

AMENDMENT NO. 02 TO TECHNICAL SPECIFICATION (Section VI)

SL. NO.	ENQUIRY SPECIFICATION				Existing	Read as
	SEC/ PART	SUB SEC.	PAGE NO.	CLAUSE NO.		
1.	VI/B	Vol I-M1	6/19	1.02.03, e	Starting System: By compressed air injected into the cylinders through starting air valves with protection devices.	Starting System: By compressed air injected into the cylinders through starting air valves with protection devices or as per standard practice of OEM.
2.	VI/B	Vol I-M1	9/19	1.08.00 iii	Sludge Storage tank - 1 no. of min. 10kL	Sludge storage tank – 1 no. of adequate capacity (finalized during detail engineering).

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3.	VI/B	Vol I-M1	9/19	2.00.01 ii	Servomotor actuated Stop valve and Control valve.	Stop Valve & Control Valve shall be servo motor actuated or as per OEM standard practice.
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4.	VI/A	Vol III	21/69	20.01.00	The Solar Photo Voltaic (PV) installation on Rooftop of various buildings of the Power Plant shall be carried out preferably on shadow free area in such a way that the generation is maximized on each building suitable for installation of Solar PV power plants. The bidder has to install the solar PV rooftop system on the buildings identified in this package on the basis of 15 square metre area(shadow free) per kwp and the bidder shall also consider utilizing all the rooftops(Buildings) for installing solar PV project.	The Solar Photo Voltaic (PV) installation on Rooftop of various available buildings of the Power Plant shall be carried out preferably on shadow free area in such a way that the generation is maximized on each building suitable for installation of Solar PV power plants. The bidder has to install the solar PV rooftop system on the available buildings identified in this package on the basis of 15 square metre area(shadow free) per kwp and the bidder shall also consider utilizing all the available rooftops(Buildings) for installing solar PV project.
5.	VI/B	Vol V	422 of 581		Installation of Solar PV Rooftop on buildings The Solar Photo Voltaic (PV) installation on Rooftop of various buildings of the Power Plant shall be carried out preferably on shadow free area in such a way that the generation is maximized on each building suitable for installation of Solar PV power plants. The bidder has to install the solar PV rooftop system on the buildings in this package on the basis of 15 square metre area (shadow free) per kwp and the bidder shall also consider utilizing all the rooftops(Buildings) for installing solar PV project.	Installation of Solar PV Rooftop on buildings The Solar Photo Voltaic (PV) installation on Rooftop of various available buildings of the Power Plant shall be carried out preferably on shadow free area in such a way that the generation is maximized on each building suitable for installation of Solar PV power plants. The bidder has to install the solar PV rooftop system on the available buildings identified in this package on the basis of 15 square metre area(shadow free) per kwp and the bidder shall also consider utilizing all the available rooftops(Buildings) for installing solar PV project.

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6.	VI/A	Vol III	20/69	19.02.12	Complete Rigid type road network and connecting these to existing roads. Scope also includes approaches to all facilities/ buildings (including Employer's building), including crossings, culverts, if any.	All the Roads in the plant boundary including periphery road and approaches to all the buildings including Employer's buildings and associated crossings culverts are in bidder's scope.
7.	VI/A	Vol III	21/69	19.02.14	Complete sewage collection including sewage treatment plant and disposal system of the plant and its conveyance either by pumping or by gravity to the sewage treatment plant.	Complete Sewerage system including collection & conveyance of sewage either by pumping or by gravity to the sewage treatment plant, disposal and reuse of treated sewage for horticulture etc. and sewage treatment plant (STP) are in bidder's scope.
8.	VI/B	Vol IV	7/37	3.03.06	a) The design and construction of RCC structures shall be carried out as per IS: 456. Working stress method shall be adopted for the design wherever specifically mentioned in this specification. b) For design and construction of steel-concrete composite members, IS: 11384 shall be followed. c) For reinforcement detailing, IS: 5525 and SP: 34 shall be followed. d) Two layers of reinforcement (on both inner and outer faces) shall be provided for RCC wall sections having thickness 150 mm or more.	a) The design and construction of RCC structures shall be carried out as per IS: 456. Working stress method shall be adopted for the design wherever specifically mentioned in this specification. b) For design and construction of steel-concrete composite members, IS: 11384 shall be followed. c) For reinforcement detailing, IS: 5525 and SP: 34 shall be followed. d) Two layers of reinforcement (on both inner and outer faces) shall be provided for RCC wall sections having thickness 150 mm or more. e) All RCC liquid retaining/conveying structure shall be designed by working stress method as outlined in clause no. 4.5 of IS 3370(part-2) 2009 unless specified otherwise.
Andaman & Nicobar Gas Power Project(50 MW) EPC Package NVVN/C&M/RE-53/2020-21					Amendment no. 2	Page 4 of 14

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9.	VI/A	Vol IV	8/28	6.01.00	Noise Levels The noise levels shall meet the MoEF&CC guidelines as enclosed at Annexure-IA of Volume-IV, Part-A, Section-VI.	Noise Levels The noise levels shall meet the guidelines as enclosed at Annexure-IA of Volume-IV, Part-A, Section-VI.
10.	VI/A	Vol IV	23/28	83	Standards/Guidelines for control of Noise Pollution from Stationary Diesel Generator (DG) Sets (6)..... the DG set manufacturer which would help prevent noise levels of the DG set from deteriorating with use.	83. NOISE POLLUTION CONDITIONS: STANDARD EC CONDITIONS FOR THERMAL POWER SECTOR D. Noise pollution and its control measures: 1. The Ambient Noise levels shall meet the standards prescribed as per the Noise Pollution (Regulation and Control) Rules, 2000. 2. Persons exposed to high noise generating equipment shall use Personal Protective Equipment (PPE) like ear-plugs/ ear muffs, etc. 3. Periodical medical examination on hearing loss shall be carried out for all the workers and maintain audiometric record and for treatment of any hearing loss including rotating to non-noisy/less noisy areas. PROJECT SPECIFIC CONDITION: Noise levels emanating from genset shall be so controlled such that the noise in the work zone shall be limited to 85 dB(A) 1m from source. For people working in the high noise area, requisite personal protective equipment like earplugs/ear muffs etc. shall be provided. Workers engaged in noisy areas such as turbine area, air compressors etc shall be periodically examined to maintain audiometric record and for treatment for any hearing loss including shifting to non-noisy/less noisy areas.
11.	VI/A	Vol IV	24/28	07	07 Temperature Limit for Discharge of Condenser Cooling Water from Thermal Power Plant.	84 Temperature Limit for Discharge of Condenser Cooling Water from Thermal Power Plant.

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12.	IV/Part B	Chapter IVD	4.06.00	13/37	Added	4.06.00 Geotechnical Investigation The Contractor shall carry out detailed geotechnical investigation in the areas under his scope for establishing the sub-surface conditions and to decide type of foundations for the structures envisaged, construction methods, any special requirements/treatment called for remedial measures for sub-soil/ foundations etc. in view of soft sub- soils, aggressive sub-soils and water, expansive/swelling soils etc. prior to commencement of detailed design/drawings. The Contractor shall obtain the approval for the field testing scheme proposed by him from the Owner before undertaking the geotechnical investigation work. 4.06.01.00 Scheme of geotechnical Investigation 4.06.02.01 Field test shall include but not be limited to the following: Boreholes, Standard Penetration Test (SPT), Dynamic Cone Penetration Test (DCPT), collection of disturbed samples (DS) and undisturbed soil samples (UDS), Trial Pits (TP), Plate Load Tests (PLT), Electrical Resistivity Test (ERT), In situ field permeability tests, collection of water samples, etc. The diameter of borehole shall be minimum 150 mm in soil and 76 mm in rock. The diameter of UDS sampler shall be 100 mm minimum. Core drilling in rock shall be done by using hydraulically feed rotary drill & double tube core barrel with diamond bit.
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					The minimum tests are indicated in Clause No. 4.07.00. Adequate number of tests shall be conducted up to sufficient depth for complete determination of subsoil conditions. The depth of boreholes shall be as specified in Appendix A. SPT shall be carried out in all types of soil deposits and in all rock formations with core recovery up to 20%, met within a borehole. This test shall be conducted at every 3.0 m interval or at change of strata, up to the final depth. SPT 'N' of 100 and above shall be referred as re- fusal. UDS shall be collected at every 3.0 m interval or at change of strata up to depth of borehole. UDS may be re- placed by additional SPT, if SPT'N' value in the strata is above 50. hall be done as per relevant IS codes. The laboratory tests, not be limited to the following shall be conducted on disturbed and undisturbed soil samples, rock samples & water samples collected during field investigations in sufficient numbers. Laboratory Tests on Soil Samples Laboratory tests shall be carried out on disturbed and undisturbed soil samples for Grain Size Analysis, Hydrometer Analysis, Atterberg Limits, Triaxial Shear Tests (UU), Natural Moisture Content, Specific Gravity and Bulk Unit Weight, Consolidation Tests, Unconfined Compression Test, Free swell Index, Shrinkage Limit, Swell Pressure Test, Chemical Analysis test on soil and water samples to determine the carbonates, sulphates, chlorides, nitrates, pH, organic matter and any other chemicals harmful to concrete and reinforcement/ steel
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					Laboratory Tests on Rock Samples Moisture content, porosity & density, Specific Gravity, Hardness, Soundness, Slake durability index, Unconfined compression test (Both at saturated and in-situ water content), Point load strength index and deformability test (Both at saturated and in-situ water content) shall be carried out on rock samples. Geotechnical investigation (field & laboratory) shall be carried out in accordance with the provisions of relevant Indian Standards. On completion of all field & laboratory work, geotechnical investigation report shall be submitted for Owner's review/approval. The Geotechnical investigation report shall contain geological information of the region, procedure adopted for investigation, field & laboratory observations/ data/ records, analysis of results & recommendations on type of foundation for different type of structures envisaged for all areas of work with supporting calculations. Recommendations on treatment for soil, foundation, based on subsoil characteristics, soft soils, aggressive chemicals, expansive soils, etc. Recommendations on foundation system and the net allowable bearing pressures and pile capacity shall be based on the conservative values of geotechnical investigation data. 4.06.03.00 Geotechnical investigation work shall be got executed by the Contractor through the following agencies or any other agency approved by owner.
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						1. C.E.TESTING COMPANY Pvt. Ltd, Kolkata 2. Cengrs Geotechnica Pvt. Ltd, New Delhi 3. KCT Consultancy Services, Ahemdabad. 4. M.K. Soil Testing Laboratory, Ahemdabad 4.07.00 Geotechnical Investigation Scheme a) Boreholes (Minimum) <table><tr><th>Sl. No.</th><th>Structure</th><th>Spac- ing/Nu mber of bore- hole</th><th>Depth of bore- hole</th><th>Remarks</th></tr><tr><td>1.</td><td>Engine Hall, Utility block, FW tank, FWPH, HSD tank, HSD PH, Trans-former, switch-gear, LT Swgr room and other structures</td><td>12 bore-holes (mini-mum)</td><td>Depth of bore-holes shall be 10m to 15m.</td><td>Depth of boreholes shall be as mentioned in column “Depth of Borehole” or 5m continuous in rock with RQD > 25% whichever is earlier.</td></tr></table>	Sl. No.	Structure	Spac- ing/Nu mber of bore- hole	Depth of bore- hole	Remarks	1.	Engine Hall, Utility block, FW tank, FWPH, HSD tank, HSD PH, Trans-former, switch-gear, LT Swgr room and other structures	12 bore-holes (mini-mum)	Depth of bore-holes shall be 10m to 15m.	Depth of boreholes shall be as mentioned in column “Depth of Borehole” or 5m continuous in rock with RQD > 25% whichever is earlier.
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					• Depth and location of Boreholes and other field tests (PLT, ERT, field permeability tests etc.) shall be approved by Owner before execution of geotechnical investigation work. • Investigation in any other building / structure / facilities / trestles which are not mentioned above shall also be carried out, if required, by the bidder for the facilities under his scope. Annexure-I SOIL DATA AND FOUNDATION SYSTEM a) Logs of boreholes of vicinity are enclosed with this Annexure. b) The foundation system to be adopted for different structures shall be as given in Table – 1 below <table><tr><th>STRUCTURE</th><th>TYPE OF FOUNDATION TO BE ADOPTED</th></tr><tr><td>Engine Hall, Utility block, FW tank, FWPH, HSD tank, HSD PH, Transformer, switchgear,LT Swgr room and other structures</td><td>Open</td></tr></table> Table – 1: Net Allowable Bearing Pressure c) The minimum founding level and the corresponding net allowable bearing pressure shall be as given in Table – 2 below.	STRUCTURE	TYPE OF FOUNDATION TO BE ADOPTED	Engine Hall, Utility block, FW tank, FWPH, HSD tank, HSD PH, Transformer, switchgear,LT Swgr room and other structures	Open
STRUCTURE	TYPE OF FOUNDATION TO BE ADOPTED								
Engine Hall, Utility block, FW tank, FWPH, HSD tank, HSD PH, Transformer, switchgear,LT Swgr room and other structures	Open								

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						<table><tr><th rowspan="2">Founding Depth/Stratum</th><th colspan="2">Net Allowable Bearing Pressure</th></tr><tr><th colspan="2">T/m2</th></tr><tr><td></td><td>Isolated / Strip for a permissible settlement of 12mm in rocky strata</td><td>Rafts (width > & = 6m) for a permissible settlement of 12mm in rocky strata</td></tr><tr><td>0.3 m embedment in rock</td><td>30.0</td><td>30.0</td></tr><tr><td>0.5 m embedment in rock</td><td>35.0</td><td>35.0</td></tr><tr><td>1.0 m embedment in rock</td><td>45.0</td><td>45.0</td></tr></table>	Founding Depth/Stratum	Net Allowable Bearing Pressure		T/m2			Isolated / Strip for a permissible settlement of 12mm in rocky strata	Rafts (width > & = 6m) for a permissible settlement of 12mm in rocky strata	0.3 m embedment in rock	30.0	30.0	0.5 m embedment in rock	35.0	35.0	1.0 m embedment in rock	45.0	45.0
Founding Depth/Stratum	Net Allowable Bearing Pressure																						
	T/m2																						
	Isolated / Strip for a permissible settlement of 12mm in rocky strata	Rafts (width > & = 6m) for a permissible settlement of 12mm in rocky strata																					
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0.5 m embedment in rock	35.0	35.0																					
1.0 m embedment in rock	45.0	45.0																					
Table – 2: Net Allowable Bearing Pressure The net allowable bearing pressure higher than above mentioned values shall not be permitted. At intermediate levels the bearing capacity shall be same as the net allowable bearing pressure corresponding to the immediate shallower level mentioned above. d) Permissible Settlement of Foundations: For open foundations, the total permissible settlement and differential settlement shall be governed by IS: 1904 and from functional requirements whichever is more stringent. However, total settlement shall be restricted to the following:																							

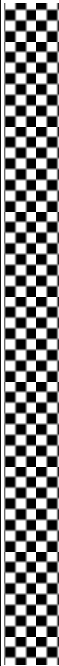
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						<table><tr><td>Isolated & Strip</td><td>40 mm</td></tr><tr><td>Raft (widths greater than 6 m)</td><td>75 mm</td></tr><tr><td>Foundations in Weathered rock / rock</td><td>12 mm</td></tr></table> In case the total permissible settlement is to be restricted to less than as above specified from functional requirements, then the net allowable bearing pressure shall be reduced after review in consultation with Engineer.	Isolated & Strip	40 mm	Raft (widths greater than 6 m)	75 mm	Foundations in Weathered rock / rock	12 mm
Isolated & Strip	40 mm											
Raft (widths greater than 6 m)	75 mm											
Foundations in Weathered rock / rock	12 mm											
13.	IV/Part B	Chapter IVD	4.01.02	9 of 37	4.01.02 Bidder shall The scheme for geotechnical investigation shall be as given at Clause 1.07.00 and shall be approved by Geotechnical investigation work shall be got executed by the Contractor through the agencies as mentioned in Clause No. 1.06.03.	4.01.02 Bidder shall The scheme for geotechnical investigation shall be as given at Clause 1.07.00 and shall be approved by..... Geotechnical investigation work shall be got executed by the Contractor through the agencies as mentioned in Clause No. 1.06.03.....						
14.	IV/Part B	Chapter IVD	4.02.03	11 of 37	Other Requirements Tank Foundations	deleted						

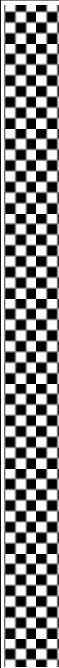
AMENDMENT NO. 02 TO TECHNICAL SPECIFICATION (Section VI)

15.	IV/Part B	Chapter IVD		PDF page 381 to 419		Replace with Annexure attached
16.	VI/B	I/M4	2 of 36	2.01.00	Areas to be Covered Complete main plant, switchyard, water treatment & radiator area, and other auxiliary buildings/areas, HSD unloading area under the scope of the Bidder.	Areas to be Covered Complete main plant, switchyard, water treatment & radiator area, and other auxiliary buildings/areas under the scope of the Bidder.

Project : Geo-technical study for the proposed 50 MW (+/-10%) LNG based power plant at Hope Town, Port Blair.																					
 GEO FOUNDATIONS & STRUCTURES PVT. LTD							Bore Hole No : BH-01 Location : Hope Town Type of Boring : Hydraulic Ground Water Level : Not met with Termination Depth : 8.0 m						Drillhole Record -BH-01								
													Fig No. 01								
													Start Date : 25.05.2019 End Date : 31.05.2019								
SOIL DESCRIPTION	COLOUR	STRUCTURE	GROUND LEVEL (m)	LEGEND	TEST NO	SAMPLE TYPE	DEPTH (m)	TEST DEPTH(m)	PENETRATION VALUES			SPT 'N' Blows/300mm	SPT 'N' PROFILE					C.R (%)	R.Q.D(%)	REMARKS	
									15cm	30cm	45cm		20	40	60	80	100				
Sandy Silty CLAY with Gravel		Hard, Layered	0.95		SPT-1	SS	0.9	0.90-0.95	50	-	-	>100							50/5 cm Penetration		
Hard Rock					CR-1	CS		0.95-2.45	-	-	-	-						48	8	(0.9-0.95 is WeatheredRock)	
					CR-2	CS	2.45	2.45-3.95	-	-	-	-						28	16		
					CR-3	CS	3.95	3.95-5.45	-	-	-	-						27	13		
					CR-4	CS	5.45	5.45-6.95	-	-	-	-						72	53		
					CR-5	CS	6.95	6.95-8.00	-	-	-	-						77	71		
G.W.L: Not met with			No of SPT: 1 No.			No of UDS : Nil			No of CR : 5 Nos			Remarks									

Project : Geo-technical study for the proposed 50 MW (+/-10%) LNG based power plant at Hope Town, Port Blair.																						
 GEO FOUNDATIONS & STRUCTURES PVT. LTD							Bore Hole No : BH-02 Location : Hope Town Type of Boring : Hydraulic Ground Water Level : Not met with Termination Depth : 8.0 m							Drillhole Record -BH-02								
														Fig No. 02								
														Start Date : 04.06.2019 End Date : 05.06.2019								
SOIL DESCRIPTION		COLOUR	STRUCTURE	GROUND LEVEL (m)	LEGEND	TEST NO	SAMPLE TYPE	DEPTH (m)	TEST DEPTH(m)	PENETRATION VALUES			SPT 'N' Blows/300mm	SPT 'N' PROFILE						C.R (%)	R.Q.D(%)	REMARKS
										15cm	30cm	45cm		20	40	60	80	100				
Gravely Silty CLAY				0.50		SPT-1	SS	0.50	0.50-0.61	50	-	-	>100								50/11 cm Penetration	
Weathered Rock				1.00		CR-1	CS	1.00	1.00-2.00	-	-	-	-						19	Nil		
Hard Rock						CR-2	CS	2.00	2.00-3.00	-	-	-	-						20	Nil		
						CR-3	CS	3.00	3.00-4.50	-	-	-	-						60	53		
						CR-4	CS	4.50	4.50-6.00	-	-	-	-						64	43		
						CR-5	CS	6.00	6.00-7.50	-	-	-	-						69	49		
						CR-6	CS	7.50	7.50-8.00	-	-	-	-						71	57		
G.W.L: Not met with				No of SPT: 1 No.				No of UDS : Nil				No of CR : 6 Nos		Remarks								

Project : Geo-technical study for the proposed 50 MW (+/-10%) LNG based power plant at Hope Town, Port Blair.																									
 GEO FOUNDATIONS & STRUCTURES PVT. LTD				Bore Hole No : BH-03 Location : Hope Town Type of Boring : Hydraulic Ground Water Level : Not met with Termination Depth : 8.0 m				Drillhole Record -BH-03 Fig No. 03 Start Date : 07.06.2019 End Date : 09.06.2019																	
SOIL DESCRIPTION	COLOUR	STRUCTURE	GROUND LEVEL (m)	LEGEND	TEST NO	SAMPLE TYPE	DEPTH (m)	TEST DEPTH(m)	PENETRATION VALUES			SPT 'N' Blows/300mm	SPT 'N' PROFILE					C.R (%)	R.Q.D (%)	REMARKS					
									15cm	30cm	45cm		20	40	60	80	100								
Silty CLAY			0.50		SPT-1	SS	0.50	0.50-0.59	50	-	-	>100													
Weathered Rock			1.00		CR-1	CS	1.00	1.00-2.50	-	-	-	-													
Hard Rock					CR-2	CS	2.50	2.50-4.00	-	-	-	-													
					CR-3	CS	4.00	4.00-5.50	-	-	-	-													
					CR-4	CS	5.50	5.50-7.00	-	-	-	-													
					CR-5	CS	7.00	7.00-8.00	-	-	-	-													
G.W.L: Not met with				No of SPT: 1 No.		No of UDS : Nil		No of CR : 5 Nos	Remarks																

Project : Geo-technical study for the proposed 50 MW (+/-10%) LNG based power plant at Hope Town, Port Blair.																							
 GEO FOUNDATIONS & STRUCTURES PVT. LTD					Bore Hole No : BH-04 Location : Hope Town Type of Boring : Hydraulic Ground Water Level : Not met with Termination Depth : 8.0 m										Drillhole Record -BH-04								
															Fig No. 04								
															Start Date : 10.06.2019 End Date : 11.06.2019								
SOIL DESCRIPTION	COLOUR	STRUCTURE	GROUND LEVEL (m)	LEGEND	TEST NO	SAMPLE TYPE	DEPTH (m)	TEST DEPTH(m)	PENETRATION VALUES			SPT 'N' Blows/300mm	SPT 'N' PROFILE					C.R (%)	R.Q.D(%)	REMARKS			
									15cm	30cm	45cm		20	40	60	80	100						
Gravely SAND			0.50		SPT-1	SS	0.50	0.50-0.56	50	-	-	>100								50/6 cm Penetration			
Weathered Rock			1.00		CR-1	CS	1.00	1.00-2.00	-	-	-	-						68	Nil				
Hard Rock					CR-2	CS	2.00	2.00-3.00	-	-	-	-							81	76			
					CR-3	CS	3.00	3.00-4.50	-	-	-	-								86	78		
					CR-4	CS	4.50	4.50-6.00	-	-	-	-								78	67		
					CR-5	CS	6.00	6.00-7.50	-	-	-	-								80	71		
					CR-6	CS	7.50	7.50-8.00	-	-	-	-								82	76		
G.W.L: Not met with			No of SPT: 1 No.			No of UDS : Nil			No of CR : 6 Nos			Remarks											

GEO FOUNDATIONS AND STRUCTURES Pvt. Ltd.									
Geo-technical study for the proposed 50 MW (+/-10%) LNG based power plant at Hope town, Port Blair									
Table 7 :LAB RESULTS FOR TEST ON ROCK									
Sl.No	Location	BORE HOLE	SAMPLE DESCRIPTION	DEPTH	WATER ABSORPTION	DENSITY	POINT LOAD STRENGTH	UCS	
				m	%	g/cm3	kN	MPa	
1	Hope Town	BH-1	Hard Rock	2.45-3.95	2.76	2.35	9.75	70.91	94.55
2				3.95-5.45	2.79	2.27	11.5	83.64	
3				5.45-6.95	2.78	2.35	17.75	129.09	
4		BH-2		4.50-6.00	2.06	2.42	7.5	54.55	68.18
5				6.00-7.50	1.36	2.48	11.25	81.82	
6		BH-3		5.5-7.00	1.68	2.44	11.75	85.45	85.45
7		BH-4		1.00-2.00	2.50	2.44	4.5	32.73	55.45
8				3.00-4.50	2.60	2.42	10.75	78.18	

GRAPHICAL REPRESENTATION 1- POLAR GRAPH AS PER IS 3043 - 1987

ERT 1

Direction	Average Resistivity in each direction									
	0.50 m	1 m	2 m	3m	4 m	5 m	6 m	8 m	10 m	Avg
N	31.43	41.32	28.01	48.23	37.18	56.21	61.04	33.66	26.38	40.38
E	25.78	38.37	45.97	32.03	51.24	61.54	36.55	28.64	13.19	37.03
S	31.43	41.32	28.01	48.23	37.18	56.21	61.04	33.66	26.38	40.38
W	25.78	38.37	45.97	32.03	51.24	61.54	36.55	28.64	13.19	37.03

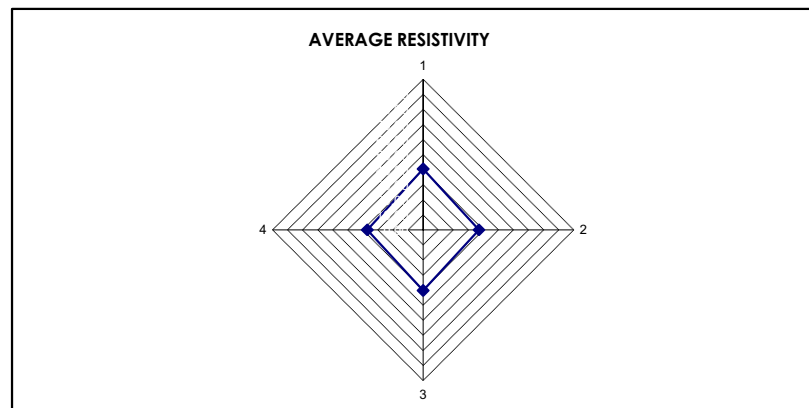


Fig No : 1.1

Average Resistivity up to 10 m (ohm-meter) :

38.71

The term 1,2,3,4 in Polar graph indicates direction N, E, S, W respectively.

Each axis unit indicates 10 Ohm - m

GRAPHICAL REPRESENTATION 1- POLAR GRAPH AS PER IS 3043 - 1987

ERT 2

Direction	Average Resistivity in each direction									
	0.50 m	1 m	2 m	3m	4 m	5 m	6 m	8 m	10 m	Avg
N	13.85	18.21	31.53	25.06	24.8688	31.714	30.521	35.168	38.308	27.69
E	11.18	16.89	29.89	38.81	43.96	40.51	40.69	35.17	35.80	32.54
S	13.85	18.21	31.53	25.06	24.87	31.71	30.52	35.17	38.31	27.69
W	11.18	16.89	29.89	38.81	43.96	40.51	40.69	35.17	35.80	32.54

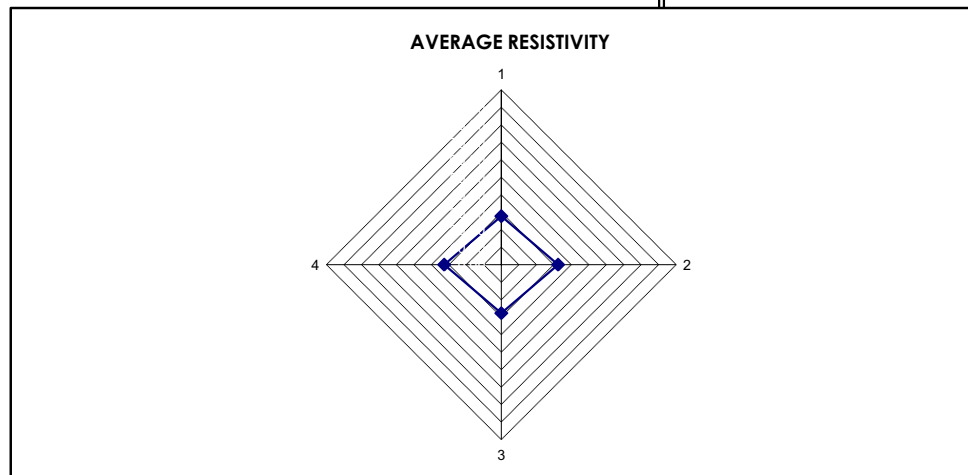


Fig No : 2.1

Average Resistivity up to 10 m (ohm-meter) :

The term 1,2,3,4 in Polar graph indicates direction N, E, S, W respectively.

Each axis unit indicates 10 Ohm - m

30.12

GRAPHICAL REPRESENTATION 1- POLAR GRAPH AS PER IS 3043 - 1987

ERT 3

Direction	Average Resistivity in each direction									
	0.50 m	1 m	2 m	3m	4 m	5 m	6 m	8 m	10 m	Avg
N	18.65	23.42	31.77	42.95	49.23	49.61	47.85	56.77	63.42	42.63
E	17.71	26.50	39.94	48.60	47.72	50.55	56.14	58.27	60.28	45.08
S	18.65	23.42	31.77	42.95	49.23	49.61	47.85	56.77	63.42	42.63
W	17.71	26.50	39.94	48.60	47.72	50.55	56.14	58.27	60.28	45.08

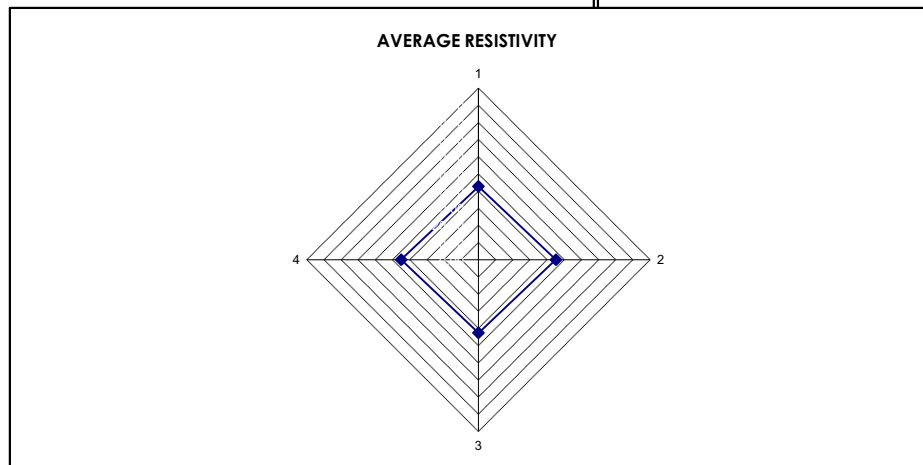


Fig No : 3.1

Average Resistivity up to 10 m (ohm-meter) :

The term 1,2,3,4 in Polar graph indicates direction N, E, S, W respectively.

Each axis unit indicates 10 Ohm - m

43.85



CHEMICAL ANALYSIS OF SOIL

Client

M/s NVVN Limited

Name of Work

Geotechnical study for the proposed 50 MW LNG Capital Based Power plant at Hopetown PortBlair

Reference No.

SI/PB-CHN/19/105/01

Table No. 8

Sl. No.	Bore Hole No.	PH of 5% aqueous solution	Chloride as Cl	Sulphate as SO ₃ (%)	Carbonate as CO ₃	Nitrate as NO ₃	Organic Matter (%)
1	BH-1	7.86	0.7	0.052	0.028	0.03	1.4
2	BH-2	7.94	0.77	0.055	0.024	0.028	1.2
3	BH-3	8.12	0.7	0.057	0.026	0.03	1
4	BH-4	8.26	0.63	0.053	0.024	0.026	0.8