong, brown SANDSTONE, moderately weathered	61.2	SPT-2	2.50-2.52	1-3					94	85	45				
4						RK-1	2.51-3.50						4		100	98	48		
5						RK-2	3.51-5.00								5		100	97	48
6						RK-3	5.00-6.50										6-8		100
7		RK-4	6.50-8.00																
8				Termination at 8.00 meters Depth.															

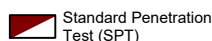
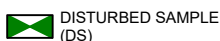
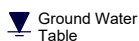




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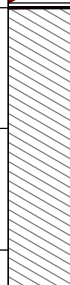
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LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.38							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.95							
COORDINATES : 1156 E, 3596 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 10							
DATE OF START : 06-Feb-2022				DATE OF FINISH : 07-Feb-2022				LOGGED BY : Mr. Kumar Gaurav							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	18		0.50	Medium dense brown silty sand (SM)	69.9	DS-1	0.00-0.50								
2		26		Very stiff brown clayey silt (CI)		UDS-1	0.50-0.85								
3	SPT-1					1.00-1.45									
4	UDS-2					3.50-3.80									
5	SPT-2					4.00-4.45									
6			6.00		64.4										
7	Ref*/ 3m			Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		SPT-3	6.00-6.03								
8						RK-1	6.01-7.00	1-7							
9						RK-2	7.00-8.50	8-14							
10			10.00		60.4	RK-3	8.50-10.00	15							
				Termination at 10.00 meters Depth.											

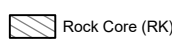
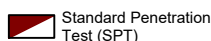
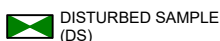
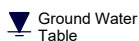




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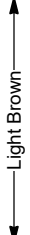
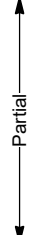
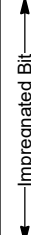
BOREHOLE NO : BH-NBH154				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 4.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.25							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.77							
COORDINATES : 1039 E, 3511 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 08-Feb-2022				DATE OF FINISH : 09-Feb-2022				LOGGED BY : Mr. Kumar Gaurav							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	8		0.50	Loose brown silty sand (SM)	68.7	DS-1	0.00-0.50								
				Stiff to very stiff brown clayey silt (CI)		UDS-1	0.50-0.85								
2	19			- stiff, 0.5 to 4.0 m		SPT-1	1.00-1.45								
3															
4								UDS-2	3.50-3.79						
5	Ref*/ 2cm		4.50	-very stiff, 4.0 to 4.5 m	64.7	SPT-2	4.00-4.45								
6			Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	SPT-3		4.50-4.52	1		Light Brown	Partial	Impregnated Bit	46	45	35	
7				RK-1		4.51-6.00									
8				RK-2		6.00-7.50						2-4			
			8.00		61.2	RK-3	7.50-8.00	5-6							
				Termination at 8.00 meters Depth.											

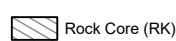
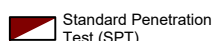
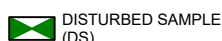




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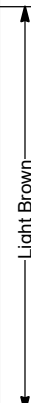
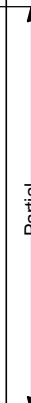
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LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.66											
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.88											
COORDINATES : 1102 E, 3514 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 9											
DATE OF START : 08-Feb-2022				DATE OF FINISH : 09-Feb-2022				LOGGED BY : Mr. Kumar Gaurav											
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)				
1	11		0.50	Medium dense brown silty sand (SM)	69.2	DS-1	0.00-0.50												
2			6.00	Hard brown clayey silt (CI)		UDS-1	0.50-0.80												
3								SPT-1	2.50-2.95										
4								UDS-2	3.50-3.88										
5																			
6	33							63.7	SPT-2	5.50-5.95									
7	Ref*/ 2cm			Weak, brown SANDSTONE, very intensely fractured, moderately weathered		SPT-3	6.00-6.02												
8																			
9																			
			9.00		60.7	RK-1	6.01-7.50	1-10					63	48	38				
						RK-2	7.50-9.00	11-12					55	53	38				
				Termination at 9.00 meters Depth.															

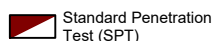
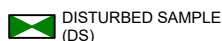
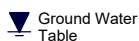




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BOREHOLE NO : BH-NBH156				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 8.50									
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.46									
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.75									
COORDINATES : 1151 E, 3516 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 13									
DATE OF START : 09-Feb-2022				DATE OF FINISH : 10-Feb-2022				LOGGED BY : Mr. Kumar Gaurav									
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)		
1	7		0.50	Loose brown silty sand (SM)	70.0 	DS-1	0.00-0.50										
2		31		Firm to hard brown clayey silt (CI)		UDS-1	0.50-0.78										
3				-firm, 0.5 to 4.0 m		SPT-1	1.00-1.45										
4				- hard, 4.0 to 8.0 m		UDS-2	3.50-3.81										
5						SPT-2	4.00-4.45										
6																	
7	18					UDS-3	6.50-6.86										
8				SPT-3		7.00-7.45											
9	Ref*/ 2cm					Weak, brown SANDSTONE, very intensely fractured, moderately weathered	62.5	SPT-4	8.00-8.02			 Light Brown	 Partial	 Impregnated Bit	18	0	20
10				Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	RK-1	8.01-10.00		1-6									
11			RK-2	10.00-11.50	7-13												
12			RK-3	11.50-13.00	14-18												
13																	
				Termination at 13.00 meters Depth.													

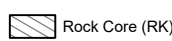
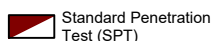
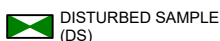
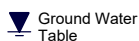




BOREHOLE NO: BH-NBH157

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BOREHOLE NO : BH-NBH157				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 6.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 68.86							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.56							
COORDINATES : 1095 E, 3459 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 9							
DATE OF START : 09-Feb-2022				DATE OF FINISH : 10-Feb-2022				LOGGED BY : Mr. Kumar Gaurav							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	7		0.50	Loose brown silty sand (SM)	62.4	DS-1	0.00-0.50								
2			20	6.00	Stiff to very stiff brown clayey silt (CI) - stiff, 0.5 to 4.0 m -very stiff, 4.0 to 6.0 m	62.9	UDS-1	0.50-0.80							
3	SPT-1	1.00-1.45													
4	UDS-2	3.50-3.76													
5	SPT-2	4.00-4.45													
6															
7	Ref*/ 2m			Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		SPT-3	6.00-6.02	1							
8						RK-1	6.01-7.50								
9							9.00	59.9					RK-2	7.50-9.00	2-4
				Termination at 9.00 meters Depth.											





BOREHOLE NO: BH-NBH158

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BOREHOLE NO : BH-NBH158				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00								
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.07								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.95								
COORDINATES : 1178 E, 3722 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8.5								
DATE OF START : 02-Feb-2022				DATE OF FINISH : 03-Feb-2022				LOGGED BY : Mr. Jitendra								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)	
1	17		1.00	Medium dense brown silty sand (SM)	66.1	DS-1	0.00-0.50									
						UDS-1	0.50-0.80									
2				Very stiff brown clayey silt (CI)		SPT-1	1.00-1.45									
3					UDS-2	3.50-3.80										
4	Ref*/ 3cm			Weak, brown SANDSTONE, very intensely fractured, severely weathered		SPT-2	4.00-4.03									
5					RK-1	4.01-5.50	1-5						34	0	22	
6				Moderately strong brown SANDSTONE, moderately weathered		RK-2	5.50-7.00	6-10						63	58	35
7						RK-3	7.00-8.50	11-13						72	58	38
8				8.50	61.6											
				Termination at 8.50 meters Depth.												

Ground Water Table

DISTURBED SAMPLE (DS)

UNDISTURBED SAMPLE (UDS)

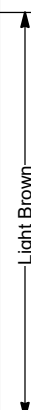
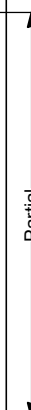
Standard Penetration Test (SPT)

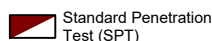
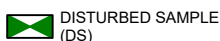
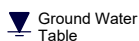
Rock Core (RK)



BOREHOLE NO: BH-NBH159

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BOREHOLE NO : BH-NBH159				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.59							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.87							
COORDINATES : 1124 E, 3731 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 02-Feb-2022				DATE OF FINISH : 03-Feb-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	14		3.00	Stiff brown clayey silt (CI)	66.6	DS-1	0.00-0.50								
						UDS-1	0.50-0.80								
2						SPT-1	1.00-1.45								
3	Ref*/ 3cm		8.00	Weak, brown SANDSTONE, very intensely fractured, severely weathered Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	61.6	SPT-2	3.00-3.03			 Light Brown	 Partial	 Impregnated Bit			
4						RK-1	3.01-4.50	1-7					 27	 0	 20
5						RK-2	4.50-6.00	8-12					 66	 54	 35
6						RK-3	6.00-7.50	13-17					 62	 47	 35
7						RK-4	7.50-8.00	18-20					 86	 76	 35
8				Termination at 8.00 meters Depth.											

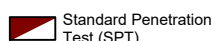
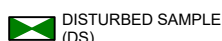




BOREHOLE NO: BH-NBH160

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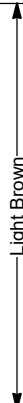
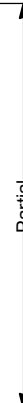
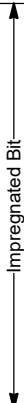
BOREHOLE NO : BH-NBH160				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 4.00								
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.08								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.65								
COORDINATES : 1216 E, 3594 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8								
DATE OF START : 06-Feb-2022				DATE OF FINISH : 07-Feb-2022				LOGGED BY : Mr. Kumar Gaurav								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)	
1	10		1.00	Medium dense brown silty sand (SM)	69.1	DS-1	0.00-0.50									
						UDS-1	0.50-0.85									
2			4.00	Stiff brown clayey silt (CI)	66.1	SPT-1	1.00-1.45									
3																
4						UDS-2	3.50-3.85									
5	Ref*/ 3cm			Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		SPT-2	4.00-4.03	1-5		 Light Brown	 Partial	 Impregnated Bit				
6						RK-1	4.01-5.00									
7						RK-2	5.00-6.50						6-8			
8						RK-3	6.50-8.00	9-11								
				Termination at 8.00 meters Depth.												

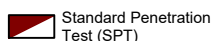
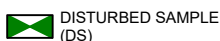
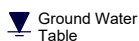




BOREHOLE NO: BH-NBH161

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BOREHOLE NO : BH-NBH161				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.00										
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.21										
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.54										
COORDINATES : 1235 E, 3660 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8										
DATE OF START : 03-Feb-2022				DATE OF FINISH : 04-Feb-2022				LOGGED BY : Mr. Jitendra										
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)			
1	14		3.00	Stiff brown clayey silt (CI)	 67.2	DS-1	0.00-0.50											
						UDS-1	0.50-0.80											
2						SPT-1	1.00-1.45											
3																		
4	Ref*/ 3cm		8.00	Weak, brown SANDSTONE, very intensely fractured, severely weathered	62.2	SPT-2	3.00-3.03											
5				Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		RK-1	3.01-4.50	1-7								23	0	20
6						RK-2	4.50-6.00	8-12								55	50	35
7						RK-3	6.00-7.50	13-18								58	38	35
8						RK-4	7.50-8.00	19					98	56	38			
				Termination at 8.00 meters Depth.														

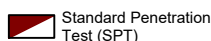
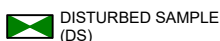
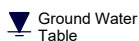




BOREHOLE NO: BH-NBH162

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BOREHOLE NO : BH-NBH162				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.37							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.55							
COORDINATES : 1353 E, 3657 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 10							
DATE OF START : 02-Feb-2022				DATE OF FINISH : 03-Feb-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	20		1.00	Medium dense brown silty sand (SM)	68.4	DS-1	0.00-0.50								
						UDS-1	0.50-0.80								
2				Stiff brown clayey silt (CI)		SPT-1	1.00-1.45								
3															
4			4.00		65.4	UDS-2	3.50-3.80								
5	Ref*/ 4cm			Weak, brown SANDSTONE, very intensely fractured, severely weathered		SPT-2	4.00-4.04			Light Brown	Partial	Impregnated Bit	41	0	22
6				Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		RK-1	4.01-5.50	1-9					52	19	30
7						RK-2	5.50-7.00	10-16					65	53	35
8						RK-3	7.00-8.50	17-22					53	30	35
9						RK-4	8.50-10.00	23-30							
10			10.00		59.4										
				Termination at 10.00 meters Depth.											

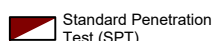
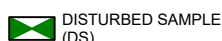




BOREHOLE NO: BH-NBH163

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BOREHOLE NO : BH-NBH163				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 4.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 68.79							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.80							
COORDINATES : 1354 E, 3733 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 10							
DATE OF START : 04-Feb-2022				DATE OF FINISH : 05-Feb-2022				LOGGED BY : Mr. Kumar Gaurav							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	21		1.00	Medium dense brown silty sand (SM)	67.8	DS-1	0.00-0.50								
2				Stiff brown clayey silt (CI)		UDS-1	0.50-0.80								
3						SPT-1	2.50-2.95								
4			4.00			UDS-2	3.50-3.70								
5	Ref*/ 3cm			Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	64.8	SPT-2	4.00-4.03			Light Grey	Partial	Impregnated Bit			
6						RK-1	4.01-5.50	1-5							
7						RK-2	5.50-7.00	6-18							
8						RK-3	7.00-8.50	19-22							
9						RK-4	8.50-10.00	23-25							
10			10.00		58.8										
				Termination at 10.00 meters Depth.											

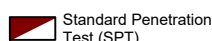
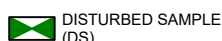




BOREHOLE NO: BH-NBH164

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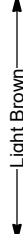
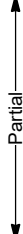
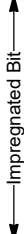
BOREHOLE NO : BH-NBH164				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 5.00								
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 68.97								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.87								
COORDINATES : 1419 E, 3657 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8								
DATE OF START : 04-Feb-2022				DATE OF FINISH : 05-Feb-2022				LOGGED BY : Mr. Kumar Gaurav								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)	
1	13		2.50	Medium dense brown silty sand (SM)	66.5	DS-1	0.00-0.50									
2						UDS-1	0.50-0.80									
3				Stiff brown clayey silt (CI)	64.0	SPT-1	2.50-2.95									
4						UDS-2	3.50-3.70									
5																
6	Ref*/ 3cm		8.00	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	61.0	SPT-2	5.00-5.03	1-10		Light Brown	Partial	Impregnated Bit				
7						RK-1	5.01-6.50							64	30	35
8						RK-2	6.50-8.00						11-13		65	55
				Termination at 8.00 meters Depth.												

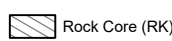
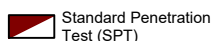
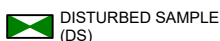
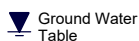




BOREHOLE NO: BH-NBH165

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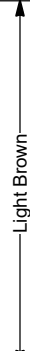
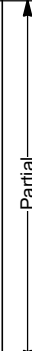
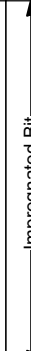
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LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 68.89											
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.77											
COORDINATES : 1446 E, 3692 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8											
DATE OF START : 04-Feb-2022				DATE OF FINISH : 05-Feb-2022				LOGGED BY : Mr. Kumar Gaurav											
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)				
1	16		5.00	Stiff to hard brown clayey silt (CI) - stiff, 0.0 to 3.5 m - hard, 3.5 to 5.0 m	63.9	DS-1	0.00-0.50												
						UDS-1	0.50-0.83												
2																			
3										SPT-1	2.50-2.95								
4						Ref*/ 3cm				UDS-2	3.50-3.75								
5	Ref*/ 3cm		5.00																
6			8.00	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		SPT-2	5.00-5.03												
7						RK-1	5.01-6.50	1-5							80	66	38		
8						RK-2	6.50-8.00	6-12							86	69	38		
				Termination at 8.00 meters Depth.															

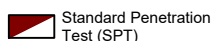
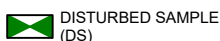
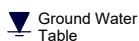




BOREHOLE NO: BH-NBH166

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BOREHOLE NO : BH-NBH166				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 67.45							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.70							
COORDINATES : 1505 E, 3716 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 04-Feb-2022				DATE OF FINISH : 05-Feb-2022				LOGGED BY : Mr. Kumar Gaurav							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	15		3.50	Very stiff brown clayey silt (CI)		DS-1	0.00-0.50								
2						UDS-1	0.50-0.80								
3									SPT-1	2.50-2.95					
4	Ref*/ 2cm		8.00	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	63.9	SPT-2	3.50-3.52								
5	RK-1					3.51-5.00	1-6	33					14	28	
6	RK-2					5.00-6.50	7-9	50					42	35	
7	RK-3					6.50-8.00	10-13	79					68	38	
8				Termination at 8.00 meters Depth.	59.4										





BOREHOLE NO: BH-NBH167

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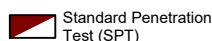
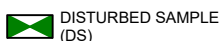
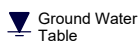
BOREHOLE NO : BH-NBH167				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.50								
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 66.39								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.95								
COORDINATES : 1384 E, 3388 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 7.5								
DATE OF START : 05-Feb-2022				DATE OF FINISH : 06-Feb-2022				LOGGED BY : Mr. Kumar Gaurav								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)	
1	20 Ref*/ 2cm		1.30	Fill: Light brown sandy silt with road material and gravel	65.1	DS-1	0.00-1.00									
2				Very stiff brown sandy silt (CL)												
3			3.00			63.4	SPT-1	2.50-2.95								
4							SPT-2	3.00-3.02			Light Brown	Partial	Impregnated Bit			
5					Moderately weak brown SANDSTONE,highly fractured, severely weathered		RK-1	3.01-4.50	1-2					15	7	22
6					Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		RK-2	4.50-6.00	3-7					57	49	35
7			7.50				RK-3	6.00-7.50	8-10					52	46	35
				Termination at 7.50 meters Depth.												



BOREHOLE NO: BH-NBH168

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BOREHOLE NO : BH-NBH168				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 4.00																						
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 67.34																						
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.56																						
COORDINATES : 1274 E, 3359 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8																						
DATE OF START : 05-Feb-2022				DATE OF FINISH : 06-Feb-2022				LOGGED BY : Mr. Kumar Gaurav																						
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)															
1	20		0.50	Medium dense brown silty sand (SM)	63.3	DS-1	0.00-0.50																							
				Very stiff brown clayey silt (CI)		UDS-1	0.50-0.85																							
2						SPT-1	1.00-1.45																							
3																														
4			4.00			UDS-2	3.50-3.80																							
5	Ref*/ 2cm			Weak, brown SANDSTONE, very intensely fractured, moderately weathered		SPT-2	4.00-4.02	1-8						31	0		22													
6																														
7																														
8																														
			8.00	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		RK-1	4.01-5.50	9-14						44	31		30													
						RK-2	5.50-7.00	15-16						65	41		35													
				Termination at 8.00 meters Depth.																										

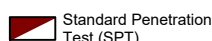
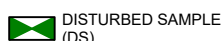




BOREHOLE NO: BH-NBH169

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BOREHOLE NO : BH-NBH169				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 5.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 65.74							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.96							
COORDINATES : 1054 E, 3154 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8.5							
DATE OF START : 07-Feb-2022				DATE OF FINISH : 08-Feb-2022				LOGGED BY : Mr. Kumar Gaurav							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	19		0.50	Medium dense brown silty sand gravel (SM)	65.2	DS-1	0.00-0.50								
2				Very stiff grey clayey silt (CI)		UDS-1	0.50-0.78								
3						SPT-1	2.50-2.95								
4						UDS-2	3.50-3.82								
5															
6	Ref*/ 2cm		5.50	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	60.2	SPT-2	5.50-5.52			 Light Brown	 Partial	 Impregnated Bit	 70	 68	 38
7				RK-1	5.51-7.00	1-2			 69				 52	 38	
8				RK-2	7.00-8.50	3-8									
			8.50	Termination at 8.50 meters Depth.	57.2										

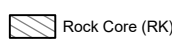
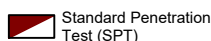
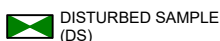
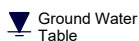




BOREHOLE NO: BH-NBH170

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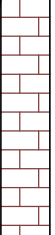
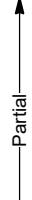
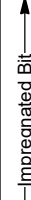
BOREHOLE NO : BH-NBH170				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 4.50																		
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 67.12																		
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.75																		
COORDINATES : 921 E, 3130 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 10																		
DATE OF START : 07-Feb-2022				DATE OF FINISH : 08-Feb-2022				LOGGED BY : Mr. Kumar Gaurav																		
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)											
1	21		2.50	Medium dense brown silty sand with gravel (SM)	64.6	DS-1	0.00-0.50																			
2							UDS-1	0.50-0.78																		
3						Very stiff grey clayey silt (CI)		SPT-1	2.50-2.95																	
4					4.50		62.6	UDS-2	3.50-3.86																	
5	Ref*/ 2cm		10.00	Weak brown SANDSTONE, very intensely fractured, moderately weathered	57.1	SPT-2	4.50-4.52	1-8		Light Brown	Partial	Impregnated Bit		37	0		22									
6																										
7																										
8														Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		RK-3	7.00-8.50	18-24					68	40		35
9																RK-4	8.50-10.00	25-29					57	38		35
10																										
				Termination at 10.00 meters Depth.																						

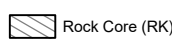
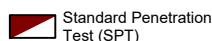
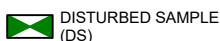
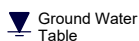




BOREHOLE NO: BH-NBH171

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BOREHOLE NO : BH-NBH171				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 6.00								
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.62								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.92								
COORDINATES : 827 E, 3183 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 9								
DATE OF START : 07-Feb-2022				DATE OF FINISH : 08-Feb-2022				LOGGED BY : Mr. Kumar Gaurav								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)	
1	22		0.50	Medium dense brown silty sand (SM)	69.1	DS-1	0.00-0.50									
2				Very stiff to hard brown clayey silt (CI)		UDS-1	0.50-0.82									
3				-very stiff, 0.5 to 5.5 m		SPT-1	2.50-2.95									
4						UDS-2	3.50-3.78									
5	32															
6			6.00	-hard, 5.5 to 6.0 m	63.6	SPT-2	5.50-5.95									
7	Ref*/ 2cm			Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		SPT-3	6.00-6.02									
8					RK-1	6.01-7.50	1-10									
9			9.00		60.6	RK-2	7.50-9.00	11-13								
				Termination at 9.00 meters Depth.												

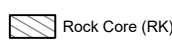
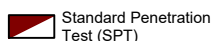
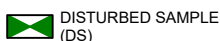
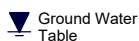




BOREHOLE NO: BH-NBH172

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BOREHOLE NO : BH-NBH172				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 6.00								
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 67.35								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.73								
COORDINATES : 844 E, 3037 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 9								
DATE OF START : 07-Feb-2022				DATE OF FINISH : 08-Feb-2022				LOGGED BY : Mr. Kumar Gaurav								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)	
1	30		6.00	Very stiff grey clayey silt (CI)	61.4	DS-1	0.00-0.50									
2						UDS-1	0.50-0.75									
3						SPT-1	2.50-2.95									
4						UDS-2	3.50-3.86									
5						SPT-2	5.50-5.95									
6	Ref*/ 2cm		9.00	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	58.4	SPT-3	6.00-6.02							68	40	35
7						RK-1	6.01-7.50	1-9								
8						RK-2	7.50-9.00	10-13						67	65	35
9																
				Termination at 9.00 meters Depth.												





BOREHOLE NO: BH-NBH173

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BOREHOLE NO : BH-NBH173				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.00															
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.27															
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.42															
COORDINATES : 1717 E, 4104 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8															
DATE OF START : 01-Feb-2022				DATE OF FINISH : 01-Feb-2022				LOGGED BY : Mr. Kumar Gaurav															
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)								
1	12		1.00	Medium dense brown silty sand (SM)	69.3	DS-1	0.00-0.50																
				UDS-1		0.50-0.80																	
2	Ref*/ 11cm			Moderately strong brown SANDSTONE, moderately weathered		SPT-1	1.00-1.45																
						SPT-2	2.00-2.11																
3																							
4						RK-1	3.00-3.50	1-2								Light Brown	Partial	Impregnated Bit	90	76	45		
5						RK-2	3.50-5.00	3-7											100	72	45		
6						RK-3	5.00-6.50	8-10											100	88	48		
7	RK-4	6.50-8.00	11-14	100	80	48																	
8			8.00		62.3																		
				Termination at 8.00 meters Depth.																			

Ground Water Table

DISTURBED SAMPLE (DS)

UNDISTURBED SAMPLE (UDS)

Standard Penetration Test (SPT)

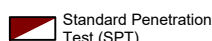
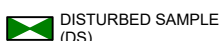
Rock Core (RK)



BOREHOLE NO: BH-NBH174

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BOREHOLE NO : BH-NBH174				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 1.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.65							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.46							
COORDINATES : 1840 E, 4036 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 6							
DATE OF START : 02-Feb-2022				DATE OF FINISH : 03-Feb-2022				LOGGED BY : Mr. Kumar Gaurav							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	Ref*/ 5cm		1.00	Hard brown clayey silt (CI)	68.6	DS-1 UDS-1	0.00-0.50 0.50-0.80								
2			6.00	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		SPT-1	1.00-1.05			Light Brown	Partial	Impregnated Bit	40	13	25
3						RK-1	1.01-2.00	1-3					68	24	30
4						RK-2	2.00-3.50	4-16					100	78	45
5						RK-3	3.50-5.00	17-24					100	71	45
6			6.00		63.6	RK-4	5.00-6.00	25-27							
				Termination at 6.00 meters Depth.											

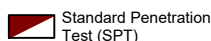
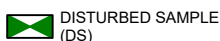
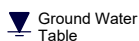




BOREHOLE NO: BH-NBH175

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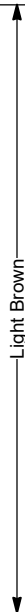
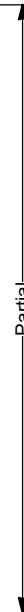
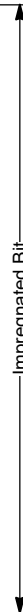
BOREHOLE NO : BH-NBH175				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 1.00								
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.79								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.41								
COORDINATES : 1765 E, 4091 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 6								
DATE OF START : 02-Feb-2022				DATE OF FINISH : 02-Feb-2022				LOGGED BY : Mr. Kumar Gaurav								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)	
1	Ref*/ 8cm		1.00	Hard brown clayey silt (CI)	68.8	DS-1	0.00-0.50									
						UDS-1	0.50-0.80									
2					Moderately strong brown SANDSTONE, moderately weathered		SPT-1	1.00-1.08			Light Brown	Partial	Impregnated Bit	82	28	30
3		RK-1					1.01-2.00	1-9						100	90	45
4		RK-2					2.00-3.50	10-11						100	80	45
5	RK-3	3.50-5.00					12-14		100					97	48	
6			6.00		63.8	RK-4	5.00-6.00	15-16								
				Termination at 6.00 meters Depth.												

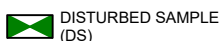
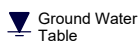




BOREHOLE NO: BH-NBH177

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BOREHOLE NO : BH-NBH177				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : -									
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.79									
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.47									
COORDINATES : 652 E, 5010 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8									
DATE OF START : 03-Feb-2022				DATE OF FINISH : 03-Feb-2022				LOGGED BY : Mr. Jitendra									
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)		
			0.50	Hard brown clayey silt (Cl)	71.3	DS-1	0.00-0.50	1-7									
1			Weak, brown SANDSTONE, very intensely fractured, severely weathered	71.3	RK-1	0.50-2.00							24	0		20	
2					RK-2	2.00-3.50	8-15						36	0		22	
3					RK-3	3.50-5.00	16-17						43	0		22	
4					Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	RK-4	5.00-6.50		18-29					72	30		35
5						RK-5	6.50-8.00		30-35					57	43		35
6																	
7																	
8			8.00		63.8												
				Termination at 8.00 meters Depth.													

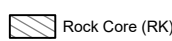
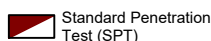
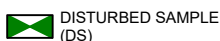
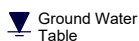




BOREHOLE NO: BH-NBH178

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BOREHOLE NO : BH-NBH178				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 1.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 72.73							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.89							
COORDINATES : 1328 E, 4335 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 15-Feb-2022				DATE OF FINISH : 16-Feb-2022				LOGGED BY : Mr. Kumar Gaurav							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	17		0.50	Loose brown silty sand (SM)	72.2	DS-1	0.00-0.50								
				Very stiff brown clayey silt (CI)		UDS-1	0.50-0.80								
			1.50		SPT-1	1.00-1.45									
2	Ref*/ 2m			Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	71.2	SPT-2 RK-1	1.50-1.52 1.51-2.00	1-4					54	34	35
3	RK-2					2.00-3.50	5-20	75					8	35	
4	RK-3					3.50-5.00	21-30	78					45	38	
5	RK-4					5.00-6.50	31-34	100					96	48	
6															
7															
8			8.00		64.7	RK-5	6.50-8.00	35-37					80	76	48
				Termination at 8.00 meters Depth.											

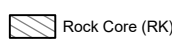
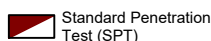
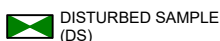
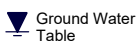




BOREHOLE NO: BH-NBH180

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BOREHOLE NO : BH-NBH180				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 7.00													
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 67.63													
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.71													
COORDINATES : 1341 E, 3483 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 10													
DATE OF START : 06-Feb-2022				DATE OF FINISH : 07-Feb-2022				LOGGED BY : Mr. Kumar Gaurav													
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)						
1	19		1.00	Medium dense brown silty sand (SM)	66.6	DS-1	0.00-0.50														
				Very stiff to hard brown clayey silt (CI)		UDS-1	0.50-0.88														
2							SPT-1	1.00-1.45													
3																					
4	33				- very stiff, 1.0 to 4.0 m		UDS-2	3.50-3.86													
5					- hard, 4.0 to 7.0 m		SPT-2	4.00-4.45													
6																					
7			7.00		60.6																
8	Ref*/ 2cm			Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		SPT-3	7.00-7.02							29	22	30					
9																					
10																					
			10.00		57.6																
				Termination at 10.00 meters Depth.																	

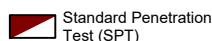
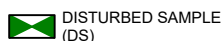
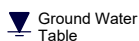




BOREHOLE NO: BH-NBH182

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BOREHOLE NO : BH-NBH182				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.00								
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.46								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.44								
COORDINATES : 1069 E, 4615 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 6								
DATE OF START : 10-Feb-2022				DATE OF FINISH : 11-Feb-2022				LOGGED BY : Mr. Kumar Gaurav								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)	
1	9		0.50	Loose brown silty sand (SM)	71.0	DS-1	0.00-0.50									
				Stiff brown clayey silt (CI)		UDS-1	0.50-0.80									
2						SPT-1	1.00-1.45									
3	Ref*/ 2m		3.00	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	68.5											
4					SPT-2	3.00-3.02			Light Brown	Partial	Impregnated Bit		60		36	35
5					RK-1	3.01-4.50	1-9									
6					RK-2	4.50-6.00	10-13									
				Termination at 6.00 meters Depth.												

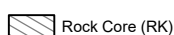
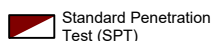
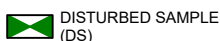
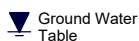




BOREHOLE NO: BH-NBH186

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BOREHOLE NO : BH-NBH186				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 72.32							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.00							
COORDINATES : 843 E, 4473 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 9.5							
DATE OF START : 20-Mar-2022				DATE OF FINISH : 20-Mar-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	15		0.50	Filled up soil	71.8	DS-1	0.00-0.50								
2			4.00	Stiff brown clayey silt (CI)		SPT-1	2.50-2.95								
3															
4															
5															
6			9.50	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	68.3	RK-1	4.00-5.00	1-4		Light Brown	Partial	Impregnated Bit	78	42	38
7						RK-2	5.00-6.50	5-12					90	78	40
8						RK-3	6.50-8.00	13-20					88	62	40
9						RK-4	8.00-9.50	21-23					78	68	40
				Termination at 9.50 meters Depth.											

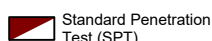
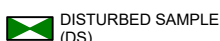




BOREHOLE NO: BH-NBH188

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BOREHOLE NO : BH-NBH188				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 73.34							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.10							
COORDINATES : 1014E, 4334 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 19-Mar-2022				DATE OF FINISH : 19-Mar-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	13		3.00	Medium dense brown silty sand (SM)	 70.3	DS-1	0.00-0.50								
2						DS-2	0.50-1.00								
3			8.00	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	65.3	RK-1	3.00-3.50	1-4		Light Brown	Partial	Impregnated Bit	80	32	35
4						RK-2	3.50-5.00	5-14					90	58	40
5						RK-3	5.00-6.50	15-23					90	54	40
6						RK-4	6.50-8.00	24-25					96	86	45
7															
8				Termination at 8.00 meters Depth.											





BOREHOLE NO: BH-NBHA1

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BOREHOLE NO : BH-NBHA1				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 1.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.65							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.00							
COORDINATES : 1840 E, 4062 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 10							
DATE OF START : 03-Feb-2022				DATE OF FINISH : 03-Feb-2022				LOGGED BY : Mr. Kumar Gaurav							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	12		1.50	Stiff brown clayey silt (CI)	68.1	DS-1	0.00-0.50								
						UDS-1	0.50-0.80								
2	Ref*/ 5cm			Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		SPT-1	1.00-1.45								
	SPT-2					1.50-1.55	1-4		Light Brown	Partial	Impregnated Bit	68	24	35	
3	RK-1					1.51-2.00						100	54	35	
4	RK-2					2.00-3.50	5-11					100	82	45	
5	RK-3					3.50-5.00	12-15					100	89	45	
6	RK-4					5.00-6.50	16-17					100	98	48	
7	RK-5					6.50-8.00	18-19					100	89	48	
8	RK-6					8.00-9.50	20-22					100	97	48	
9						RK-7	9.50-10.00	23							
10			10.00	Termination at 10.00 meters Depth.	59.6										

Ground Water Table

DISTURBED SAMPLE (DS)

UNDISTURBED SAMPLE (UDS)

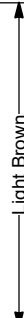
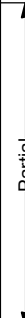
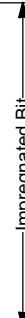
Standard Penetration Test (SPT)

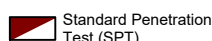
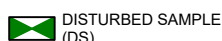
Rock Core (RK)



BOREHOLE NO: BH-NBHA2

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BOREHOLE NO : BH-NBHA2				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.79							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.40							
COORDINATES : 1714 E, 4139 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 6.5							
DATE OF START : 09-Feb-2022				DATE OF FINISH : 09-Feb-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1			2.50	Very dense brown silty sand (SM)	67.3	DS-1	0.00-0.50								
2						UDS-1	0.50-0.80								
3	Ref*/ 2cm		6.50	Moderately strong, brown SANDSTONE, moderately weathered	63.3	SPT-1	2.50-2.52						90	84	45
4	RK-1					2.51-3.50	1-12	100					54	45	
5	RK-2					3.50-5.00	13-26								
6	RK-3					5.00-6.50	27-32	100					92	48	
				Termination at 6.50 meters Depth.											

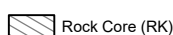
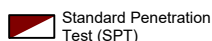
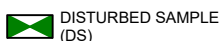
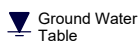




BOREHOLE NO: BH-NBH33

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BOREHOLE NO : BH-NBH33				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 4.00										
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.17										
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.45										
COORDINATES : 1342 E, 3944 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 10										
DATE OF START : 07-Apr-2022				DATE OF FINISH : 07-Apr-2022				LOGGED BY : Mr. Vijay Tiwari										
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)			
1	12		0.70	Fill	69.5	DS-1	0.00-0.70											
2			Very stiff brown silty clay (CH)	4.50	Very stiff brown silty clay (CH)	65.7	SPT-1	1.00-1.45										
3																		
4										DS-2	3.50-3.80							
5	Ref*/ 3cm						Weak brown SANDSTONE, very intensely fractured, severely weathered Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	60.2	SPT-2 RK-1	4.50-4.53 4.51-5.00	1-2					42	0	25
6									RK-2	5.00-6.50	3-8					95	82	45
7									RK-3	6.50-8.00	9-13					100	91	48
8			RK-4	8.00-9.50	14-21	100			87	48								
9			RK-5	9.50-10.00	22-25	100			80	48								
10			10.00	Termination at 10.00 meters Depth.														

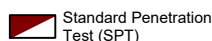
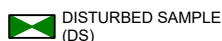
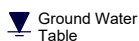




BOREHOLE NO: BH-NBH34

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BOREHOLE NO : BH-NBH34				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.93							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.80							
COORDINATES : 1304 E, 3943 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 07-Apr-2022				DATE OF FINISH : 07-Apr-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	13		0.50	Fill	69.4 	DS-1	0.00-0.50								
				Stiff brown clayey silt (CI)		UDS-1	0.50-0.70								
2				SPT-1		1.00-1.45									
3			3.00		66.9										
4	Ref*/ 2cm			Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		SPT-2	3.00-3.02	1-4		Light Brown	Partial	Impregnated Bit	90	66	40
RK-1						3.01-3.50									
RK-2						3.50-5.00	5-16								
RK-3						5.00-6.50	17-22								
RK-4						6.50-8.00	23-26								
8			8.00		61.9										
				Termination at 8.00 meters Depth.											





BOREHOLE NO: BH-NBH36

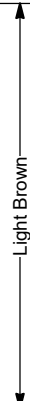
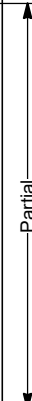
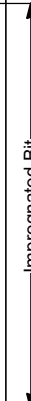
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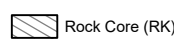
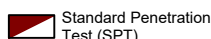
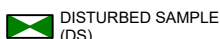
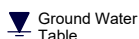
BOREHOLE NO : BH-NBH36				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.00								
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.60								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.70								
COORDINATES : 1207 E, 3920 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8.5								
DATE OF START : 03-Apr-2022				DATE OF FINISH : 05-Apr-2022				LOGGED BY : Mr. Vijay Tiwari								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)	
1	15 Ref*/ 2cm		1.00	Filled up: Road material and gravels	69.6	DS-1	0.00-1.00									
2				Medium dense brown coarse sand with gravel (SP)		DS-2	1.00-2.50									
3			2.50		68.1	SPT-1 DS-3	2.50-2.95 2.51-3.00									
4				3.00	Medium dense brown clayey sand with gravel (SC)	67.6	SPT-2 RK-1	3.00-3.02 3.01-3.50	1-4					100	76	45
5				Moderately strong brown SANDSTONE, moderately fractured, moderately weathered			RK-2	3.50-5.00	5-11					87	73	45
6							RK-3	5.00-6.50	12-21					100	88	45
7		RK-4					6.50-8.00	22-28	93					82	45	
8		RK-5					8.00-8.50	29	100					96	48	
			8.50	62.1												
				Termination at 8.50 meters Depth.												



BOREHOLE NO: BH-NBH39

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BOREHOLE NO : BH-NBH39				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.45							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.08							
COORDINATES : 1353 E, 3998 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 06-Apr-2022				DATE OF FINISH : 06-Apr-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	15		0.50	Fill	69.9	DS-1	0.00-0.50								
2				Stiff brown clayey silt (CI)		UDS-1	0.50-0.80								
3			3.00		67.4	SPT-1	2.50-2.95								
4	Ref*/ 3cm			Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		SPT-2 RK-1	3.00-3.03 3.01-3.50	1-4					100	92	50
5			RK-2		3.50-5.00	5-12	100	82					50		
6			RK-3		5.00-6.50	13-17	91	89					50		
7			RK-4		6.50-8.00	18-22	100	91					50		
8			8.00	62.4	Termination at 8.00 meters Depth.										

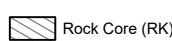
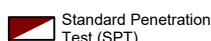
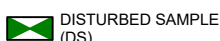




BOREHOLE NO: BH-NBH46

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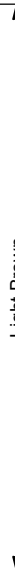
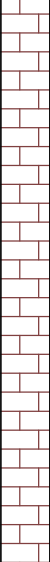
BOREHOLE NO : BH-NBH46				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.09							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.72							
COORDINATES : 1353 E, 3972 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 10							
DATE OF START : 04-Apr-2022				DATE OF FINISH : 05-Apr-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	14		0.50	Fill	69.6	DS-1	0.00-0.50								
2			3.50	Stiff brown clayey silt (CI)	66.6	UDS-1	0.50-0.80								
3				SPT-1		2.50-2.95									
4	Ref*/ 3cm			Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		60.1	SPT-2	3.50-3.53			Light Brown	Partial	Impregnated Bit		92
5			RK-1		3.51-5.00		1-10		89					85	48
6			RK-2		5.00-6.50		11-13		99					85	48
7			RK-3		6.50-8.00		14-19		100					95	50
8			RK-4		8.00-9.50		20		100					96	50
9			RK-5		9.50-10.00		21-22		100					96	50
10			10.00	Termination at 10.00 meters Depth.											

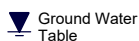




BOREHOLE NO: BH-NBH54

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BOREHOLE NO : BH-NBH54				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 1.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.67							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.20							
COORDINATES : 1300 E, 4102 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 08-Apr-2022				DATE OF FINISH : 08-Apr-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1			1.00	Fill	 70.7	DS-1	0.00-1.00	-		 Light Brown	 Partial	 Impregnated Bit			
2			Weak brown SANDSTONE, very intensely fractured, severely weathered	RK-1		1.00-1.50			62				0	25	
3				RK-2		1.50-3.00	1-7		87				71	48	
4				RK-3		3.00-4.50	8-10		91				84	48	
5				RK-4		4.50-6.00	11-19		90				60	48	
6				RK-5		6.00-7.50	20-24		90				77	48	
7				RK-6		7.50-8.00	25		94				90	50	
8			8.00		63.7										
				Termination at 8.00 meters Depth.											



DISTURBED SAMPLE (DS)



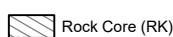
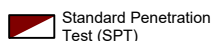
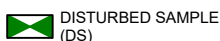
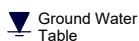
Rock Core (RK)



BOREHOLE NO: BH-NBH56

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BOREHOLE NO : BH-NBH56				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00											
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.60											
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.60											
COORDINATES : 1215 E, 4124 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 11.5											
				DATE OF FINISH : 04-Apr-2022				LOGGED BY : Mr. Vijay Tiwari											
DATE OF START : 03-Apr-2022				DATE OF FINISH : 04-Apr-2022				LOGGED BY : Mr. Vijay Tiwari											
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)				
1	12		1.00	Filled up: Light brown sandy silt with gravel and rock fragments	70.6	DS-1	0.00-0.50												
2				Stiff brown sandy silt with gravel (CL)		SPT-1	1.00-1.45												
3	Ref*/ 3cm		2.50	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	69.1	SPT-2	2.50-2.53			Light Brown	Partial	Impregnated Bit	100	10	30				
RK-1						2.51-3.50	1-14												
RK-2						3.50-5.00	15-28												
RK-3						5.00-6.50	29-47												
RK-4						6.50-8.00	48-55												
RK-5						8.00-9.50	56-66												
RK-6						9.50-11.00	67-68												
RK-7						11.00-11.50	69-70												
				Termination at 11.50 meters Depth.															





BOREHOLE NO: BH-NBH57

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BOREHOLE NO : BH-NBH57				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 1.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.61							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.82							
COORDINATES : 1260 E, 4145 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 17-Apr-2022				DATE OF FINISH : 17-Apr-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	Ref*/ 2cm		1.00	Fill	70.6	DS-1	0.00-0.50								
2			8.00	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	63.6	SPT-1	1.00-1.02			Light Brown	Partial	Impregnated Bit	37	29	30
3						RK-1	1.01-2.00	1-3					81	60	45
4						RK-2	2.00-3.50	4-5					88	78	45
5						RK-3	3.50-5.00	6-9					100	93	50
6						RK-4	5.00-6.50	10-11					100	95	50
7						RK-5	6.50-8.00	12-14							
8															
				Termination at 8.00 meters Depth.											



BOREHOLE NO: BH-NBH58

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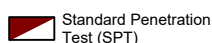
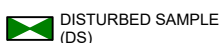
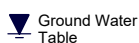
BOREHOLE NO : BH-NBH58				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 1.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.67							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.60							
COORDINATES : 1292 E, 4150 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 16-Apr-2022				DATE OF FINISH : 17-Apr-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	Ref*/ 3cm		1.00	Fill	70.7	DS-1	0.00-0.50								
2			8.00	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		SPT-1	1.00-1.03			Light Brown	Partial	Impregnated Bit	52	28	30
3						RK-1	1.01-2.00	1-4					85	55	45
4						RK-2	2.00-3.50	5-7					90	72	45
5						RK-3	3.50-5.00	8-11					100	95	50
6						RK-4	5.00-6.50	12-14					100	97	50
7						RK-5	6.50-8.00	15-16							
8															
				Termination at 8.00 meters Depth.											



BOREHOLE NO: BH-NBH70

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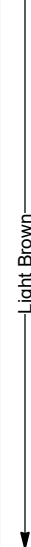
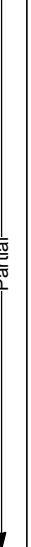
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LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.24							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.20							
COORDINATES : 1293 E, 4197 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8.5							
DATE OF START : 08-Apr-2022				DATE OF FINISH : 08-Apr-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1			1.00	Fill	70.2	DS-1	0.00-1.00								
2			2.00	Hard brown clayey silt (CI)	69.2	DS-2	1.00-2.00								
3	Ref*/ 3cm			Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		SPT-1	2.00-2.03			Light Brown	Partial	Impregnated Bit			
4						RK-1	2.01-3.50	1-12					63	17	30
5						RK-2	3.50-5.00	13-19					100	96	50
6						RK-3	5.00-6.50	20-28					92	64	48
7						RK-4	6.50-8.00	29-34					100	87	50
8						RK-5	8.00-8.50	35					100	96	50
				Termination at 8.50 meters Depth.											





BOREHOLE NO: BH-NBH71

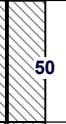
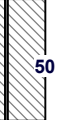
PAGE 1 OF 1

BOREHOLE NO : BH-NBH71				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 1.50										
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.27										
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.90										
COORDINATES : 1219 E, 4201 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8										
DATE OF START : 09-Apr-2022				DATE OF FINISH : 09-Apr-2022				LOGGED BY : Mr. Vijay Tiwari										
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)			
			0.60	Filled up: Road material and gravels	69.7	DS-1	0.00-0.60											
1	Ref*/ 7cm		1.00	Very dense brown clayey sand with gravel and rock fragments (SC)	69.3	DS-2	0.60-1.00											
2				Moderately weak brown SANDSTONE, severely weathered		SPT-1	1.00-1.07							76	0		25	
3				Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		RK-1	1.01-2.00	1-4							89	82		45
4						RK-2	2.00-3.50	5-9							100	99		50
5						RK-3	3.50-5.00	10							100	99		50
6						RK-4	5.00-6.50	11-12							100	99		50
7						RK-5	6.50-8.00	13						100	99		50	
8			8.00		62.3													
				Termination at 8.00 meters Depth.														



BOREHOLE NO: BH-NBH73

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BOREHOLE NO : BH-NBH73				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 1.00								
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.77								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.86								
COORDINATES : 1275 E, 4247 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8								
DATE OF START : 12-Apr-2022				DATE OF FINISH : 12-Apr-2022				LOGGED BY : Mr. Jitendra								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)	
			0.50	Fill	71.3	DS-1	0.00-0.50									
1	Ref*/ 2cm		1.00	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	70.8	SPT-1	1.00-1.02									
2							RK-1	1.01-2.00	1-5		Light Brown	Partial	Impregnated Bit			
3							RK-2	2.00-3.50	6-10							
4							RK-3	3.50-5.00	11-12							
5							RK-4	5.00-6.50	13-17							
6							RK-5	6.50-8.00	18							
7																
8			8.00		63.8											
				Termination at 8.00 meters Depth.												



BOREHOLE NO: BH-NBH82

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BOREHOLE NO : BH-NBH82				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.50								
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 72.08								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.82								
COORDINATES : 1399 E, 4316 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8								
DATE OF START : 13-Apr-2022				DATE OF FINISH : 13-Apr-2022				LOGGED BY : Mr. Jitendra								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)	
	18		0.50	Fill	71.6	DS-1	0.00-0.50									
1			3.00	Very stiff brown silty clay (CH)	69.1	SPT-1	2.50-2.95									
2																
3																
4																
5			8.00	Weak brown SANDSTONE, very intensely fractured, severely weathered Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		RK-1	3.00-3.50	1-3		Light Brown	Partial	Impregnated Bit	38	0	25	
6						RK-2	3.50-5.00	4-13					75	44	40	
7						RK-3	5.00-6.50	14-18					76	74	45	
8						RK-4	6.50-8.00	19-21					90	88	45	
				Termination at 8.00 meters Depth.												

Ground Water Table

DISTURBED SAMPLE (DS)

Standard Penetration Test (SPT)

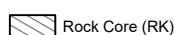
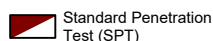
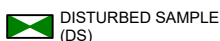
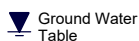
Rock Core (RK)



BOREHOLE NO: BH-NBH83

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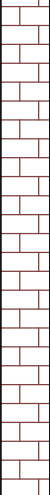
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LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.10							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.86							
COORDINATES : 1333 E, 4292 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 15-Apr-2022				DATE OF FINISH : 16-Apr-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	Ref*/ 3cm		1.50	Fill	69.6	DS-1	0.00-0.50								
2			8.00	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	63.1	SPT-1 RK-1	1.50-1.53 1.51-2.00	1-2		Light Brown	Partial	Impregnated Bit	98	69	45
3						RK-2	2.00-3.50	3-5					86	76	45
4						RK-3	3.50-5.00	6-7					100	98	50
5						RK-4	5.00-6.50	7-9					97	90	50
6						RK-5	6.50-8.00	10-12					96	94	50
7															
8															
				Termination at 8.00 meters Depth.											

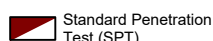
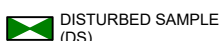




BOREHOLE NO: BH-NBH84

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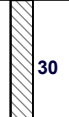
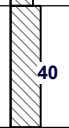
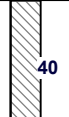
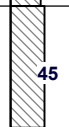
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LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.17							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.90							
COORDINATES : 1277 E, 4294 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 14-Apr-2022				DATE OF FINISH : 14-Apr-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	Ref*/ 3cm		0.50	Fill	70.7	DS-1	0.00-0.50								
2			1.50	Weak brown SANDSTONE, very intensely fractured, severely weathered Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	69.7	SPT-1 RK-1	1.50-1.53 1.51-2.00	1-4		 Light Brown	 Partial	 Impregnated Bit	62	0	25
3			85		73	45									
4			90		66	45									
5			100		95	50									
6			100		97	50									
7															
8			8.00		63.2										
				Termination at 8.00 meters Depth.											





BOREHOLE NO: BH-NBH85

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BOREHOLE NO : BH-NBH85				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 1.00									
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.18									
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.93									
COORDINATES : 1225 E, 4295 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8									
DATE OF START : 14-Apr-2022				DATE OF FINISH : 15-Apr-2022				LOGGED BY : Mr. Jitendra									
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)		
			0.50	Fill	70.7	DS-1	0.00-0.50										
1	Ref*/ 2cm		1.00	Weak brown SANDSTONE, very intensely fractured, severely weathered Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	70.2	SPT-1	1.00-1.02										
2						RK-1	1.01-2.00	1-5		Light Brown	Partial	Impregnated Bit		43	0		25
3						RK-2	2.00-3.50	6-24						100	23		30
4						RK-3	3.50-5.00	25-31						90	62		40
5						RK-4	5.00-6.50	31-36						73	33		40
6						RK-5	6.50-8.00	37-40						87	80		45
7																	
8			8.00		63.2												
				Termination at 8.00 meters Depth.													



BOREHOLE NO: BH-NBH86

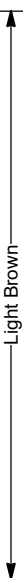
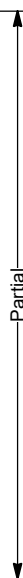
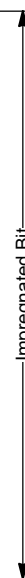
PAGE 1 OF 1

BOREHOLE NO : BH-NBH86				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 1.00								
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.27								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.62								
COORDINATES : 1222 E, 4353 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8								
DATE OF START : 13-Apr-2022				DATE OF FINISH : 14-Apr-2022				LOGGED BY : Mr. Jitendra								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)	
			0.50	Fill	70.8	DS-1	0.00-0.50									
1	Ref*/ 3cm		1.00	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	70.3	SPT-1	1.00-1.03									
2							RK-1	1.01-2.00	1-8		Light Brown	Partial	Impregnated Bit	84	15	30
3							RK-2	2.00-3.50	9-14					91	79	45
4							RK-3	3.50-5.00	15-17					95	88	50
5							RK-4	5.00-6.50	18-21					96	89	50
6							RK-5	6.50-8.00	22-23					100	98	50
7																
8			8.00		63.3											
				Termination at 8.00 meters Depth.												



BOREHOLE NO: BH-NBH87

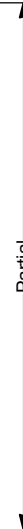
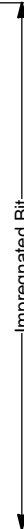
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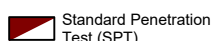
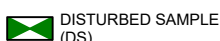
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LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.27							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.69							
COORDINATES : 1278 E, 4352 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 13-Apr-2022				DATE OF FINISH : 13-Apr-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
			0.50	Fill	70.8	DS-1	0.00-0.50								
1	Ref*/ 2cm		1.00	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	70.3	SPT-1	1.00-1.02							0	
2			81												
3			82												
4			99												
5			89												
6															
7															
8			8.00		63.3										
				Termination at 8.00 meters Depth.											



BOREHOLE NO: BH-NBH88

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BOREHOLE NO : BH-NBH88				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00								
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.31								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.76								
COORDINATES : 1328 E, 4335 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8								
DATE OF START : 15-Apr-2022				DATE OF FINISH : 15-Apr-2022				LOGGED BY : Mr. Jitendra								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)	
			0.50	Fill	70.8	DS-1	0.00-0.50									
1		 Ref*/ 2cm	1.50	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	69.8	SPT-1 RK-1	1.50-1.52 1.51-2.00	1-6		 Light Brown	 Partial	 Impregnated Bit				
2							RK-2	2.00-3.50					7-11			
3							RK-3	3.50-5.00					12-15			
4							RK-4	5.00-6.50					16-18			
5																
6																
7																
8			8.00		63.3											
				Termination at 8.00 meters Depth.												





BOREHOLE NO: BH-NBH89

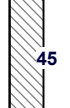
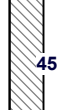
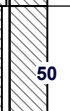
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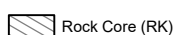
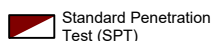
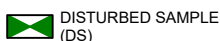
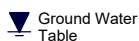
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LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.34							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.00							
COORDINATES : 1296 E, 4394 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 16-Apr-2022				DATE OF FINISH : 16-Apr-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
			0.50	Fill	69.8	DS-1	0.00-0.50								
1			1.50	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		SPT-1	1.50-1.53	1-5		Light Brown	Partial	Impregnated Bit		0	
2	Ref*/ 3cm		68.8		RK-1	1.51-2.00	52						14	25	
3			RK-2		2.00-3.50	6-12	52						14	30	
4			RK-3		3.50-5.00	13-19	44						22	30	
5			RK-4		5.00-6.50	20-26	80						50	40	
6			RK-5		6.50-8.00	27-31	84						73	45	
7															
8			8.00		62.3										
				Termination at 8.00 meters Depth.											



BOREHOLE NO: BH-NBH90

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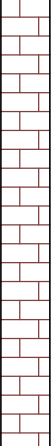
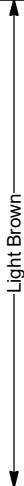
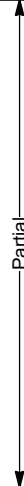
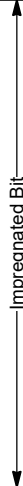
BOREHOLE NO : BH-NBH90				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.39							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.50							
COORDINATES : 1351 E, 4426 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 18-Apr-2022				DATE OF FINISH : 18-Apr-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1			0.50	Very dense brown silty sand (SM)	68.9	DS-1	0.00-0.50								
2				Hard brown clayey silt (CI)		DS-2	0.50-2.00								
3	Ref*/ 3cm			Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		SPT-1	2.00-2.03			Light Brown	Partial	Impregnated Bit			
4						RK-1	2.01-3.50	1-4							
5						RK-2	3.50-5.00	5-8							
6						RK-3	5.00-6.50	9-10							
7						RK-4	6.50-8.00	11-12							
8			8.00		62.4										
				Termination at 8.00 meters Depth.											

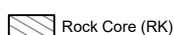
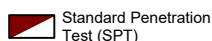
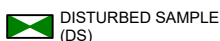
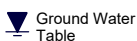




BOREHOLE NO: BH-NBH92

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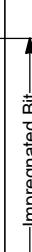
BOREHOLE NO : BH-NBH92				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.37							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.35							
COORDINATES : 1245 E, 4458 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 17-Apr-2022				DATE OF FINISH : 17-Apr-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
			0.50	Very dense brown silty sand (SM)	69.9	DS-1	0.00-0.50								
1				Hard brown silty clay (CH)		DS-2	0.50-2.00								
2			2.00		68.4										
	Ref*/ 3cm			Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		SPT-1	2.00-2.03								
3	RK-1					2.01-3.50	1-8	66					36	30	
4	RK-2					3.50-5.00	9-11	48					19	30	
5	RK-3					5.00-6.50	12-19	98					66	40	
6	RK-4					6.50-8.00	20-25	95					65	40	
7															
8			8.00		62.4										
				Termination at 8.00 meters Depth.											





BOREHOLE NO: BH-NBH97

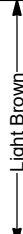
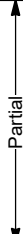
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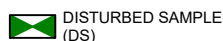
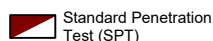
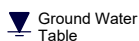
BOREHOLE NO : BH-NBH97				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.00												
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 74.38												
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.80												
COORDINATES : 1055 E, 4494 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8												
DATE OF START : 29-Mar-2022				DATE OF FINISH : 29-Mar-2022				LOGGED BY : Mr. Jitendra												
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)					
1	12		1.00	Medium dense brown silty sand (SM)	73.4	DS-1	0.00-0.50													
		DS-2				0.50-0.80														
2	19		4.00	Very stiff brown clayey silt (CI)		SPT-1	1.00-1.45													
3																				
4																				
5			5.00	Very stiff brown sandy silt (CL)		DS-3	3.50-3.80													
						SPT-2	4.00-4.45													
6	Ref*/ 3cm		8.00	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		SPT-3	5.00-5.03						100	88	48					
7																				
8															RK-2	6.50-8.00	9-10			
				Termination at 8.00 meters Depth.																



BOREHOLE NO: BH-NBH100

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BOREHOLE NO : BH-NBH100				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 5.00								
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 74.46								
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m :								
COORDINATES : 1149 E, 4516 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8								
DATE OF START : 31-Mar-2022				DATE OF FINISH : 01-Apr-2022				LOGGED BY : Mr. Vijay Tiwari								
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)	
1	8		0.50	Fill: Light brown clayey sand with gravel	74.0	-	0.00-0.50									
2			5.00	Stiff brown clayey silt intermixed with sand (CI)		UDS-1	0.50-0.80									
3	SPT-1					1.00-1.45										
4	10					DS-1	3.50-3.80									
5	SPT-2					4.00-4.45										
6	Ref*/ 2cm		8.00	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		69.5	SPT-3	5.00-5.02								
7	RK-1	5.01-6.50			1-11		90	45	40							
8	RK-2	6.50-8.00			12-21		100	65	45							
				Termination at 8.00 meters Depth.												

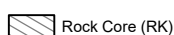
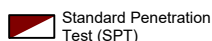
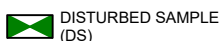
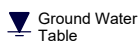




BOREHOLE NO: BH-NBH101

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BOREHOLE NO : BH-NBH101				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.43							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.50							
COORDINATES : 1115 E, 4616 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 23-Mar-2022				DATE OF FINISH : 23-Mar-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	17		0.50	Fill: Road Material	68.9	DS-1	0.00-0.50								
2			Very stiff brown clayey silt (CI)	67.4	SPT-1	1.00-1.45									
3					3.00										
4				Weak brown SANDSTONE, very intensely fractured, severely weathered Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		RK-1	3.00-3.50	1-6		Light Brown	Partial	Impregnated Bit	60	0	25
5						RK-2	3.50-5.00	7-14					83	64	40
6						RK-3	5.00-6.50	15-20					76	58	40
7						RK-4	6.50-8.00	21-23					92	81	45
8			8.00		62.4										
				Termination at 8.00 meters Depth.											





BOREHOLE NO: BH-NBH102

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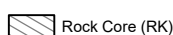
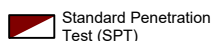
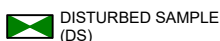
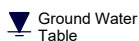
BOREHOLE NO : BH-NBH102				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 7.00										
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 73.46										
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 2.90										
COORDINATES : 1064 E, 4584 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 10										
DATE OF START : 22-Mar-2022				DATE OF FINISH : 22-Mar-2022				LOGGED BY : Mr. Jitendra										
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)			
1	17		0.50	Very stiff brown sandy silt (CL)	73.0	DS-1	0.00-0.50											
2				Very stiff brown clayey silt (CI)		DS-2	0.50-0.80											
3							SPT-1	2.50-2.95										
4			3.50	Medium dense brown coarse sand (SP)	70.0	DS-3	3.50-3.70											
5																		
6	Ref*/ 3cm		5.50	Weak brown SANDSTONE, very intensely fractured, severely weathered	68.0	SPT-2 RK-1	5.50-5.53 5.51-6.50	1-8						52	0		25	
7			Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		RK-2	6.50-8.00	9-19						81		38		40	
8						RK-3	8.00-9.50	20-29						93		53		45
9						RK-4	9.50-10.00	30-31						88		74		45
10			10.00	63.5														
				Termination at 10.00 meters Depth.														



BOREHOLE NO: BH-NBH103

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BOREHOLE NO : BH-NBH103				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 4.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.62							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.30							
COORDINATES : 979 E, 4554 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8.5							
DATE OF START : 24-Mar-2022				DATE OF FINISH : 24-Mar-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	14		5.00	Fill: Light brown sandy silt Fill: Light brown silty sand	66.6	DS-1	0.00-0.50	1-4							
2						DS-2	0.50-2.50								
3						SPT-1	2.50-2.95								
4															
5			8.50	Weak brown SANDSTONE, very intensely fractured, severely weathered Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	63.1	RK-1	5.00-5.50	15-16		Light Brown	Partial	Impregnated Bit	50	0	25
6	RK-2					5.50-7.00	80						46	40	
7							93						92	45	
8	RK-3					7.00-8.50									
				Termination at 8.50 meters Depth.											





BOREHOLE NO: BH-NBH104

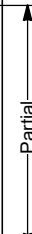
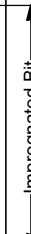
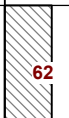
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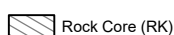
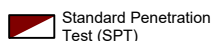
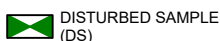
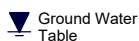
BOREHOLE NO : BH-NBH104				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 5.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.65							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.15							
COORDINATES : 967 E, 4451 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 29-Mar-2022				DATE OF FINISH : 29-Mar-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	13		1.00	Filledup soil	70.7	DS-1	0.00-0.50								
		DS-2		0.50-0.80											
2	21		4.00	Stiff brown sandy silt (CL)	67.7	SPT-1	1.00-1.45								
3															
4		DS-3		3.50-3.80											
5			5.00	Very stiff brown clayey silt (CI)	66.7	SPT-2	4.00-4.45								
6	Ref*/ 4cm		8.00	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		SPT-3	5.00-5.04								
7						RK-1	5.01-6.50	-							
8						RK-2	6.50-8.00	-							
				Termination at 8.00 meters Depth.											



BOREHOLE NO: BH-NBH105

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BOREHOLE NO : BH-NBH105				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 4.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 73.59							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.90							
COORDINATES : 892 E, 4515 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 30-Mar-2022				DATE OF FINISH : 30-Mar-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	16		0.50	Fill	73.1	DS-1	0.00-0.50								
2				Very stiff brown sandy silt (CL)		DS-2	0.50-0.80								
3					SPT-1	2.50-2.95									
4					DS-3	3.50-3.80									
5			5.00		68.6										
6	Ref*/ 3cm			Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		SPT-2	5.00-5.03								
7					RK-1	5.01-6.50	-								
8					8.00	65.6	RK-2	6.50-8.00	-						
				Termination at 8.00 meters Depth.											





BOREHOLE NO: BH-NBH107

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BOREHOLE NO : BH-NBH107				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 6.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 73.59							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.00							
COORDINATES : 898 E, 4624 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8.5							
DATE OF START : 22-Mar-2022				DATE OF FINISH : 23-Mar-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	19		0.50	Fill: Road Material	73.1	DS-1	0.00-0.50								
			1.00	Medium dense brown coarse sand (SP)	72.6	DS-2	0.50-0.80								
2	25			Very stiff brown clayey silt (CI)		SPT-1	1.00-1.45								
3															
4						DS-3	3.50-3.80								
5						SPT-2	4.00-4.45								
6	Ref*/ 2cm		5.50	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	68.1	SPT-3	5.50-5.52								
7	RK-1					5.51-7.00	1-8								
8	RK-2					7.00-8.50	9-12								
			8.50	Termination at 8.50 meters Depth.	65.1										



BOREHOLE NO: NBH108

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BOREHOLE NO : BH-NBH108	BORING METHOD : Rotary Drilling	GROUND ELEVATION, m : RL 72.61
LOCATION : Talcher, Odisha	SPT HAMMER USED : -	GROUND WATER DEPTH, m : 1.10
COORDINATES : 944 E , 4632 N	BOREHOLE DIAMETER, mm : 150	TERMINATION DEPTH, m : 10.45
DATE OF START : 25-Mar-2022	CASING DEPTH, m : 5.00	LOGGED BY : Mr. Jitendra
	DATE OF FINISH : 25-Mar-2022	CHECKED BY : Mr. Pushpendra

DEPTH (m)	GRAPHICAL LOG	SYMBOL	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SAMPLE TYPE SYMBOL	FIELD N VALUES	▲ FIELD SPT N VALUE ▲ 20 40 60 80 PL (%) MC (%) LL (%) 20 40 60 80 ■ FINES CONTENT (%) ■ 20 40 60 80
1		SP	1.00	Medium dense brown coarse sand (SP)	72.61	DS-1	0.00 - 0.50			
						DS-2	0.50 - 0.80			
2		CL		Stiff to very stiff brown sandy silt (CL)		SPT-1	1.00 - 1.45		12	
3										
4				- stiff, 1.0 to 4.0 m		DS-3	3.50 - 3.80			
5				- very stiff, 4.0 to 7.0 m		SPT-2	4.00 - 4.45		18	
6										
7			7.00		65.6	DS-4	6.50 - 6.80			
8		CI		Very stiff brown clayey silt (CI)		SPT-3	7.00 - 7.45		25	
9										
10						DS-5	9.50 - 9.80			
			10.45		62.2	SPT-4	10.00 - 10.45		28	
				Termination at 10.45 meters Depth.						

PL - PLASTIC LIMIT

LL - LIQUID LIMIT

MC - MOISTURE CONTENT

Ground Water
Table

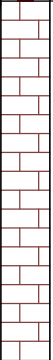
DISTURBED SAMPLE
(DS)

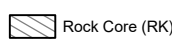
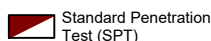
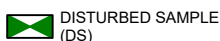
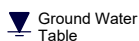
Standard Penetration
Test (SPT)



BOREHOLE NO: BH-NBH109

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BOREHOLE NO : BH-NBH109				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 4.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.60							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 2.50							
COORDINATES : 1001 E, 4638 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 14							
DATE OF START : 27-Mar-2022				DATE OF FINISH : 28-Mar-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	14		2.50	Medium dense brown silty sand (SM)	63.1	DS-1	0.00-0.50								
2						UDS-1	0.50-0.80								
3															
4	18		8.50	Stiff to very stiff brown clayey silt (CI) - stiff, 2.5 to 5.5 m - very stiff, 5.5 to 8.5 m	63.1	SPT-1	2.50-2.95								
5						DS-2	3.50-3.80								
6															
7	22		9.50	Medium dense brown silty sand (SM)	63.1	SPT-2	5.50-5.95								
8						DS-3	6.50-6.80								
9															
10	Ref*/ 2cm		14.00	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	62.1	SPT-3	8.50-8.95								
11															
12															
13															
14															
				Termination at 14.00 meters Depth.											

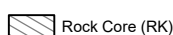
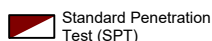
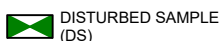
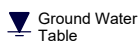




BOREHOLE NO: BH-NBH110

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BOREHOLE NO : BH-NBH110				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 6.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 72.59							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m :							
COORDINATES : 942 E, 4695 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 14							
DATE OF START : 28-Mar-2022				DATE OF FINISH : 29-Mar-2022				LOGGED BY : Mr. Jitendra							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	17		2.50	Medium dense brown silty sand (SM)	70.1	DS-1	0.00-0.50								
2						DS-2	0.50-0.80								
3	22		11.00	Very stiff brown sandy silt (CL)	61.6	SPT-1	2.50-2.95								
4						DS-3	3.50-3.80								
5	28		14.00	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	58.6	SPT-2	5.50-5.95								
6						DS-4	6.50-6.80								
7	Ref*/ 3cm		14.00	Termination at 14.00 meters Depth.		SPT-3	8.50-8.95								
8						DS-5	9.50-9.80								
9	Ref*/ 3cm		14.00	Termination at 14.00 meters Depth.		SPT-4	11.00-11.03								
10						RK-1	11.01-12.50	1-3							
11	RK-2	12.50-14.00	4-8												
12															
13															
14															

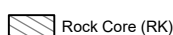
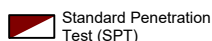
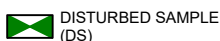
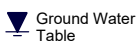




BOREHOLE NO: BH-NBH111

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BOREHOLE NO : BH-NBH111				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 7.00											
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 72.59											
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 3.30											
COORDINATES : 894 E, 4673 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 14											
DATE OF START : 29-Mar-2022				DATE OF FINISH : 29-Mar-2022				LOGGED BY : Mr. Jitendra											
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)				
1	12		1.00	Medium dense brown silty sand (SM)	71.6	DS-1	0.00-0.50												
				DS-2		0.50-0.80													
2	19			Stiff to very stiff brown sandy silt (CL)		SPT-1	1.00-1.45												
3																			
4				DS-3		3.50-3.80													
5				SPT-2		4.00-4.45													
6	24		7.00	- stiff, 1.0 to 4.0 m - very stiff, 4.0 to 7.0 m	65.6														
7				DS-4		6.50-6.80													
8	28			Very stiff brown clayey silt (CI)		SPT-3	7.00-7.45												
9																			
10				DS-5		9.50-9.80													
11				SPT-4		10.00-10.45													
12	Ref*/ 6cm			Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	61.6	SPT-5	11.00-11.06												
13				RK-1		11.01-12.50	-												
14				RK-2		12.50-14.00	-												
				Termination at 14.00 meters Depth.															

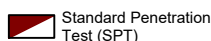
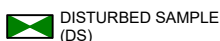
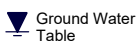




BOREHOLE NO: BH-NBH112

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BOREHOLE NO : BH-NBH112				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 10.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 72.58							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 3.35							
COORDINATES : 828 E, 4679 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 14							
DATE OF START : 30-Mar-2022				DATE OF FINISH : 30-Mar-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	9			Fill: Road Material		DS-1	0.00-0.50								
2						UDS-1	0.50-0.70								
3						SPT-1	2.50-2.95								
4	11				67.1	DS-2	3.50-3.80								
5															
6															
7	16			Stiff grey clayey silt (CI)		SPT-2	5.50-5.95								
8						DS-3	6.50-6.80								
9															
10				Medium dense brown silty sand (SM)		SPT-3	8.50-8.95								
11						DS-4	9.50-9.80								
12															
13	Ref*/ 2cm			Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		SPT-4	11.00-11.02						100	85	48
14						RK-1	11.01-12.50	1-6							
						RK-2	12.50-14.00	7-14					98	85	48
				Termination at 14.00 meters Depth.											





BOREHOLE NO: BH-NBH113

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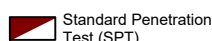
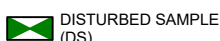
BOREHOLE NO : BH-NBH113				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 5.00									
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 72.61									
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.47									
COORDINATES : 785 E, 4613 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8.5									
DATE OF START : 23-Mar-2022				DATE OF FINISH : 23-Mar-2022				LOGGED BY : Mr. Jitendra									
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)		
	21		0.50	Fill	72.1	DS-1	0.00-0.50										
1					Very stiff brown sandy silt (CL)		SPT-1	1.00-1.45									
2																	
3																	
4	18			3.50		Very stiff brown clayey silt (CI)	69.1	DS-2	3.50-3.80								
5								SPT-2	4.00-4.45								
6	Ref*/ 3cm		5.50	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	67.1	SPT-3	5.50-5.53										
7								RK-1					5.51-7.00	-	73	48	40
8								RK-2					7.00-8.50	-	84	72	45
			8.50	Termination at 8.50 meters Depth.	64.1												



BOREHOLE NO: BH-NBH114

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BOREHOLE NO : BH-NBH114				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 7.00											
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 73.59											
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m :											
COORDINATES : 809 E, 4740 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 13.5											
DATE OF START : 25-Mar-2022				DATE OF FINISH : 27-Mar-2022				LOGGED BY : Mr. Jitendra											
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)				
1	15			Fill: Light brown silty sand		DS-1	0.00-0.50												
						UDS-1	0.50-0.80												
2						SPT-1	1.00-1.45												
3																			
4	18					DS-2	3.50-3.80												
5						SPT-2	4.00-4.45												
6																			
7																			
8	20		7.00		66.6	DS-3	6.50-6.80												
9						SPT-3	7.00-7.45												
10				Very stiff brown clayey silt (CI)															
11																			
12	Ref*/ 3cm		10.50		63.1	DS-4	9.50-9.80												
13																			
14			13.50	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		SPT-4	10.50-10.53				Light Brown	Partial	Impregnated Bit		66		30		40
15						RK-1	10.51-12.00	1-8											
16						RK-2	12.00-13.50	9-13											
17					60.1														
				Termination at 13.50 meters Depth.															

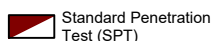
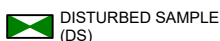
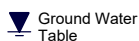




BOREHOLE NO: BH-NBH115

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BOREHOLE NO : BH-NBH115				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.50													
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 71.63													
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.63													
COORDINATES : 730 E, 4694 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8.5													
DATE OF START : 24-Mar-2022				DATE OF FINISH : 24-Mar-2022				LOGGED BY : Mr. Jitendra													
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)						
1	12		0.50	Fill: Road Material	71.1 	DS-1	0.00-0.50														
				Stiff to very stiff brown clayey silt (CI)		UDS-1	0.50-0.80														
				- stiff, 0.5 to 4.0 m		SPT-1	1.00-1.45														
	22																				
6	Ref*/ 3cm		5.50	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	66.1	SPT-3	5.50-5.53														
			RK-1			5.51-7.00	1-10														
			RK-2			7.00-8.50	11-19														
				Termination at 8.50 meters Depth.																	

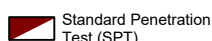
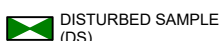




BOREHOLE NO: BH-NBH134

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BOREHOLE NO : BH-NBH134				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 76.26							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.80							
COORDINATES : 642 E, 4144 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 30-Mar-2022				DATE OF FINISH : 31-Mar-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	Ref*/ 3cm		2.00	Filled up: Road material and rock fragments	74.3	DS-1	0.00-0.50								
2															
3	Ref*/ 3cm		8.00	Moderately weak brown SANDSTONE,severely weathered	68.3	SPT-1	2.00-2.03	1-21		Light Grey	Partial	Impregnated Bit	84	0	25
4				RK-1		2.01-3.50									
5				RK-2		3.50-5.00	22-33						72	27	35
6				RK-3		5.00-6.50	34-42						96	60	45
7				RK-4		6.50-8.00	43-50						90	63	45
8				Termination at 8.00 meters Depth.											

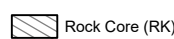
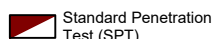
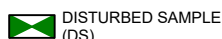
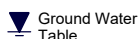




BOREHOLE NO: BH-NBH135

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BOREHOLE NO : BH-NBH135				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 74.25							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.60							
COORDINATES : 802 E, 4200 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 6							
DATE OF START : 31-Mar-2022				DATE OF FINISH : 01-Apr-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	10		0.50	Filled up: Road material and coal pieces	73.8	DS-1	0.00-0.50								
2					Medium dense brown clayey sand with gravel (SC)		UDS-1	0.50-0.80							
3	Ref*/ 3cm		2.50		71.8	SPT-1	1.00-1.45								
4				Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		SPT-2	2.50-2.53	1-7		Light Brown	Partial	Impregnated Bit	90	66	45
5					RK-1	2.51-3.50									
6					RK-2	3.50-5.00	8-14								
						RK-3	5.00-6.00	15					100	96	48
				Termination at 6.00 meters Depth.											

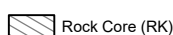
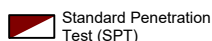
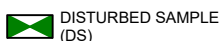
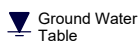




BOREHOLE NO: BH-NBH136

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BOREHOLE NO : BH-NBH136				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 3.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 72.32							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 1.75							
COORDINATES : 1018 E, 4204 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 6							
DATE OF START : 02-Apr-2022				DATE OF FINISH : 02-Apr-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
			0.60	Filled up: Road material	71.7	-	0.00-0.60								
1				Filled up: PCC pieces and rock fragments											
2						DS-1	0.60-2.50								
3	Ref*/ 2cm		2.50		69.8	SPT-1	2.50-2.52								
4	Ref*/ 2cm		3.50	Very dense brown coarse sand intermixed with rock fragments (SP)	68.8										
5				Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		SPT-2	3.50-3.52								
6			6.00		66.3	RK-1	3.51-5.00	1-13					87	28	30
						RK-2	5.00-6.00	14					98	97	48
Termination at 6.00 meters Depth.															





BOREHOLE NO: BH-NBH176

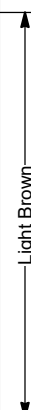
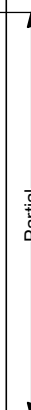
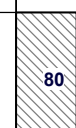
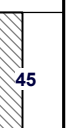
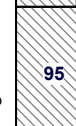
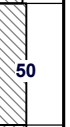
PAGE 1 OF 1

BOREHOLE NO : BH-NBH176				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 5.00										
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 73.56										
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m :										
COORDINATES : 856 E, 4822 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8.5										
DATE OF START : 26-Mar-2022				DATE OF FINISH : 26-Mar-2022				LOGGED BY : Mr. Jitendra										
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)			
1	15		1.00	Fill	72.6	DS-1	0.00-0.50											
						UDS-1	0.50-0.80											
2				Very stiff brown clayey silt (CI)		SPT-1	1.00-1.45											
3																		
4	22									SPT-2	4.00-4.45							
5																		
6	Ref*/ 3cm		5.50	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	68.1	SPT-3	5.50-5.53			Light Brown	Partial	Impregnated Bit						
7					RK-1	5.51-7.00	1-12											
8					RK-2	7.00-8.50	13-16											
			8.50	Termination at 8.50 meters Depth.	65.1													



BOREHOLE NO: BH-NBH179

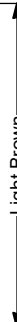
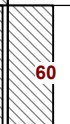
PAGE 1 OF 1

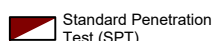
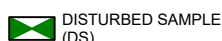
BOREHOLE NO : BH-NBH179				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 69.92							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.80							
COORDINATES : 1253 E, 3898 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 05-Apr-2022				DATE OF FINISH : 05-Apr-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	12		0.60	Fill	69.3 	DS-1	0.00-0.60								
2				Stiff grey clayey silt (CI)		SPT-1	1.00-1.45								
3			3.00		66.9	SPT-2	3.00-3.02								
4	Ref*/ 2cm			Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		RK-1	3.01-4.50	1-8							
RK-2						4.50-6.00	9-11								
RK-3						6.00-7.50	12-15								
RK-4						7.50-8.00	16								
8			8.00		61.9										
				Termination at 8.00 meters Depth.											



BOREHOLE NO: BH-NBH181

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BOREHOLE NO : BH-NBH181				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 4.00							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 74.46							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 2.00							
COORDINATES : 1114 E, 4443 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 02-Apr-2022				DATE OF FINISH : 02-Apr-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1	13		0.50	Fill	74.0	DS-1	0.00-0.50								
2			4.00	Stiff brown sandy silt (CL)		UDS-1	0.50-0.80								
3						SPT-1	2.50-2.95								
4						DS-2	3.50-3.80								
5	Ref*/ 2cm					8.00	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	70.5	SPT-2	4.00-4.02			 Light Brown	 Partial	 Impregnated Bit
6		RK-1	4.01-5.00	1-16	 93				 60	 45					
7		RK-2	5.00-6.50	17-28											
8		RK-3	6.50-8.00	29-34	 97				 80	 48					
				Termination at 8.00 meters Depth.											

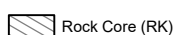
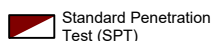
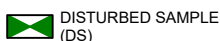
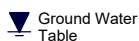




BOREHOLE NO: BH-NBH187

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BOREHOLE NO : BH-NBH187				SOIL BORING METHOD : Rotary Drilling				CASING DEPTH, m : 2.50							
LOCATION : Talcher, Odisha				ROCK DRILLING METHOD : Rotary Drilling				GROUND ELEVATION, m : RL 70.65							
				BOREHOLE DIAMETER IN SOIL, mm : 150				GROUND WATER DEPTH, m : 0.97							
COORDINATES : 916 E, 4445 N				BOREHOLE DIAMETER IN ROCK, mm :NX				TERMINATION DEPTH, m : 8							
DATE OF START : 02-Apr-2022				DATE OF FINISH : 03-Apr-2022				LOGGED BY : Mr. Vijay Tiwari							
DEPTH (m)	FIELD N VALUES	GRAPHICAL LOG	LAYER DEPTH, m	MATERIAL DESCRIPTION	LAYER ELEVATION, m	SAMPLE NUMBER	SAMPLE DEPTH (m)	SERIAL NO. OF CORES	SAMPLE TYPE SYMBOL	RETURN WATER COLOR	RETURN WATER LOSS	BITS USED	PERCENTAGE RECOVERY	ROCK QUALITY DESIGNATION (RQD), %	ROCK MASS RATING (RMR)
1			2.00	Fill	 68.7	DS-1	0.00-2.00								
2			2.50		68.2										
3	Ref*/ 2cm			Moderately strong brown SANDSTONE, moderately fractured, moderately weathered		SPT-1 RK-1	2.50-2.52 2.51-3.50	1-7		 Light Grey	 Partial	 Impregnated Bit	 61	 38	 40
4						RK-2	3.50-5.00	8-11					 90	 81	 45
5						RK-3	5.00-6.50	12-13					 100	 99	 50
6						RK-4	6.50-8.00	14-16					 100	 89	 50
7															
8			8.00		62.7										
				Termination at 8.00 meters Depth.											



Certificate No. TC-7134

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134



Borehole No.: -NBH2
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results																																
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																							
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																														
0.00	0.70	DS-1	10 Ref*/5cm		1-2	100	86	Fill: Dark grey road material	0.70					46.7	21.3	25.3																																									
1.00	1.45	SPT-1						Stiff grey clayey silt, medium plastic (CI)	3.00																																																
3.00	3.05	SPT-2						Moderately strong, brown SANDSTONE, moderately weathered	8.00																																																
3.01	3.50	RK-1																																																							
3.50	5.00	RK-2																																																							
5.00	6.50	RK-3																																																							
6.50	8.00	RK-4																																																							

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.: -NBH3
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{***}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results									
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	27 Ref*/3cm			100	75	Fill: Light brown silty sand with brickbats	0.50					52.0	24.9	27.1						1.95	21.4	1.61	UU	1,2,3	0.5	6.7						
0.50	0.80	UDS-1						Very stiff brown silty clay, high plastic (CH)																										
2.50	2.95	SPT-1																																
3.50	3.80	UDS-2																																
5.50	5.53	SPT-2																																
5.51	6.50	RK-1																																
6.50	8.00	RK-2																																
8.00	9.50	RK-3																																
9.50	10.00	RK-4																																

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.: -NBH4
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results																																
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, % %	Shrinkage Limit, % %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																							
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																														
0.00	0.50	DS-1	Ref*/ 3cm		1-9	97	71	Filled up : Sandy silt	0.50												1.92	18.5	1.62																																		
0.50	0.70	UDS-1						Hard brown sandy silt (CL)	2.00																																																
2.00	2.03	SPT-1						Moderately strong brown SANDSTONE, moderately weathered																																																	
2.01	3.50	RK-1																																																							
3.50	5.00	RK-2																																																							
5.00	6.50	RK-3																																																							
6.50	7.00	RK-4																																																							

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.: -NBH5
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{***}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
0.00	0.50	DS-1	9 Ref*/ 8cm	14				Stiff brown sandy silt (CL)	3.50	0	44	29	27								1.93	19.9	1.61																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.: -NBH6
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results														Rock Lab Results																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, % %	Shrinkage Limit, % %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
0.00	0.50	DS-1	Ref*/ 3cm		1-6	52	32	Hard brown sandy silt with gravel (CL)	2.00	6	41	45	8						1.90	16.3	1.63																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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2.00	2.03	SPT-1						Moderately strong brown SANDSTONE, moderately weathered																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index

Certificate No. TC-7134

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Certificate No. TC-7134

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Borehole No.: -NBH9
SUMMARY OF LABORATORY TEST RESULTS

Certificate No. TC-7134

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results														Rock Lab Results										
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, % %	Shrinkage Limit, % %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	16 Ref*/ 7cm		1-4	100	98	Fill: Light brown sandy silt with gravel	0.50	0	25	54	21	60.8	24.9	35.9					1.94	21.2	1.60	UU	1,2,3	0.6	4.6	2.72				0.80	4.70	344
0.50	0.80	UDS-1						Very stiff grey sandy silt (CL)	2.50																									
2.50	2.95	SPT-1						Very stiff grey silty clay, high plastic (CH)	3.00																									
3.00	3.07	SPT-2						Moderately strong, brown SANDSTONE, moderately weathered																										
3.01	4.50	RK-1																																
4.50	6.00	RK-2																																
6.00	7.50	RK-3																																
7.50	8.00	RK-4																																

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Certificate No. TC-7134

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Certificate No. TC-7134

Borehole No.:NBH11
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results																																	
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																								
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																															
0.00	0.50	DS-1	10	10	1-4	27	0	Medium dense brown silty sand (SM)	0.50																																																	
0.50	0.80	UDS-1						Stiff brown silty clay, high plastic (CH)																																																		
1.00	1.45	SPT-1						2.00																																																		
2.00	2.03	SPT-2						Weak brown SANDSTONE, very intensely fractured, moderately weathered																																																		
2.01	3.50	RK-1																																																								
3.50	5.00	RK-2																																																								
5.00	6.50	RK-3																																																								
6.50	8.00	RK-4																																																								
8.00	8.50	RK-5																																																								

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Certificate No. TC-7134

Borehole No.:NBH12
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results														Rock Lab Results										
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	Ref*/3cm		1-7	49	10	Hard brown sandy silt, low plastic (CL)	2.50					36.4	18.4	17.9				1.95	21.4	1.61												
0.50	0.80	UDS-1																																
2.50	2.53	SPT-1						Moderately strong, brown SANDSTONE, moderately fractured, moderately weathered																										
2.51	3.50	RK-1																																
3.50	5.00	RK-2																																
5.00	6.50	RK-3																																
6.50	8.00	RK-4																																
8.00	8.50	RK-5																																

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Certificate No. TC-7134

Borehole No.:NBH13
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{***}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results																Rock Lab Results								
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	12 Ref*/ 2cm	12	1-6	85	74	Medium dense brown clayey sand with traces of gravel (SC)	3.50	1	60	34	5							1.85	17.9	1.57												
0.50	0.70	UDS-1																																
2.50	2.95	SPT-1																																
3.50	3.52	SPT-2						Moderately strong, brown SANDSTONE, moderately fractured, moderately weathered													1.86	19.5												1.56
3.51	5.00	RK-1																																
5.00	6.50	RK-2																																
6.50	8.00	RK-3																																
8.00	8.50	RK-4																																

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Certificate No. TC-7134

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Certificate No. TC-7134

CENGRS



Borehole No.:NBH15
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{***}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results																Rock Lab Results									
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)	
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ								
0.00	0.50	DS-1	14 Ref*/ 2cm	14	1-2	100	81	Medium dense brown clayey sand with gravel (SC)	0.50	7	61	27	5							1.95	20.4	1.62													
0.50	0.70	UDS-1						Stiff brown clayey silt, medium plastic (CI)						43.4	21.1	22.3																			
2.50	2.95	SPT-1																																	
3.50	3.52	SPT-2																																	
3.51	5.00	RK-1																																	
5.00	6.50	RK-2																																	
6.50	8.00	RK-3																																	
8.00	8.50	RK-4																																	
																									</										

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Certificate No. TC-7134

Borehole No.:NBH16
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results													
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, % %	Shrinkage Limit, % %	Specific Gravity	Free Swell Index, % %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, % %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)				
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ											
0.00	0.50	DS-1	Ref*/3cm		1-5	64	56	Hard brown sandy silt, low plastic (CL)	2.00	3	42	38	17	33.1	18.4	14.7					1.80	15.6	1.56															
0.50	0.70	UDS-1																																				
2.00	2.03	SPT-1																																				
2.01	3.50	RK-1						6-9																											86	79	2.76	
3.50	5.00	RK-2						10-13																											100	96		
5.00	6.50	RK-3						14-17																											93	80		8.00
6.50	8.00	RK-4																																				

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Certificate No. TC-7134

Borehole No.:NBH17
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results														Rock Lab Results										
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, % %	Shrinkage Limit, % %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	Ref*/3cm		1-3	84	54	Very dense brown clayey sand (SC)	2.00	0	45	44	11																					
0.50	0.70	UDS-1								0	65	20	15						1.92	19.6	1.61													
2.00	2.03	SPT-1						Moderately strong brown SANDSTONE, moderately weathered	7.00																									
2.01	2.50	RK-1																																
2.50	4.00	RK-2																																
4.00	5.50	RK-3																																
5.50	7.00	RK-4																															246	

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Certificate No. TC-7134

Borehole No.:NBH18
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{***}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results																Rock Lab Results								
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	13	13				Stiff brown sandy silt (CL)	1.00	20	25	24	31	50.9	24.1	26.9				1.94	20.4	1.61												
0.50	0.70	UDS-1																																
1.00	1.45	SPT-1						Stiff grey clayey silt with gravel, medium plastic (CI)																										
2.50	2.52	SPT-2						Moderately strong brown SANDSTONE, moderately weathered																										
2.51	3.50	RK-1						1-7	92																									58
3.50	5.00	RK-2						8-14	84																									59
5.00	6.50	RK-3						15-26	100																									65
6.50	7.50	RK-4						27-29	100																									93

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Certificate No. TC-7134

Borehole No.:NBH19
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results														Rock Lab Results										
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, % %	Shrinkage Limit, % %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	16 Ref*/ 11cm	16	1-3	20	0	Very stiff brown sandy silt (CL)	2.50	18	28	30	24						1.88	19.3	1.58						2.71				11	209		
0.50	0.70	UDS-1																																
2.50	2.95	SPT-1																																
3.50	3.61	SPT-2																																
3.51	5.00	RK-1																																
5.00	6.50	RK-2																																
6.50	8.00	RK-3																																
8.00	9.50	RK-4																																
9.50	10.00	RK-5																																

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Certificate No. TC-7134

CENGRS



Borehole No.:NBH21
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{***}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results																Rock Lab Results																																
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																								
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																															
0.00	0.50	DS-1	11	11	1-5	100	91	Stiff brown sandy silt (CL)	1.00	6	18	40	36	53.9	25.5	28.4					1.88	20.4	1.56																																			
0.50	0.70	UDS-1																																																								
1.00	1.45	SPT-1																																																								
1.50	1.52	SPT-2																																																								
1.51	3.00	RK-1																																																								
3.00	4.50	RK-2																																																								
4.50	6.00	RK-3																																																								
6.00	6.50	RK-4																																																								
									6.50																																																	

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Certificate No. TC-7134

Borehole No.:NBH22
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{***}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results																Rock Lab Results																																							
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																															
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																																						
0.00	0.50	DS-1	15 Ref*/4cm	15	1-3	100	95	Stiff grey clayey silt intermixed with sand and gravel (CI)	2.00	6	34	35	25							1.96	19.9	1.63																																											
0.50	0.70	UDS-1																																																															
1.00	1.45	SPT-1						Moderately strong brown SANDSTONE, moderately weathered	7.00																																																								
2.00	2.04	SPT-2																																																															
2.01	3.50	RK-1							4-7																																																							100	96
3.50	5.00	RK-2							8																																																							97	94
5.00	6.50	RK-3							9																																																							100	98
6.00	7.00	RK-4																																																															
																																																																266	

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134



Borehole No.:NBH23
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{**}	Corrected Value N ^{m**}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results										
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)	
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ								
0.00	0.50	DS-1	19	19	1-15	65	0	Very stiff brown clayey silt with gravel (CI)	2.00	1	39	35	25							1.98	21.2	1.63	UU	1,2,3	0.6	5.7	2.74	2.67	0.026	2.60	4.20	8	317		
0.50	0.70	UDS-1																																	
1.00	1.45	SPT-1																																	
2.00	2.03	SPT-2						Ref*/ 3cm																											
2.01	3.50	RK-1																																	
3.50	5.00	RK-2																																	
5.00	6.50	RK-3																																	
6.50	8.00	RK-4																																	
8.00	8.50	RK-5									38-40	100	76		8.50																				

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH24
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results														Rock Lab Results											
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, % %	Shrinkage Limit, % %	Specific Gravity	Free Swell Index, % %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)	
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ								
0.00	0.50	DS-1	Ref*/6cm		1-6	100	58	Very dense brown clayey sand with gravel (SC)	2.00	8	42	41	9																						
0.50	0.70	UDS-1																																	
2.00	2.06	SPT-1						Moderately strong brown SANDSTONE, moderately weathered	8.00																										
2.01	3.50	RK-1																																	
3.50	5.00	RK-2																																	
5.00	6.50	RK-3																																	
6.50	8.00	RK-4																																	288

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH25
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results									
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, % %	Shrinkage Limit, % %	Specific Gravity	Free Swell Index, % %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	18 Ref*/3m		1-3	100	95	Fill: Dark grey road material and gravel	0.60					39.9	19.3	20.6																		
1.00	1.45	SPT-1						Very stiff brown clayey silt, medium plastic (CI)	3.50																									
3.50	3.53	SPT-2						Moderately strong brown SANDSTONE, moderately weathered																										
3.51	5.00	RK-1																																
5.00	6.50	RK-2																																
6.50	8.00	RK-3																																
8.00	8.50	RK-4							8.50																									

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Certificate No. TC-7134

Borehole No.:NBH26
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results										
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, % %	Shrinkage Limit, % %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)	
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ								
0.00	0.50	DS-1	15	15				Filled up soil	0.65																										
2.50	2.95	SPT-1						22	20	Very stiff grey clayey silt (CI)																									
3.50	3.70	UDS-1	Medium dense brown clayey sand (SC)	4.00																															
4.00	4.45	SPT-2	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	5.00																															
5.00	5.03	SPT-3	Ref*/3cm		1-10	54	14																												
5.01	6.50	RK-1																																	
6.50	8.00	RK-2																																	
8.00	9.50	RK-3																																	
9.50	11.00	RK-4																																	

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

CENGRS



Borehole No.:NBH27
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{***}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results														Rock Lab Results										
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	Ref*/8cm		1-2	83	77	Hard brown sandy silt (CL)	2.50																									
0.50	0.70	UDS-1																																
2.50	2.58	SPT-1																																
2.51	3.50	RK-1																																
3.50	5.00	RK-2																																
5.00	6.50	RK-3																																
6.50	8.00	RK-4																																
																			</															

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

CENGRS



Borehole No.:NBH28
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{***}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results									
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	11 Ref*/3cm	11				Filled up																										
0.50	0.80	UDS-1																																
1.00	1.45	SPT-1							Stiff brown clayey silt (CI)																									
2.00	2.03	SPT-2							Moderately strong brown SANDSTONE, moderately weathered																									
2.01	3.50	RK-1					1-4	100	68																									
3.50	5.00	RK-2					5-14	100	72																									
5.00	6.50	RK-3					15-20	100	83																									
6.50	8.00	RK-4					21-26	100	84		8.00																							

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH29
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{***}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results																Rock Lab Results								
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	Ref*/3cm		1-8	100	82	Hard grey sandy silt (CL)	2.00										1.92	18.6	1.62													
0.50	0.70	UDS-1																																
2.00	2.03	SPT-1						Moderately strong brown SANDSTONE, moderately weathered																										
2.01	3.50	RK-1																																
3.50	5.00	RK-2																																
5.00	6.50	RK-3																																
6.50	7.00	RK-4																																

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH30
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results														Rock Lab Results											
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)	
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ								
0.00	0.50	DS-1	18 Ref*/ 2cm	24				Medium dense brown silty sand (SM)	0.50	4	47	38	11						1.92	19.1	1.61														
0.50	0.80	UDS-1			Medium dense brown clayey sand with gravel (SC)																														
1.00	1.45	SPT-1			Weak brown SANDSTONE, very intensely fractured, moderately weathered																														
2.00	2.02	SPT-2																																	
2.00	3.50	RK-1			1-5240																														
3.50	5.00	RK-2			6-18577																														
5.00	6.50	RK-3			19-318024																														
6.50	8.00	RK-4			32-389884																														
8.00	9.50	RK-5			39-449368																														
9.50	11.00	RK-6			45-468884																														
11.00	12.50	RK-7			47-4810072																														

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH31
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results														Rock Lab Results																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
0.00	0.50	DS-1	13 Ref*/3cm	19	1-5	80	61	Medium dense brown silty sand (SM)	1.00	6	37	33	24	43.4	20.8	22.6				1.94	19.0	1.63																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					</

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Certificate No. TC-7134

Borehole No.:NBH32
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results														Rock Lab Results										
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, % %	Shrinkage Limit, % %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	Ref*/ 2cm			100	98	Very dense brown silty sand (SM)	2.00									1.97	20.9	1.63														
0.50	0.70	UDS-1																																
2.00	2.02	SPT-1																																
2.00	3.50	RK-1						1																										97
3.50	5.00	RK-2			2	97	93																											
5.00	6.50	RK-3			3	100	98																											
6.50	7.00	RK-4			4	99	98	Moderately strong brown SANDSTONE, moderately weathered	7.00																									

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH36
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results														Rock Lab Results												
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)		
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ									
0.00	1.00	DS-1	15	19	1-4	100	76	Filled up: Road material and gravels	1.00																											
1.00	2.50	DS-2						Medium dense brown coarse sand with gravel (SP)	2.50																											
2.50	2.95	SPT-1						Medium dense brown clayey sand with gravel (SC)	3.00																											
2.51	3.00	DS-3						Moderately strong brown SANDSTONE, moderately fractured, moderately weathered																												
3.00	3.02	SPT-2								Ref*/ 2cm																										
3.01	3.50	RK-1								5-11	87	73																								
3.50	5.00	RK-2							12-21	100	88																									
5.00	6.50	RK-3							22-28	93	82																									
6.50	8.00	RK-4						29	100	96																										
8.00	8.50	RK-5																																		

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH37
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results									
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	16	16				Medium dense brown silty fine sand with traces of gravel (SM)		2	74	20	4	40.3	17.0	23.4																		
0.50	1.00	DS-2																																
1.00	1.45	SPT-1																																
3.00	3.50	RK-1			1-4	62	20																											
3.50	5.00	RK-2			5-10	96	86																											
5.00	6.50	RK-3			11-15	100	82																											
6.50	8.00	RK-4			16-23	100	78																											
8.00	8.50	RK-5			24	100	99																											

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index

Certificate No. TC-7134

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index

Certificate No. TC-7134

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Certificate No. TC-7134

Borehole No.:NBH41
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{***}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results														Rock Lab Results											
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)	
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ								
0.00	0.50	DS-1	16 Ref*/3cm	16				Very stiff brown clayey silt with gravel, medium plastic (CI)	2.50	19	39	21	21	44.0	18.9	25.1					1.96	21.1	1.62	UU	1,2,3	0.5	3.2								
0.50	0.80	UDS-1																																	
1.00	1.45	SPT-1																																	
2.50	2.53	SPT-2																																	
2.50	3.50	RK-1			1-9	90	60	Moderately strong brown SANDSTONE, moderately weathered	7.50																										
3.50	5.00	RK-2			10-13	98	87																												
5.00	6.50	RK-3			14-16	93	86																												
6.50	7.50	RK-4			17-18	90	87																												

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH42
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{**}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
0.00	0.50	DS-1	29 Ref*/3cm	32				Medium dense brown silty fine sand with gravel (SM)	2.50	12	75	13	0							1.96	21.1	1.62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH43
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results														Rock Lab Results																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, % %	Shrinkage Limit, % %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
0.00	0.50	DS-1	Ref*/5cm					Hard brown clayey silt (CI)	2.50																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH44
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{**}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
0.00	0.50	DS-1	13 Ref*/3cm	19	1-10	77	13	Medium dense brown clayey sand with traces of gravel, low plastic (SC)	2.50	1	56	24	19	34.8	17.2	17.6					1.95	20.7	1.62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH45
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results														Rock Lab Results																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, % %	Shrinkage Limit, % %	Specific Gravity	Free Swell Index, % %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
0.00	0.50	DS-1	Ref*/3cm		1-6	80	10	Very dense brown clayey sand with traces of gravel (SC)	1.50	1	56	26	17						1.97	20.8	1.63																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index

Certificate No. TC-7134

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH49
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results									
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, % %	Shrinkage Limit, % %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	30	35				Dense brown clayey sand with traces of gravel, low plastic (SC)	1.50	2	56	31	11	30.4	16.0	14.4																		
0.50	0.80	UDS-1																			1.91	18.9	1.61											
1.00	1.45	SPT-1																																
1.50	2.00	RK-1			1-3	82	68	Moderately strong brown SANDSTONE, moderately weathered																										
2.00	3.50	RK-2			4-11	96	68																											
3.50	5.00	RK-3			12-13	100	98																											
5.00	6.50	RK-4			14-16	100	98		6.50																								228	

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH50
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results									
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.30	DS-1	Ref*/8cm		1-4	66	44	Fill: Light grey gravel and road material	0.30																									
0.50	0.70	UDS-1						Very dense brown silty sand (SM)	2.50																									
2.50	2.58	SPT-1						Moderately strong brown SANDSTONE, moderately weathered																										
2.50	3.50	RK-1																																
3.50	5.00	RK-2																																
5.00	6.50	RK-3																																
6.50	8.00	RK-4																																
8.00	9.50	RK-5																																
9.50	10.00	RK-6																																

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH51
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results									
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	16 Ref*/5cm	22		100	53	Medium brown silty sand (SM)	0.50	0	68	28	4						1.90	18.6	1.60													
0.50	0.80	UDS-1						Medium dense brown clayey sand (SC)																										
1.00	1.45	SPT-1																																
2.00	2.05	SPT-2																																
2.00	3.50	RK-1						1-7																										
3.50	5.00	RK-2						8-14																										
5.00	6.50	RK-3						15-17																										
6.50	8.00	RK-4						18-19																										
									8.00																-	-	-	-	-	-	210			

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH52
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results														Rock Lab Results																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, % %	Shrinkage Limit, % %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
0.00	0.50	DS-1	Ref*/4cm		1-2	80	77	Very dense brown silty sand intermixed with gravel and rock fragments (SM-GP)	1.00	48	34	18	0							1.90	17.8	1.61																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											

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Certificate No. TC-7134

Borehole No.:NBH53
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results														Rock Lab Results										
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, % %	Shrinkage Limit, % %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	15	19				Stiff brown sandy silt, low plastic (CL)	3.50																									
0.50	1.00	DS-2																																
1.00	1.45	SPT-1																																
3.50	5.00	RK-1			1-5	42	6	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered																										
5.00	6.50	RK-2			69	80	52																											
6.50	8.00	RK-3			10-14	89	59																											
8.00	9.50	RK-4			15-22	83	62																											
9.50	10.50	RK-5			23	84	83					10.50																						

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH56
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results														Rock Lab Results										
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	12 Ref*/3cm	18				Filled up: Light brown sandy silt with gravel and rock fragments	1.00																									
1.00	1.45	SPT-1			Stiff brown sandy silt with gravel (CL)	2.50																												
2.50	2.53	SPT-2			Moderately strong brown SANDSTONE, moderately fractured, moderately weathered																													
2.51	3.50	RK-1			1-14	100	10																											
3.50	5.00	RK-2			15-28	89	38																											
5.00	6.50	RK-3			29-47	95	13																											
6.50	8.00	RK-4			48-55	95	75																											
8.00	9.50	RK-5			56-66	100	68																											
9.50	11.00	RK-6			67-68	100	99																											
11.00	11.50	RK-7			69-70	100	99				11.50																							

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH59
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{***}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results																Rock Lab Results																																				
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																												
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																																			
0.00	0.50	DS-1	Ref*/5cm		1-7	45	0	Very dense brown clayey sand intermixed with gravel and rock fragments (SC-GP)	1.00	49	30	14	7																																																	
0.50	0.80	UDS-1						Weak, brown SANDSTONE, very intensely fractured, severely weathered																																																						
1.00	1.05	SPT-1																																																												
1.00	2.00	RK-1																																																												
2.00	3.50	RK-2																																				Moderately strong brown SANDSTONE, moderately weathered																								
3.50	5.00	RK-3																																																												
5.00	6.50	RK-4																																																												
6.50	7.00	RK-5																																					7.00																							

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH60
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{***}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results									
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	73	73				Hard brown clayey silt (CI)	2.60											1.91	18.5	1.61												
0.50	0.80	UDS-1																																
1.00	1.45	SPT-1																																
2.60	2.63	SPT-2																																
2.60	3.50	RK-1																														1-3	28	0
3.50	5.00	RK-2																														4-7	100	92
5.00	6.50	RK-3																														8-13	100	92
6.50	8.00	RK-4																														14-16	100	96
8.00	8.50	RK-5																														17-18	100	99

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH61
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results									
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, % %	Shrinkage Limit, % %	Specific Gravity	Free Swell Index, % %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	Ref*/ 2cm					Very dense brown clayey sand, low plastic (SC) Moderately strong brown SANDSTONE, moderately weathered	0.50	0	61	29	10	20.3	14.2	6.0																		
0.50	0.52	SPT-1																																
0.50	2.00	RK-1			1-9	100	38																											
2.00	3.50	RK-2			10	100	96																											
3.50	5.00	RK-3			11-12	100	100																											
5.00	6.50	RK-4			13	100	100																		-	-	-	-	-	-	-	-	247	
6.50	7.00	RK-5			14-15	90	90					7.00																						

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH66
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results										
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)	
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ								
0.00	0.50	DS-1	13 Ref*/ 4cm					Medium dense brown silty sand (SM)	1.50	0	62	29	9							1.90	18.0	1.61													
0.50	0.80	UDS-1																																	
1.00	1.45	SPT-1																																	
1.50	1.54	SPT-2																																	
1.51	2.00	RK-1						1-3																										56	38
2.00	3.50	RK-2						4-9																										100	56
3.50	5.00	RK-3						10-14																										100	91
5.00	6.50	RK-4						15-17																										100	93
6.50	7.00	RK-5						18																										100	98
									7.00																										

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH67
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{**}	Corrected Value N ^{m**}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results																Rock Lab Results																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
0.00	0.50	DS-1	Ref*/4cm		1-4	54	0	Very dense brown silty sand (SM)	1.50								1.90	17.9	1.61																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
0.50	0.80	UDS-1						Weak, brown SANDSTONE, very intensely fractured, severely weathered																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
1.50	1.54	SPT-1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
1.51	2.00	RK-1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
2.00	3.50	RK-2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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5.00	6.50	RK-4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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8.00	8.50	RK-6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH68
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{***}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results																Rock Lab Results																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
0.00	0.50	DS-1	28 Ref*/3cm	31				Medium dense brown clayey sand with traces of gravel, medium plastic (SC)	2.00	2	52	28	18	35.9	15.5	20.3					1.93	20.6	1.60																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
0.50	0.80	UDS-1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
1.00	1.45	SPT-1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
2.00	2.03	SPT-2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
2.01	3.50	RK-1			1-6	80	40	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	20.00																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
3.50	5.00	RK-2			7-12	100	86																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
5.00	6.50	RK-3			13-17	100	72																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
6.50	8.00	RK-4			18-27	100	65																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
8.00	9.50	RK-5			28-35	100	72																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
9.50	11.00	RK-6			36-45	100	62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
11.00	12.50	RK-7			46-54	100	57																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
12.50	14.00	RK-8			55-56	100	70																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
14.00	15.50	RK-9			57-67	100	48																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
15.50	17.00	RK-10			68-73	100	62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
17.00	18.50	RK-11			74-79	100	78																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
18.50	20.00	RK-12			80-82	100	86																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH69
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{***}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results														Rock Lab Results										
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1						Very dense brown silty sand (SM)																										
0.50	1.00	DS-2							1.50																									
1.50	3.00	RK-1			1-12	98	50	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered																										
3.00	4.50	RK-2			13-21	95	82																											
4.50	6.00	RK-3			22-29	100	80																											
6.00	7.50	RK-4			30-36	100	90																											
7.50	8.00	RK-5			37-40	100	76		8.00																									

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH71
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{***}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results									
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.60	DS-1	Ref*/ 7cm					Filled up: Road material and gravels	0.60																									
0.60	1.00	DS-2						Very dense brown clayey sand with gravel and rock fragments (SC)	1.00																									
1.00	1.07	SPT-1						Moderately weak brown SANDSTONE, severely weathered																										
1.01	2.00	RK-1			1-4	76	0	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered																										
2.00	3.50	RK-2			5-9	89	82																											
3.50	5.00	RK-3			10	100	99																											
5.00	6.50	RK-4			11-12	100	99																											
6.50	8.00	RK-5			13	100	99	8.00																										

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH72
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{***}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results																Rock Lab Results								
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1						Very dense brown silty sand (SM)	0.50																									
0.50	2.00	RK-1			1-10	31	0	Weak brown SANDSTONE, very intensely fractured, severely weathered																										
2.00	3.50	RK-2			11-13	84	82	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered																										
3.50	5.00	RK-3			14-15	91	90																											
5.00	6.50	RK-4			16-19	100	99																											
6.50	8.00	RK-5			20-22	100	90		8.00																									

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH74
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results														Rock Lab Results										
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, % %	Shrinkage Limit, % %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1						Filled up soil																										
0.50	0.80	DS-2							2.00																									
2.00	3.50	RK-1			1-7	88	66	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered																										
3.50	5.00	RK-2			8-12	96	88																											
5.00	6.50	RK-3			13-19	100	72																											
6.50	8.00	RK-4			20	90	89		8.00																									

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH75
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results																Rock Lab Results								
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	102/20cm		1-3	20	0	Fill: Light grey PCC pieces and gravels	0.50																									
0.50	0.70	UDS-1						Hard grey sandy silt with gravel (CL)	2.50																									
2.50	2.85	SPT-1						Weak brown SANDSTONE, very intensely fractured, moderately weathered	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered																									
2.51	3.50	RK-1																																
3.50	5.00	RK-2																																
5.00	6.50	RK-3																																
6.50	8.00	RK-4																																
8.00	9.50	RK-5																																
9.50	11.00	RK-6																																
11.00	12.50	RK-7																																
12.50	14.00	RK-8																																
14.00	15.50	RK-9																																
15.50	17.00	RK-10																																
17.00	18.50	RK-11																																
18.50	20.00	RK-12																																

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH76
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results														Rock Lab Results																																			
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, % %	Shrinkage Limit, % %	Specific Gravity	Free Swell Index, % %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																									
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																																
0.00	0.50	DS-1	Ref*/ 2cm		1-2	100	86	Hard grey clayey sand with gravel, medium plastic (SC)	2.50	19	59	19	3	38.9	17.0	21.9					1.96	21.6	1.61																																				
0.50	0.80	UDS-1																																																									
2.50	2.52	SPT-1						Moderately strong brown SANDSTONE, moderately weathered	7.50																																																		
2.51	3.50	RK-1																																																									
3.50	5.00	RK-2																																																									
5.00	6.50	RK-3																																																									
6.50	7.50	RK-4																																																									
					18-22	100	89																									154																											

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH77
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{**}	Corrected Value N ^{m**}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results																Rock Lab Results												
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, % _o	Shrinkage Limit, % _o	Specific Gravity	Free Swell Index, % _o	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)				
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ											
0.00	0.50	DS-1	25					Very stiff brown silty intermixed with sand clay, high plastic (CH)	2.50	0	43	35	22	50.0	17.4	32.6					1.93	20.2	1.61															
0.50	0.80	UDS-1																																				
1.00	1.45	SPT-1																																				
2.50	3.50	RK-1																																	1-2	32	0	Weak, brown SANDSTONE, very intensely fractured, severely weathered
3.50	5.00	RK-2																																	3-10	34	8	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered
5.00	6.50	RK-3																																	11-21	100	62	Moderately strong brown SANDSTONE, moderately weathered
6.50	8.00	RK-4																																	22-32	93	69	
8.00	9.50	RK-5																																	33-42	87	69	
9.50	10.00	RK-6																																	43-44	100	99	
10.00	11.00	RK-7																																	45-49	75	36	
11.00	12.50	RK-8																																	50-51	100	98	
12.50	14.00	RK-9																																	52-55	100	93	
14.00	15.50	RK-10																																	56-65	100	77	
15.50	17.00	RK-11																																	66-68	100	95	
17.00	18.50	RK-12																																	69-70	100	91	
18.50	20.00	RK-13																																	71-74	100	75	
									20.00																													

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

CENGRS



Borehole No.:NBH78
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{**}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results																Rock Lab Results																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
0.00	0.50	DS-1	22					Very stiff brown clayey silt (CI)	2.50	0	38	46	16							1.91	18.9	1.61																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										</

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH79
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results																																	
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																								
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																															
0.00	0.50	DS-1	Ref*/3cm					Very dense brown silty sand (SM)	0.50																																																	
0.50	0.80	UDS-1						Hard brown sandy silt (CL)	2.00																																1.92	18.6	1.62	UU	1,2,3	0.9	6.7											
2.00	2.03	SPT-1						Moderately strong brown SANDSTONE, moderately fractured, moderately weathered																																																		
2.01	3.50	RK-1						1-8	46																								12																									
3.50	5.00	RK-2			9-15	48	18																																																			
5.00	6.50	RK-3			16-23	80	66																																																			
6.50	8.00	RK-4			24-44	93	20																																																			
8.00	9.50	RK-5			45-49	100	93																										Moderately strong brown SANDSTONE, moderately weathered																									
9.50	11.00	RK-6			50-52	100	94																																																			
11.00	12.50	RK-7			53-57	100	92																																																			
12.00	13.00	RK-8			58	100	100																											13.00																								
19.50	12.50	RK-7			53-57	100	92																																																	272		

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.: -NBH134
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results														Rock Lab Results										
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, % %	Shrinkage Limit, % %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	Ref*/ 3cm					Filled up: Road material and rock fragments	2.00																									
2.00	2.03	SPT-1						Moderately weak brown SANDSTONE,severely weathered																										
2.01	3.50	RK-1			1-21	84	0																											
3.50	5.00	RK-2			22-33	72	27	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered																										
5.00	6.50	RK-3			34-42	96	60																											
6.50	8.00	RK-4			43-50	90	63				8.00																							

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.: -NBH135
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results														Rock Lab Results																																		
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																								
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																															
0.00	0.50	DS-1	10 Ref*/3cm	16	1-7	90	66	Filled up: Road material and coal pieces	0.50																																																	
0.50	0.80	UDS-1						Medium dense brown clayey sand with gravel (SC)																																1.85	18.9	1.56																
1.00	1.45	SPT-1																																																								
2.50	2.53	SPT-2																																																								
2.51	3.50	RK-1																																																								
3.50	5.00	RK-2																																																								
5.00	6.00	RK-3																																																								

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.: -NBH136
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results														Rock Lab Results										
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.60	-	Ref*/ 2cm		1-13	87	28	Filled up: Road material	0.60																									
0.60	2.50	DS-1						Filled up: PCC pieces and rock fragments	2.50																									
2.50	2.52	SPT-1						Very dense brown coarse sand intermixed with rock fragments (SP)	3.50																									
3.50	3.52	SPT-2						Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	6.00																									
3.51	5.00	RK-1																																
5.00	6.00	RK-2			14	98	97																											

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH137
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{**}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results																																			
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, % _w	Shrinkage Limit, % _w	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																										
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																																	
0.00	0.50	DS-1	14	17	1-9	68	48	Filled up: Road Material	0.50																																																			
0.50	1.00	DS-2						Stiif brown sandy silt, low plastic (CL)																																																				
2.50	2.95	SPT-1							3.50																									29.4	15.0	14.4																								
3.50	5.00	RK-1						1-9	68																									48	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered																									
5.00	6.50	RK-2						10-19	100																									80																										
6.50	8.00	RK-3						20-27	92																									64																										

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.: -NBH138
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^m **	Corrected Value N ^m **	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results														Rock Lab Results										
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	Ref*/ 2cm		1-6	78	20	Hard grey sandy silt, low plastic (CL)	1.50					31.3	13.9	17.4				1.84	19.6	1.54						-	2.72	-	-	-	25	-
0.50	0.80	UDS-1						Moderately strong brown SANDSTONE, moderately fractured, moderately weathered																										
1.50	1.52	SPT-1																																
1.51	2.00	RK-1																																
2.00	3.50	RK-2																																
3.50	5.00	RK-3																																
5.00	6.50	RK-4																																
6.50	8.00	RK-5																																

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.: -NBH139
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{***}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results									
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	13 Ref*/ 2cm	19	1-5	85	78	Medium dense brown silty sand (SM)	0.50	6	49	41	4					2.68			1.87	20.5	1.55											
0.50	0.80	UDS-1						Medium dense brown clayey sand with gravel (SC)	2.50																									
1.00	1.45	SPT-1																																
2.50	2.52	SPT-2						Moderately strong brown SANDSTONE, moderately weathered																										
2.51	3.50	RK-1																																
3.50	5.00	RK-2																																
5.00	6.50	RK-3																																
6.50	8.00	RK-4																																

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

CENGRS



Borehole No.: -NBH140
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{***}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results																Rock Lab Results								
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	13 Ref*/ 2cm	13				Medium dense brown silty sand (SM)	0.50	0	4	50	46					2.66			1.87	19.4	1.57											
0.50	0.80	UDS-1						Stiff brown clayey silt (CI)																										
2.50	2.95	SPT-1						3.50																										
3.50	3.52	SPT-2																																
3.51	5.00	RK-1						1-5	91																								80	
5.00	6.50	RK-2						6-7	100																								85	
6.50	8.00	RK-3						8-10	91																								84	8.00

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Certificate No. TC-7134

Borehole No.: -NBH141
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results														Rock Lab Results										
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	Ref*/ 3cm					Fill: Light grey clayey silt intermixed with brickbats Moderately strong, brown SANDSTONE, moderately fractured, moderately weathered	2.00																									
2.00	2.03	SPT-1																																
2.01	3.50	RK-1			1-10	54	20																											
3.50	5.00	RK-2			11-15	100	80																											
5.00	6.50	RK-3			16-20	100	95																											
6.50	8.00	RK-4			21-23	100	96																											
8.00	8.50	RK-5			24-25	100	97					8.50																						

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.: -NBH142
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results														Rock Lab Results																																			
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																									
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																																
0.00	0.50	DS-1	11 Ref*/ 2cm	16	1-5	90	68	Medium dense brown silty sand (SM)	0.50																																																		
0.50	0.80	UDS-1						Stiff brown sandy silt, low plastic (CL)																																																			
1.00	1.45	SPT-1																																																									
2.50	2.52	SPT-2																																																									
2.51	3.50	RK-1																																																									
3.50	5.00	RK-2																																																									
5.00	6.50	RK-3																																																									
6.50	8.00	RK-4																																																									

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Certificate No. TC-7134

Borehole No.: -NBH143
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results																																					
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																												
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																																			
0.00	0.50	DS-1	14 Ref*/ 2cm	14	1-11	100	69	Medium dense brown silty sand (SM)	1.00																																																					
0.50	0.80	UDS-1						1.00																																																						
1.00	1.45	SPT-1						3.50	51.1																									23.2	27.9	1.86	19.7	1.55																								
3.50	3.52	SPT-2						3.50	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered																									51.1	23.2	27.9	1.86	19.7	1.55																							
3.51	5.00	RK-1						1-11																																																					100	69
5.00	6.50	RK-2						12-13																																																					100	96
6.50	8.00	RK-3						14-15																																																					100	97

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Certificate No. TC-7134

Borehole No.: -NBH144
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results											
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, % %	Shrinkage Limit, % %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)		
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ									
0.00	0.50	DS-1	Ref*/ 2cm		1-2	76	70	Very dense brown silty sand (SM)	0.50																											
0.50	0.80	UDS-1						Hard brown clayey silt (CI)	2.00									1.85	20.3	1.54																
2.00	2.02	SPT-1						Moderately strong brown SANDSTONE, moderately weathered																												
2.01	3.50	RK-1																																		
3.50	5.00	RK-2																																		
5.00	6.50	RK-3																																		
6.50	8.00	RK-4																																		

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Certificate No. TC-7134

Borehole No.: -NBH145
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{***}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
0.00	0.50	DS-1	11	11				Medium dense brown silty sand (SM)	0.50	4	12	60	24					2.67			1.87	19.9	1.56																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															</

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Certificate No. TC-7134

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Certificate No. TC-7134

Borehole No.: -NBH147
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results												
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)			
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ										
0.00	0.50	DS-1	10	10				Stiff brown clayey silt (CI)	3.50	7	18	61	14							1.89	20.4	1.57															
0.50	0.80	UDS-1						- with gravel, 0.5 to 1.0 m																													
1.00	1.45	SPT-1						Weak brown SANDSTONE, very intensely fractured, moderately weathered																													
3.50	3.53	SPT-2																																			
3.51	5.00	RK-1			1	20	0	Moderately strong brown SANDSTONE, moderately weathered																													
5.00	6.50	RK-2			2-3	20	0																														
6.50	8.00	RK-3			4-13	94	65																														
8.00	9.50	RK-4			14-18	90	84																														
9.50	11.00	RK-5			19-21	100	96																														
11.00	11.50	RK-6			22	100	96		11.50																									2.72	2.69	0.011	0.83

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Certificate No. TC-7134

Borehole No.: -NBH149
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{***}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results									
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	15 Ref*/3cm	15	1	87	85	Fill: Light grey clayey silt intermixed with fly ash	0.50	38.8	18.3	20.5					1.83	19.5	1.53					-	2.69	-	-	-	18	-				
0.50	0.80	UDS-1						Very stiff grey clayey silt, medium plastic (CI)																										
2.50	2.95	SPT-1																																
3.50	3.53	SPT-2						Moderately strong brown SANDSTONE, moderately weathered																										
3.50	5.00	RK-1																																
5.00	6.50	RK-2																																
6.50	8.00	RK-3																																
8.00	8.50	RK-4																																

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Certificate No. TC-7134

Borehole No.: -NBH150
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results																																																																																																																																																																																																																																										
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																																																																																																																																																																																																																																	
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																																																																																																																																																																																																																																								
0.00	0.50	DS-1	15	15				Fill: Dark grey fly ash with gravel	0.50																																																																																																																																																																																																																																																										
0.50	0.70	UDS-1						Medium dense brown silty sand (SM)	2.50																									54.9	23.8	31.1						1.94	20.8	1.61	DS	0.5,1,1.5	0.0	30.7																																																																																																																																																																																																																			
2.50	2.95	SPT-1						Hard grey silty clay, high plastic (CH)	4.00																																																																																																																																																																																																																																																										
3.50	3.80	UDS-2						Moderately strong brown SANDSTONE, moderately weathered																																																																																																																																																																																																																																																											
4.00	4.03	SPT-2																																																																																																																	1-10	74	38																																																																																																																																														
4.00	5.50	RK-1																																																																																																																																														11-17	80	57																																																																																																																	
5.50	7.00	RK-2																																																																																																																																																																											18-20	100	96																																																																																				
7.00	8.50	RK-3																																																																																																																																																																																																								21-23	100	94																																																							
8.50	10.00	RK-4																																																																																																																																																																																																																																					24	98	96																										
10.00	10.50	RK-5																																																																																																																																																																																																																																																																	

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Certificate No. TC-7134

Borehole No.:NBH151
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{**}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results																Rock Lab Results								
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, % _p	Shrinkage Limit, % _s	Specific Gravity	Free Swell Index, % _f	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	11	11				Fill: Dark grey fly ash with gravel Stiff to hard brown silty clay, high plastic (CH) - stiff, 0.5 to 4.0 m	0.50																									
0.50	0.80	UDS-1																																
1.00	1.45	SPT-1																																
3.50	3.80	UDS-2																																
4.00	4.45	SPT-2	25	25				- very stiff, 4.0 to 7.0 m		1	29	36	34																					
6.50	6.80	UDS-3																																
7.00	7.45	SPT-3																																
7.50	7.53	SPT-4																																
7.50	9.00	RK-1	Ref*/3cm			1-7	80	66	7.50																									
9.00	10.50	RK-2																																
10.50	12.00	RK-3																																
12.00	12.50	RK-4																																

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Certificate No. TC-7134

Borehole No.: -NBH152
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{***}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results									
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	8	8	1-3	94	85	Stiff brown silty clay (CH)	2.50	0	7	44	49					2.69			1.84	18.2	1.56											
0.50	0.80	UDS-1																																
1.00	1.45	SPT-1																																
2.50	2.52	SPT-2																																
2.50	3.50	RK-1																																
3.50	5.00	RK-2																																
5.00	6.50	RK-3																																
6.50	8.00	RK-4																																
		</																																

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Certificate No. TC-7134

Borehole No.:NBH153
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^m **	Corrected Value N ^m **	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results																Rock Lab Results																																																															
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																																																							
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																																																														
0.00	0.50	DS-1	18	23				Medium dense brown silty sand (SM)	0.50																																																																																
0.50	0.88	UDS-1						Very stiff brown sandy silt, low plastic (CL)	26.1																										17.9	8.3							1.84	18.7	1.55																																												
1.00	1.45	SPT-1																																																												6.00																											
3.50	3.80	UDS-2																																																																																							
4.00	4.45	SPT-2	26	25				Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	6.00																																																																																
6.00	6.03	SPT-3	Ref*/ 3cm																																																																																						
6.00	7.00	RK-1																																1-7	48	14																																																					
7.00	8.50	RK-2																																8-14	66	48																																																					
8.50	10.00	RK-3																																15	65	49	10.00																																																				

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH154
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{**}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results																Rock Lab Results																																				
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																												
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																																			
0.00	0.50	DS-1	8	8				Loose brown silty sand (SM)	0.50																																																					
0.50	0.85	UDS-1																																																												
1.00	1.45	SPT-1																																																												
3.50	3.79	UDS-2	19	19				- stiff, 0.5 to 4.0 m																																																						
4.00	4.45	SPT-2																																																												
4.50	4.52	SPT-3																																																												
4.50	6.00	RK-1	Ref*/2cm			1	46	45																																																						
6.00	7.50	RK-2																																			2-4	57	54																							
7.50	8.00	RK-3																																			5-6	60	46																							

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.: -NBH155
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{***}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results									
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	11	16				Medium dense brown silty sand (SM)	0.50	5	51	25	19						1.86	18.6	1.57													
0.50	0.80	UDS-1						Medium dense to dense brown clayey sand (SC)																										
2.50	2.95	SPT-1						- medium dense, 0.5 to 5.5 m																										
3.50	3.88	UDS-2																																
5.50	5.95	SPT-2						- dense, 5.5 to 6.0 m																										
6.00	6.02	SPT-3						Weak, brown SANDSTONE, very intensely fractured, moderately weathered																										
6.00	7.50	RK-1							1-10																								63	48
7.50	9.00	RK-2							11-12																								55	53

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH156
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{***}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results																Rock Lab Results									
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)	
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ								
0.00	0.50	DS-1	7	7				Loose brown silty sand (SM)	0.50																										
0.50	0.78	UDS-1																																	
1.00	1.45	SPT-1																																	
3.50	3.81	UDS-2																																	
4.00	4.45	SPT-2																																	
6.50	6.86	UDS-3																																	
7.00	7.45	SPT-3																																	
8.00	8.02	SPT-4																																	
8.50	10.00	RK-1																																	
10.00	11.50	RK-2																																	
11.50	13.00	RK-3																																	

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.: -NBH157
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{**}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results																Rock Lab Results																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
0.00	0.50	DS-1	7	7				Loose brown silty sand (SM)	0.50	20	14	45	21						2.67			1.83	18.2	1.55																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.: -NBH158
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{***}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results																Rock Lab Results										
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)		
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ									
0.00	0.50	DS-1	17	17				Medium dense brown silty sand (SM)	1.00	1	25	38	36	46.2	21.3	24.9					1.91	19.6	1.60	UU	1,2,3	0.9	7.5									
0.50	0.80	UDS-1																																		
1.00	1.45	SPT-1																																		
3.50	3.80	UDS-2						- with traces of gravel, 1.0 to 3.5 m	4.00																											
4.00	4.03	SPT-2						Weak brown SANDSTONE, very intensely fractured, severely weathered																												
4.00	5.50	RK-1						1-5	34																									0		
5.50	7.00	RK-2						6-10	63																									58	Moderately strong brown SANDSTONE, moderately weathered	
7.00	8.50	RK-3						11-13	72																									58		8.50

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH159
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{***}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
0.00	0.50	DS-1	14 Ref*/3cm	14				Stiff brown silty clay, high plastic (CH)	3.00	1	17	42	40	58.8	24.8	34.0					1.99	22.1	1.63																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																

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Certificate No. TC-7134

Borehole No.: -NBH160
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
0.00	0.50	DS-1	10	10				Medium dense brown silty sand (SM)	1.00																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
0.50	0.83	UDS-1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
1.00	1.45	SPT-1						Stiff brown silty clay, high plastic (CH)	53.6																									24.5	29.0	2.70																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
3.50	3.85	UDS-2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
4.00	4.03	SPT-2						Moderately strong brown SANDSTONE, moderately fractured, moderately weathered																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
4.00	5.00	RK-1							1-5																									36	11																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
5.00	6.50	RK-2							6-8																									50	41																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
6.50	8.00	RK-3							9-11																									62	53	8.00																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.: -NBH161
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{**}	Corrected Value N ^{m**}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results														Rock Lab Results										
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	14 Ref*/ 3cm	14				Stiff brown clayey silt (CI)	3.00													UU	1,2,3	0.7	3.6									
0.50	0.80	UDS-1																																
1.00	1.45	SPT-1																																
3.00	3.03	SPT-2																																
3.00	4.50	RK-1			1-7	23	0	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	8.00																									
4.50	6.00	RK-2			8-12	55	50																											
6.00	7.50	RK-3			13-18	58	38																											
7.50	8.00	RK-4			19	98	56																											

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.: -NBH162
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{***}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results																Rock Lab Results																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
0.00	0.50	DS-1	20	20				Medium dense brown silty sand (SM)	1.00	1	24	40	35	50.6	23.8	26.8					1.93	19.6	1.61		UU	1,2,3	0.9	3.4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
0.50	0.80	UDS-1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
1.00	1.45	SPT-1						Stiff brown silty clay, high plastic (CH)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
3.50	3.80	UDS-2						- with traces of gravel, 1.0 to 3.5 m	4.00																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
4.00	4.04	SPT-2						Weak brown SANDSTONE, very intensely fractured, severely weathered																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
4.00	5.50	RK-1						1-9	41																												0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
5.50	7.00	RK-2						10-16	52																												19	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
7.00	8.50	RK-3						17-22	65																												53																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
8.50	10.00	RK-4						23-30	53																												30	10.00																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.: -NBH163
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{***}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results														Rock Lab Results																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
0.00	0.50	DS-1	21	21				Medium dense brown silty sand (SM)	1.00																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
0.50	0.80	UDS-1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
2.50	2.95	SPT-1						Stiff brown clayey silt (CI)	4.00																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
3.50	3.70	UDS-2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
4.00	4.03	SPT-2						Moderately strong brown SANDSTONE, moderately fractured, moderately weathered																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
4.00	5.50	RK-1																																1-5	27	7																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
5.50	7.00	RK-2																																6-18	72	12																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
7.00	8.50	RK-3																																19-22	68	60																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
8.50	10.00	RK-4																																23-25	70	76																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								

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Certificate No. TC-7134

Borehole No.: -NBH164
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results														Rock Lab Results																																			
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																									
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																																
0.00	0.50	DS-1	13	13				Medium dense brown silty sand (SM)	0.50																																																		
0.50	0.80	UDS-1						Stiff brown silty clay, high plastic (CH)																																																			
2.50	2.95	SPT-1																																																									
3.50	3.70	UDS-2																																																									
5.00	5.03	SPT-2																																																									
5.00	6.50	RK-1																																																									
6.50	8.00	RK-2																																																									

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.: -NBH165
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{***}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results										
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)	
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ								
0.00	0.50	DS-1	16	16	1-5	80	66	Stiff to hard brown clayey silt (CI)	5.00	1	24	43	32					2.67			1.84	19.2	1.54												
0.50	0.83	UDS-1						- very stiff, 0.0 to 3.5 m																											8.00
2.50	2.95	SPT-1						- with traces of gravel, 2.5 to 3.5 m																											
3.50	3.75	UDS-2						- hard, 3.5 to 5.0 m																											
5.00	5.03	SPT-2						Moderately strong brown SANDSTONE, moderately fractured, moderately weathered																											
5.00	6.50	RK-1																																	
6.50	8.00	RK-2																																	

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.: -NBH166
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results														Rock Lab Results										
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, % %	Shrinkage Limit, % %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	15 Ref*/ 2cm	15				Very stiff brown clayey silt (CI)	3.50	0	33	46	21							1.84	18.7	1.55												
0.50	0.80	UDS-1																																
2.50	2.95	SPT-1																																
3.50	3.52	SPT-2			1-6	33	14	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	8.00																									
3.50	5.00	RK-1																																
5.00	6.50	RK-2			7-9	50	42																											
6.50	8.00	RK-3			10-13	79	68																											

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index

Certificate No. TC-7134

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.: -NBH168
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results											
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)		
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ									
0.00	0.50	DS-1	20	20				Medium dense brown silty sand (SM)	0.50																											
0.50	0.85	UDS-1						Very stiff brown clayey silt (CI)										1.83	18.2	1.55																
1.00	1.45	SPT-1																																		
3.50	3.80	UDS-2																																		
4.00	4.02	SPT-2						Ref*/ 2cm					Weak brown SANDSTONE, very intensely fractured, moderately weathered	4.00																						
4.00	5.50	RK-1								1-8	31	0																								
5.50	7.00	RK-2								9-14	44	31	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered																							
7.00	8.00	RK-3								15-16	65	41		8.00																						

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.: -NBH169
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results												
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)			
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ										
0.00	0.50	DS-1	19	19				Medium dense brown silty sand gravel (SM)	0.50																												
0.50	0.78	UDS-1						Very stiff grey clayey silt, medium plastic (CI)						49.3	20.9	28.5				1.84	17.9	1.56															
2.50	2.95	SPT-1																																			
3.50	3.82	UDS-2												5.50							1.87	18.5	1.58														
5.50	5.52	SPT-2						Ref*/ 2cm																													
5.50	7.00	RK-1							1-2	70	68																										
7.00	8.50	RK-2							3-8	69	52				8.50																						

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.: -NBH170
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^{**}	Corrected Value N ^{***}	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
0.00	0.50	DS-1	21	21				Medium dense brown silty sand with gravel (SM)	2.50																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
0.50	0.78	UDS-1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
2.50	2.95	SPT-1						Very stiff grey clayey silt (CI)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
3.50	3.86	UDS-2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
4.50	4.52	SPT-2						Weak brown SANDSTONE, very intensely fractured, moderately weathered																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
4.50	5.50	RK-1							1-8																									37	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
5.50	7.00	RK-2							9-17																									46	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
7.00	8.50	RK-3							18-24																									68	40																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
8.50	10.00	RK-4						25-29	57																									38	Moderately strong brown SANDSTONE, moderately fractured, moderately weathered	10.00																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH171
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results											
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)		
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ									
0.00	0.50	DS-1	22	22				Medium dense brown silty sand (SM)	0.50																											
0.50	0.82	UDS-1										Very stiff to hard brown clayey silt (CI)										1.81	17.6	1.54												
2.50	2.95	SPT-1										- very stiff, 0.5 to 5.5 m																								
3.50	3.78	UDS-2																																		
5.50	5.95	SPT-2	32	32				- hard, 5.5 to 6.0 m	6.00							2.66																				
6.00	6.02	SPT-3	Ref*/ 2cm					Moderately strong brown SANDSTONE, moderately fractured, moderately weathered																												
6.00	7.50	RK-1								1-10	80	48																								
7.50	9.00	RK-2								11-13	86	83	9.00																							

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.:NBH172
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results									
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, % %	Shrinkage Limit, % %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ							
0.00	0.50	DS-1	30	30				Very stiff grey clayey silt (CI) - with traces of gravel, 0.5 to 2.5 m <																										

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.: -NBH178
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N'***	Corrected Value N'***	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results																															
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)																						
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ																													
0.00	0.50	DS-1	17	17	1-4	54	34	Medium dense brown silty sand (SM)	0.50																																															
0.50	0.80	UDS-1						Very stiff brown clayey silt (CI)																																																
1.00	1.45	SPT-1																																																						
1.50	1.52	SPT-2																																																						
1.51	2.00	RK-1																																																						
2.00	3.50	RK-2																																																						
3.50	5.00	RK-3																																																						
5.00	6.50	RK-4																																																						
6.50	8.00	RK-5																																																						

** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Certificate No. TC-7134

Borehole No.: -NBH180
SUMMARY OF LABORATORY TEST RESULTS

Depth, m		Sample Type	Field Value N ^m **	Corrected Value N ^m **	Serial No of Cores	Percent Core Recovery	Percent RQD	SOIL/ ROCK DESCRIPTION	Strata Break	Soil Lab Results															Rock Lab Results											
From	To									Grain Size Analysis				Liquid Limit, %	Plastic Limit, %	Plasticity Index, %	Shrinkage Limit, %	Specific Gravity	Free Swell Index, %	Swelling Pressure kg/cm ²	Bulk Density, gms/cm ³	Moisture Content, %	Dry Density, g/cm ³	Shear Strength Parameters				Specific Gravity	Density (g/cc)	Void Ratio	Moisture Content (%)	Water Absorption (%)	Point Load Index (kg/cm ²)	Unconfined Compressive Strength (kg/cm ²)		
										Gravel (%)	Sand (%)	Silt (%)	Clay (%)											Type of test	Confining Pressure / Normal Stress kg/cm ²	c, kg/cm ²	Degree φ									
0.00	0.50	DS-1	19	19				Medium dense brown silty sand (SM)	1.00																											
0.50	0.88	UDS-1																																		
1.00	1.45	SPT-1																																		
3.50	3.86	UDS-2	33	33				- very stiff, 1.0 to 4.0 m																												
4.00	4.45	SPT-2																																		
7.00	7.02	SPT-3																																		
7.00	8.50	RK-1	Ref*/ 2cm			1-3	29	22																												
8.50	10.00	RK-2										4-6	50	44																						

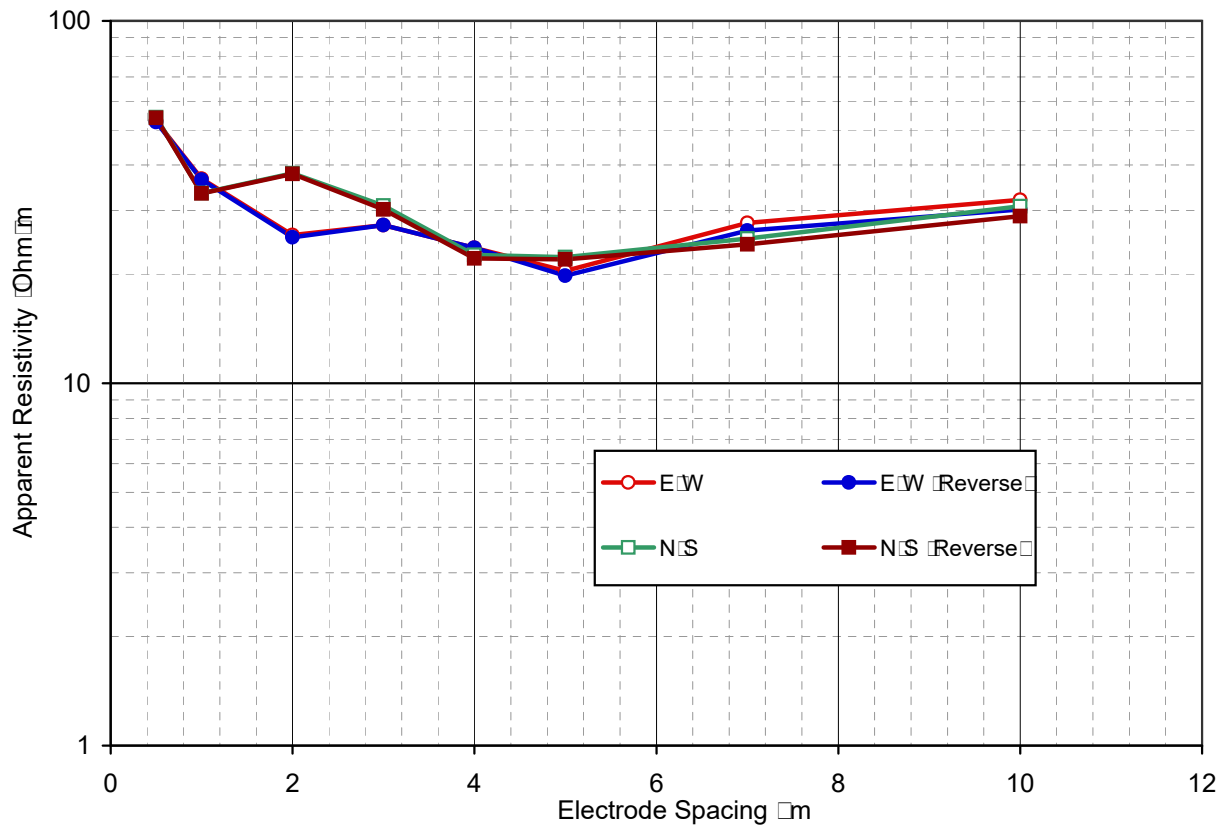
** Outside NABL scope. DS: Direct Shear Test- Consolidated Drained UU: Unconsolidated Undrained Triaxial Test UC: Unconfined Compression Test CU: Consolidated Undrained Triaxial Test CD: Consolidated Drained Triaxial Test * Equivalent Unconfined Compressive Strength based on Point Load Strength Index



Electrical Resistivity Test No.: ERT-1

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-1
Test Location : Space for GIS Switch Yard for 400 kv
Coordinate : 1250 E 3599 N



Electrode Spacing (m)	Apparent Resistivity (Ohm.m)			
	E-W	E-W Reverse	N-S	N-S Reverse
0.5	52.9	52.6	54.2	54.0
1.0	36.7	36.4	33.5	33.4
2.0	25.6	25.3	38.0	37.8
3.0	27.3	27.3	30.9	30.2
4.0	23.6	23.6	22.6	22.1
5.0	20.4	19.8	22.3	22.0
7.0	27.7	26.4	25.1	24.2
10.0	32.0	30.2	30.8	28.9
Mean Resistivity	31	30	32	32

Mean Resistivity Value (ohm.m) : 24.9 ohm.m

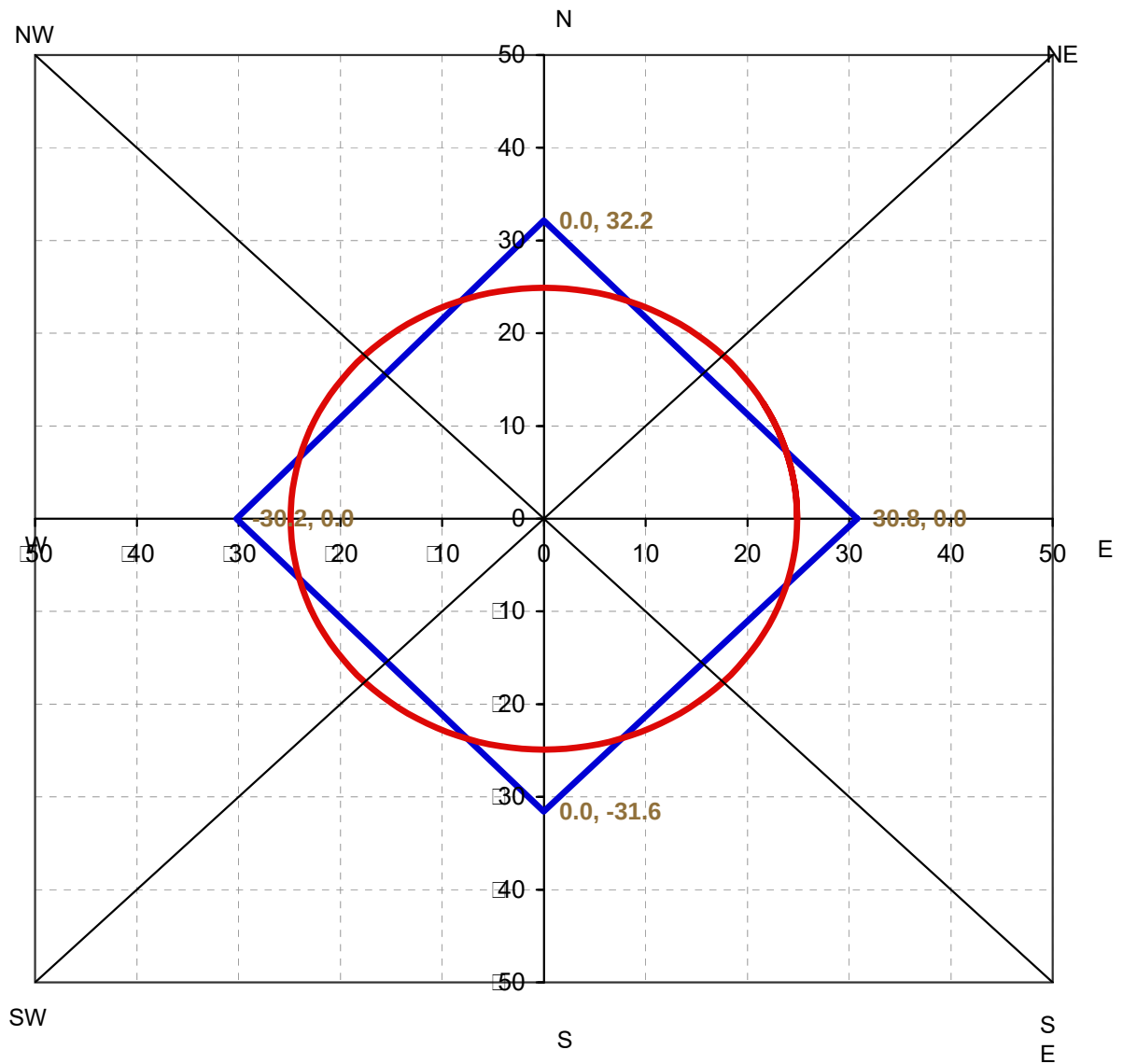
Apparent Resistivity Values (ERT-1)



Electrical Resistivity Test No.: ERT-1

IS: 3043:1987-RA:2006

Test Details
Test Designation : ERT-1
Test Location : Space for GIS Switch Yard for 400 kv
Co-ordinate : 1250 E-3599 N



Total Area of Polygon : 1944

Radius of Equivalent Circle-Mean Resistivity : 25 ohm-m

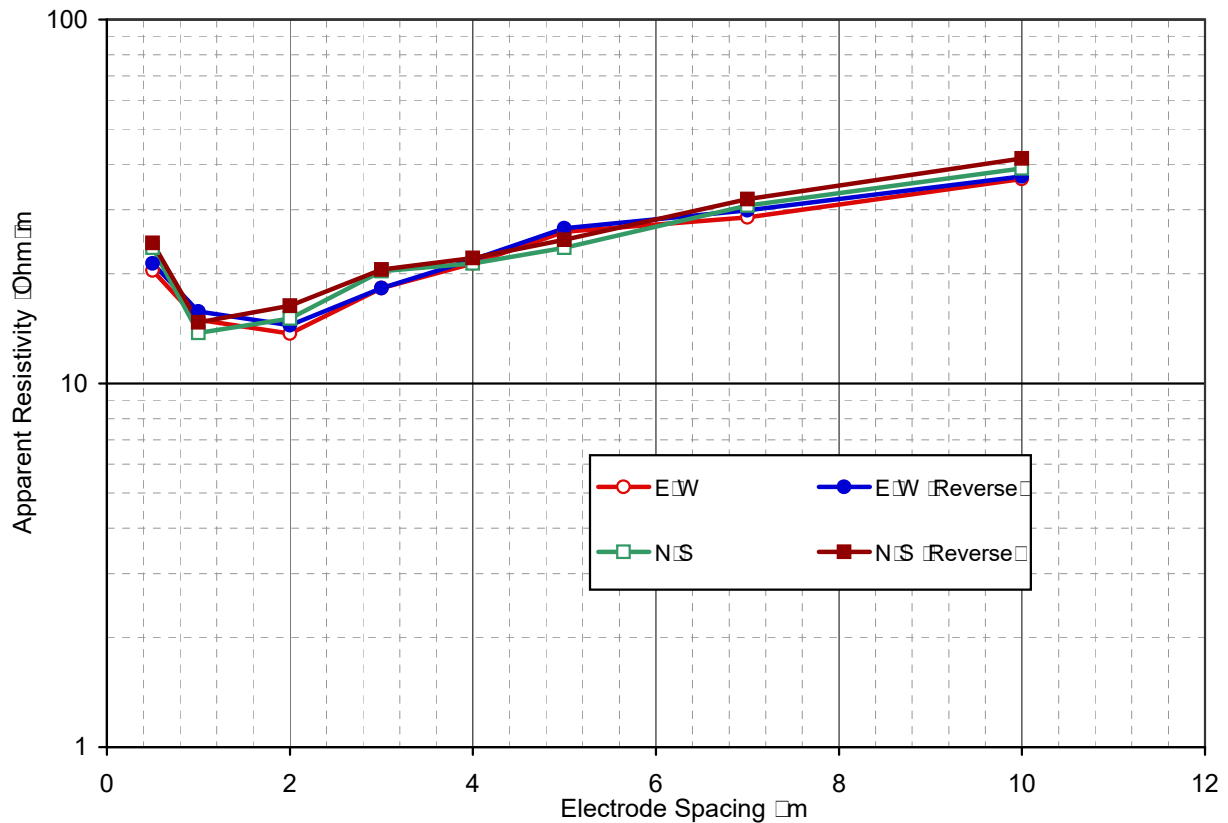
Polar Resistivity Curves (ERT-1)



Electrical Resistivity Test No.: ERT-2

IS: 3043:1987-RA:2006

Test Details
Test Designation : ERT-2
Test Location : Space for GIS Switch Yard for 400 kv
Co-ordinate : 1210 E 3658 N



Electrode Spacing (m)	Apparent Resistivity (Ohm.m)			
	E-W	E-W Reverse	N-S	N-S Reverse
0.5	20.4	21.4	23.6	24.3
1.0	15.0	15.8	13.8	14.7
2.0	13.7	14.5	15.1	16.3
3.0	18.3	18.3	20.4	20.5
4.0	21.4	21.9	21.4	22.1
5.0	26.1	26.7	23.6	24.8
7.0	28.6	29.9	30.8	32.1
10.0	36.4	37.1	39.0	41.5
Mean Resistivity	22	23	23	25

Mean Resistivity Value (ohm.m) : 18.7 ohm.m

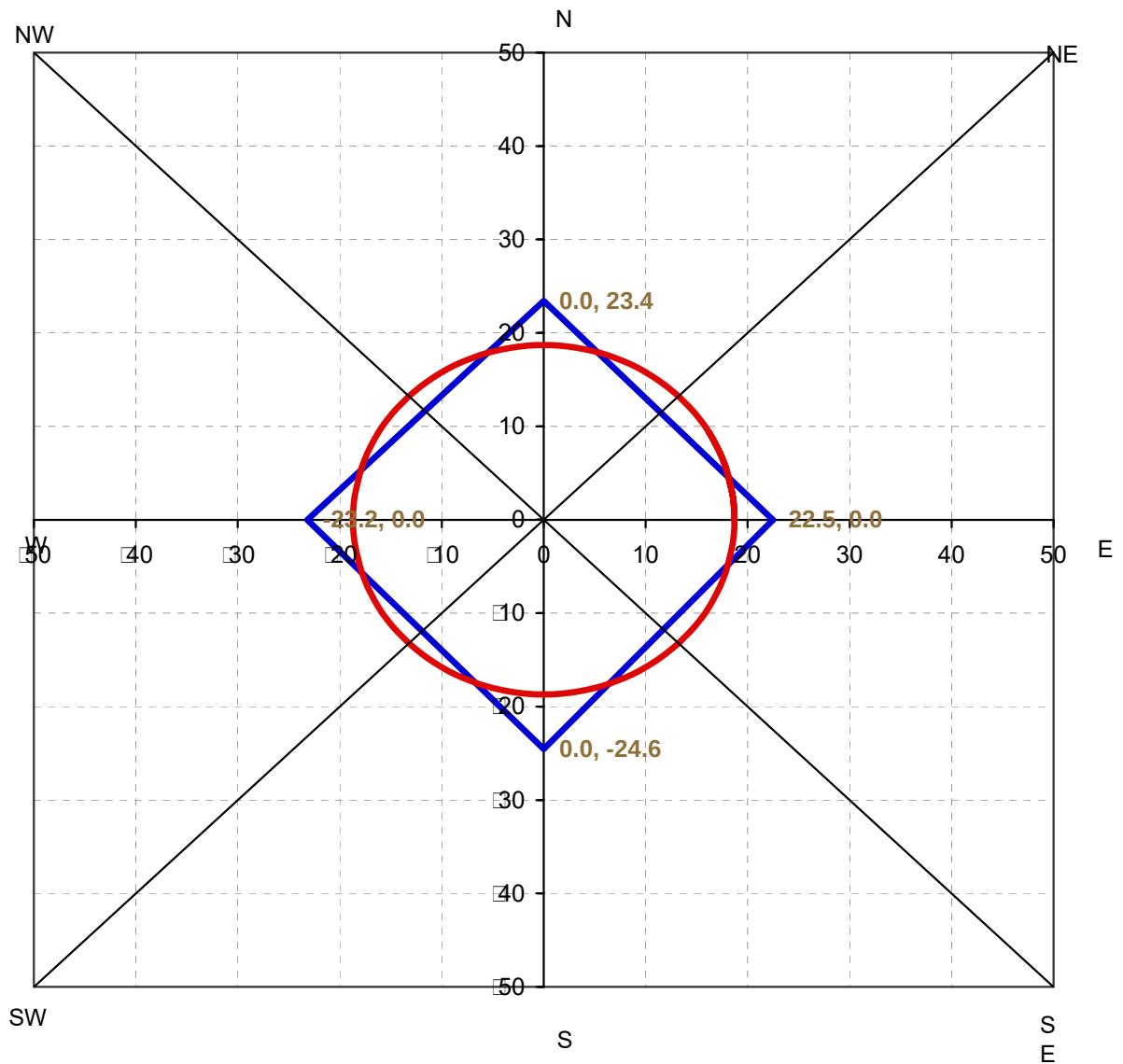
Apparent Resistivity Values (ERT-2)



Electrical Resistivity Test No.: ERT-2

IS: 3043:1987-RA:2006

Test Details
Test Designation : ERT-2
Test Location : Space for GIS Switch Yard for 400 kv
Co-ordinate : 1210 E-3658 N



Total Area of Polygon : 1095

Radius of Equivalent Circle-Mean Resistivity : 19 ohm-m

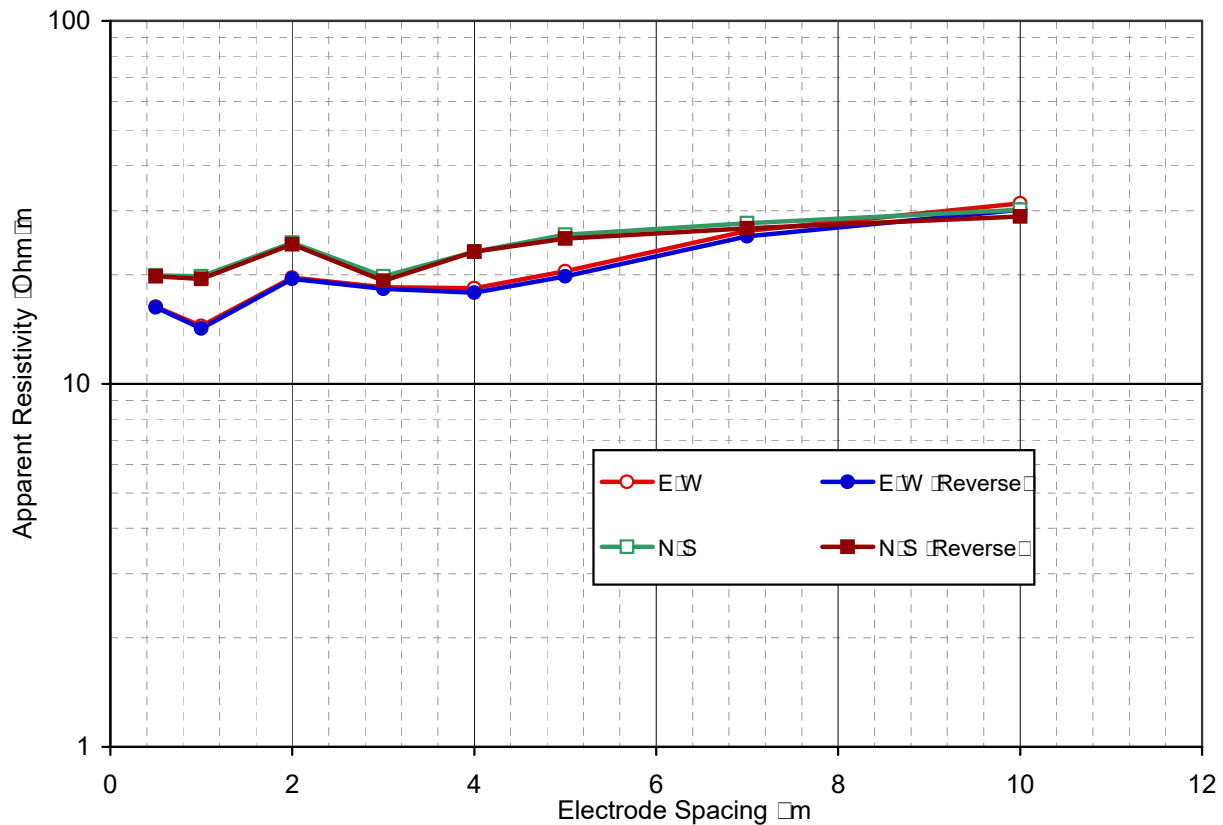
Polar Resistivity Curves (ERT-2)



Electrical Resistivity Test No.: ERT-3

IS: 3043:1987/RA:2006

Test Details
Test Designation : ERT-3
Test Location : Space for GIS Switch Yard for 400 kv
Co-ordinate : 1227 E 3717 N



Electrode Spacing (m)	Apparent Resistivity (Ohm.m)			
	E-W	E-W Reverse	N-S	N-S Reverse
0.5	16.3	16.2	19.9	19.8
1.0	14.5	14.2	19.8	19.5
2.0	19.6	19.5	24.5	24.3
3.0	18.5	18.3	19.8	19.2
4.0	18.3	17.8	23.1	23.1
5.0	20.4	19.8	25.8	25.1
7.0	26.4	25.5	27.7	26.8
10.0	31.4	30.2	30.2	28.9
Mean Resistivity	21	20	24	23

Mean Resistivity Value (ohm.m) : 17.5 ohm.m

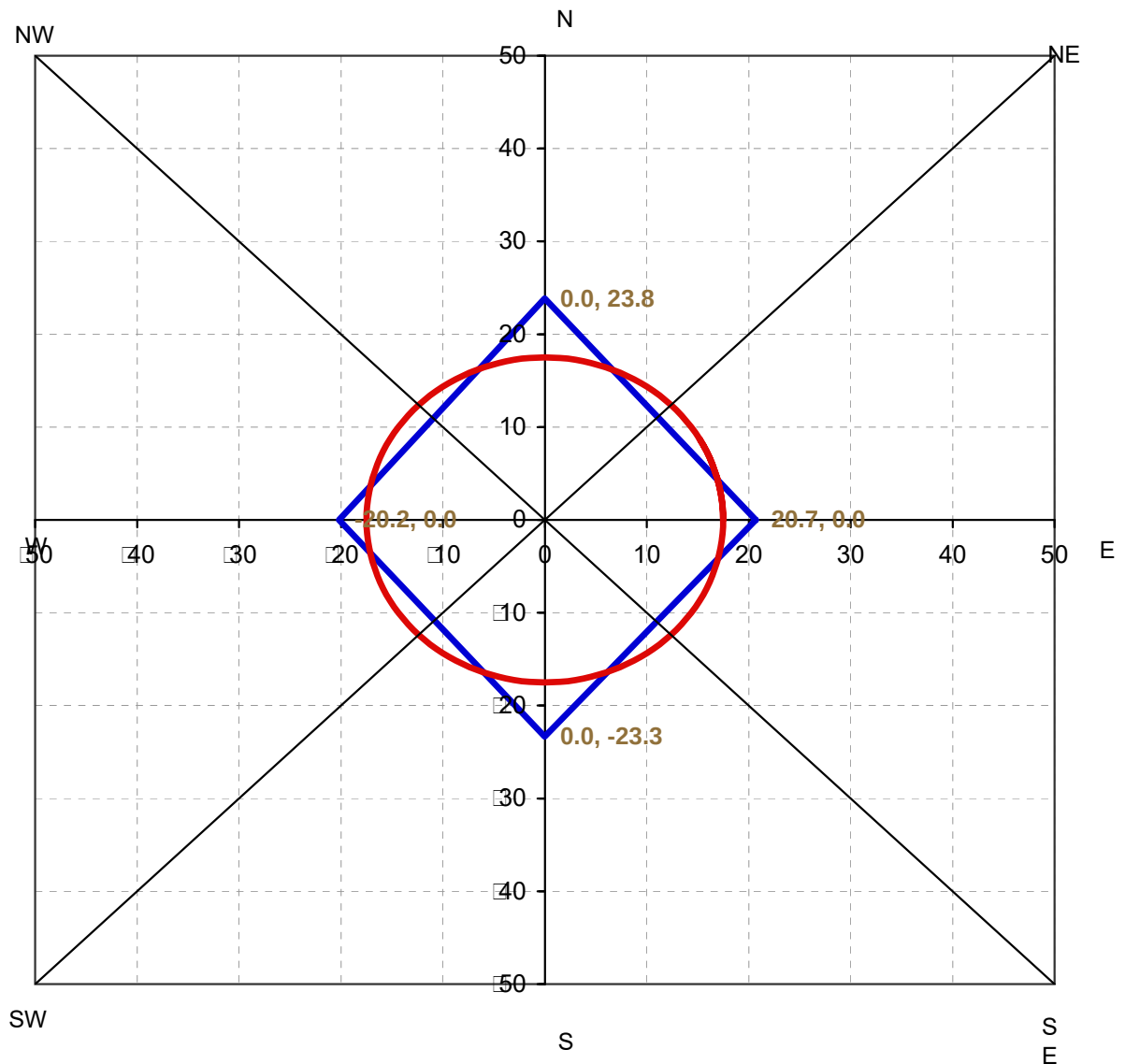
Apparent Resistivity Values (ERT-3)



Electrical Resistivity Test No.: ERT-3

IS: 3043:1987-RA:2006

Test Details
Test Designation : ERT-3
Test Location : Space for GIS Switch Yard for 400 kv
Co-ordinate : 1227 E 3717 N



Total Area of Polygon : 964

Radius of Equivalent Circle-Mean Resistivity : 18 ohm-m

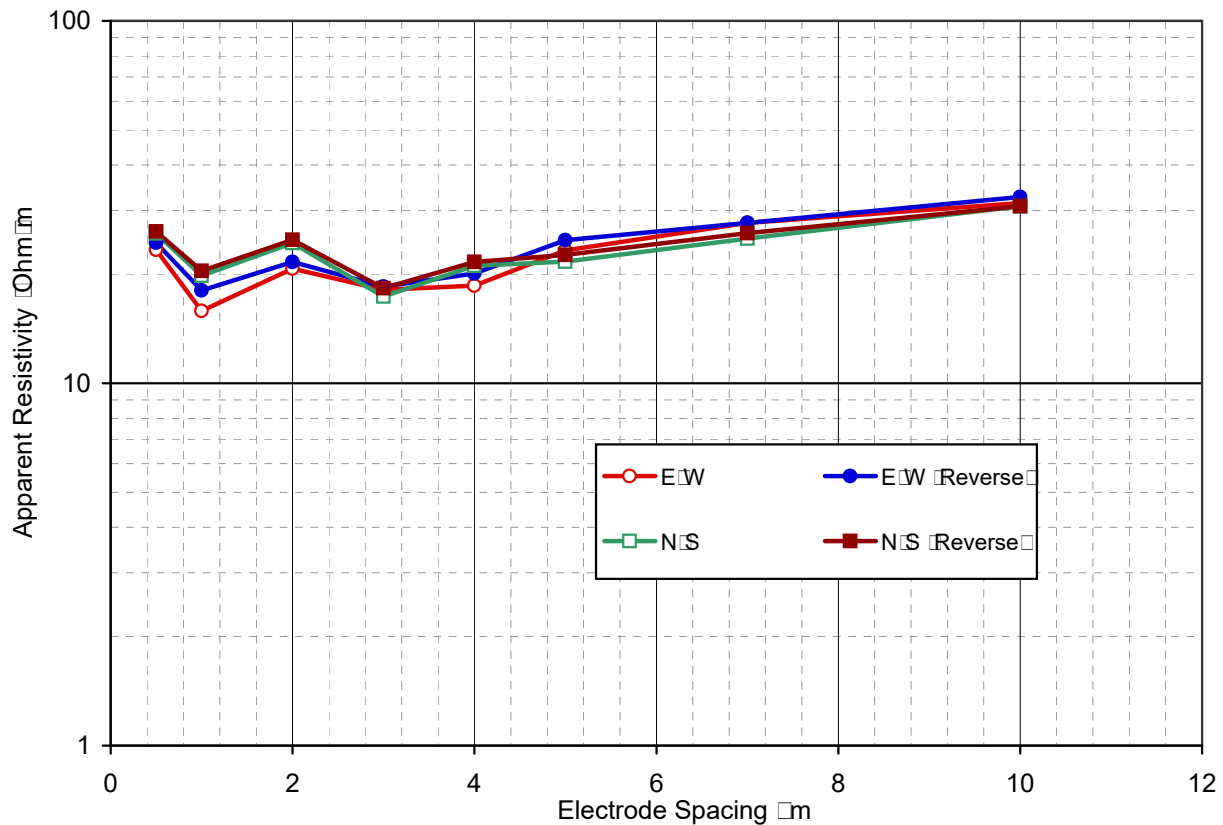
Polar Resistivity Curves (ERT-3)



Electrical Resistivity Test No.: ERT-4

IS: 3043:1987:RA:2006

Test Details
Test Designation : ERT-4
Test Location : Space for GIS Switch Yard for 400 kv
Coordinate : 1326 E 3722 N



Electrode Spacing (m)	Apparent Resistivity (Ohm.m)			
	E-W	E-W Reverse	N-S	N-S Reverse
0.5	23.4	24.4	25.9	26.2
1.0	15.8	18.0	19.8	20.4
2.0	20.7	21.6	24.4	24.9
3.0	18.1	18.5	17.3	18.3
4.0	18.6	20.1	21.1	21.6
5.0	23.2	24.8	21.7	22.6
7.0	27.7	27.7	25.1	25.9
10.0	31.4	32.7	30.8	30.8
Mean Resistivity	22	23	23	24

Mean Resistivity Value (ohm.m) : 18.5 ohm.m

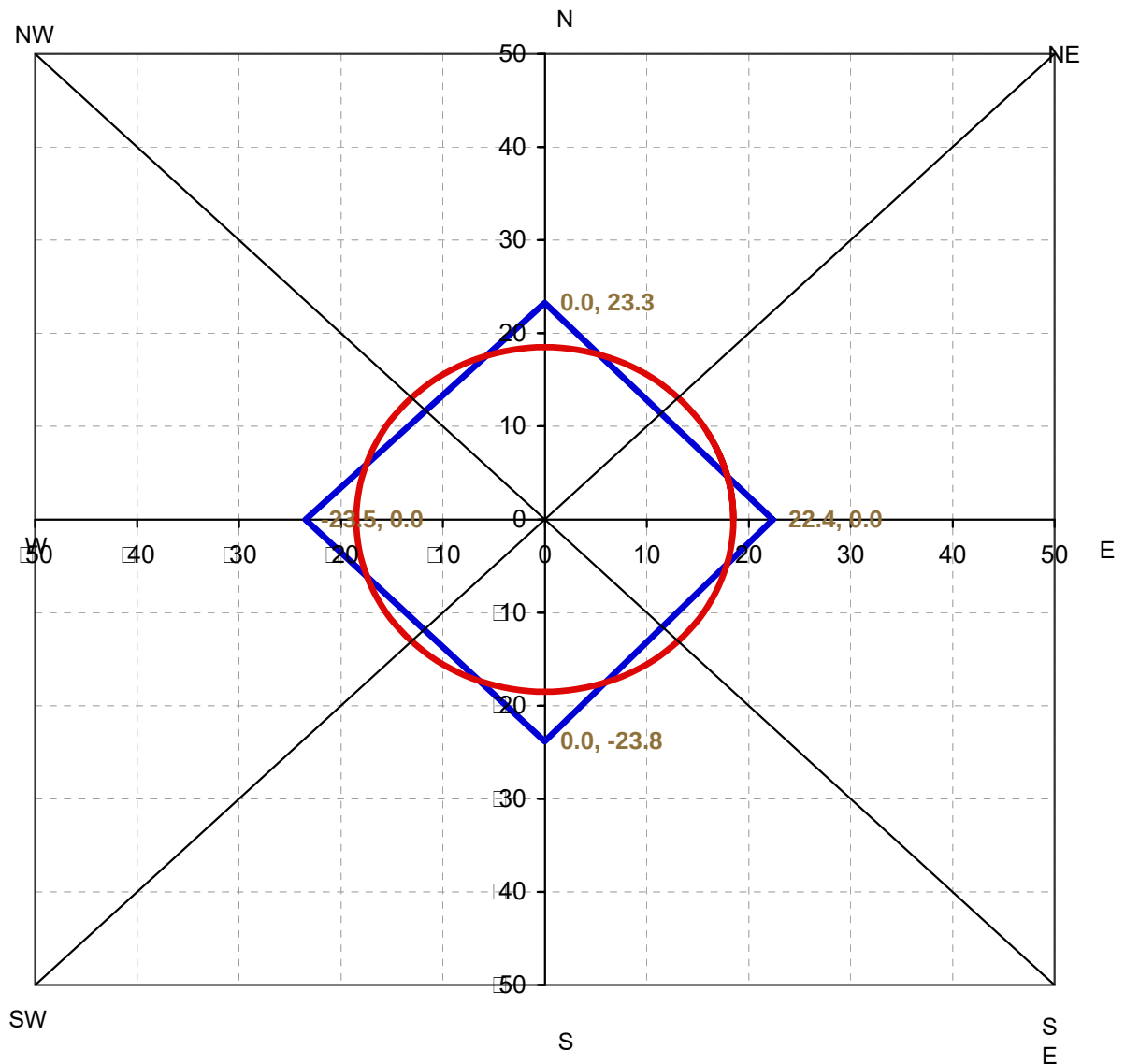
Apparent Resistivity Values (ERT-4)



Electrical Resistivity Test No.: ERT-4

IS: 3043:1987-RA:2006

Test Details
Test Designation : ERT-4
Test Location : Space for GIS Switch Yard for 400 kv
Co-ordinate : 1326 E 3722 N



Total Area of Polygon : 1080

Radius of Equivalent Circle-Mean Resistivity : 19 ohm-m

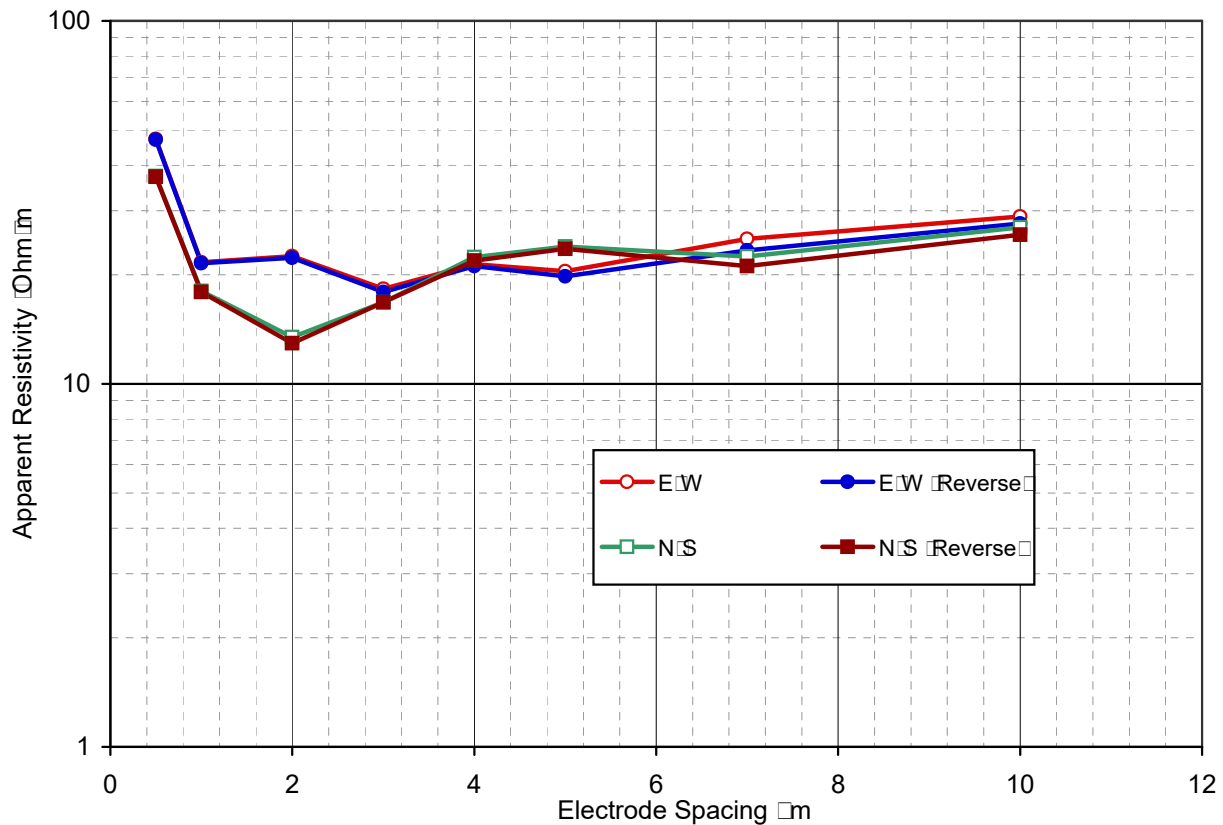
Polar Resistivity Curves (ERT-4)



Electrical Resistivity Test No.: ERT-5

IS: 3043-1987 (RA-2006)

Test Details
Test Designation : ERT-5
Test Location : Space for GIS Switch Yard for 400 kv
Co-ordinate : 1281 E 3676 N



Electrode Spacing (m)	Apparent Resistivity (Ohm.m)			
	E-W	E-W Reverse	N-S	N-S Reverse
0.5	47.3	47.1	37.4	37.2
1.0	21.6	21.5	18.0	17.9
2.0	22.5	22.2	13.4	12.9
3.0	18.3	17.9	16.8	16.8
4.0	21.4	21.1	22.4	21.9
5.0	20.4	19.8	23.9	23.6
7.0	25.1	23.3	22.4	21.1
10.0	28.9	27.6	27.0	25.8
Mean Resistivity	26	25	23	22

Mean Resistivity Value (ohm.m) : 19 ohm.m

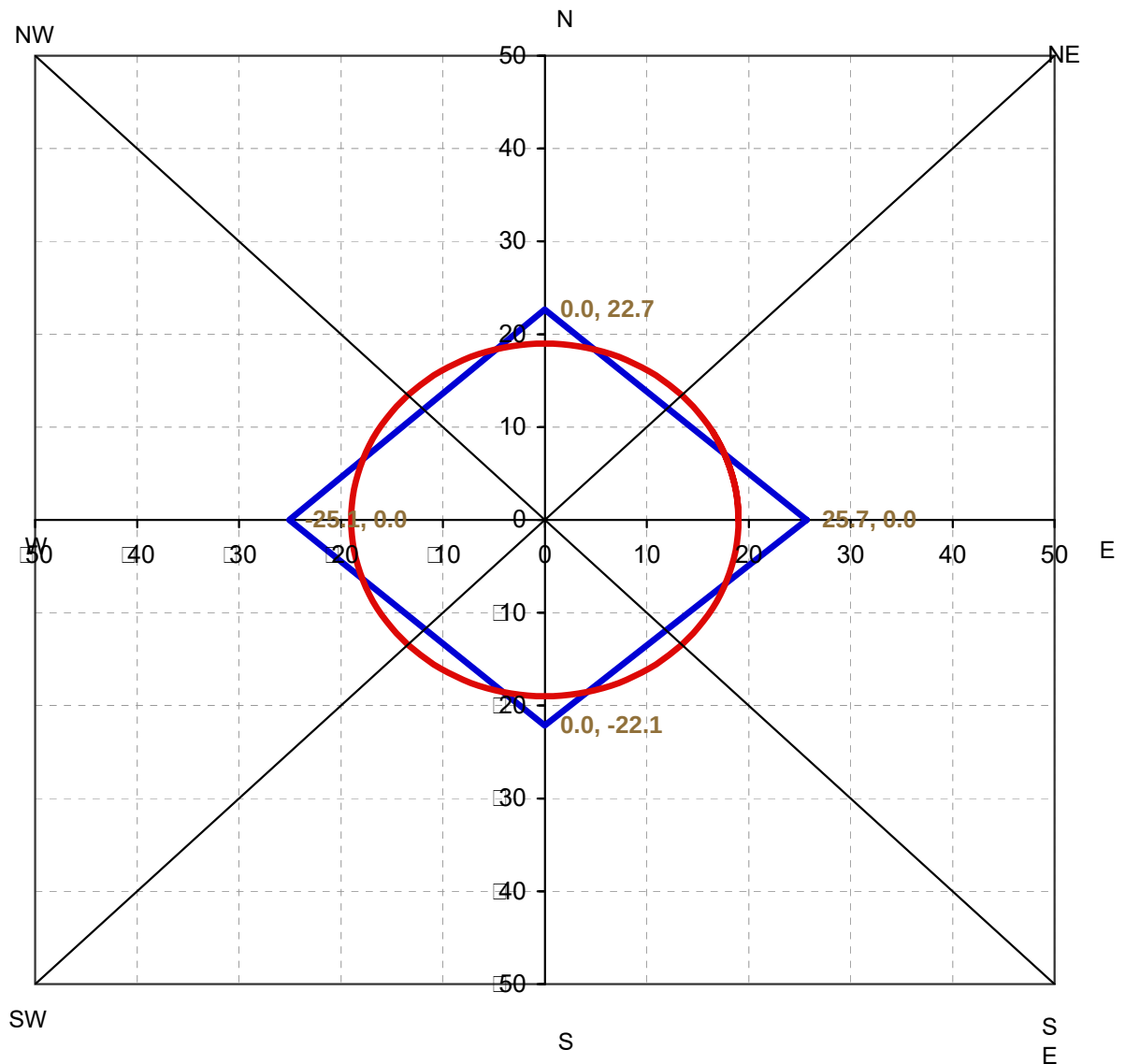
Apparent Resistivity Values (ERT-5)



Electrical Resistivity Test No.: ERT-5

IS: 3043:1987-RA:2006

Test Details
Test Designation : ERT-5
Test Location : Space for GIS Switch Yard for 400 kv
Co-ordinate : 1281 E-3676 N



Total Area of Polygon : 1137

Radius of Equivalent Circle-Mean Resistivity : 19 ohm-m

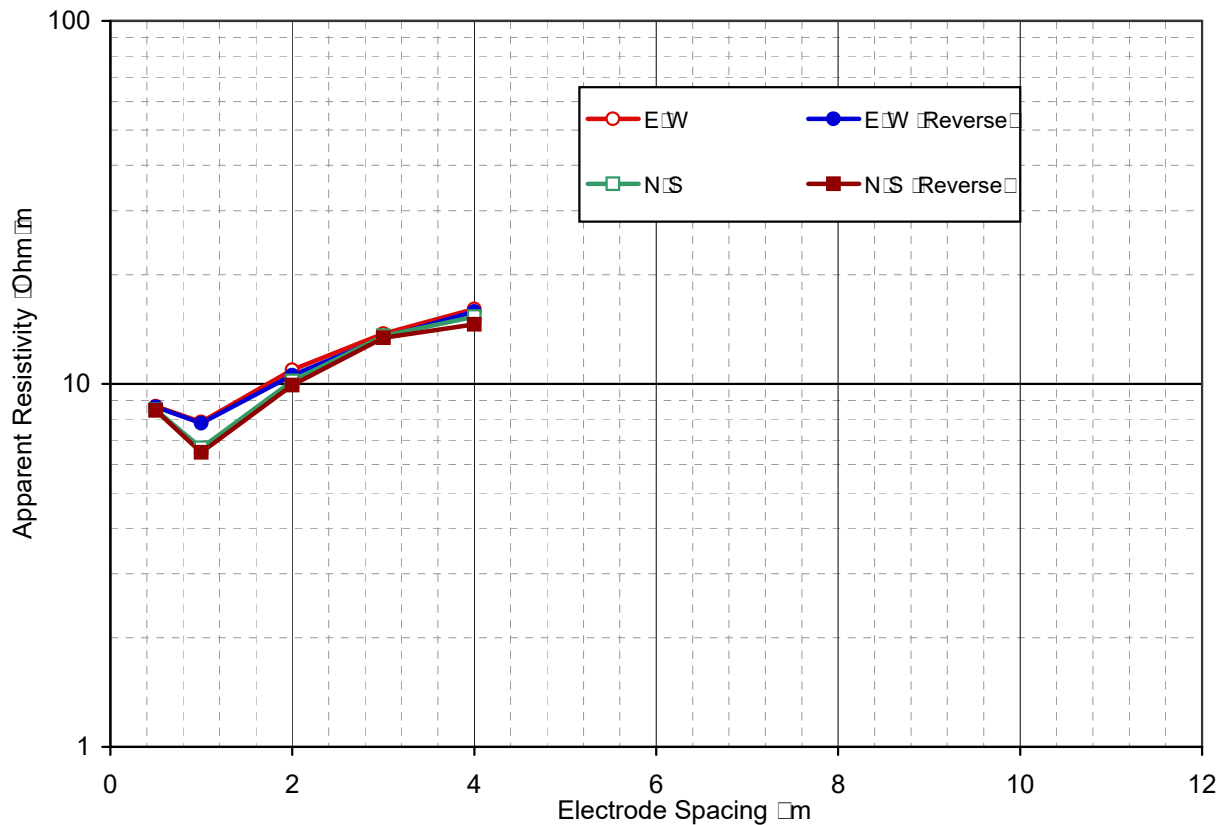
Polar Resistivity Curves (ERT-5)



Electrical Resistivity Test No.: ERT-6

IS: 3043:1987/RA:2006

Test Details
Test Designation : ERT-6
Test Location : Space for GIS Switch Yard for 400 kv
Co-ordinate : 1370 E 3641 N



Electrode Spacing (m)	Apparent Resistivity (Ohm.m)			
	E-W	E-W Reverse	N-S	N-S Reverse
0.5	8.7	8.6	8.5	8.5
1.0	7.9	7.8	6.7	6.5
2.0	10.9	10.6	10.2	9.9
3.0	13.8	13.4	13.6	13.4
4.0	16.1	15.8	15.3	14.6
5.0	No Space			
7.0				
10.0				
Mean Resistivity	11	11	11	11

Mean Resistivity Value (ohm.m) : 8.8 ohm.m

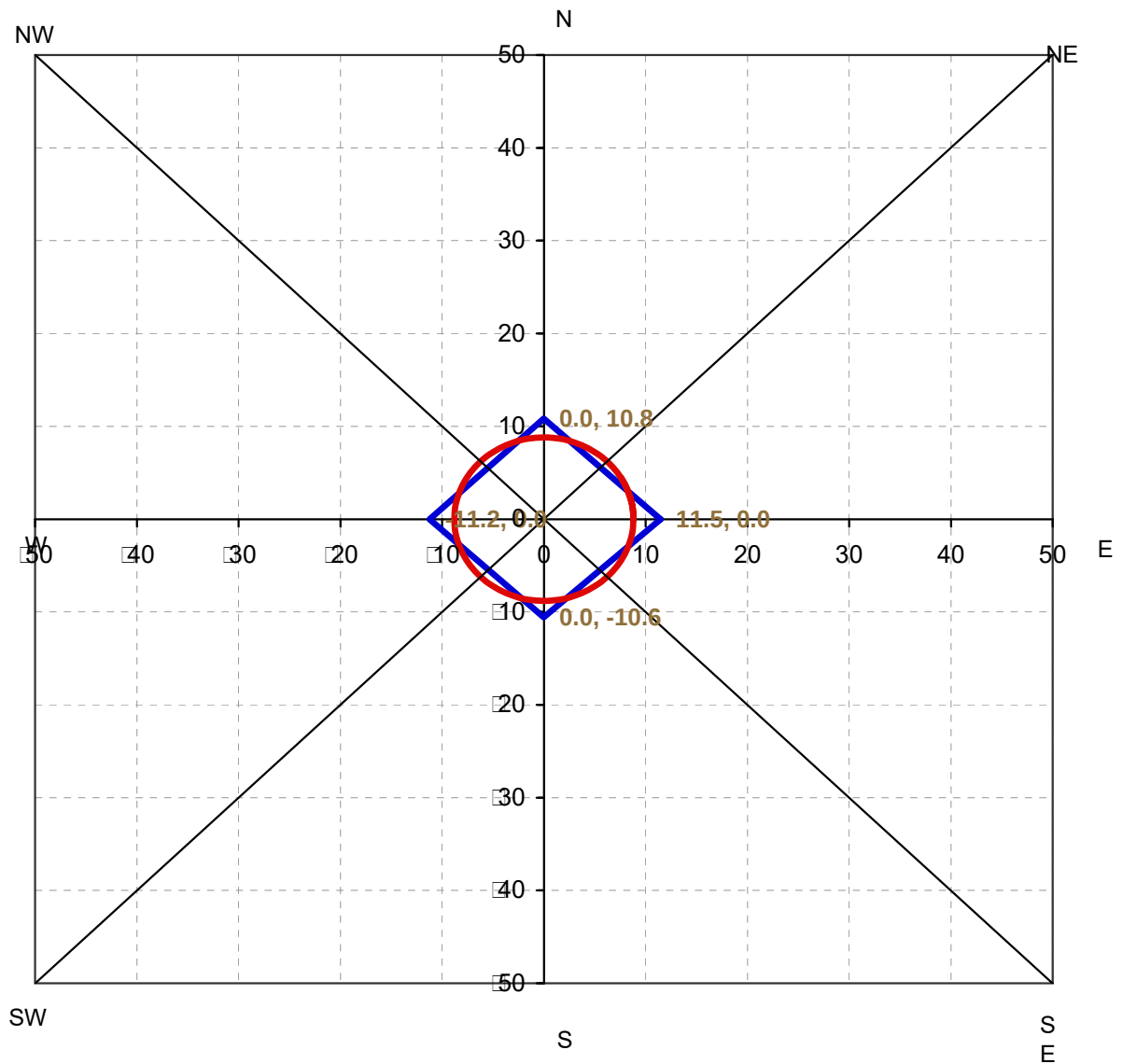
Apparent Resistivity Values (ERT-6)



Electrical Resistivity Test No.: ERT-6

IS: 3043:1987-RA:2006

Test Details
Test Designation : ERT-6
Test Location : Space for GIS Switch Yard for 400 kv
Co-ordinate : 1370 E 3641 N



Total Area of Polygon : 243

Radius of Equivalent Circle-Mean Resistivity : 9 ohm-m

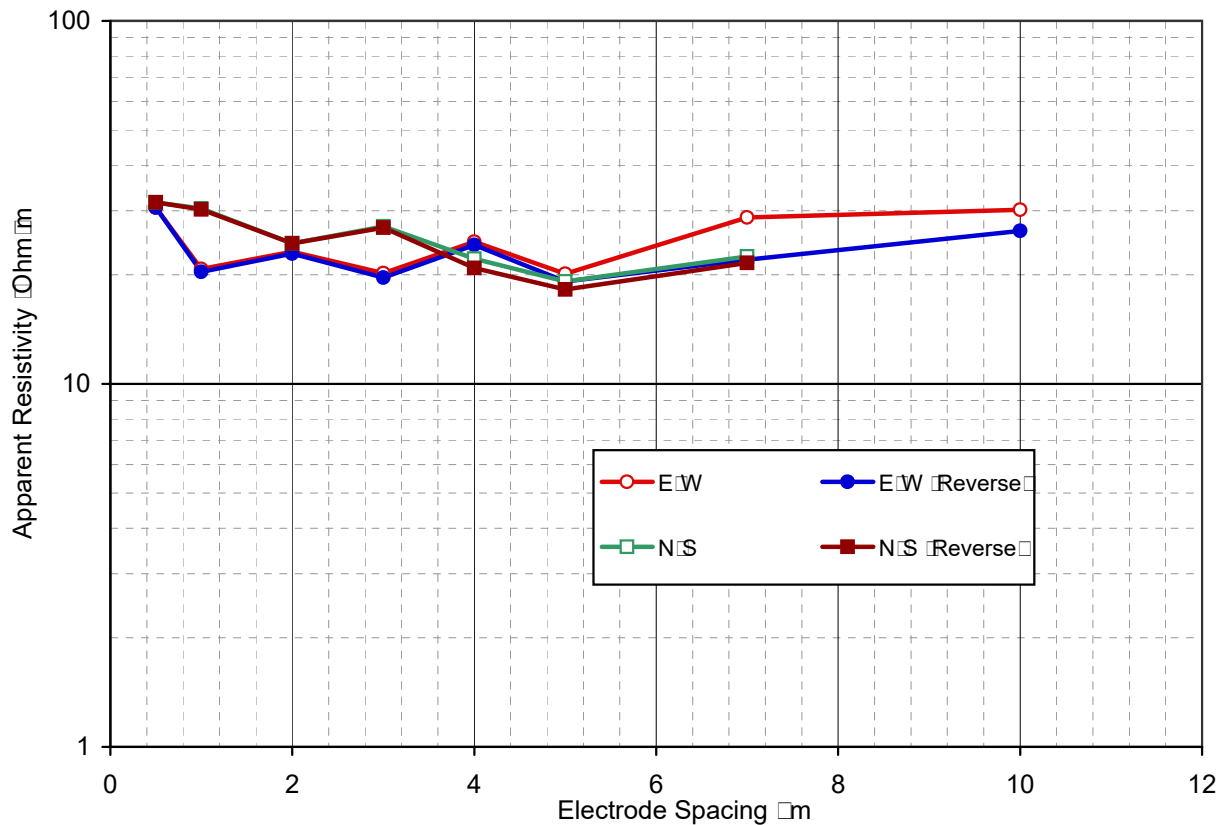
Polar Resistivity Curves (ERT-6)



Electrical Resistivity Test No.: ERT-7

IS: 3043:1987/RA:2006

Test Details
Test Designation : ERT-7
Test Location : Space for GIS Switch Yard for 400 kv
Co-ordinate : 1419 E 3697 N



Electrode Spacing (m)	Apparent Resistivity (Ohm.m)			
	E-W	E-W Reverse	N-S	N-S Reverse
0.5	30.6	30.6	31.6	31.6
1.0	20.7	20.4	30.4	30.2
2.0	23.1	22.9	24.4	24.4
3.0	20.2	19.6	27.1	27.0
4.0	24.6	24.1	22.1	20.9
5.0	20.1	19.2	19.2	18.2
7.0	28.8	22.0	22.4	21.6
10.0	30.2	26.4	Ni Space	
Mean Resistivity	25	23	25	25

Mean Resistivity Value (ohm.m) : 19.6 ohm.m

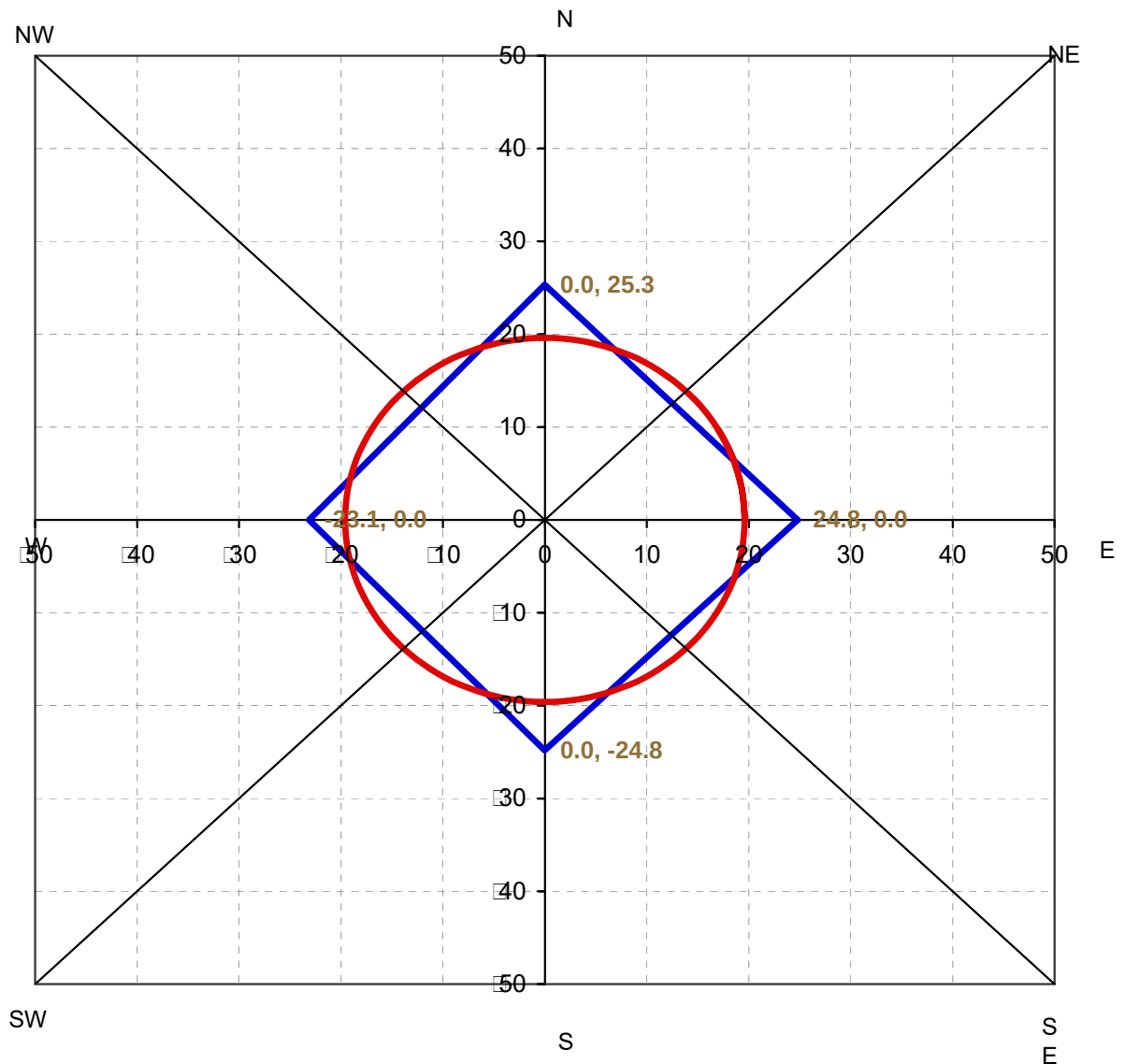
Apparent Resistivity Values (ERT-7)



Electrical Resistivity Test No.: ERT-7

IS: 3043:1987-RA:2006

Test Details
Test Designation : ERT-7
Test Location : Space for GIS Switch Yard for 400 kv
Co-ordinate : 1419 E-3697 N



Total Area of Polygon : 1202

Radius of Equivalent Circle-Mean Resistivity : 20 ohm-m

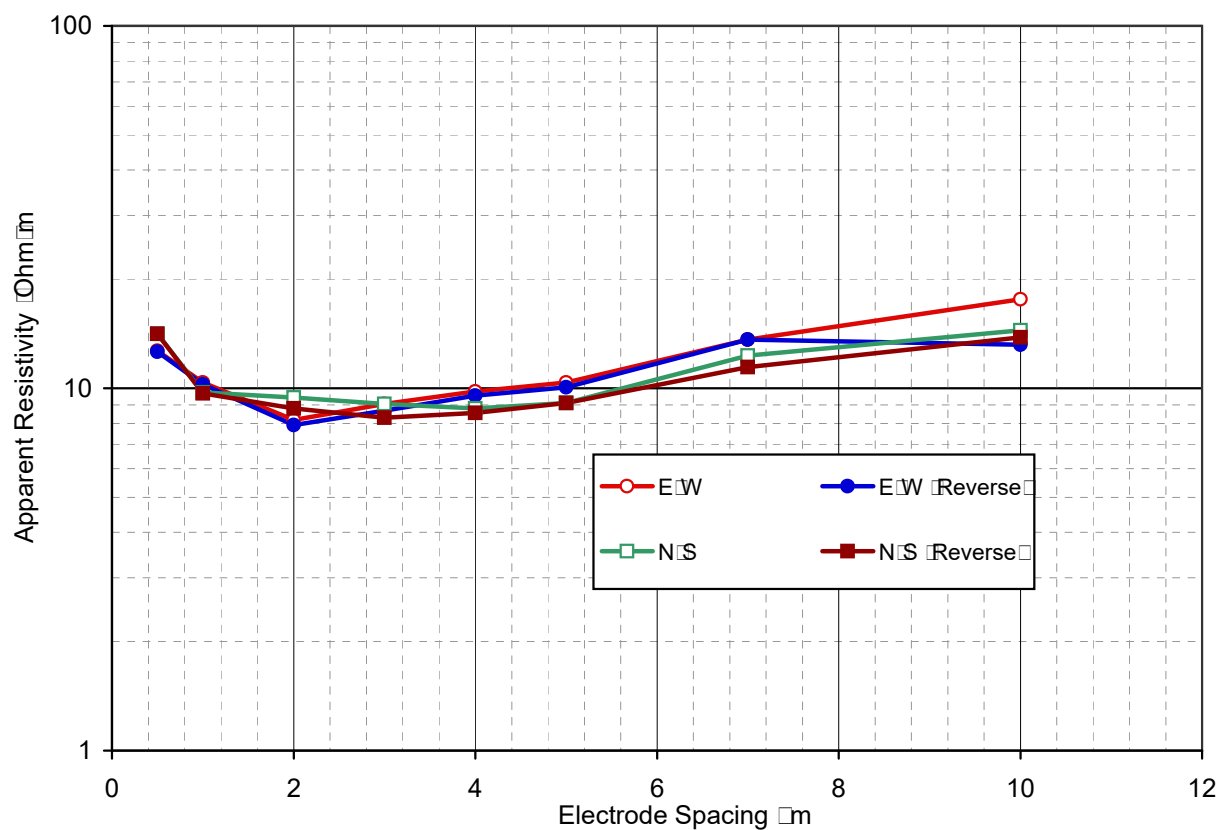
Polar Resistivity Curves (ERT-7)



Electrical Resistivity Test No.: ERT-8

IS: 3043:1987/RA:2006

Test Details
Test Designation : ERT-8
Test Location : Canteen Area
Co-ordinate : 1495 E 3722 N



Electrode Spacing (m)	Apparent Resistivity (Ohm.m)			
	E-W	E-W Reverse	N-S	N-S Reverse
0.5	12.7	12.6	14.1	14.1
1.0	10.4	10.2	9.7	9.7
2.0	8.2	7.9	9.4	8.8
3.0	9.0	8.7	9.0	8.3
4.0	9.8	9.6	8.8	8.5
5.0	10.4	10.1	9.1	9.1
7.0	13.6	13.6	12.3	11.4
10.0	17.6	13.2	14.5	13.8
Mean Resistivity	11	11	11	10

Mean Resistivity Value (ohm.m) : 8.7 ohm.m

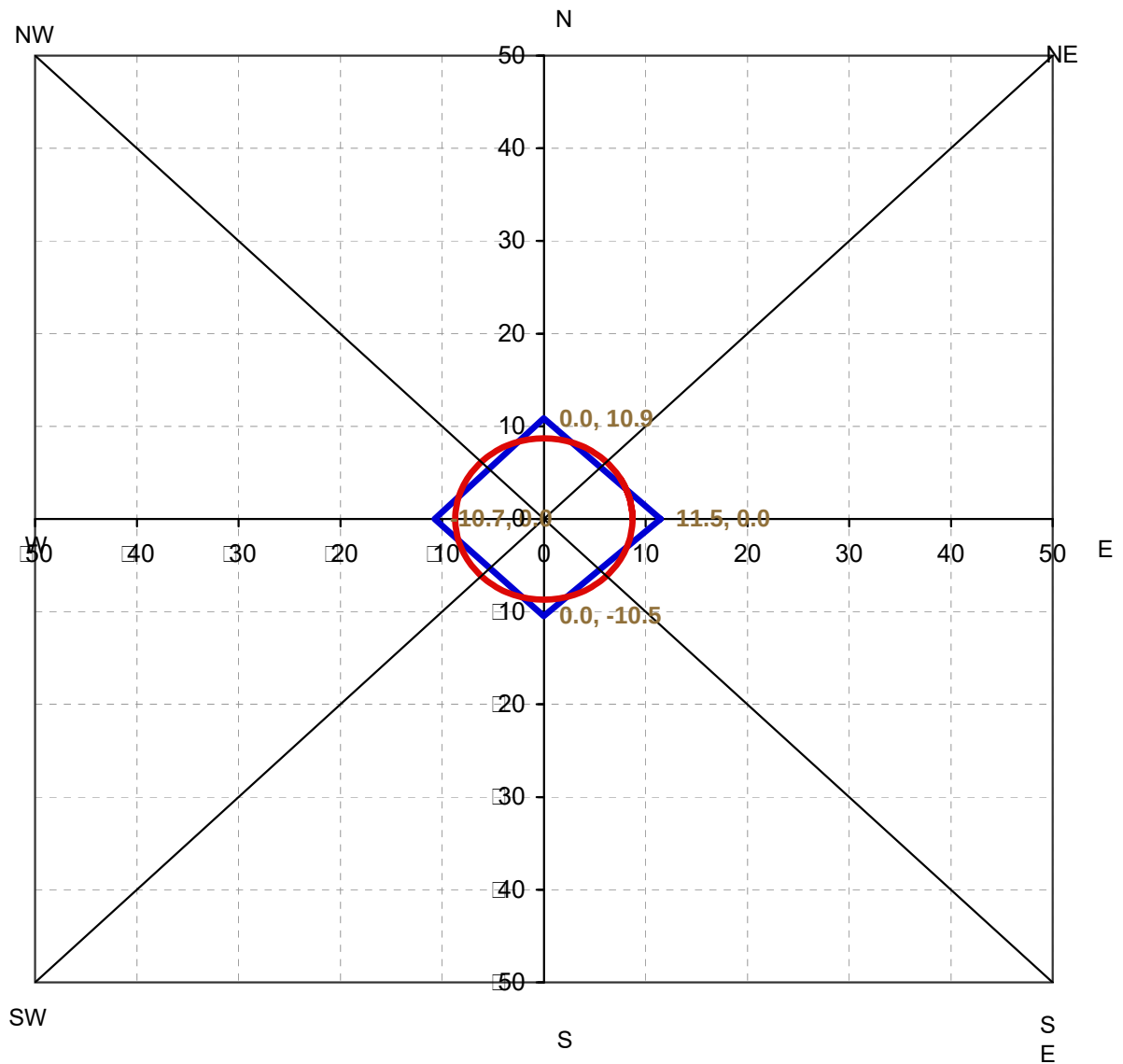
Apparent Resistivity Values (ERT-8)



Electrical Resistivity Test No.: ERT-8

IS: 3043:1987-RA:2006

Test Details
Test Designation : ERT-8
Test Location : Canteen Area
Co-ordinate : 1495 E-3722 N



Total Area of Polygon : 237

Radius of Equivalent Circle-Mean Resistivity : 9 ohm-m

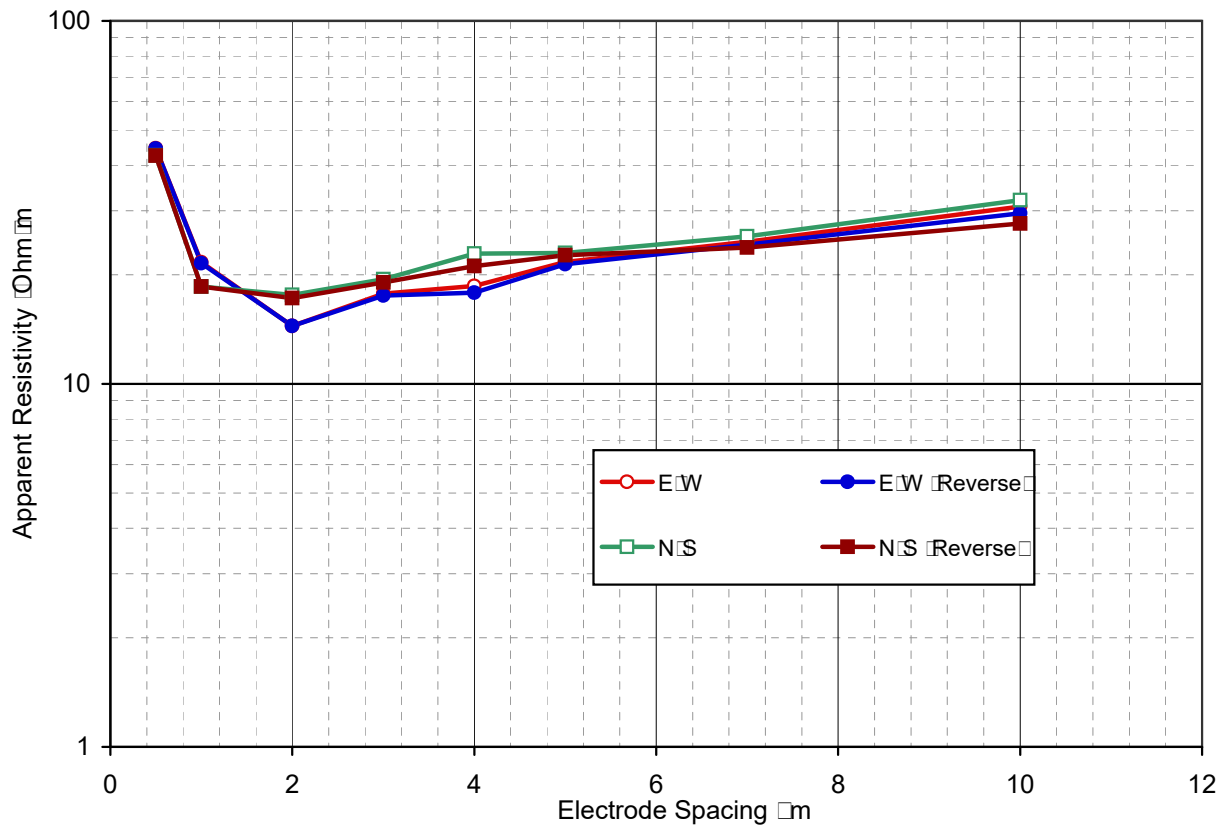
Polar Resistivity Curves (ERT-8)



Electrical Resistivity Test No.: ERT-9

IS: 3043-1987/RA-2006

Test Details
Test Designation : ERT-9
Test Location : CT-1
Co-Ordinate : 1073 E 3462 N



Electrode Spacing (m)	Apparent Resistivity (Ohm.m)			
	E-W	E-W Reverse	N-S	N-S Reverse
0.5	44.6	44.5	42.6	42.5
1.0	21.6	21.5	18.5	18.5
2.0	14.5	14.5	17.6	17.2
3.0	17.7	17.5	19.4	19.0
4.0	18.6	17.8	22.9	21.1
5.0	21.7	21.4	22.9	22.6
7.0	24.6	24.2	25.5	23.8
10.0	30.8	29.5	32.0	27.6
Mean Resistivity	24	24	25	24

Mean Resistivity Value (ohm.m) : 19.4 ohm.m

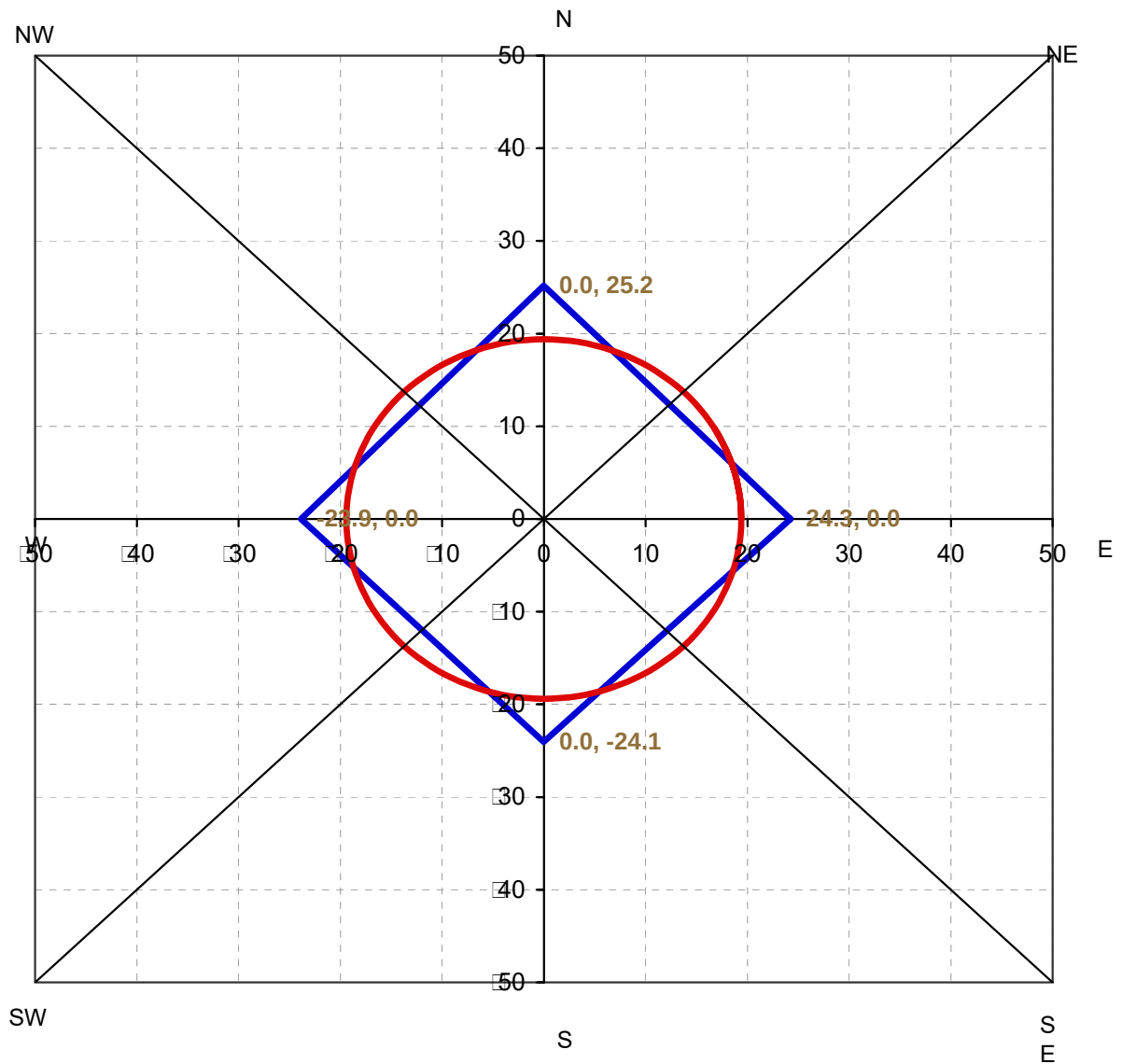
Apparent Resistivity Values (ERT-9)



Electrical Resistivity Test No.: ERT-9

IS: 3043:1987-RA:2006

Test Details
Test Designation : ERT-9
Test Location : CT-1
Co-ordinate : 1073 E-3462 N



Total Area of Polygon : 1185

Radius of Equivalent Circle-Mean Resistivity : 19 ohm-m

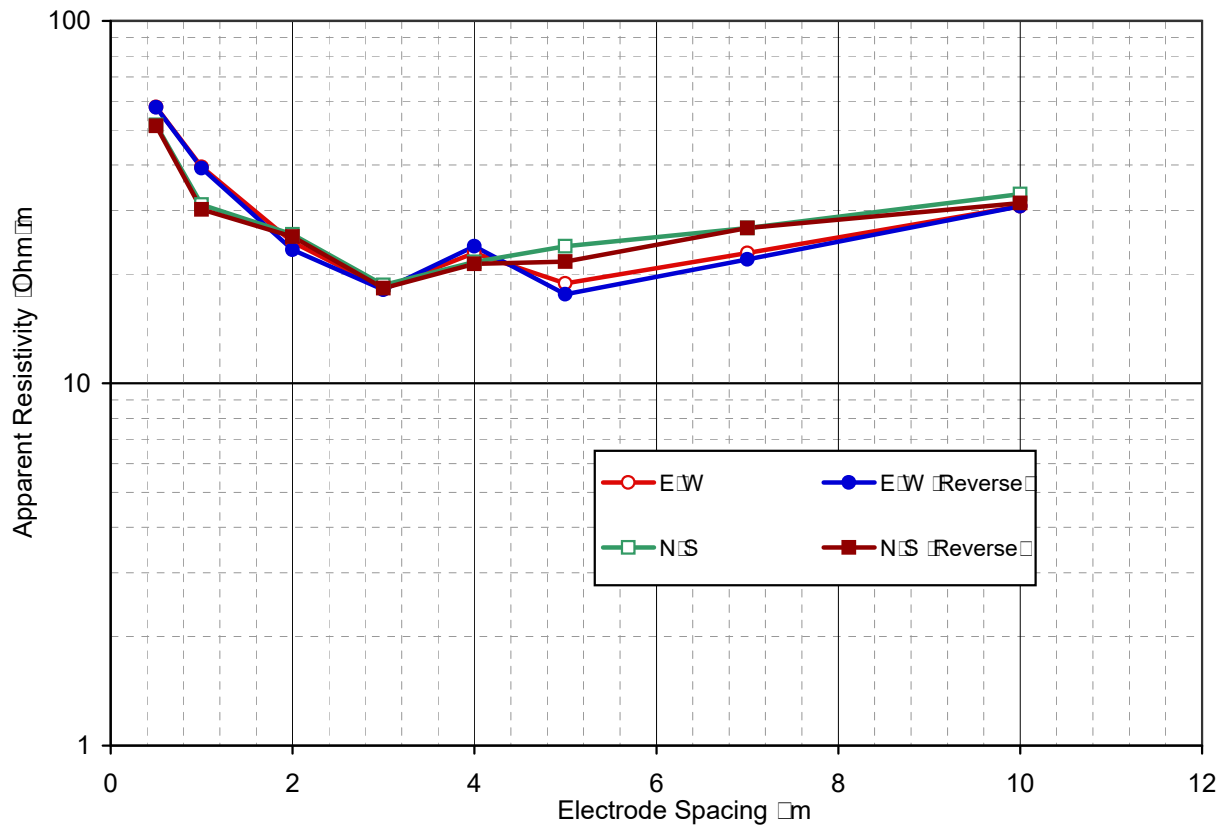
Polar Resistivity Curves (ERT-9)



Electrical Resistivity Test No.: ERT-10

IS: 3043:1987:RA:2006

Test Details
Test Designation : ERT-10
Test Location : CT-1
Co-Ordinate : 1115 E 3569 N



Electrode Spacing (m)	Apparent Resistivity (Ohm.m)			
	E-W	E-W Reverse	N-S	N-S Reverse
0.5	57.8	57.7	51.7	51.4
1.0	39.6	39.3	31.1	30.2
2.0	24.5	23.4	25.8	25.4
3.0	18.3	18.1	18.7	18.3
4.0	22.9	23.9	21.6	21.4
5.0	18.8	17.6	23.9	21.7
7.0	22.9	22.0	26.8	26.8
10.0	30.8	30.8	33.3	31.4
Mean Resistivity	29	29	29	28

Mean Resistivity Value (ohm.m) : 23.1 ohm.m

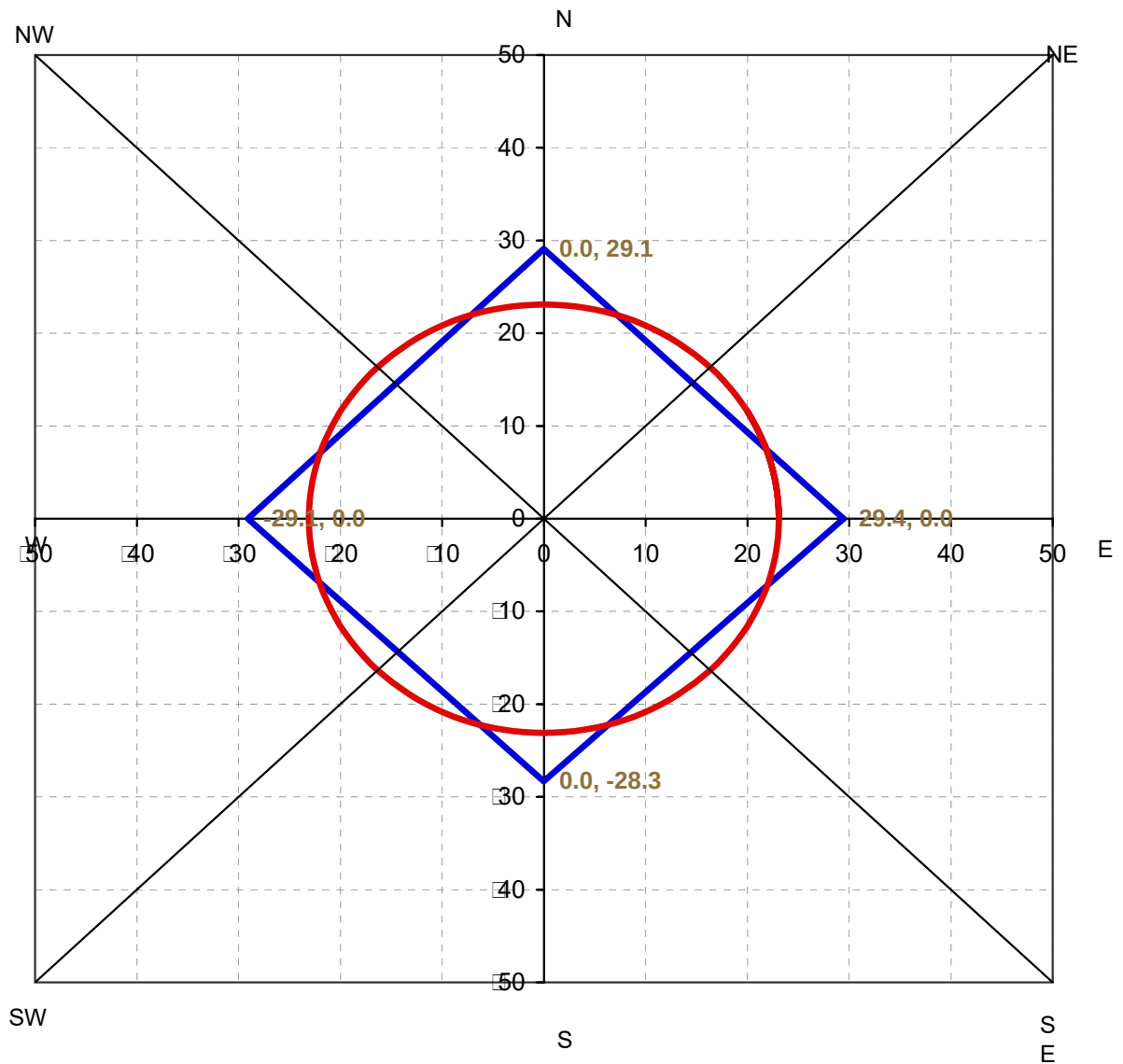
Apparent Resistivity Values (ERT-10)



Electrical Resistivity Test No.: ERT-10

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-10
Test Location : CT-1
Co-ordinate : 1115 E-3569 N



Total Area of Polygon : 1680

Radius of Equivalent Circle-Mean Resistivity : 23 ohm-m

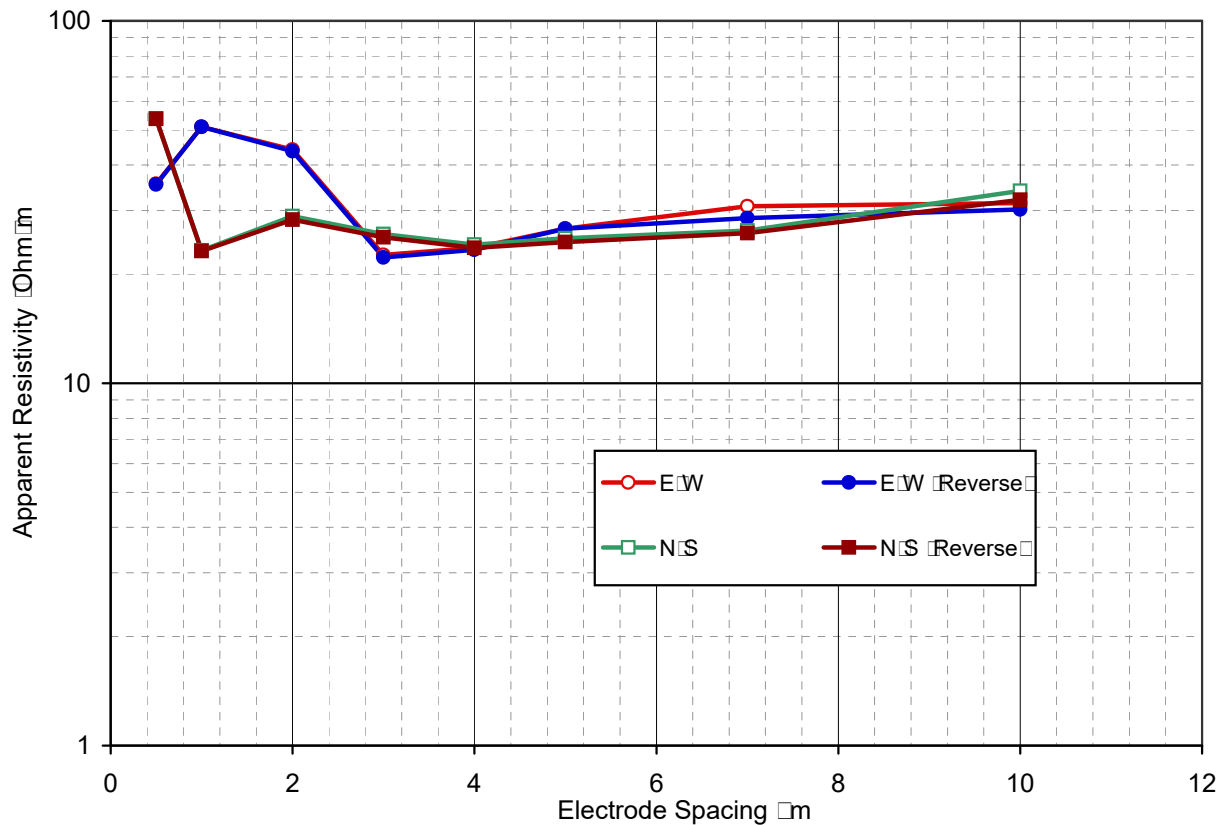
Polar Resistivity Curves (ERT-10)



Electrical Resistivity Test No.: ERT-11

IS: 3043-1987/RA-2006

Test Details
Test Designation : ERT-11
Test Location : TANK AREA
Co-Ordinate : 1137 E 3615 N



Electrode Spacing (m)	Apparent Resistivity (Ohm.m)			
	E-W	E-W Reverse	N-S	N-S Reverse
0.5	35.5	35.3	53.8	53.7
1.0	51.0	51.0	23.2	23.2
2.0	44.1	43.7	28.9	28.3
3.0	22.6	22.2	25.8	25.3
4.0	23.6	23.4	24.1	23.6
5.0	26.7	26.7	25.1	24.5
7.0	30.8	28.6	26.4	25.9
10.0	31.4	30.2	33.9	32.0
Mean Resistivity	33	33	30	30

Mean Resistivity Value (ohm.m) : 25 ohm.m

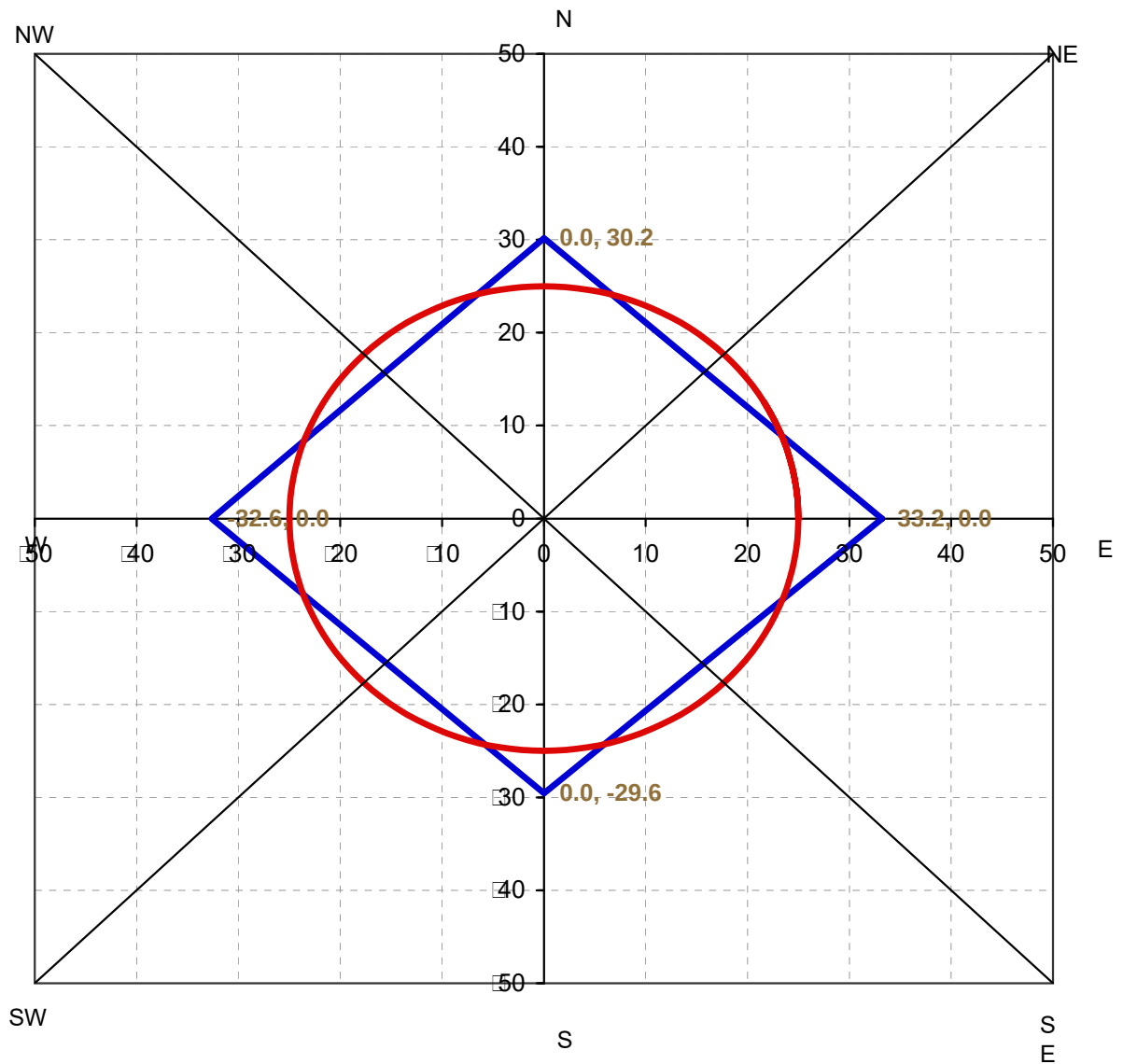
Apparent Resistivity Values (ERT-11)



Electrical Resistivity Test No.: ERT-11

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-11
Test Location : TANK AREA
Co-ordinate : 1137 E-3615 N



Total Area of Polygon : 1967

Radius of Equivalent Circle-Mean Resistivity : 25 ohm-m

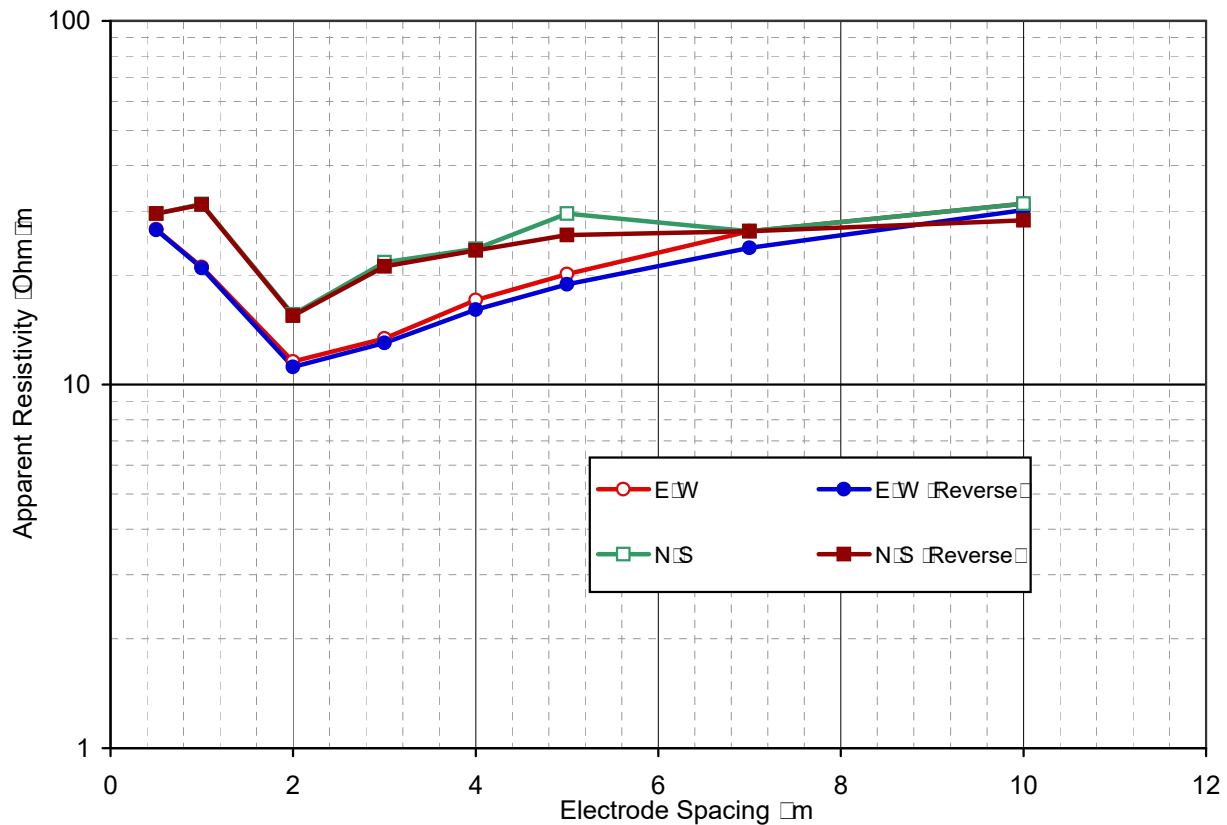
Polar Resistivity Curves (ERT-11)



Electrical Resistivity Test No.: ERT-12

IS: 3043:1987/RA:2006

Test Details
Test Designation : ERT-12
Test Location : CT-2
Co-ordinate : 1092 E 3708 N



Electrode Spacing (m)	Apparent Resistivity (Ohm.m)			
	E-W	E-W Reverse	N-S	N-S Reverse
0.5	26.7	26.6	29.5	29.5
1.0	21.0	20.9	31.4	31.2
2.0	11.6	11.2	15.6	15.5
3.0	13.4	13.0	21.7	21.1
4.0	17.1	16.1	23.6	23.4
5.0	20.1	18.8	29.5	25.8
7.0	26.4	23.8	26.4	26.4
10.0	31.4	30.2	31.4	28.3
Mean Resistivity	21	20	26	25

Mean Resistivity Value (ohm.m) : 18.3 ohm.m

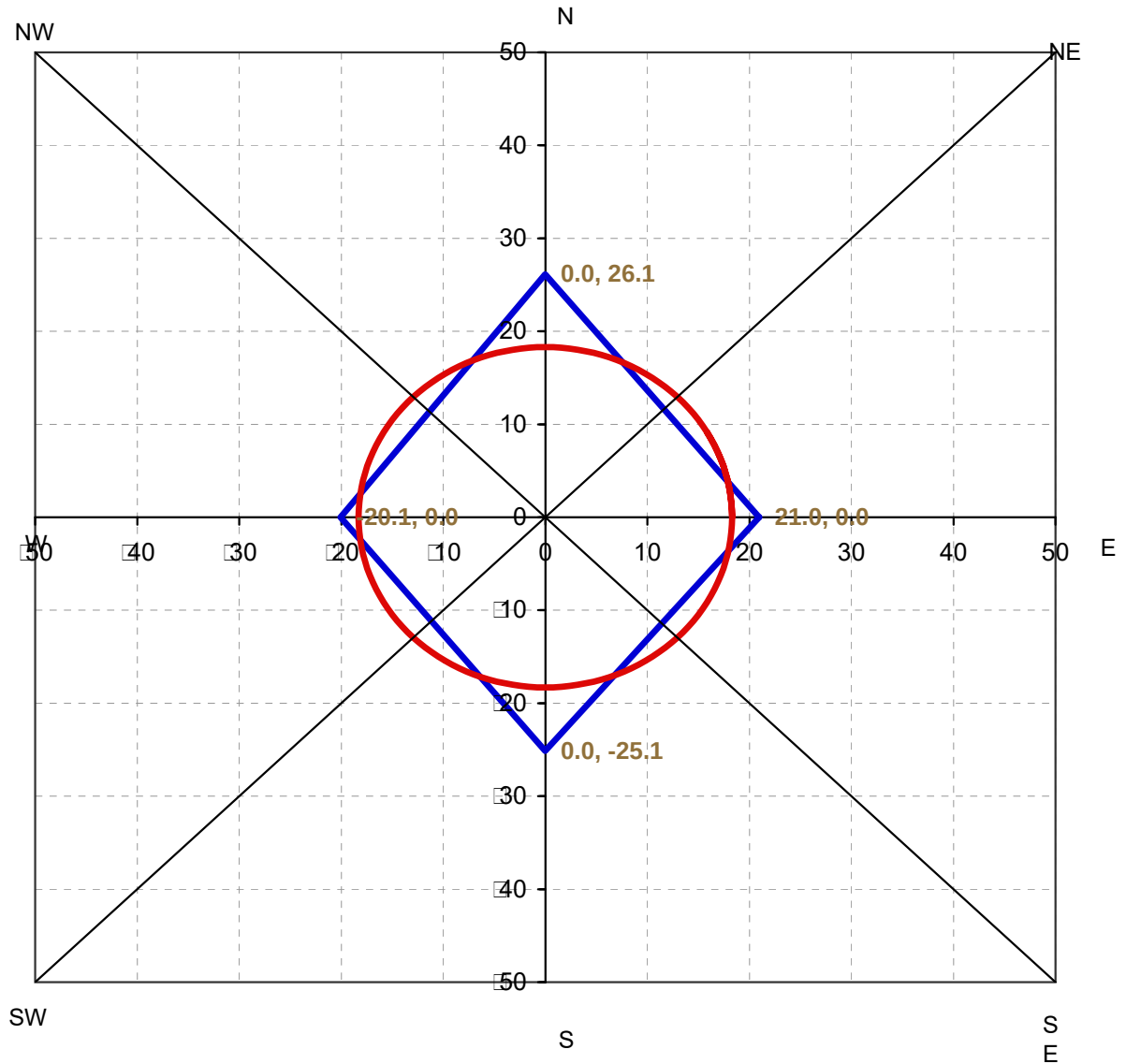
Apparent Resistivity Values (ERT-12)



Electrical Resistivity Test No.: ERT-12

IS: 3043:1987-RA:2006

Test Details
Test Designation : ERT-12
Test Location : CT-2
Co-ordinate : 1092 E-3708 N



Total Area of Polygon : 1052

Radius of Equivalent Circle-Mean Resistivity : 18 ohm-m

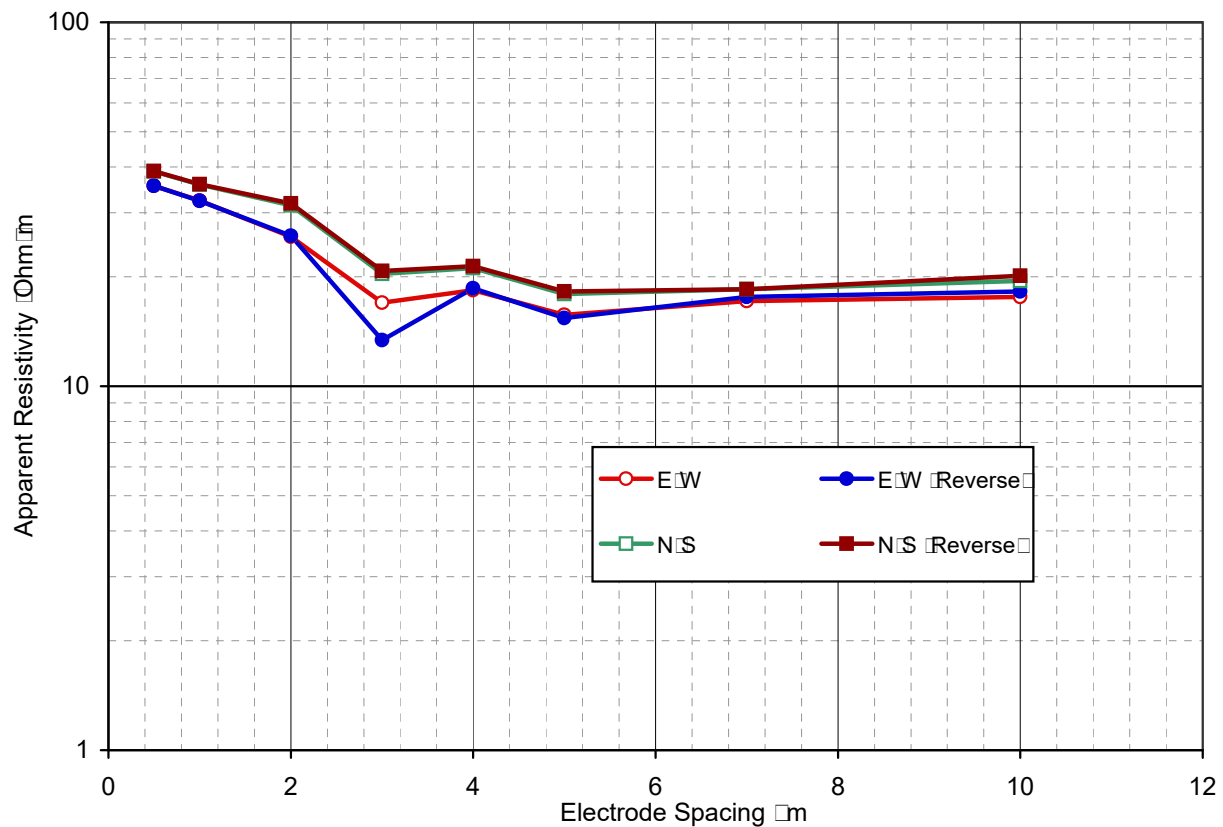
Polar Resistivity Curves (ERT-12)



Electrical Resistivity Test No.: ERT-13

IS: 3043:1987:RA:2006

Test Details
Test Designation : ERT-13
Test Location : TANK AREA
Co-ordinate : 1020 E 3771 N



Electrode Spacing (m)	Apparent Resistivity (Ohm.m)			
	E-W	E-W Reverse	N-S	N-S Reverse
0.5	35.5	35.5	39.0	39.0
1.0	32.4	32.3	35.8	35.9
2.0	25.8	25.9	31.4	31.8
3.0	17.0	13.4	20.4	20.7
4.0	18.3	18.6	21.1	21.4
5.0	15.7	15.4	17.9	18.2
7.0	17.2	17.6	18.5	18.5
10.0	17.6	18.2	19.5	20.1
Mean Resistivity	22	22	25	26

Mean Resistivity Value (ohm.m) : 19 ohm.m

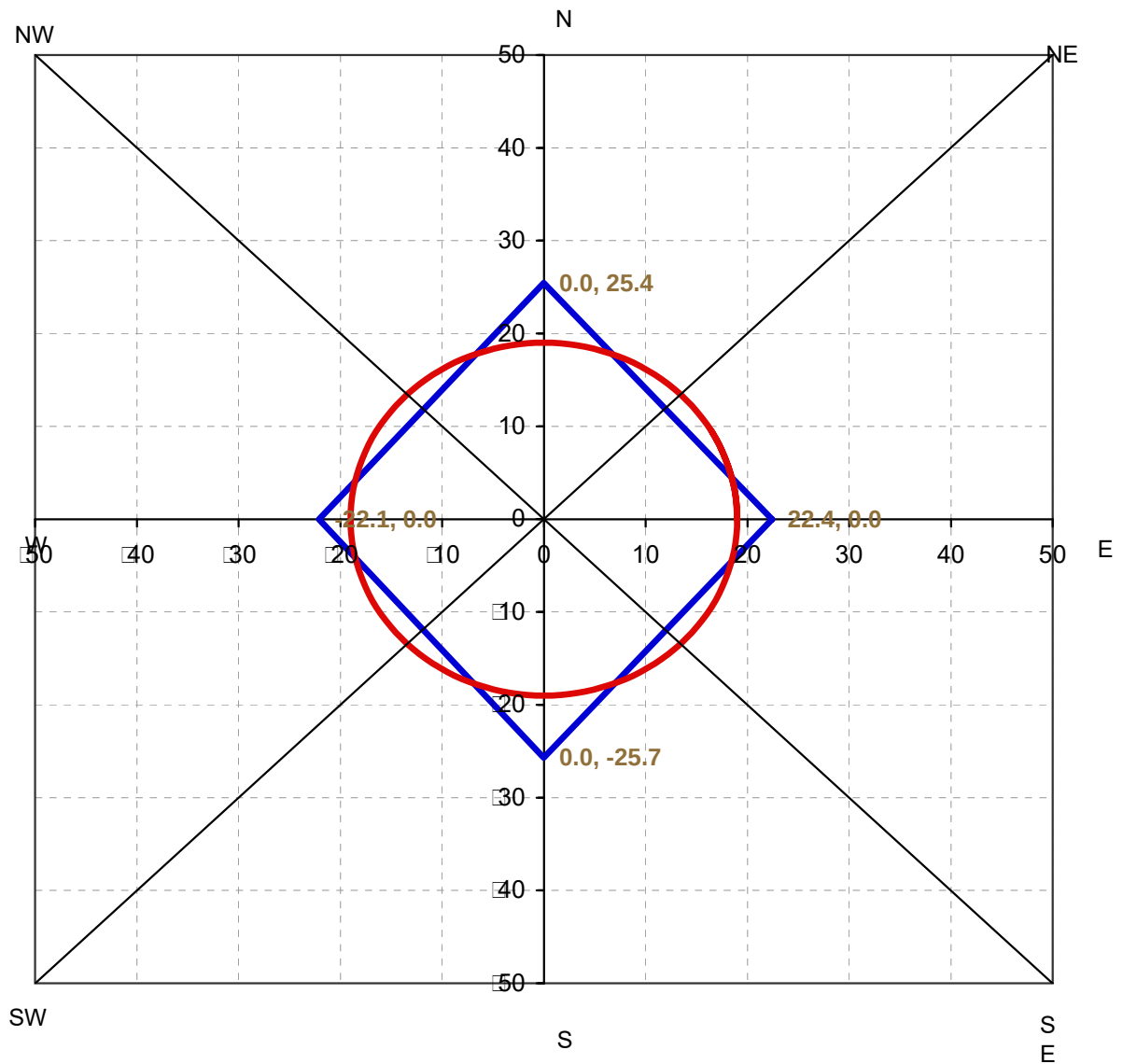
Apparent Resistivity Values (ERT-13)



Electrical Resistivity Test No.: ERT-13

IS: 3043:1987-RA:2006

Test Details
Test Designation : ERT-13
Test Location : TANK AREA
Co-ordinate : 1020 E-3771 N



Total Area of Polygon : 1139

Radius of Equivalent Circle-Mean Resistivity : 19 ohm-m

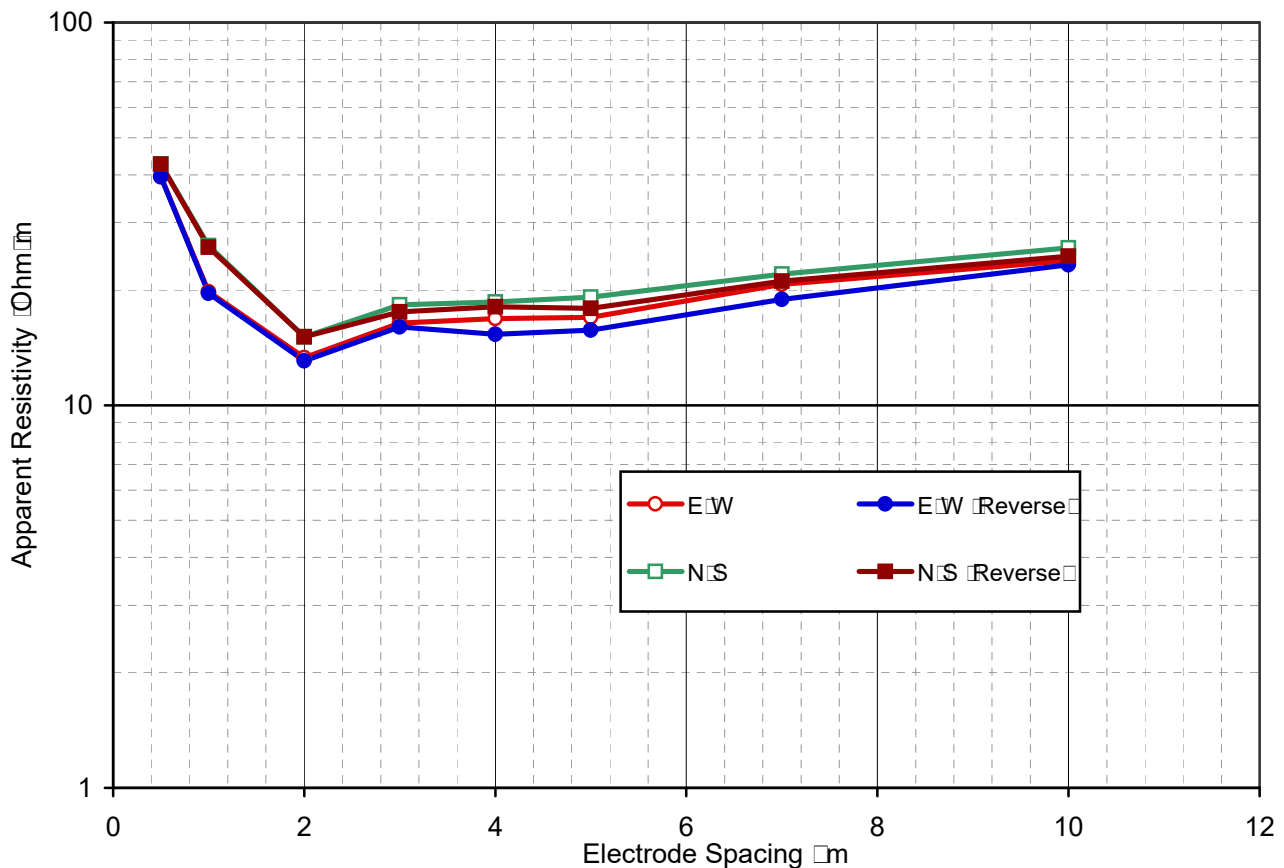
Polar Resistivity Curves (ERT-13)



Electrical Resistivity Test No.: ERT-14

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-14
Test Location : Auxiliary Boiler Area
Co-ordinate : 1072 E-3863 N



Electrode Spacing (m)	Apparent Resistivity (Ohm-m)			
	E-W	E-W Reverse	N-S	N-S Reverse
0.5	39.6	39.6	42.7	42.6
1.0	19.8	19.6	26.1	25.9
2.0	13.3	13.1	15.1	15.1
3.0	16.4	16.0	18.3	17.5
4.0	16.8	15.3	18.6	18.1
5.0	17.0	15.7	19.2	17.9
7.0	20.7	18.9	22.0	21.1
10.0	23.9	23.2	25.8	24.5
Mean Resistivity	21	20	23	23

Mean Resistivity Value (ohm-m) : 17.4 ohm-m

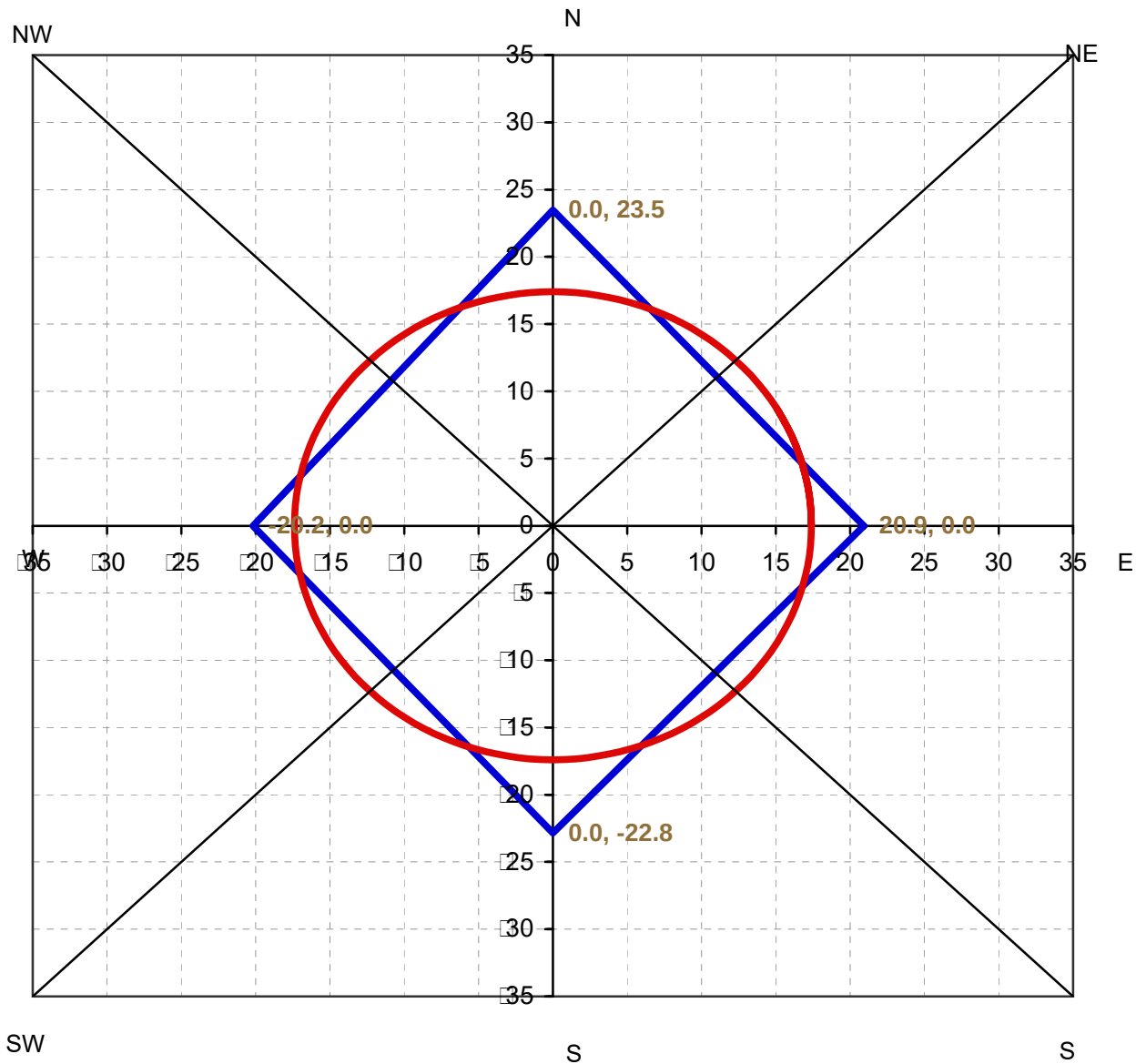
Apparent Resistivity Values (ERT-14)



Electrical Resistivity Test No.: ERT-14

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-14
Test Location : Auxiliary Boiler Area
Co-ordinate : 1072 E-3863 N



Total Area of Polygon : 952
Radius of Equivalent Circle-Mean Resistivity : 17 ohm-m

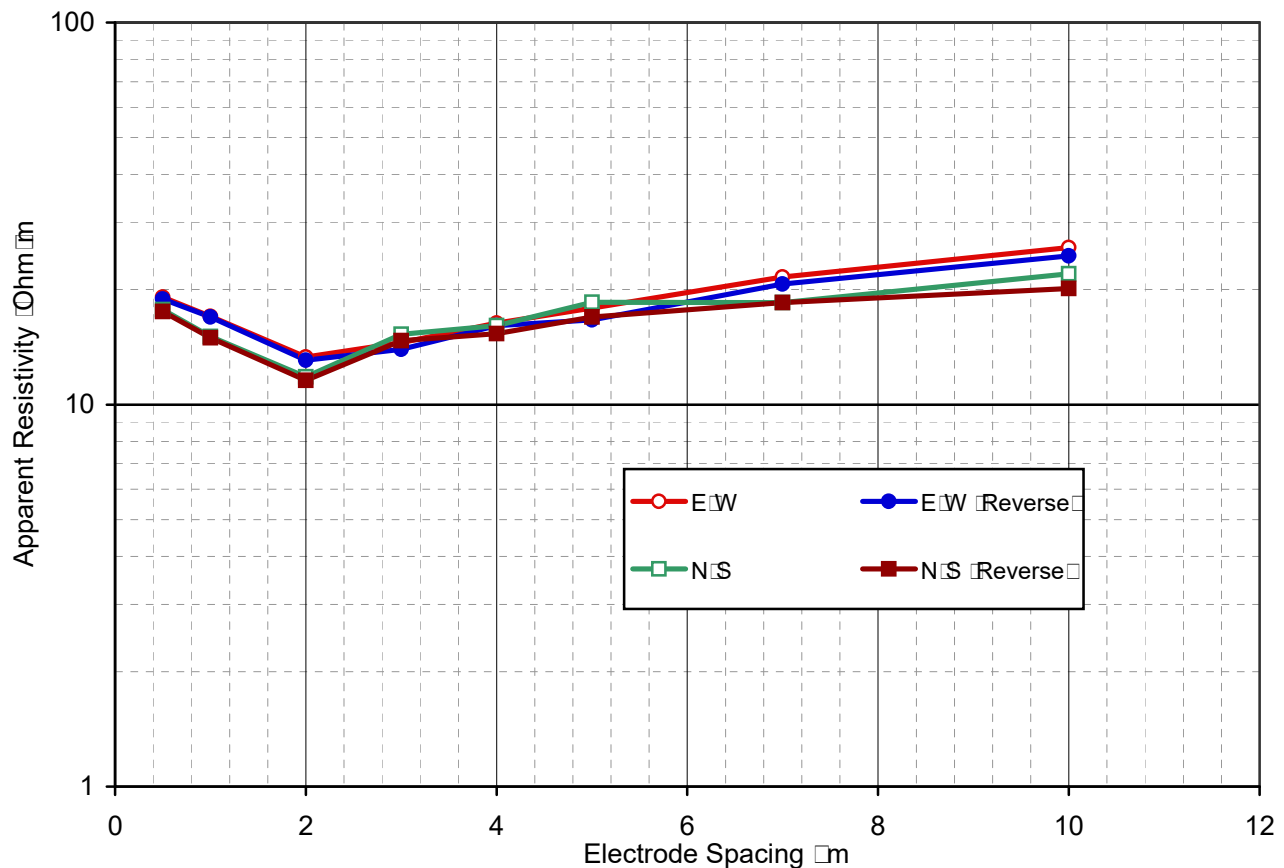
Polar Resistivity Curves (ERT-14)



Electrical Resistivity Test No.: ERT-15

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-15
Test Location : Auxiliary Boiler Area
Co-ordinate : 1202 E-3842 N



Electrode Spacing (m)	Apparent Resistivity (Ohm.m)			
	E-W	E-W Reverse	N-S	N-S Reverse
0.5	19.1	18.9	17.7	17.5
1.0	17.0	17.0	15.1	15.0
2.0	13.3	13.1	11.8	11.6
3.0	14.5	13.9	15.3	14.7
4.0	16.3	16.1	16.1	15.3
5.0	17.9	16.7	18.5	17.0
7.0	21.6	20.7	18.5	18.5
10.0	25.8	24.5	22.0	20.1
Mean Resistivity	18	18	17	16

Mean Resistivity Value (ohm.m) : 13.7 ohm.m

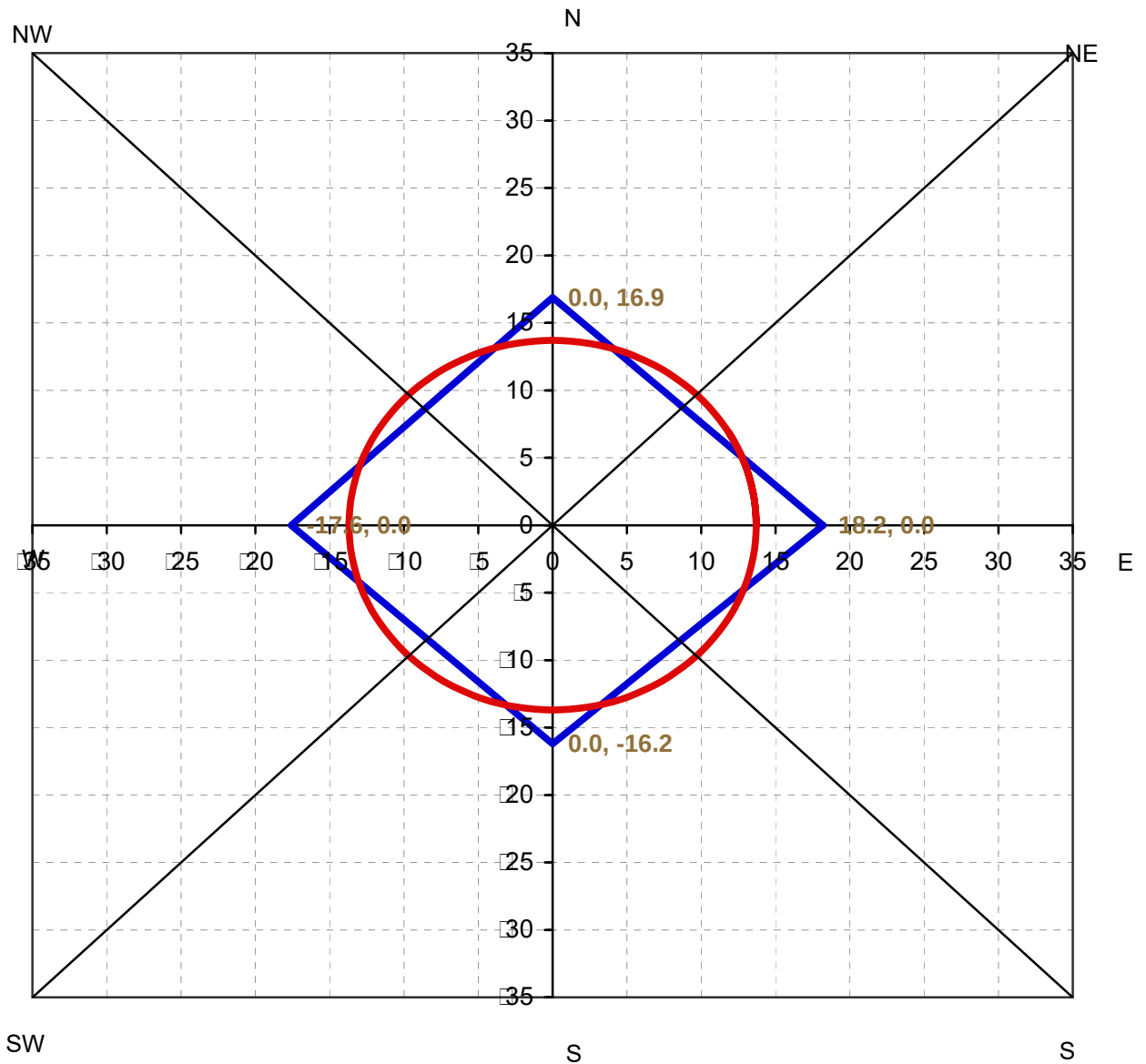
Apparent Resistivity Values (ERT-15)



Electrical Resistivity Test No.: ERT-15

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-15
Test Location : Auxiliary Boiler Area
Coordinate : 1202 E-3842 N



Total Area of Polygon : 592

Radius of Equivalent Circle-Mean Resistivity : 14 ohm-m

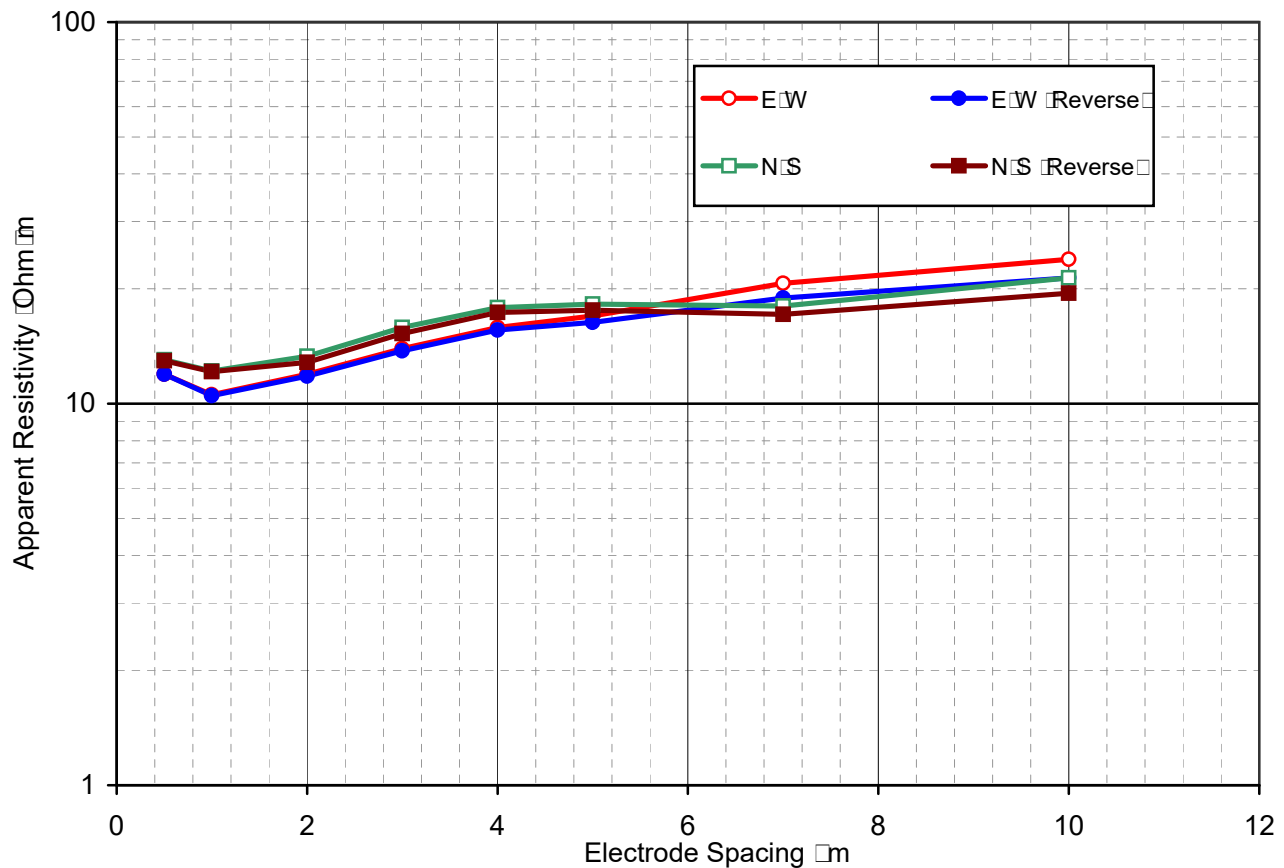
Polar Resistivity Curves (ERT-15)



Electrical Resistivity Test No.: ERT-16

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-16
Co-ordinate : 313851.14E-2312912.19N



Electrode Spacing (m)	Apparent Resistivity (Ohm.m)			
	E-W	E-W Reverse	N-S	N-S Reverse
0.5	11.9	11.9	13.0	12.9
1.0	10.6	10.5	12.2	12.1
2.0	11.9	11.8	13.3	12.8
3.0	13.9	13.8	15.8	15.3
4.0	15.8	15.6	17.8	17.3
5.0	17.0	16.3	18.2	17.6
7.0	20.7	18.9	18.0	17.2
10.0	23.9	21.4	21.4	19.5
Mean Resistivity	16	15	16	16

Mean Resistivity Value (ohm.m) : 12.5 ohm.m

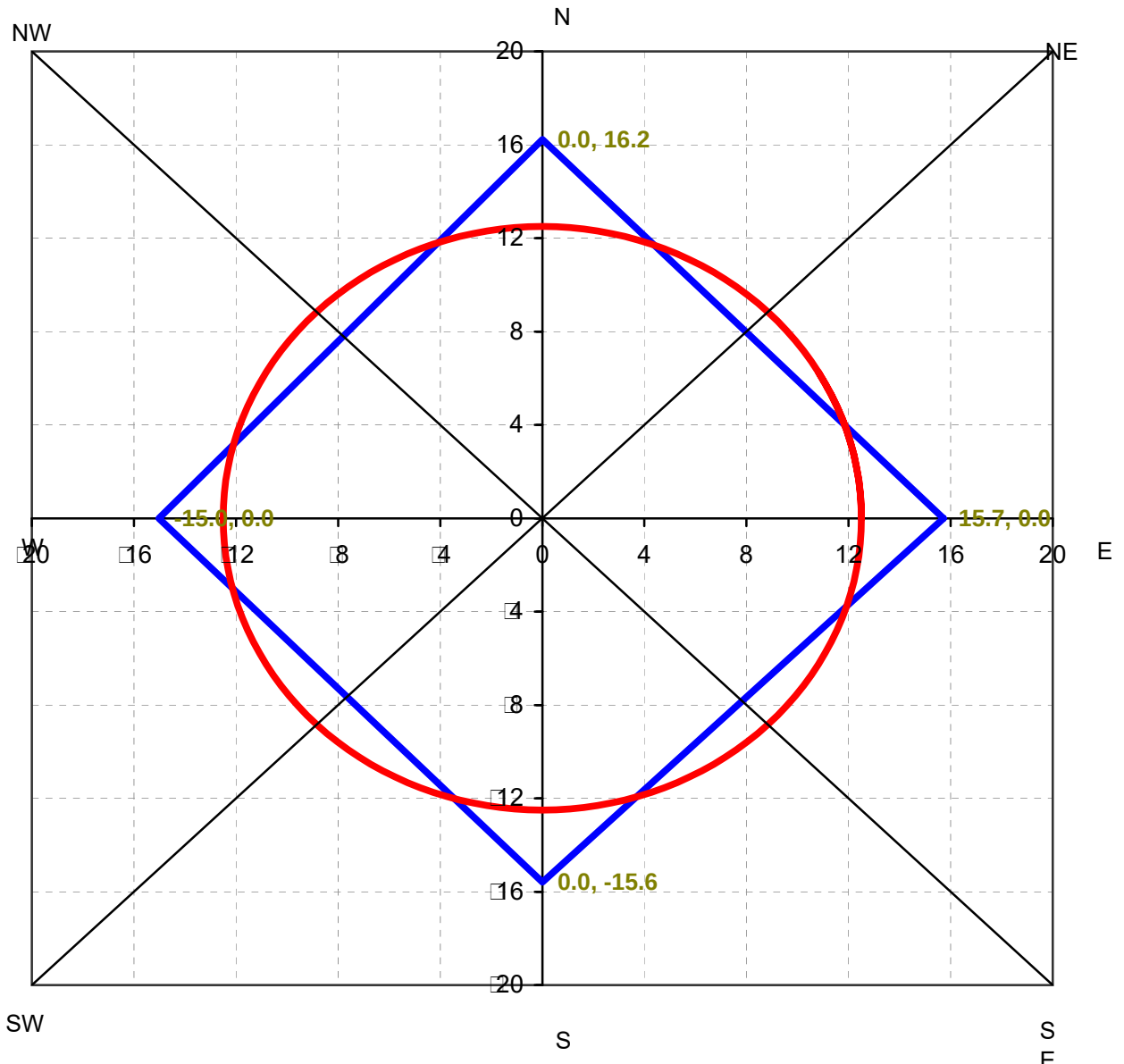
Apparent Resistivity Values (ERT-16)



Electrical Resistivity Test No.: ERT-16

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-16
Co-ordinate : 313851.14E-2312912.19N



Total Area of Polygon : 489

Radius of Equivalent Circle-Mean Resistivity : 13 ohm-m

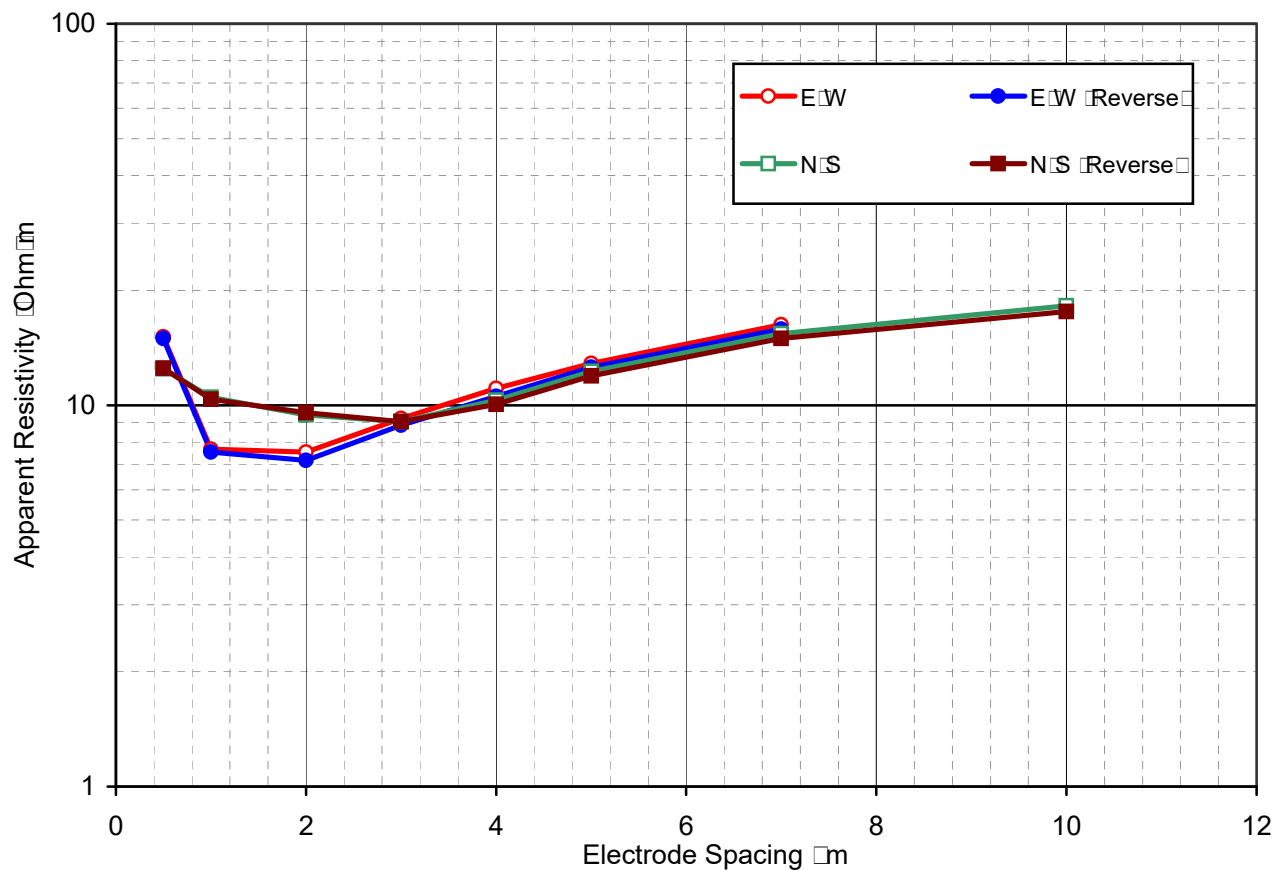
Polar Resistivity Curves (ERT-16)



Electrical Resistivity Test No.: ERT-17

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-17
Co-ordinate : 313930.86E-2312874.7N



Electrode Spacing (m)	Apparent Resistivity (Ohm-m)			
	E-W	E-W Reverse	N-S	N-S Reverse
0.5	15.1	15.0	12.4	12.5
1.0	7.7	7.5	10.5	10.4
2.0	7.5	7.2	9.4	9.6
3.0	9.2	8.9	9.0	9.0
4.0	11.1	10.6	10.3	10.1
5.0	12.9	12.6	12.3	11.9
7.0	16.3	15.8	15.4	15.0
10.0			18.2	17.6
Mean Resistivity	11	11	12	12

Mean Resistivity Value (ohm-m) : 9.3 ohm-m

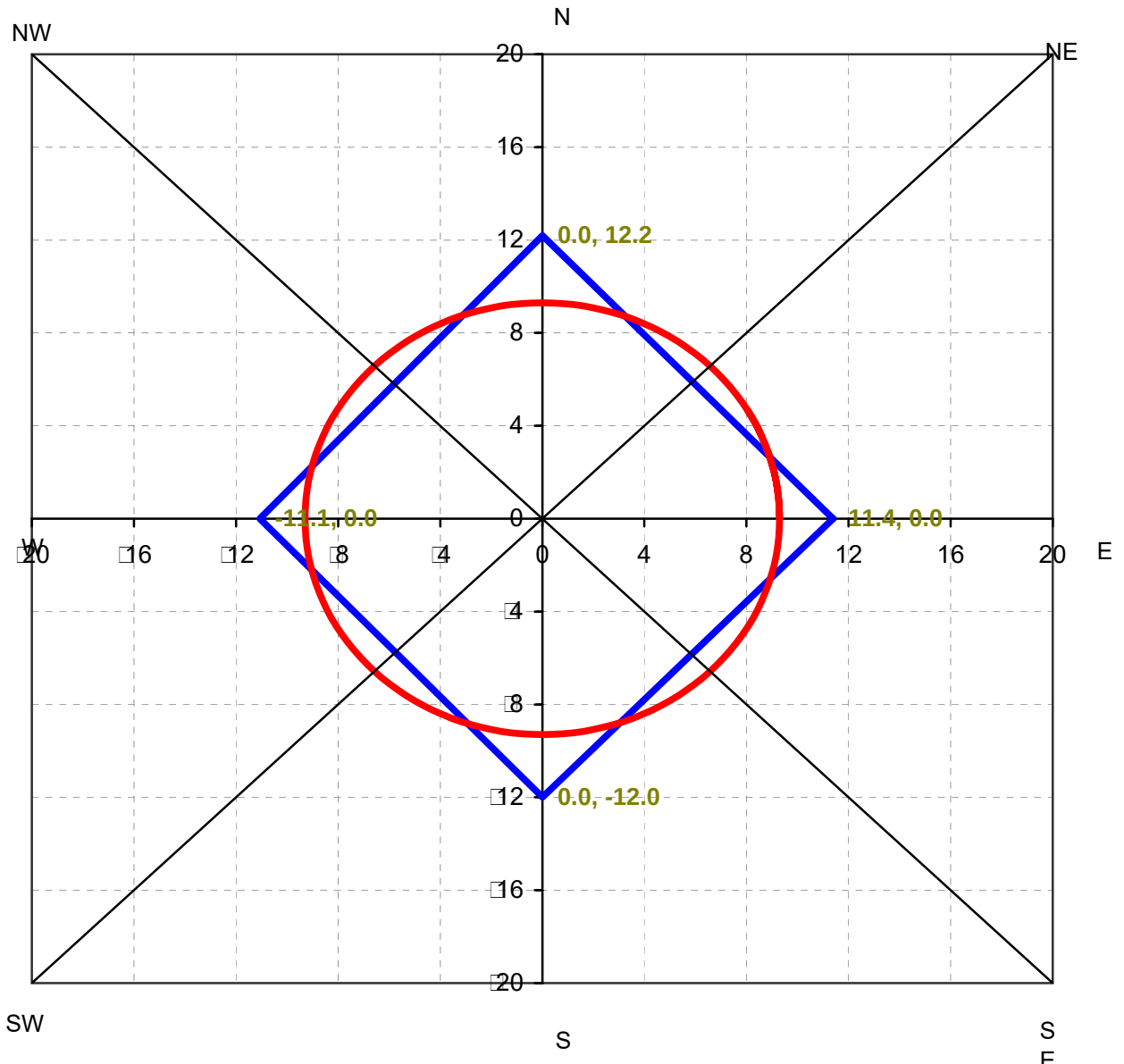
Apparent Resistivity Values (ERT-17)



Electrical Resistivity Test No.: ERT-17

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-17
Co-ordinate : 313930.86E-2312874.7N



Total Area of Polygon : 272

Radius of Equivalent Circle-Mean Resistivity : 9 ohm-m

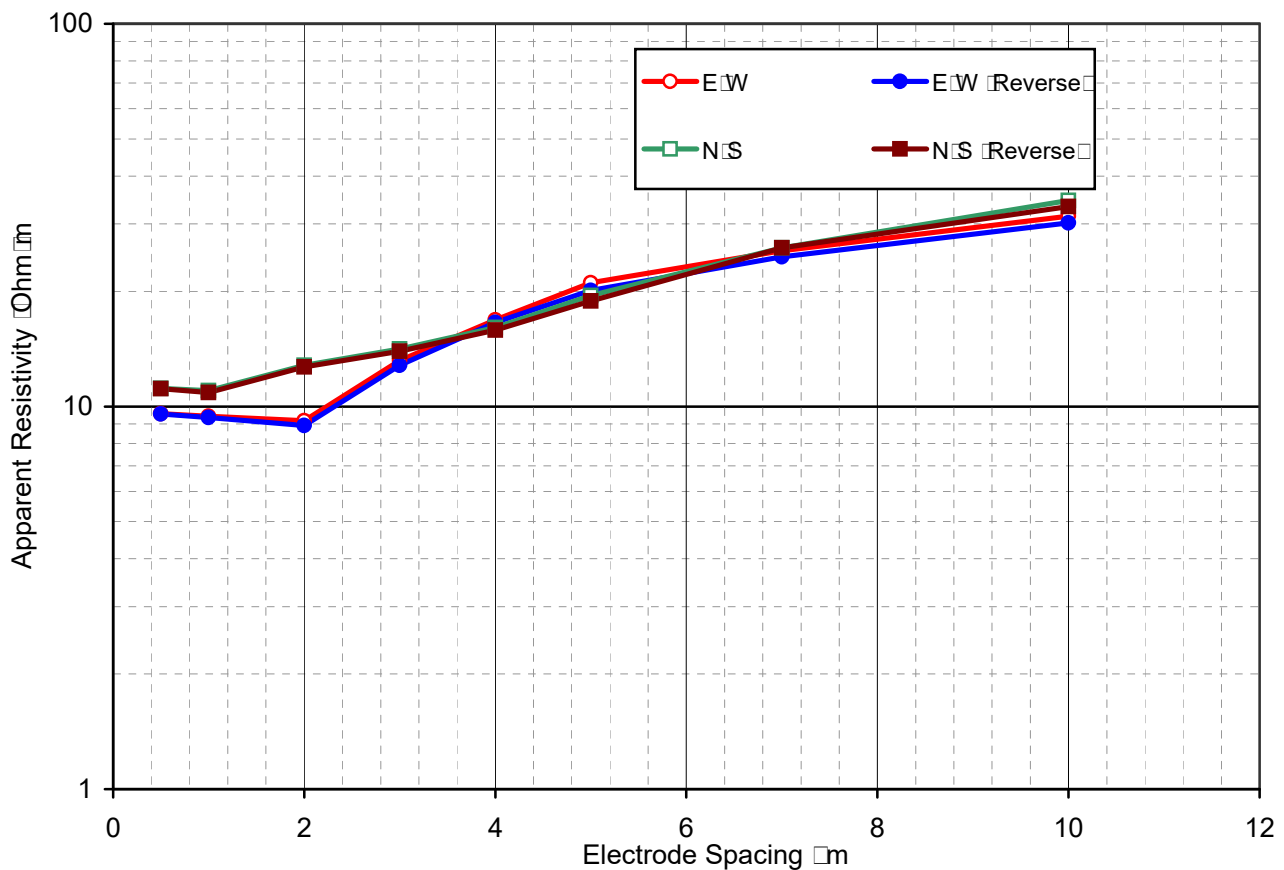
Polar Resistivity Curves (ERT-17)



Electrical Resistivity Test No.: ERT-18

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-18
Co-ordinate : 313981.2E-2312858.78N



Electrode Spacing (m)	Apparent Resistivity (Ohm-m)			
	E-W	E-W Reverse	N-S	N-S Reverse
0.5	9.6	9.6	11.2	11.1
1.0	9.4	9.4	11.0	10.9
2.0	9.2	8.9	12.8	12.7
3.0	13.2	12.8	14.1	13.9
4.0	16.8	16.6	16.1	15.8
5.0	21.0	20.1	19.5	18.8
7.0	25.5	24.6	25.9	25.9
10.0	31.4	30.2	34.6	33.3
Mean Resistivity	17	17	18	18

Mean Resistivity Value (ohm-m) : 13.9 ohm-m

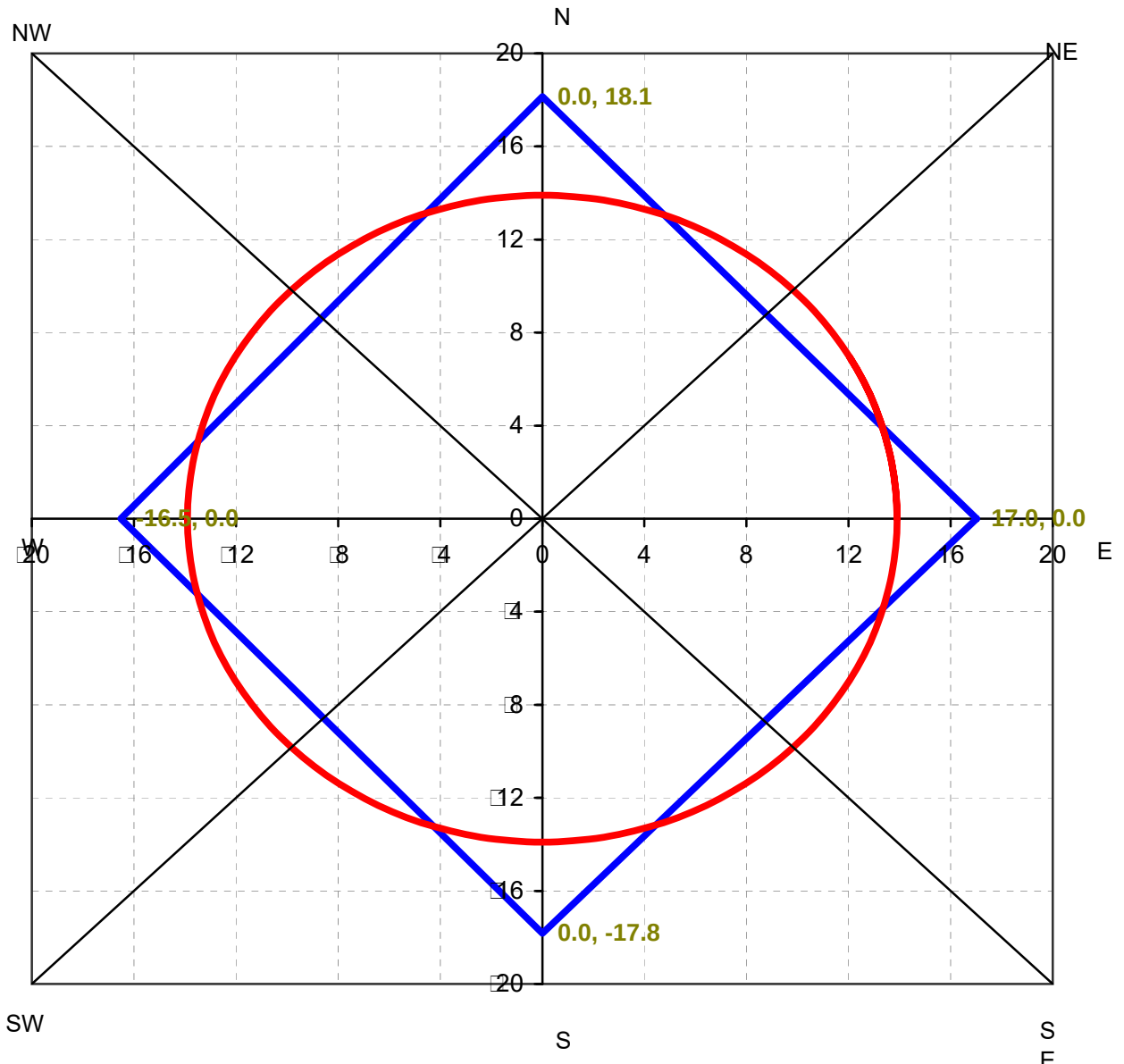
Apparent Resistivity Values (ERT-18)



Electrical Resistivity Test No.: ERT-18

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-18
Co-ordinate : 313981.2E-2312858.78N



Total Area of Polygon : 603

Radius of Equivalent Circle-Mean Resistivity : 14 ohm-m

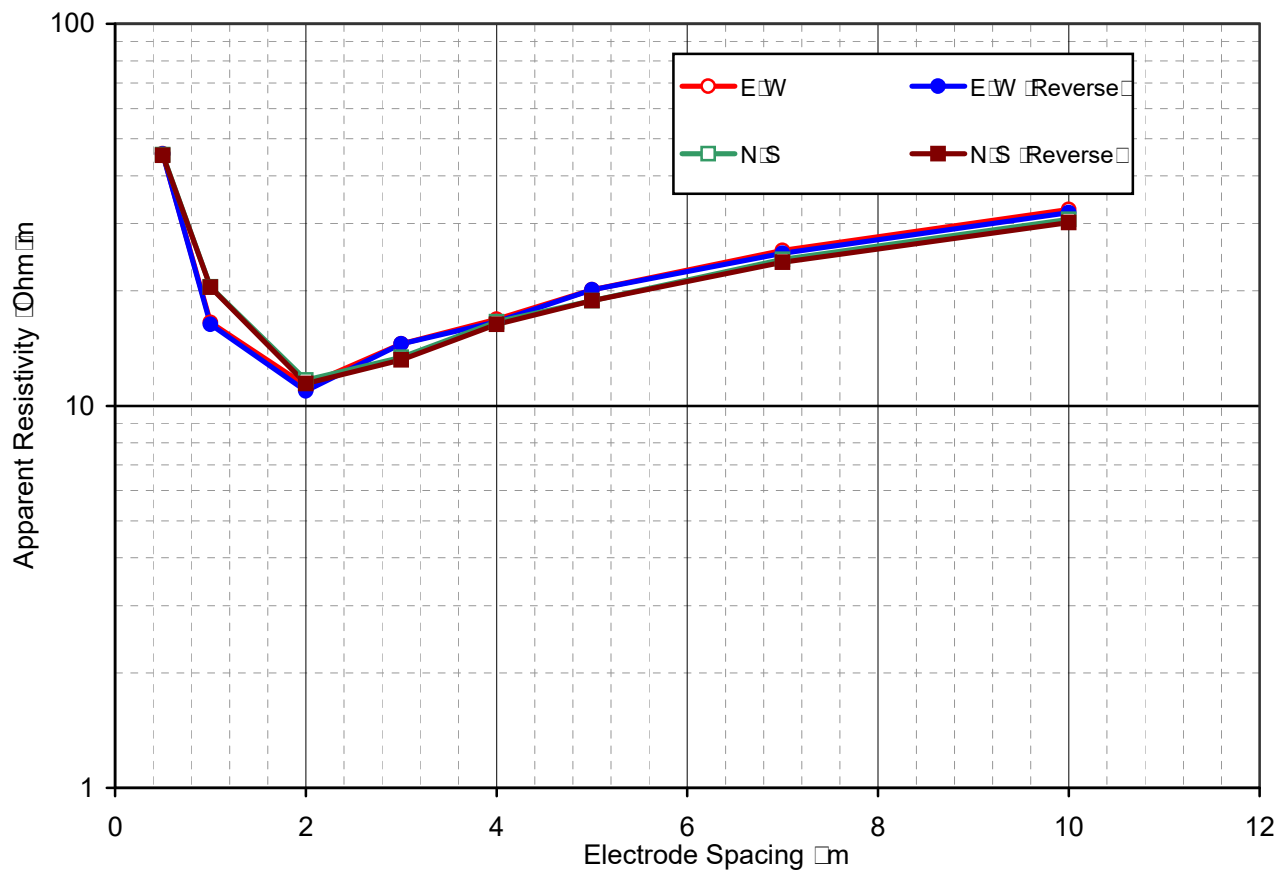
Polar Resistivity Curves (ERT-18)



Electrical Resistivity Test No.: ERT-19

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-19
Co-ordinate : 314047.79E-2312822.8N



Electrode Spacing (m)	Apparent Resistivity (Ohm.m)			
	E-W	E-W Reverse	N-S	N-S Reverse
0.5	45.6	45.6	45.4	45.2
1.0	16.5	16.3	20.5	20.4
2.0	11.3	10.9	11.7	11.4
3.0	14.5	14.5	13.4	13.2
4.0	16.8	16.6	16.6	16.3
5.0	20.1	20.1	18.8	18.8
7.0	25.5	25.1	24.2	23.8
10.0	32.7	32.0	30.8	30.2
Mean Resistivity	21	23	23	22

Mean Resistivity Value (ohm.m) : 17.7 ohm.m

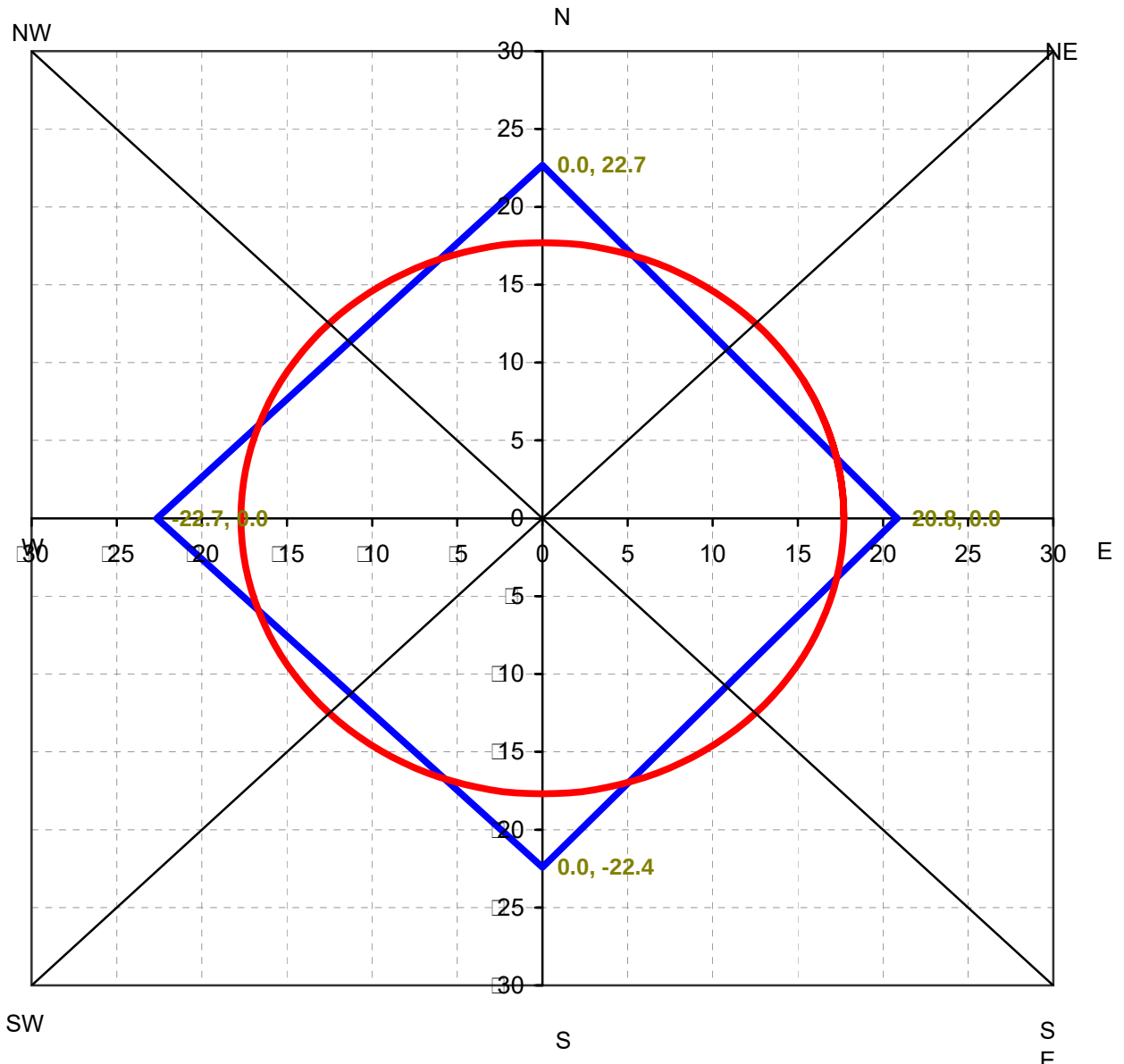
Apparent Resistivity Values (ERT-19)



Electrical Resistivity Test No.: ERT-19

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-19
Co-ordinate : 314047.79E-2312822.8N



Total Area of Polygon : 980

Radius of Equivalent Circle-Mean Resistivity : 18 ohm-m

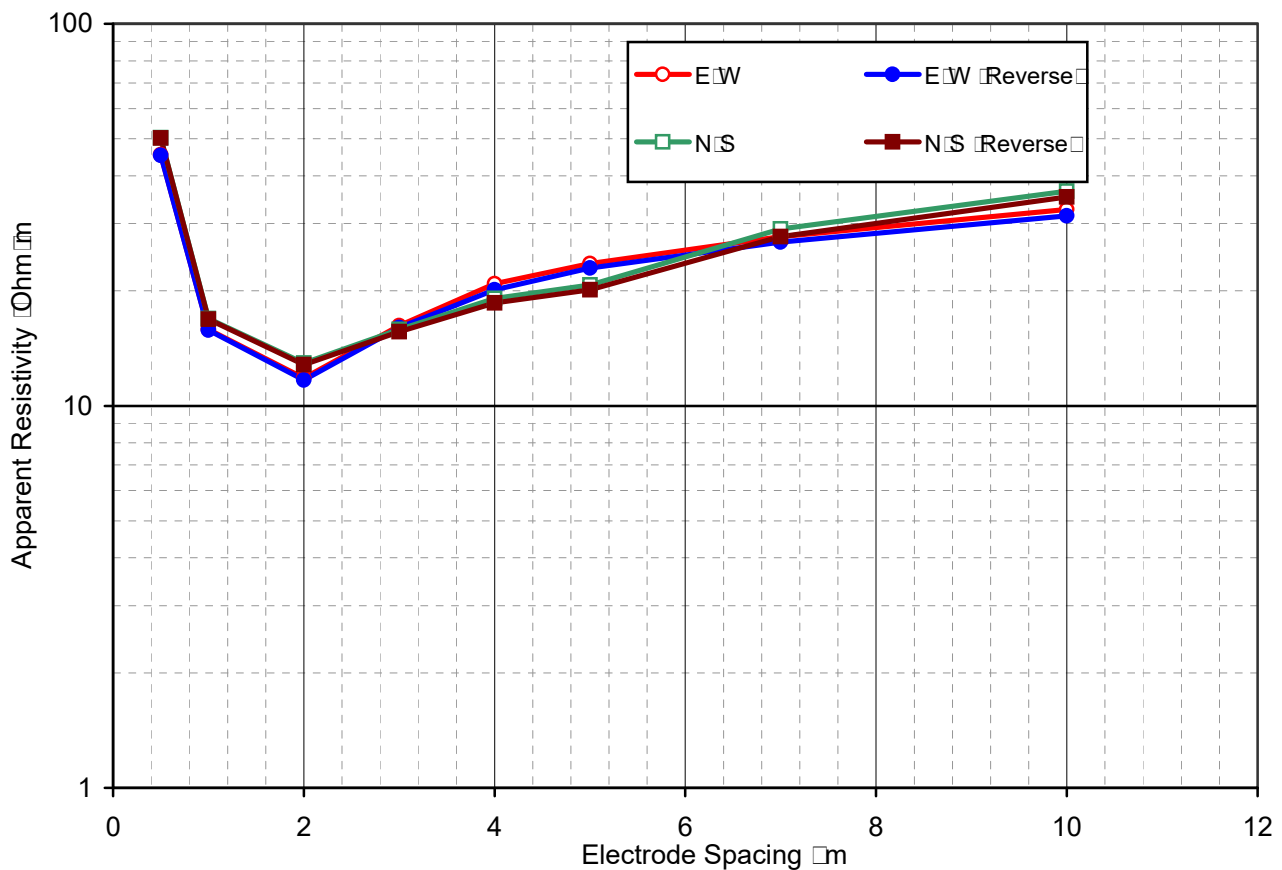
Polar Resistivity Curves (ERT-19)



Electrical Resistivity Test No.: ERT-20

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-20
Co-ordinate : 314025.86E-2312879.6N



Electrode Spacing (m)	Apparent Resistivity (Ohm-m)			
	E-W	E-W Reverse	N-S	N-S Reverse
0.5	45.4	45.2	50.4	50.2
1.0	15.8	15.8	16.9	16.8
2.0	11.8	11.7	12.9	12.8
3.0	16.2	16.0	15.8	15.6
4.0	20.9	20.1	19.1	18.6
5.0	23.6	22.9	20.7	20.1
7.0	27.7	26.8	29.0	27.7
10.0	32.7	31.4	36.4	35.2
Mean Resistivity	22	24	25	25

Mean Resistivity Value (ohm-m) : 19.1 ohm-m

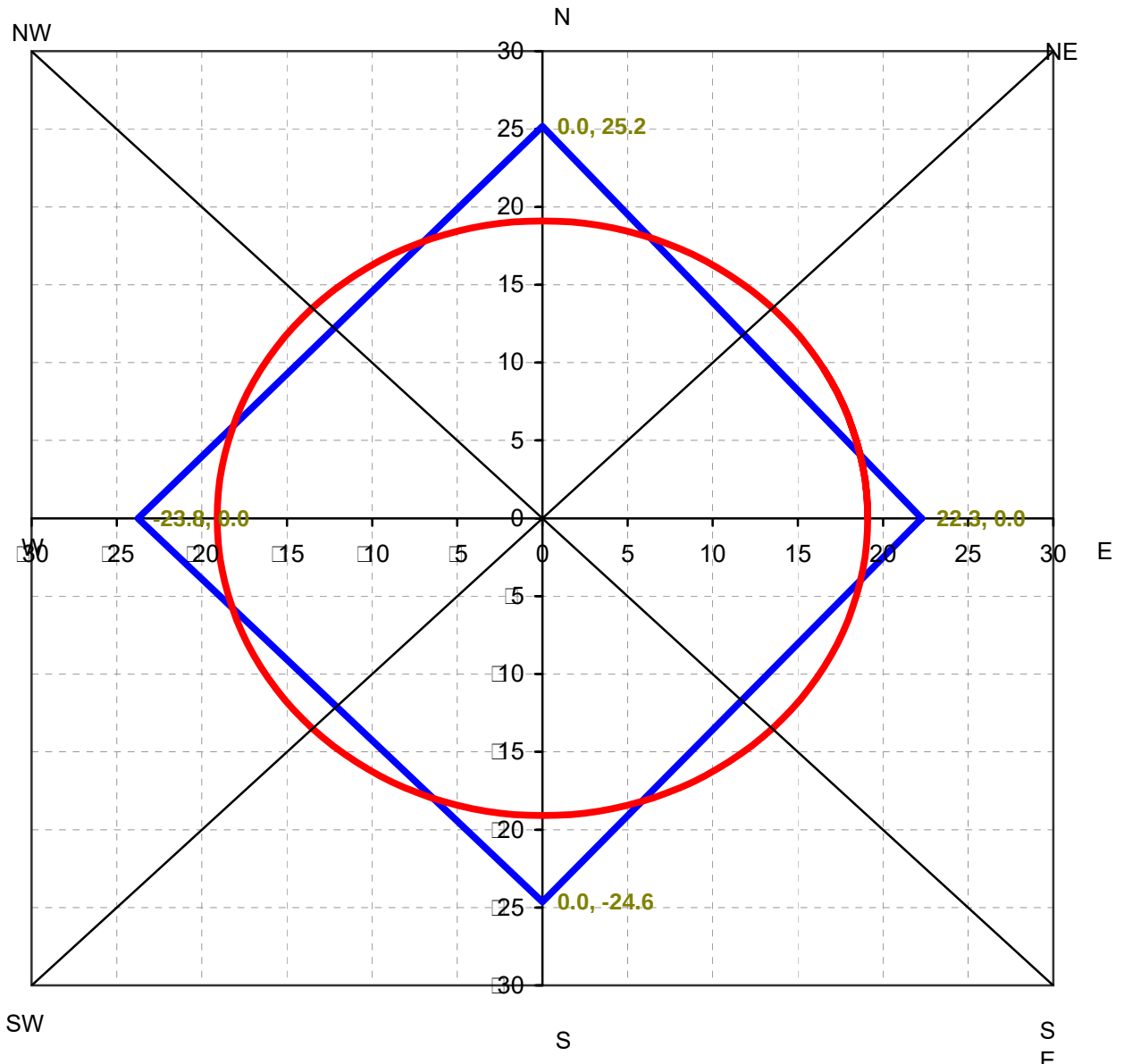
Apparent Resistivity Values (ERT-20)



Electrical Resistivity Test No.: ERT-20

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-20
Co-ordinate : 314025.86E-2312879.6N



Total Area of Polygon : 1146

Radius of Equivalent Circle-Mean Resistivity : 19 ohm-m

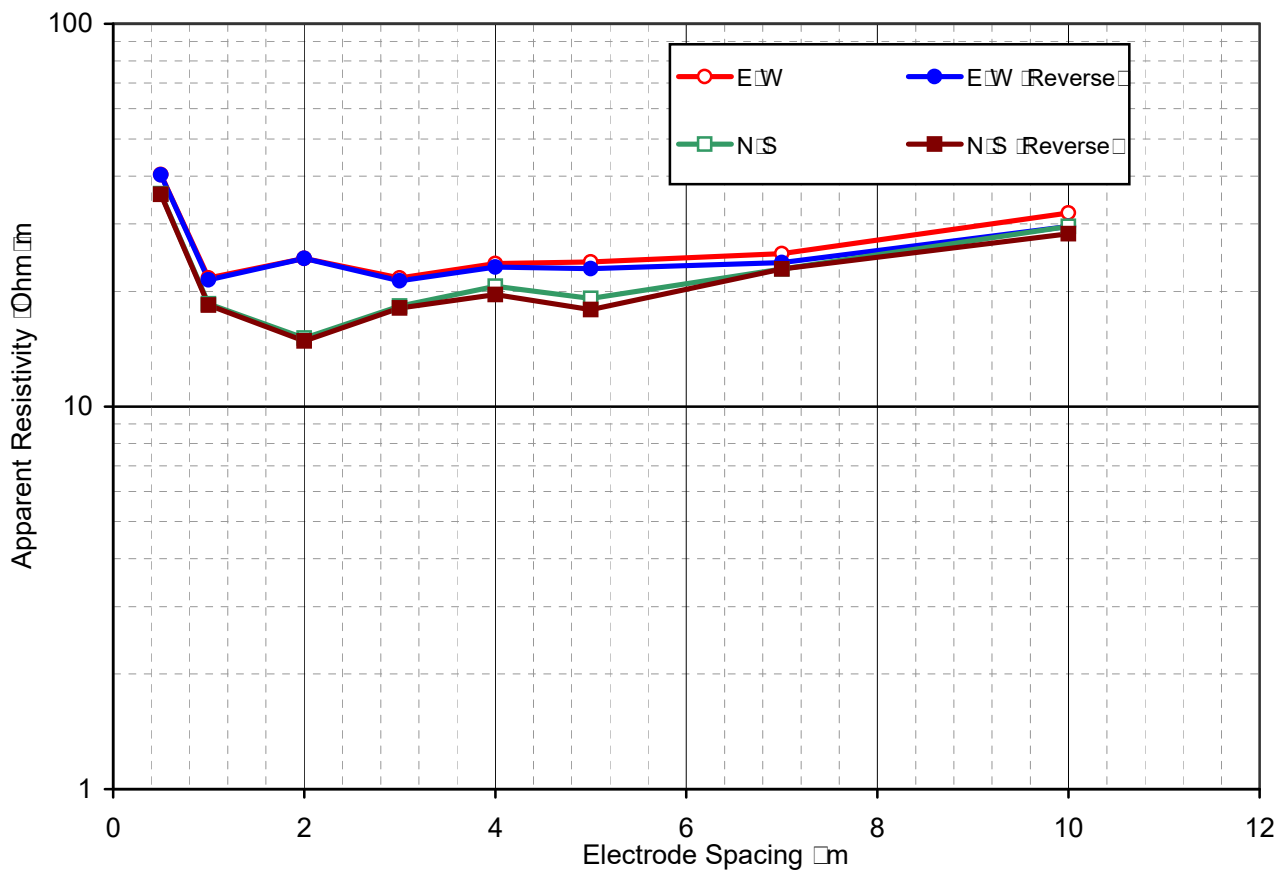
Polar Resistivity Curves (ERT-20)



Electrical Resistivity Test No.: ERT-21

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-21
Co-ordinate : 313983.75E-2312906.3N



Electrode Spacing (m)	Apparent Resistivity (Ohm.m)			
	E-W	E-W Reverse	N-S	N-S Reverse
0.5	40.3	40.3	35.9	35.8
1.0	21.7	21.4	18.5	18.4
2.0	24.4	24.4	15.1	14.8
3.0	21.7	21.3	18.3	18.1
4.0	23.6	23.1	20.6	19.6
5.0	23.9	22.9	19.2	17.9
7.0	25.1	23.8	22.9	22.9
10.0	32.0	29.5	29.5	28.3
Mean Resistivity	27	26	23	22

Mean Resistivity Value (ohm.m) : 19.3 ohm.m

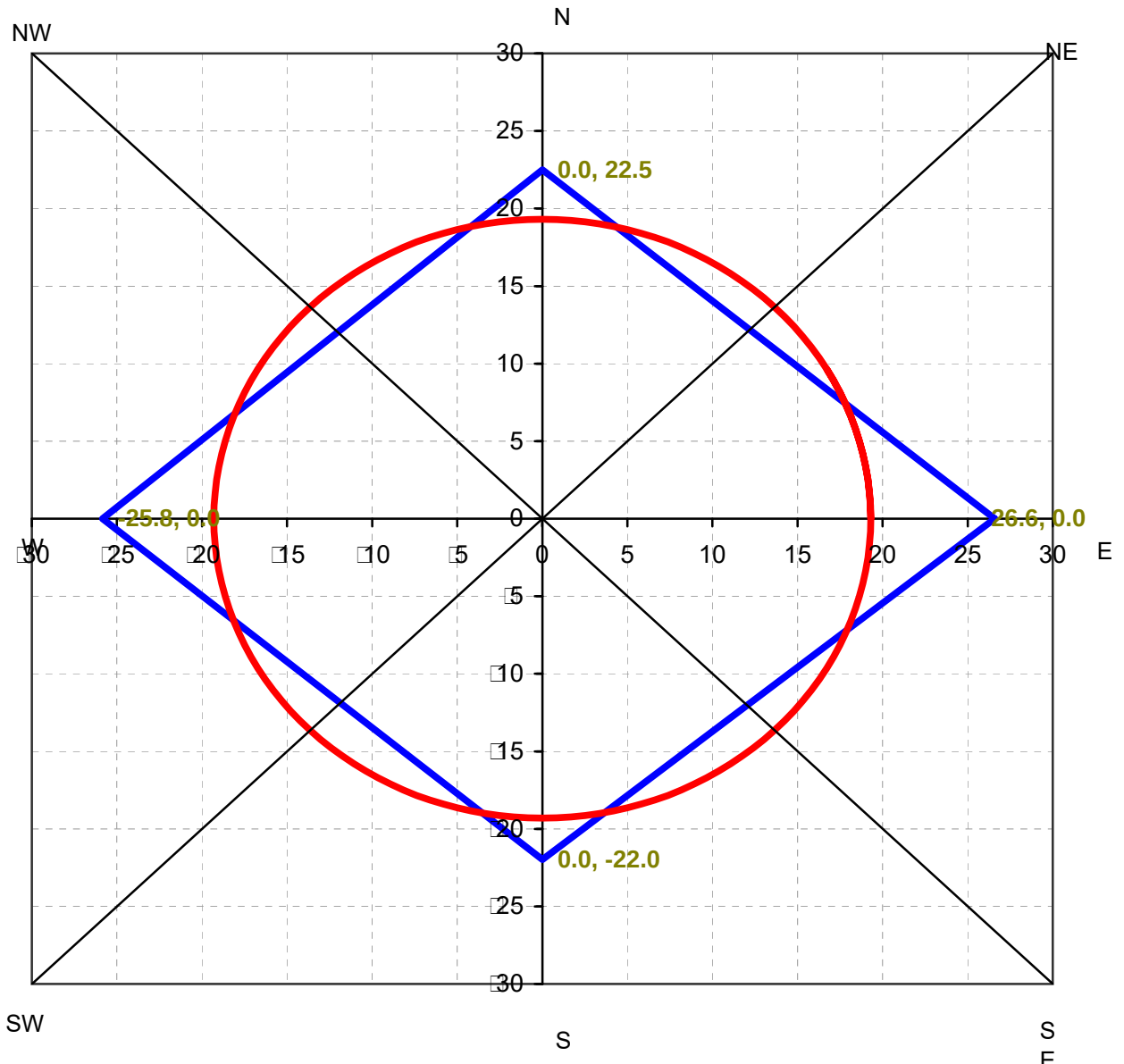
Apparent Resistivity Values (ERT-21)



Electrical Resistivity Test No.: ERT-21

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-21
Co-ordinate : 313983.75E-2312906.3N



Total Area of Polygon : 1166

Radius of Equivalent Circle-Mean Resistivity : 19 ohm-m

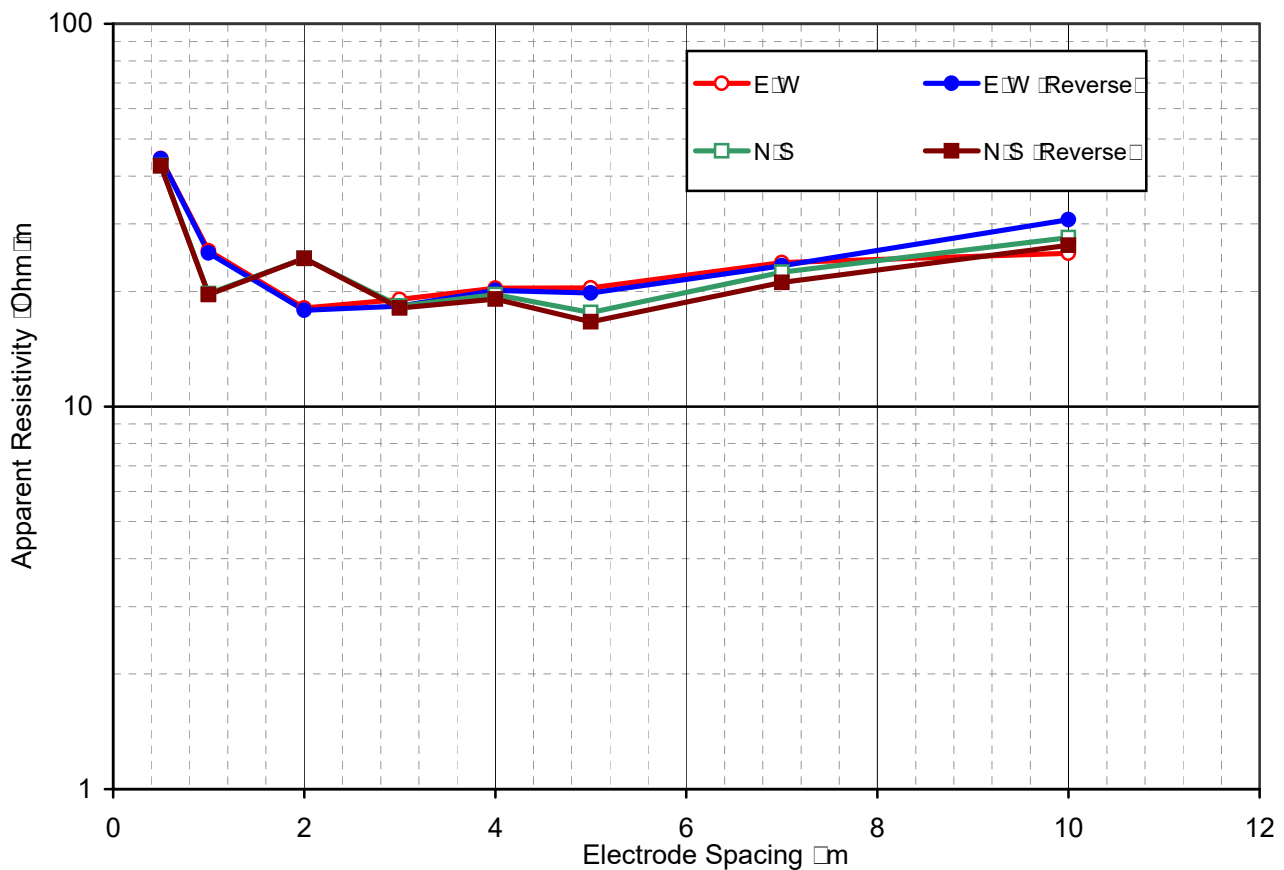
Polar Resistivity Curves (ERT-21)



Electrical Resistivity Test No.: ERT-22

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-22
Co-ordinate : 313901.31E-2312932.66N



Electrode Spacing (m)	Apparent Resistivity (Ohm.m)			
	E-W	E-W Reverse	N-S	N-S Reverse
0.5	44.5	44.4	42.6	42.5
1.0	25.5	25.2	19.7	19.6
2.0	18.1	17.8	24.4	24.4
3.0	19.0	18.3	18.3	18.1
4.0	20.4	20.1	19.6	19.1
5.0	20.4	19.8	17.6	16.7
7.0	23.8	23.3	22.4	21.1
10.0	25.1	30.8	27.6	26.4
Mean Resistivity	25	25	24	23

Mean Resistivity Value (ohm.m) : 19.4 ohm.m

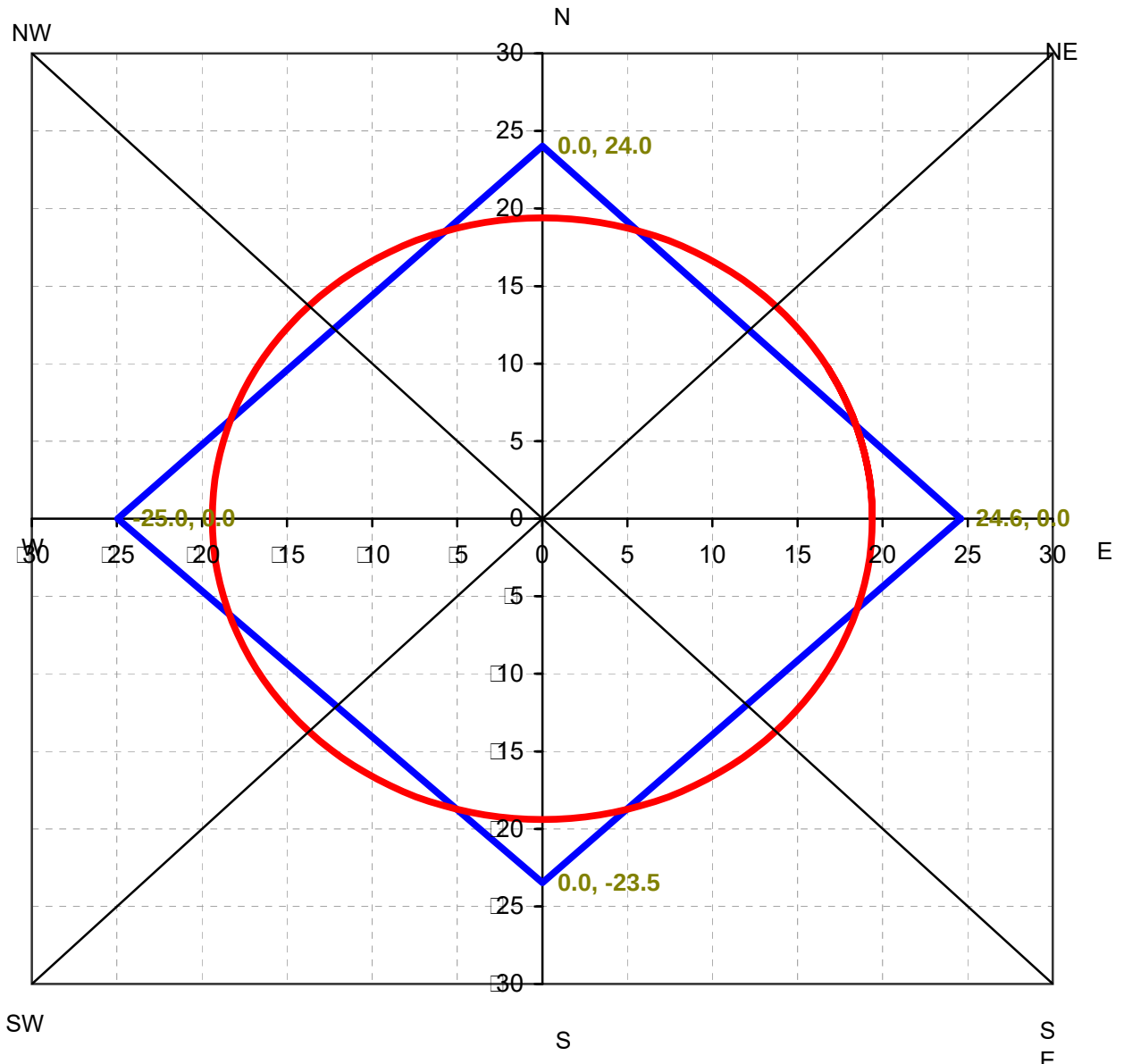
Apparent Resistivity Values (ERT-22)



Electrical Resistivity Test No.: ERT-22

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-22
Co-ordinate : 313901.31E-2312932.66N



Total Area of Polygon : 1177

Radius of Equivalent Circle-Mean Resistivity : 19 ohm-m

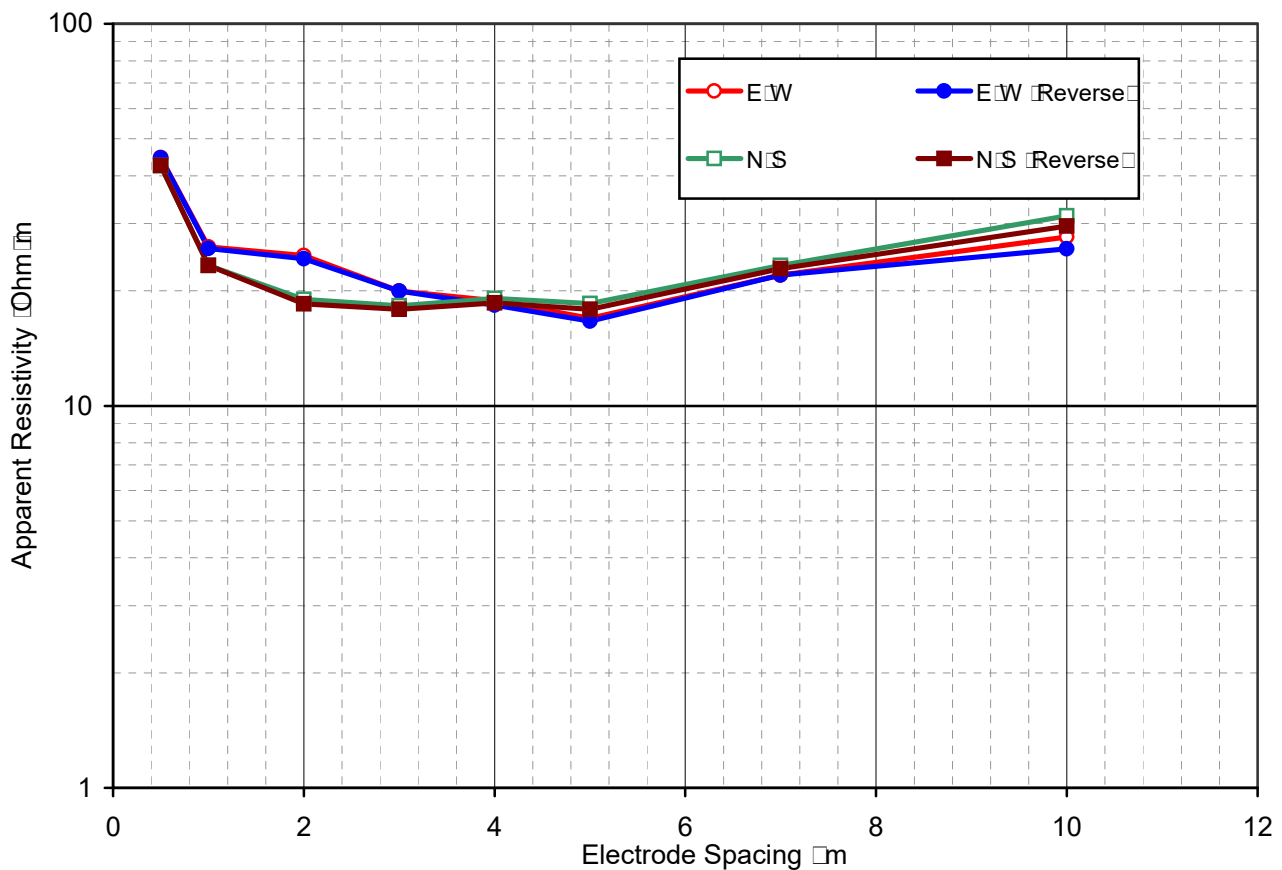
Polar Resistivity Curves (ERT-22)



Electrical Resistivity Test No.: ERT-23

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-23
Co-ordinate : 313851.91E-2312963.41N



Electrode Spacing (m)	Apparent Resistivity (Ohm.m)			
	E-W	E-W Reverse	N-S	N-S Reverse
0.5	44.6	44.5	42.5	42.5
1.0	26.1	25.8	23.3	23.3
2.0	24.8	24.3	19.0	18.5
3.0	20.0	20.0	18.3	17.9
4.0	18.8	18.3	19.1	18.6
5.0	17.0	16.7	18.5	17.9
7.0	22.0	22.0	23.3	22.9
10.0	27.6	25.8	31.4	29.5
Mean Resistivity	25	25	24	24

Mean Resistivity Value (ohm.m) : 19.6 ohm.m

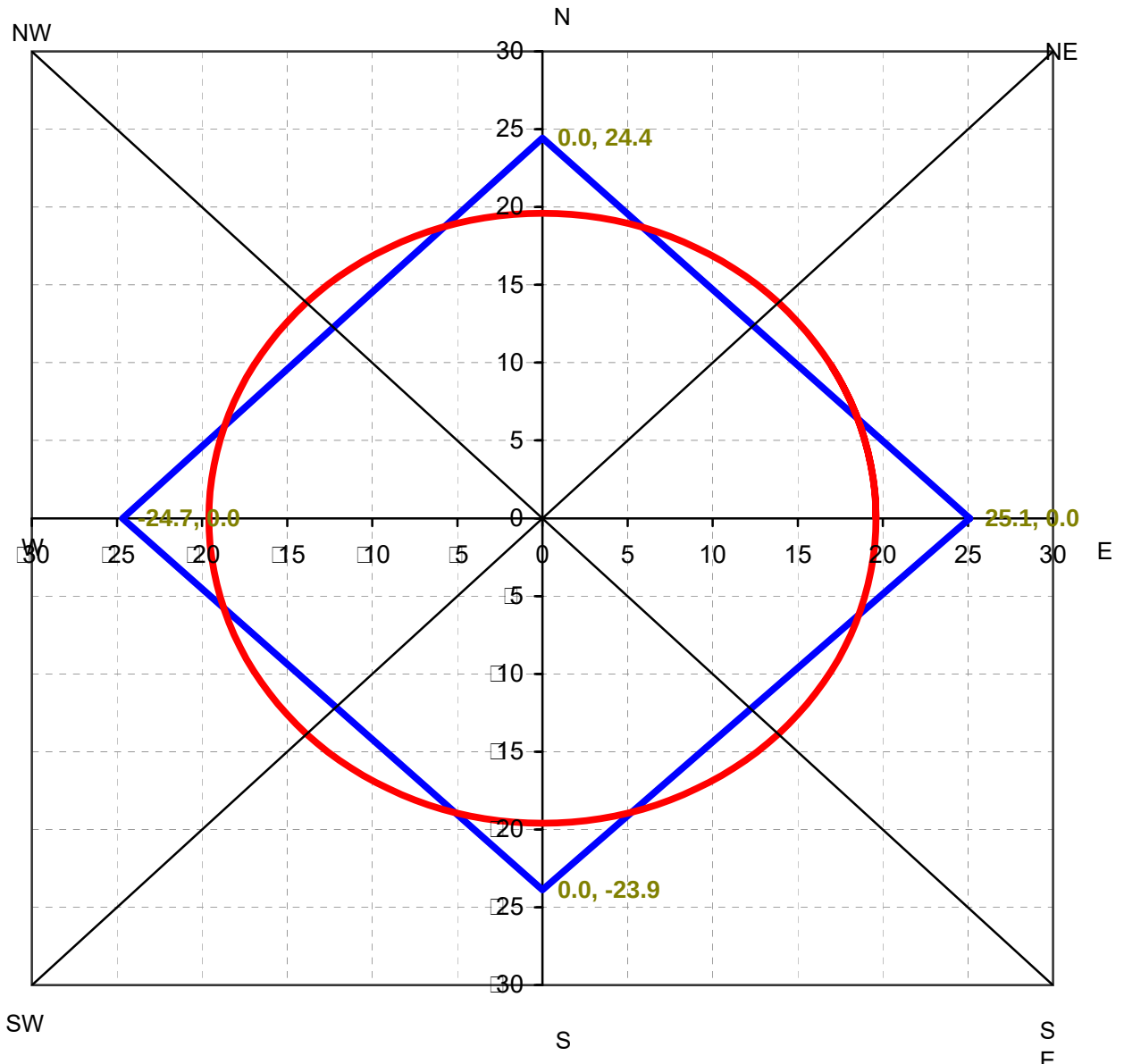
Apparent Resistivity Values (ERT-23)



Electrical Resistivity Test No.: ERT-23

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-23
Co-ordinate : 313851.91E-2312963.41N



Total Area of Polygon : 1203

Radius of Equivalent Circle-Mean Resistivity : 20 ohm-m

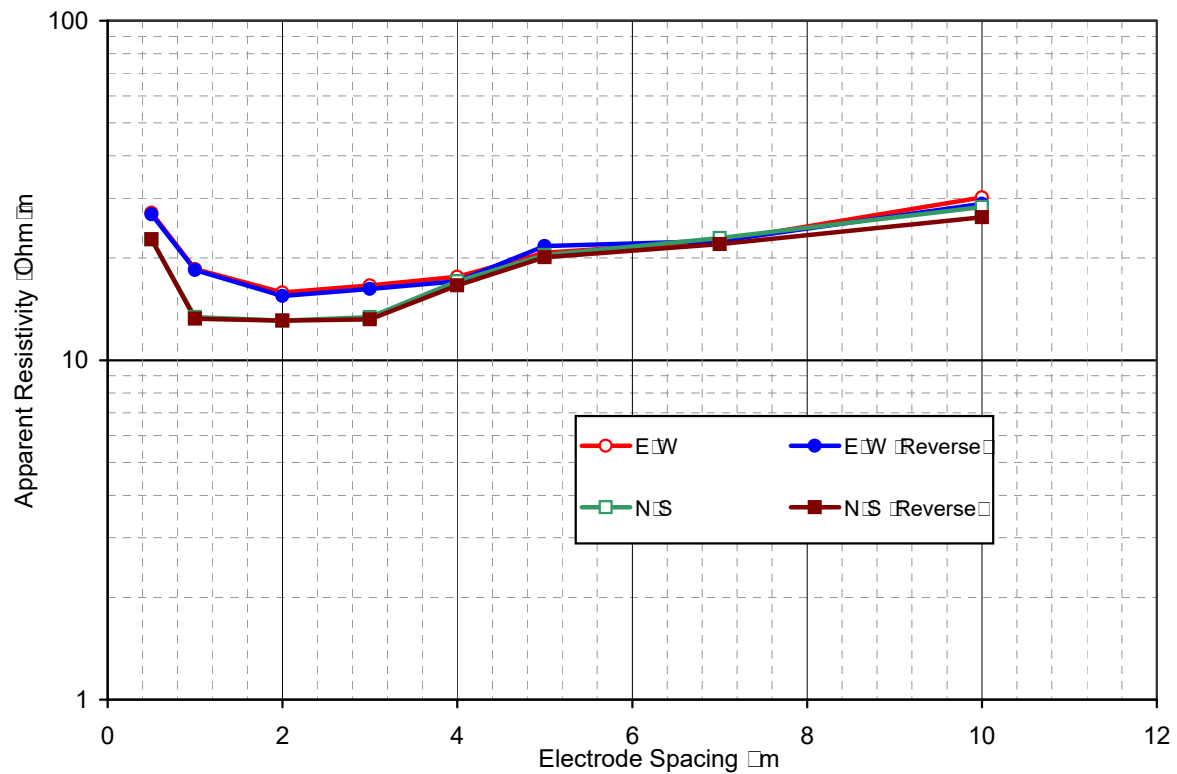
Polar Resistivity Curves (ERT-23)



Electrical Resistivity Test No.: ERT-25

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-25
Test Location : ESP CONTROL ROOM & I/O PANEL
Coordinate : 314112 E-2313046 N



Electrode Spacing (m)	Apparent Resistivity (Ohm-m)			
	E-W	E-W Reverse	N-S	N-S Reverse
0.5	27.2	26.9	22.7	22.7
1.0	18.5	18.4	13.4	13.3
2.0	15.8	15.5	13.1	13.1
3.0	16.6	16.2	13.4	13.2
4.0	17.6	17.1	17.1	16.6
5.0	20.7	21.7	20.4	20.1
7.0	22.4	22.4	22.9	22.0
10.0	30.2	28.9	28.3	26.4
Mean Resistivity	21	21	19	18

Mean Resistivity Value (ohm-m) : 15.8 ohm-m

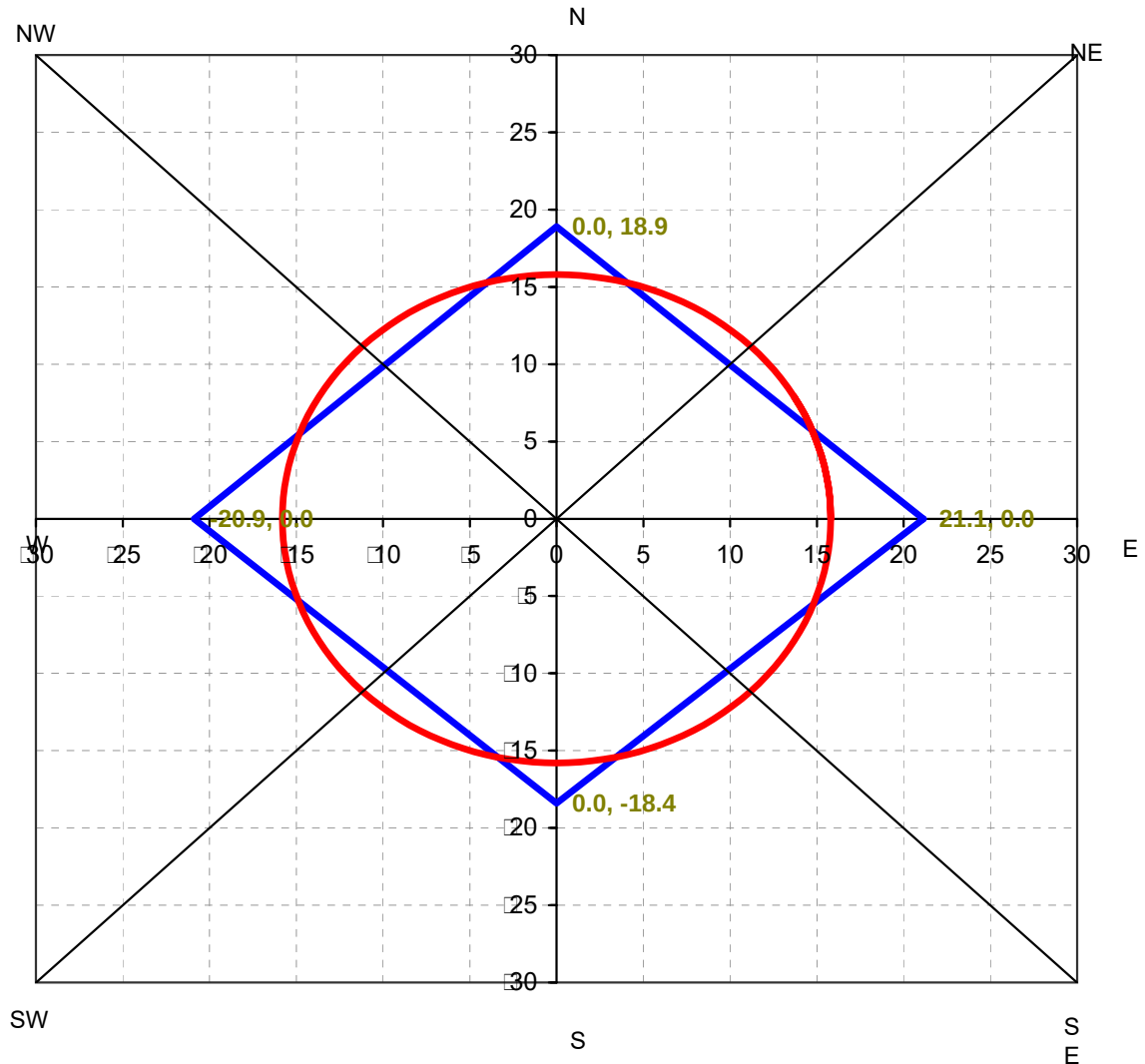
Apparent Resistivity Values (ERT-25)



Electrical Resistivity Test No.: ERT-25

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-25
Test Location : ESP CONTROL ROOM & I/O PANEL
Co-ordinate : 314112 E-2313046 N



Total Area of Polygon : 784

Radius of Equivalent Circle-Mean Resistivity : 16 ohm-m

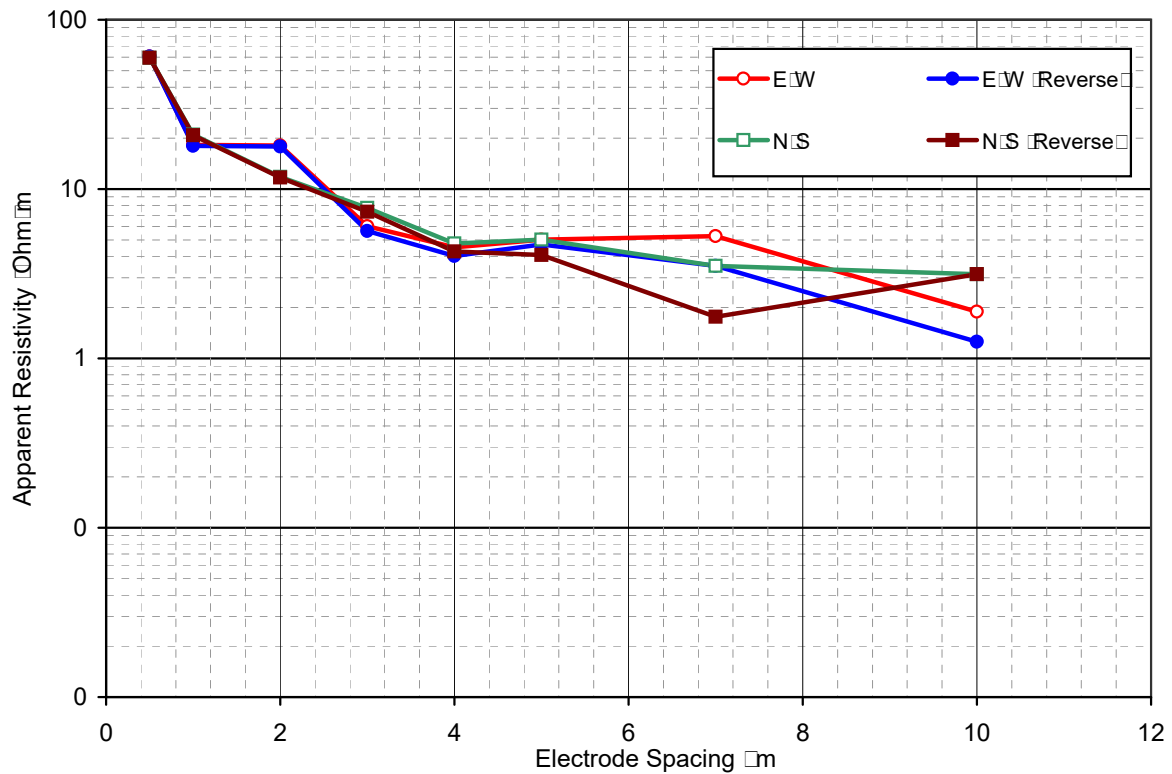
Polar Resistivity Curves (ERT-25)



Electrical Resistivity Test No.: ERT-26

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-26
Test Location : Passage Way
Co-ordinate : 314092 E-2313110 N



Electrode Spacing (m)	Apparent Resistivity (Ohm-m)			
	E-W	E-W Reverse	N-S	N-S Reverse
0.5	60.7	60.6	59.5	59.5
1.0	18.2	18.0	20.9	20.7
2.0	18.1	17.8	11.8	11.7
3.0	6.0	5.7	7.7	7.4
4.0	4.5	4.0	4.8	4.3
5.0	5.0	4.7	5.0	4.1
7.0	5.3	3.5	3.5	1.8
10.0	1.9	1.3	3.1	3.1
Mean Resistivity	15	14	15	14

Mean Resistivity Value (ohm-m) : 11.6 ohm-m

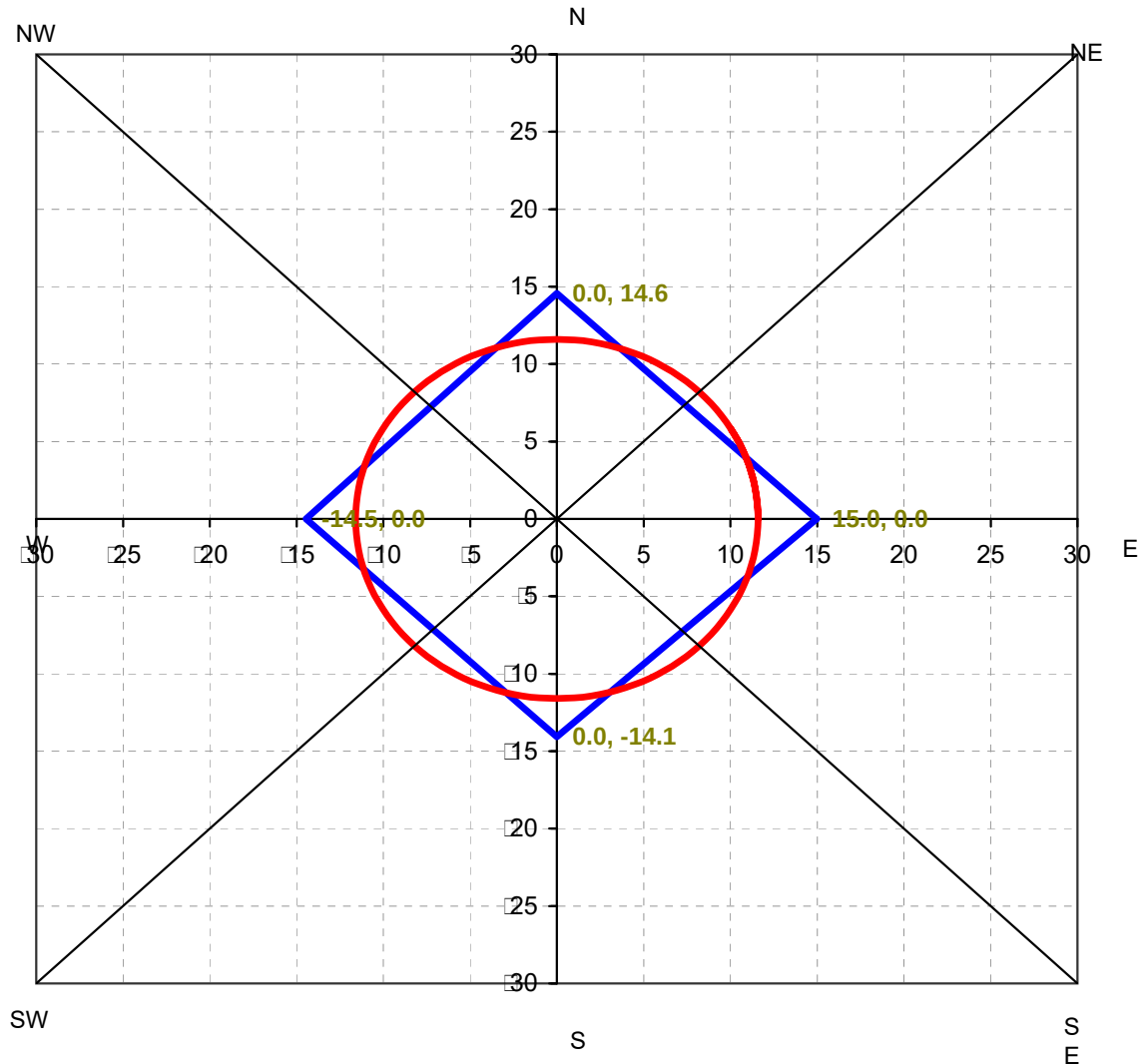
Apparent Resistivity Values (ERT-26)



Electrical Resistivity Test No.: ERT-26

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-26
Test Location : Passage Way
Co-ordinate : 314092 E-2313110 N



Total Area of Polygon : 421

Radius of Equivalent Circle-Mean Resistivity : 12 ohm-m

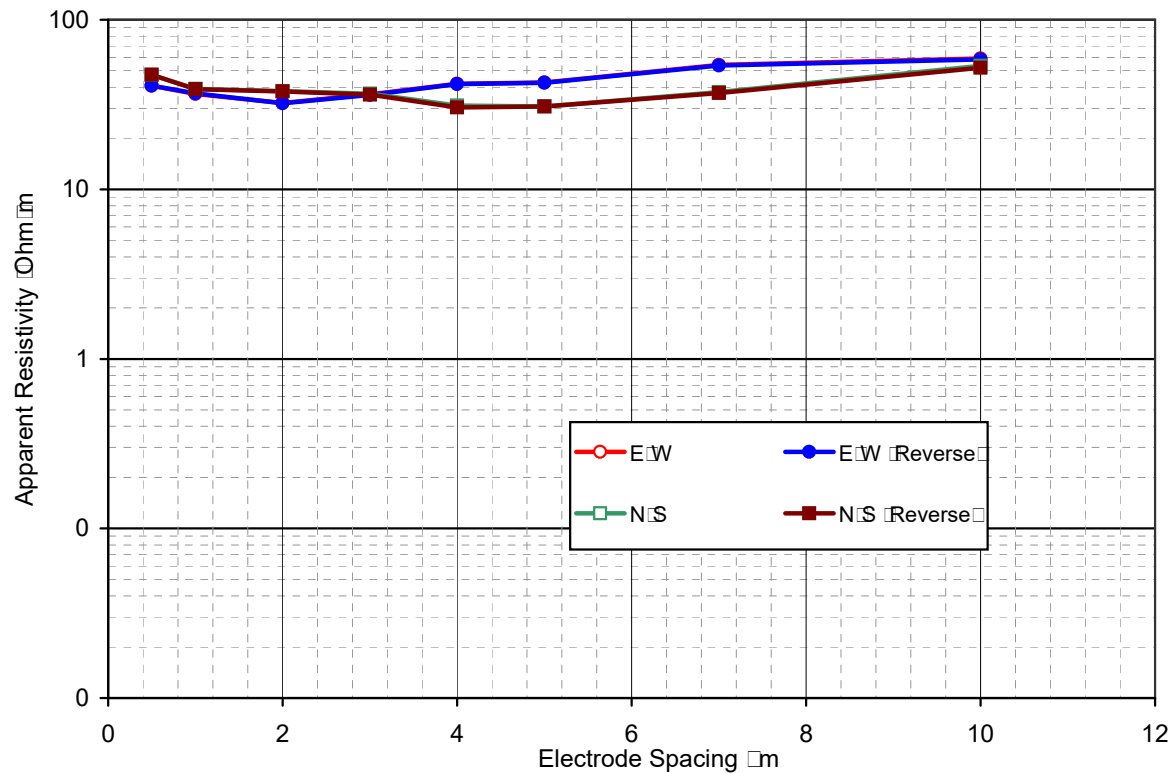
Polar Resistivity Curves (ERT-26)



Electrical Resistivity Test No.: ERT-28

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-28
Test Location : Passage Way
Co-ordinate : 314166 E-2313120 N



Electrode Spacing (m)	Apparent Resistivity (Ohm-m)			
	E-W	E-W Reverse	N-S	N-S Reverse
0.5	40.9	40.9	47.4	47.4
1.0	36.5	36.8	39.1	38.9
2.0	32.3	32.2	38.0	37.8
3.0	36.4	36.0	36.6	36.2
4.0	42.0	41.7	31.2	30.4
5.0	42.7	42.4	30.8	30.8
7.0	54.1	53.7	37.4	36.9
10.0	59.1	58.4	53.4	52.2
Mean Resistivity	43	43	39	39

Mean Resistivity Value (ohm-m) : 32.6 ohm-m

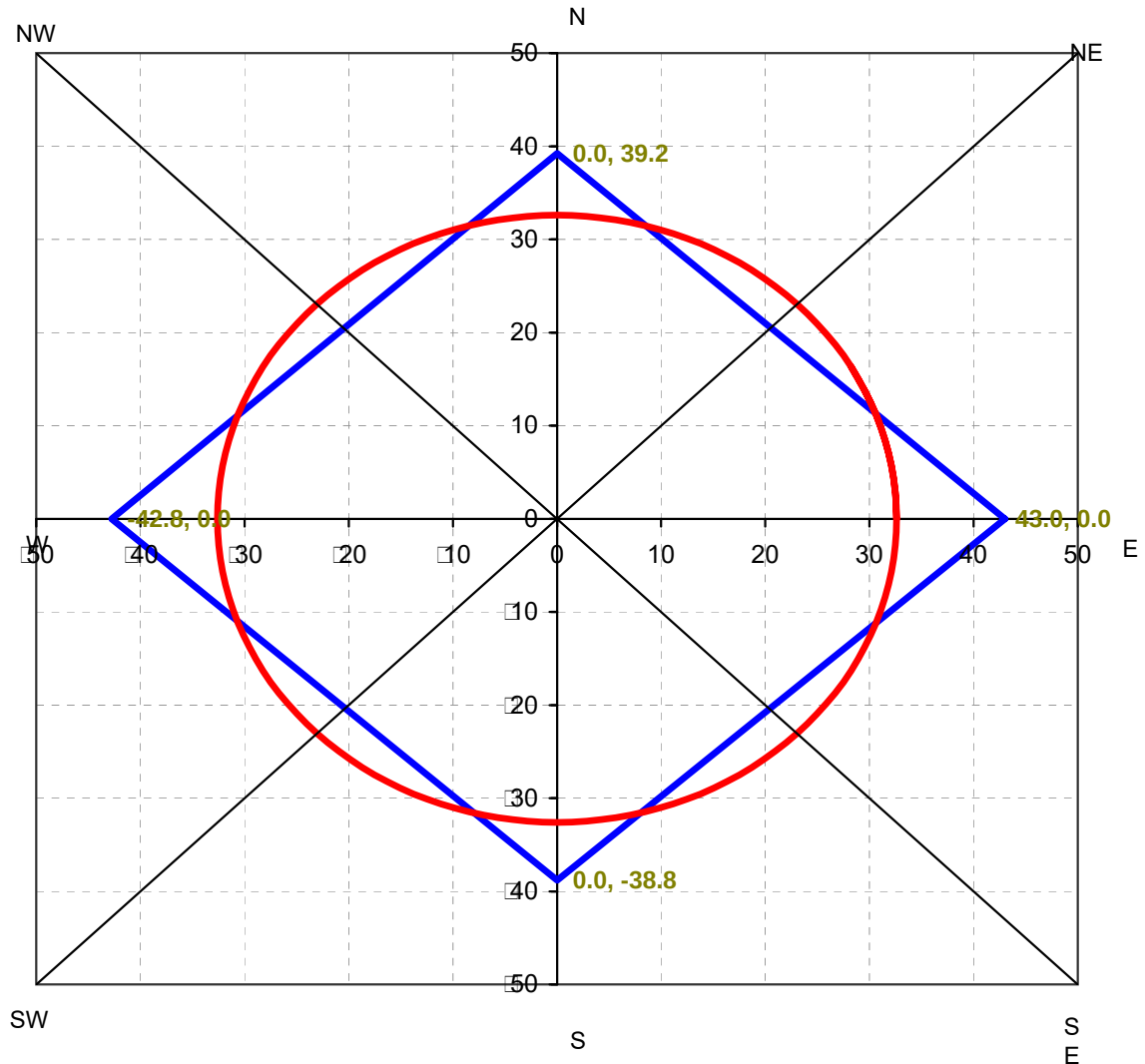
Apparent Resistivity Values (ERT-28)



Electrical Resistivity Test No.: ERT-28

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-28
Test Location : Passage Way
Co-ordinate : 314166 E-2313120 N



Total Area of Polygon : 3346

Radius of Equivalent Circle-Mean Resistivity : 33 ohm-m

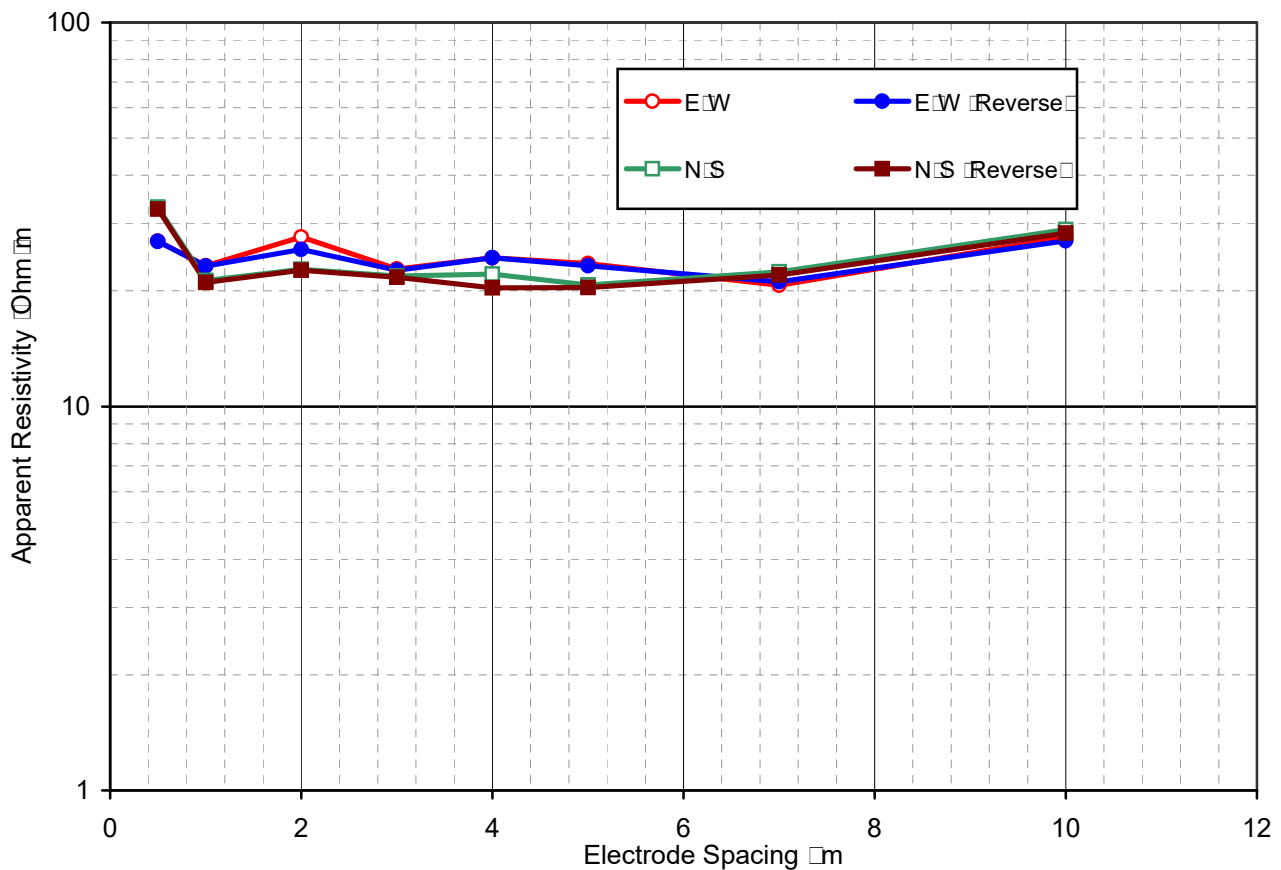
Polar Resistivity Curves (ERT-28)



Electrical Resistivity Test No.: ERT-30

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-30
Co-ordinate : 314074.67E-2313221.51N



Electrode Spacing (m)	Apparent Resistivity (Ohm.m)			
	E-W	E-W Reverse	N-S	N-S Reverse
0.5	27.0	26.9	33.0	32.7
1.0	23.2	23.2	21.3	21.0
2.0	27.6	25.6	22.7	22.6
3.0	22.8	22.6	21.9	21.7
4.0	24.4	24.4	22.1	20.4
5.0	23.6	23.2	20.7	20.4
7.0	20.7	21.1	22.4	22.0
10.0	27.6	27.0	28.9	28.3
Mean Resistivity	25	24	24	24

Mean Resistivity Value (ohm.m) : 19.3 ohm.m

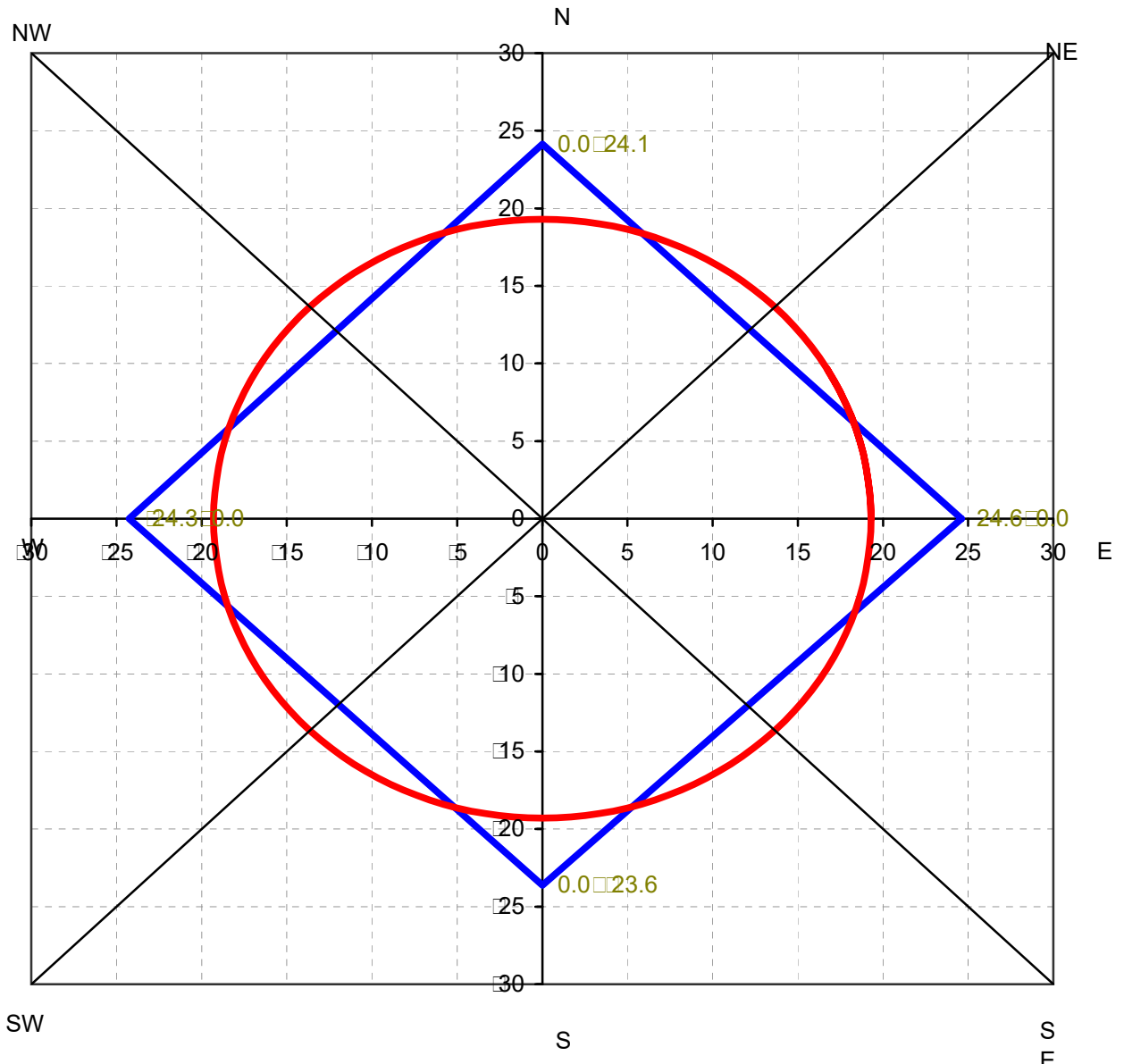
Apparent Resistivity Values (ERT-30)



Electrical Resistivity Test No.: ERT-30

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-30
Co-ordinate : 314074.67E-2313221.51N



Total Area of Polygon : 1168

Radius of Equivalent Circle-Mean Resistivity : 19 ohm-m

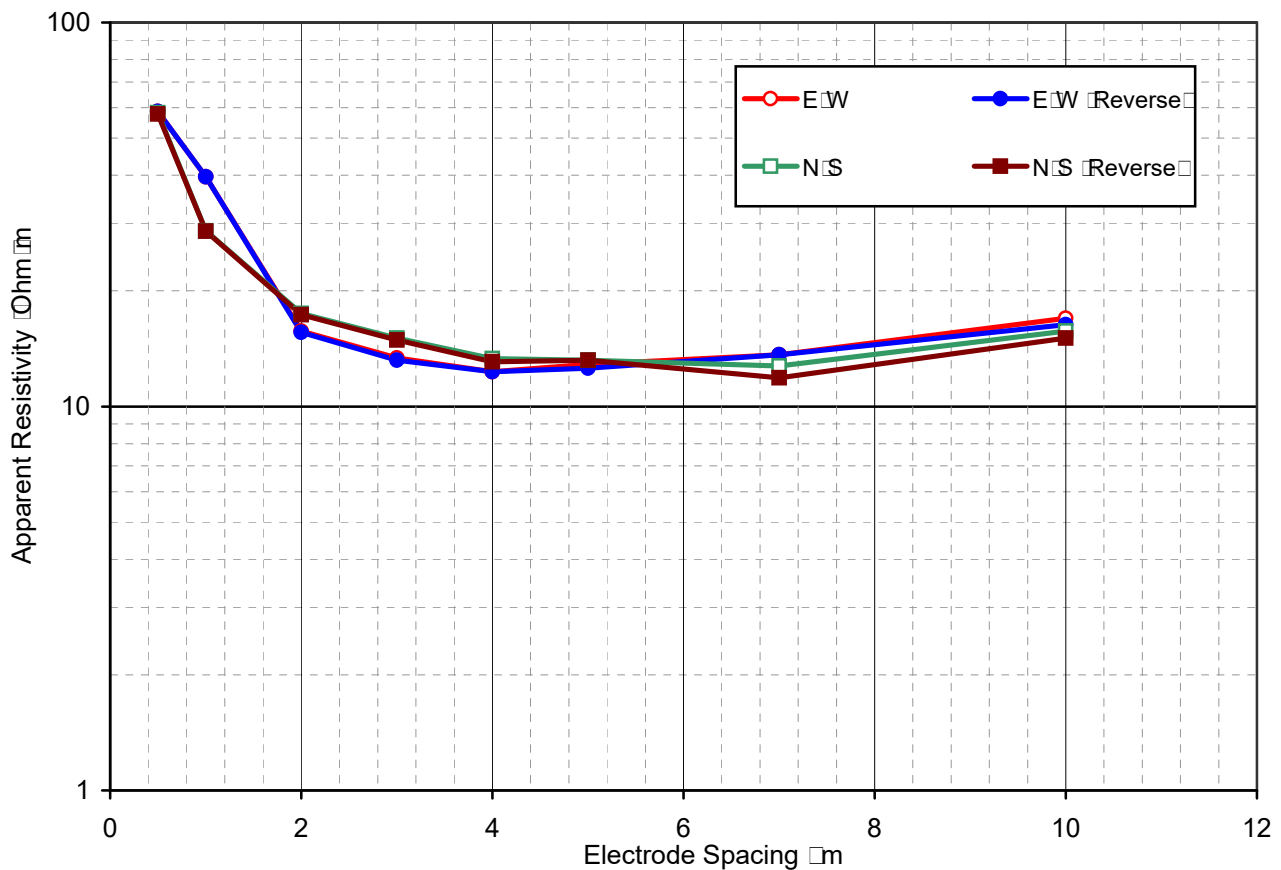
Polar Resistivity Curves (ERT-30)



Electrical Resistivity Test No.: ERT-31

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-31
Co-ordinate : 314111.93E-2313249.51N



Electrode Spacing (m)	Apparent Resistivity (Ohm.m)			
	E-W	E-W Reverse	N-S	N-S Reverse
0.5	58.7	58.7	58.2	57.8
1.0	39.6	39.6	28.7	28.6
2.0	15.7	15.6	17.5	17.3
3.0	13.4	13.2	15.1	14.9
4.0	12.3	12.3	13.3	13.1
5.0	12.9	12.6	13.2	13.2
7.0	13.6	13.6	12.8	11.9
10.0	17.0	16.3	15.7	15.1
Mean Resistivity	23	23	22	21

Mean Resistivity Value (ohm.m) : 17.7 ohm.m

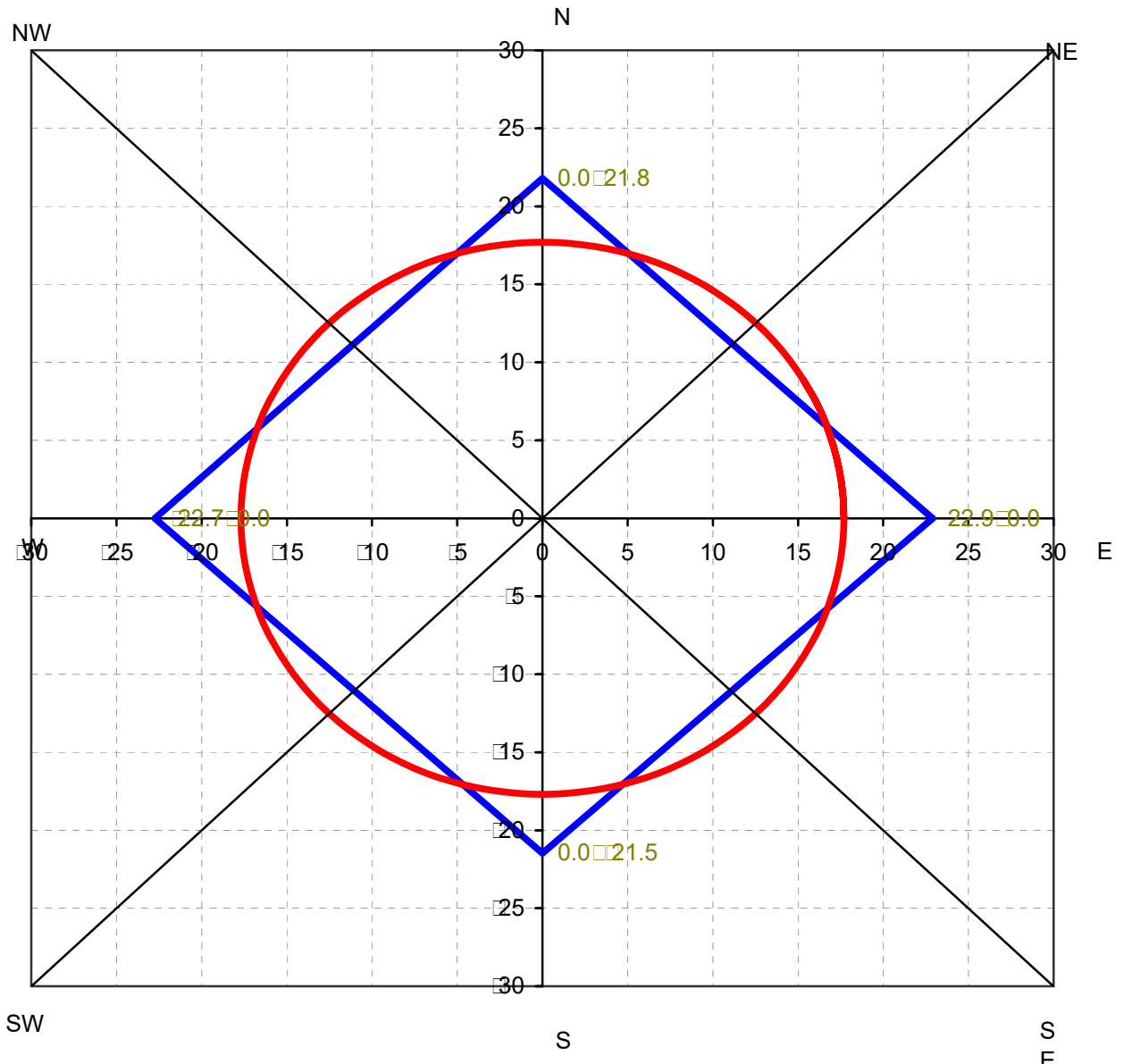
Apparent Resistivity Values (ERT-31)



Electrical Resistivity Test No.: ERT-31

IS: 3043-1987-RA-2006

Test Details
Test Designation : ERT-31
Co-ordinate : 314111.93E-2313249.51N



Total Area of Polygon : 988

Radius of Equivalent Circle = Mean Resistivity : 18 ohm-m

Polar Resistivity Curves (ERT-31)