DREDGING CORPORATION OF INDIA LTD,
HEAD OFFICE: VISAKHAPATNAM

Date: 07.01.2020

ADDENDUM -I

Name of the work : Chartering of Cutter suction dredger on Cu.M basis and disposal through shore and floating pipeline at Northern sea shore at a distance of 1.5 Kms for carrying out Dredging at North BOT complex (NDC) at Paradip Port.

Tender No : DCI/OPS/PDP/SUB-CONT/2019 dated: 20-12-2019

A)Siltation During dredging : Siltation during the period of contract is to be removed by the contractor at his own cost, for which no additional amount shall be paid.

B) Page No.56/81 of Bill of quantities: Present levels may please be read as approximately -14.00 Mtrs to +3.00 Mtrs CD instead of -6.00 Mtrs to +3.00 Mtrs CD.

HOD(Operations)

466198.00	2241355.00	15.37
466197.00	2241356.00	15.49
466198.00	2241356.00	15.21
466199.00	2241355.00	14.88
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466200.00	2241355.00	14.34
466199.00	2241356.00	15.07
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466202.00	2241359.00	13.28
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PRE BID CLARIFICATIONS.

Date: 07.01.2020

Name of the work : Chartering of Cutter suction dredger on Cu.M basis and disposal through shore and floating pipeline at Northern sea shore at a distance of 1.5 Kms for carrying out Dredging at North BOT complex (NDC) at Paradip Port.

Tender No : DCI/OPS/PDP/SUB-CONT/2019 dated: 20-12-2019

Ref: Pre bid meeting was conducted on 27.12.2019 at DCI tender room.

The following clarification / queries raised by tenderers during pre -bid meeting held on 27-12-2019 at 1100 Hrs at DCI tender room and clarifications were issued by DCI as detailed below of each tenderers.

1. M/s Boskalis Smit India LLP, Mumbai- 400 051.

Sl. no	Clause	Page	Bid condition	Query /Actions	Clarified by DCI
1	4.1 of Instructions to bidders	11/80	**Time for posing queries** : Pre-bid meeting will be held on 27-12-2019 at 1100 Hrs at DCIL, HO. Prospective bidders are requested to forward their queries by e-mail on or before 26-12-2019. Bidders who wish to attend for the pre-bid meeting has to intimate the same in advance by e-mail along with their details and ID proof to obtain necessary permissions etc. The clarifications requested by the bidders will be suitably hosted in DCI website one week before last date of submission. No press notification for any amendment will be issued. However, prospective bidders have to visit the websites www.dredge-india.com, http://eprocure.gov.in two days before the date of submission for any corrigendum/ addendum.	Bidder should get the opportunity to pose additional queries after receipt of the responses of DCI to the Pre-bid queries. Please confirm.	Tender condition prevails.
2	ITB	01/80	NIT	The NIT says "CHARTERING OF CUTTER SUCTION DREDGER ON CU.M BASIS" Either it should be charter Hire or the scope of work on Cu.m Basis. Kindly change the BOQ to day basis with minimum day.	Tender condition prevails.
3	Clause No. 26 of ITB	19/80 or 20/80	**Extensions given by DCI**: Contractor has to execute the work within 4 months with±20% BOQ	In case of excess in quantity for which contract will be extended as per requirement of DCI, please confirm that	Please refer page No. 20 para No.4. Tender condition prevails.

Sl. no	Clause	Page	Bid condition	Query /Actions	Clarified by DCI
			quantity. If the quantity is more than +20%, extension of time period will be granted proportionately	in such case a suitable contract period extension will be given by DCI.	
4	Clause No. 26 of ITB	20/80	**Curtailment of contract period**: In case of curtailment of the contract period at any stage, the tenderer shall be informed of the same in advance by serving One week notice. In this case the tenderer shall not have any additional claim whatsoever. During the contract period and extended period, Contract shall be terminated by giving 7 days notice by the Project Office, Paradip if the services of the tenderer are found to be inadequate or unsatisfactory or in violation of the terms/ conditions of the contract, without prejudice to its rights and remedies..	In case of curtailment of the contract period, the tenderer shall be informed of the same in advance by serving 2 days notice. Question: 2 days notice is not acceptable. Please adjust and confirm that in case of such an event at least 2 weeks notice will be given	Please refer page No. 20 para No.2, as mentioned in tender, contract shall be terminated by giving 7 days notice by the Project Office Tender condition prevails.
5.	Clause No.4.3 of GCC	28/80	**Priority of Documents**: Interpretation of Contract Document – Engineers' Power : Several documents forming the contract are to be taken as mutually explanatory of one another. Should there be any discrepancy, the Engineer shall have the power to correct the same and his decision shall be final and binding on the parties to the Contract.	Please provide the Priority of Contract Documents.	As all points are clarified in the Pre bid, all clauses in the tender and pre- bid clarifications issued by DCIL holds good.
6	Clause No.5.2.7 of GCC	30/80	**Contractor to Indemnify**: Contractor to Indemnify DCIL/ PPT against all Claims for Loss, Damages etc: The CSD/crafts should be available for operations round the clock.	The CSD/crafts should be available for operations round the clock. Kindly clarify the regular maintenance and loss of bunker times include in this	Contractor can take maintenance and bunkering approximately 3 days in a month, whereas as work is on Cum basis, contractor can plan his maintenance and bunkering in such a way that work should be completed within the stipulated time of contract.
7.	Clause No.8.5 of GCC	32/80	**Payment** on back to back: Monthly bill survey will be carried out jointly by PPT/DCI/Third party appointed by PPT or DCI at the cost of	Payment on back to back basis is not acceptable. Contractor should receive his monthly payments for certified invoices independently of the fact if DCI	Tender condition prevails.

Sl. no	Clause	Page	Bid condition	Query /Actions	Clarified by DCI
			PPT. The payment will released by DCI to contractor on back to back basis. (Back to back means the quantity allowed by PPT as per the survey). The monthly payment will be released by DCI to contractor within 15 days upon receipt of payment from PPT.	has received payments from the Employer. Please adjust.	
8.	Clause No.10.1 of GCC	33/80	**Change Orders**: DCIL may at any time by a written order give to the Contractor make changes within the general scope of the Contract for the services to be provided by the Contractor.	The DCI may at any time by a written order give the Contractor make changes within the General scope of Contract for services to be provided by the Contractor." This Not acceptable. Please delete this clause	Tender condition prevails.
9.	Clause No.19 of GCC	36/80	**Termination for Convenience**: DCIL may, by written notice sent to the Contractor, terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for DCIL's convenience, the extent to which performance of work under the Contract is terminated, and the date upon which such termination becomes effective. A notice period of one week will be given. Contractor shall be paid for the works executed as on date of Termination after receipt of payment from PPT.	This clause is one-sided and not acceptable. Please include the FIDIC Form of Contract for Dredging and Reclamation Works (Second edition) General Contract Condition Termination clause.	Tender condition prevails.
10.	Clause 20 of GCC	36/80	**Arbitration clause** Settlement of Disputes/ Arbitration clause : If any dispute or difference of any kind whatsoever shall arise between Owner/Charterer and DCI in connection with or arising out of the Charter Agreement, the parties shall make every effort to resolve amicably such dispute or difference by mutual	Unacceptable. Unless settled amicably disputes shall be settled by arbitration under the provisions of the Indian Arbitration and Conciliation Act-1996 or any statutory modifications or re-enactment thereof. Dispute resolution board shall be set up with representatives of both parties. The place of the arbitration shall be Mumbai.	Tender condition prevails.

Sl. no	Clause	Page	Bid condition	Query /Actions	Clarified by DCI
			consultation. Departmental Resolution Committee nominated by Chief General Manager/ Director (Operations & Technical) of DCI will try to resolve the dispute in an amicable way with the consent of DCI management. If, after thirty (30) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either Owner/Charterer (or) DCI may give notice to the other party of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given and the disputes herein shall be settled by arbitration under the provisions of Indian Arbitration and Conciliation Act-1996. Each party shall appoint an arbitrator and Arbitrators so appointed shall appoint a third Arbitrator who shall be the Presiding Arbitrator and the award of Arbitrators shall be final and binding upon the parties hereto, subject to the provisions of the Arbitration and Conciliation Act,1996 (Act 26 of 1996). The Arbitrators shall give a reasoned award within six months from the date of the appointment of the 3rd Arbitrator. The contract shall be governed by Indian Laws. The dispute arising out or under the contract will be subject to the exclusive jurisdiction of the Courts at Visakhapatnam only. The Arbitrator shall give a reasoned Award and it shall be in accordance with the provisions of Arbitration & Conciliation Act, 1996 or any statutory modifications or re-enactment thereof. The venue for the Arbitration shall be		

Sl. no	Clause	Page	Bid condition	Query /Actions	Clarified by DCI
			Visakhapatnam and the Court at Visakhapatnam shall have exclusive jurisdiction on all matters with reference to this contract.		
11	Clause No.8 of SCC	43/80	**Scope of work** : The CSD deployed shall be suitable to carry out dredging at the proposed site in Paradip Port waters	It says "The CSD deployed shall be suitable to carry out dredging at the proposed site in Paradip Port waters". Without any specification given how bidder can offer the suitable CSD?	Tender condition prevails.
12.	Clause No.3 of SCC	43/80	**Scope of work:** It is envisaged that, the dredging material is predominantly sand, silt, soft/stiff clay and is amenable to CSD. However, stones, boulders, tree roots etc may present in the proposed location and no additional payment / claims are allowed for clearing the same.	Bid document says "stones, boulders, tree roots etc may present in the proposed location and no additional payment / claims are allowed"– In what bases bidder assume the cost as no details given for the obstruction. More over on Charter hire this risk remain with the employer.	Tender condition prevails.
13	Clause No.5 of SCC	43/80	**Scope of work:** The contractor has to provide vehicle/routine boat as and when required basis as per instructions of DCI/PPT to visit the site and CSD proposed to be deployed .	Kindly provide the details which kind vehicle/routine boat needed.	Tender condition prevails.
14	Clause No.7 of SCC		**Scope of work**: Dredging will be carried out on in-situ quantity basis and difference in depths between pre and progressive/post dredge surveys will be considered for calculating the dredging quantity for payment as certified by PPT. Total quantity may vary up to + or – 20%. In case the quantity exceeds +20%, extension of time will be granted to complete the work with same rate, terms and conditions.	Why detail methodology needed as its Charter Hire bidder equipment will work based on Employer Methodology in its best capacity. Kindly provide the Methodology for our review	Tender condition prevails.
15		67/80	Details of CSDs or any other kind of equipment/CSD with suitable dredging methodology	Its say "Details of CSDs or any other kind of equipment/CSD with suitable dredging methodology" can we propose any other kind of equipment other than CSD?	It is modified as "Details of CSDs / TSHD with suitable dredging methodology.
16.	General		Bathymetric survey data	Please provide recent bathymetric survey data in x,y,z format or Autocad format of the	Bathymetric survey x, y, z is hosted on web.

Sl. no	Clause	Page	Bid condition	Query /Actions	Clarified by DCI
				areas to be dredged	
17.	General		Scope	Please confirm if this is a Capital Dredging of maintenance dredging work	Capital dredging
18.			Clearance	We understand all statutory clearance of equipment is bidder scope other than that pls confirm if any specific Naval Clearance needed for foreign flag vessel	Statutory clearances required for foreign flag vessels are to be obtained by the contractor at his cost.
19.	Clause No.V of SCC para No.46		Price variation clause		It may please be read/ Modified as V=(P-Po)/Po x R x Q Wherein **V**= Variation in Price on account of main fuel for the month under Consideration Po= Price of main fuel in the concerned area ie Paradip as on date of submission of tender. P = Price of main fuel for the month under consideration. Q = Main fuel Element factor = 0.28 R = Value of work during the month under consideration. IOCL/BPCL/HPCL official fuel circular shall be used for calculation of Po and P in the Fuel escalation formula. The amount in terms of this clause shall be paid by the DCI within 15 days on receipt of payment from PPT

2. M/s Adani Ports and Logistics

S No	Clause No	Page No	Description	Details	Query	DCI Reply
1.	Clause No. 4.1 of ITB	11	Clarification of Bidding Documents	"…**The clarifications requested by the bidders will be suitably hosted in DCI website one week before last date of submission.** …"	Request hosting clarifications at least **two weeks** before last of submission.	Tender condition prevails
2.	Clause No. 13.1 of ITB	15	Period of Validity of Bids	"The Tenderer should keep open the validity of the Bid for 60 days from the date fixed for its opening or from the date of its opening **whichever is later**. …"	As actual bid opening date is not certain, the expression "whichever is later…" makes the bid validity open ended. Hence, we request to please replace the expression as under: "The Tenderer should keep open the validity of the Bid for 60 days from the date fixed for its opening or from the date of its opening **whichever is earlier**. …"	Tender condition prevails
3.	Clause No.26 of ITB	20	Right to vary period of contract at Time of Award	"…In case of curtailment of the contract period at any stage, the tenderer shall be Informed of the same in advance by serving **One week notice**."	Request to inform curtailment by serving **Two week notice**.	Tender condition prevails
4.	Clause No.26 of ITB	20	Right to vary period of contract at Time of Award	"… Contractor has to execute the work within 4 months with +/- 20% BOQ quantity. **If the quantity is more than +20%, extension of time period will be granted proportionately.**"	We assume that if quantity is more than allowed variation (i.e., +20% as stipulated in tender), **the Contractor will have Right to Re-negotiate the Rates or Right to Refuse the extension.** Please clarify.	Tender condition prevails.
5.	Clause No.8.3 of GCC	33	Payment	"8.3 In addition to Performance Security, **retention amount of 5% of bill will be deducted from monthly bill value and same shall be refunded along with Performance security.**"	Request deletion of this clause. With Performance Security of 10% in place, retention should not be held.	Tender condition prevails.

S No	Clause No	Page No	Description	Details	Query	DCI Reply
6.	Clause No. 8.5 and 8.6 of GCC	33	Payment	"8.5 Monthly bill survey will be carried out jointly by PPT/DCI/Third party appointed by PPT or DCI at the cost of PPT. **The payment will released by DCI to contractor on back to back basis. (Back to back means the quantity allowed by PPT as per the survey). The monthly payment will be released by DCI to contractor within 15 days upon receipt of payment from PPT.** …"	The tender document does not mention about stipulated time period for PPT to make payments to DCIL. In present condition Contractor does not have an understanding of a definitive time period to receive payments. We request clarification. It is also requested to include Financial charges on delayed payment at rate of SBI PLR + 2% p.a.	PPT shall make monthly payment to DCI within 30 days.
7.	Clause No.16.5 of GCC	35	Termination for Default	"16.5 In the event DCIL terminates the Contract in whole or in part, pursuant to GCC Clause 16.1, DCIL may procure, upon such terms and in such manner, as it deems appropriate, Services similar to those undelivered, and the Contractor shall be liable to DCIL for any excess costs for such similar Services. However, the Contractor shall continue performance of the Contract to the extent not terminated."	We assume that in case of Default by Contractor, the payment of Services already delivered will be made to the Contractor by DCIL. Please confirm.	Please go through page no 36, clause no 19. Tender condition prevails.
8.	Clause No.17.2 of GCC	36	Force Majeure	"…Such events may include, but are not restricted to, acts of DCIL contractual capacity, wars or revolutions, fire, floods , Tsunami, epidemics, quarantine restrictions and freight embargoes. …"	Please include **"Cyclonic Conditions"** in Force Majeure.	Tender condition prevails
9.	Clause No.I (1) SCC	43	Scope of Work	"1) DCI intends to Charter CSD on Cu.M basis and dispose the material through shore and floating pipeline at Northern sea Shore at a distance of 1.5 KM for carrying out dredging at North BOT complex (NDC) at Paradip Port."	Clarity on number of dredgers and capacity of CSD is not mentioned.	Maximum two Cutter suction dredgers can be deployed and depending upon floatation, contractor is free to deploy TSHD, work should be completed as per contract period given.

S No	Clause No	Page No	Description	Details	Query	DCI Reply
10.	Clause No.I (1) Conditions of Contract (SCC) Clause – I (1)	43	Scope of Work	"1) DCI intends to Charter CSD on Cu.M basis and **dispose the material through shore and floating pipeline at Northern sea Shore at a distance of 1.5 KM** for carrying out dredging at North BOT complex (NDC) at Paradip Port."	The tender document is silent on disposal management aspects such as whether the material is to be "open discharged" or to be "contained" when disposing at Northern Sea Shore at a distance of 1.5 KM. Please clarify along with drawing specifying area demarcation for disposal.	Open discharge
11.	Clause No.I(7) of SCC	43	Scope of Work	"3) The quantities mentioned in BOQ are only indicative and the actual quantities may vary by + or – 20% with respect to the pre-dredge surveys. It is envisaged that, the dredging material is predominantly sand, silt, soft/stiff clay and is amenable to CSD. **However, stones, boulders, tree roots etc may present in the proposed location and no additional payment / claims are allowed for clearing the same.** The dredged spoil will be dumped through the combination of shore and floating pipeline at a distance of 1.5 KM at Northern sea shore. All required pipeline and accessories are to be arranged by contractor at his cost."	As it is envisaged that, the dredging material is predominantly sand, silt, soft/ silty clay, **it is requested that clearing of stones, boulders, tree roots, wrecks and other debris be excluded from the Contractor's scope. If the Contractor is to remove such material, it shall be carried out at additional time and cost.**	Tender condition prevails.
12.	Section – IV – Special Conditions of Contract (SCC) Clause – I (3)	43	Scope of Work	"3) The quantities mentioned in BOQ are only indicative and the actual quantities may vary by + or – 20% with respect to the pre-dredge surveys. **It is envisaged that, the dredging material is predominantly sand, silt, soft/stiff clay and is amenable to CSD**…"	Request clarity and further details of Geo-technical studies/ borehole data for the area to be dredged to ascertain the soil characteristics of material to be dredged.	Material mainly comprises of sand, silt clay, boulders, soft rock or combination of above dredgeable by CSD, In case of further requirement of geotechnical investigation of the area, contractor is free to carry out the same at his cost. (Geo Technical investigation report is enclosed)
13.	Clause – I (7) of SCC	44	Scope of Work	"7) Dredging period of 4 months shall be given to complete the work. Contractor has to submit detail methodology of completing the work in above period of 4 months with bar chart along with tender submission."	In case only one dredger is allowed, for BoQ +/- 20% volume, completion within 4 months is a short period. We request providing 6 months for completion.	Refer Sr no 9 above.

S No	Clause No	Page No	Description	Details	Query	DCI Reply
14.	Clause No.I (7) of SCC	44	Scope of Work	"7) Dredging period of 4 months shall be given to complete the work. Contractor has to submit detail methodology of completing the work in above period of 4 months with bar chart along with tender submission."	Also, with intended commencement from end-January '20 and dredging period of 4 months would lead to completion in Monsoon period. Towing of CSD may not be feasible/ allowed during foul weather. DCIL is requested to provide place and permission to park the vessel within work site, free of cost during such period.	Tender condition prevails
15.	Clause No. – I (14) of SCC	44	Scope of Work	"14) All the allied crafts, plants and machinery deployed by the contractor shall strictly adhere to the relevant IMO regulations, MARPOL convention 79/78 and other statutory regulations."	Statutory regulations shall be adhered, as applicable to the equipment we propose. Please confirm.	Tender condition prevails
16.	Clause No I of (SCC)	45	Scope of Work	-	The tender does not specify "Local hindrances/ issues". Please include the following sub-clause: "Local issues and hindrances shall be addressed and resolved by DCIL. Contractor shall be granted extension of time to cover for such delays."	No Local issues are anticipated.

3. M/s Reach Dredging Limited

Sl. no	Clause	Page	Bid condition	Query /Actions	Clarified by DCI
1	Para -4 of Section –I of ITB	4	Mobilization period 15 days from the date of work order.	We request you consider 45 days mobilisation from the date of work order.	Mobilisation period 30 days from the date of work order.
2	Para-5 of Section-I of ITB	4 and 12 of 80	Earnest Money deposit Rs.18,00,000/- . The EMD shall pay through E-Payment / Bank Guarantee. Page No.12 Point No.7.2.6 : EMD in the form of E-Challan (E-Recipet to be enclosed) Bank Guarantee furnished in accordance with ITB clause .12	Please Note that in the Page No.4 for making EMD through E-Payment , Bank details provided in the tender documents. Now our queries is how to make the payment of EMF of either E-Payment or by E-Challan. Please clarify. The NIT says "CHARTERING OF CUTTER SUCTION DREDGER ON CU.M BASIS" Either it should be charter Hire or the scope of work on Cu.m Basis. Kindly change the BOQ to day basis with minimum day.	The bank Receipt to be enclosed with the tender. Tender condition prevails.
3	Page No.5 , Point No.9 of ITB	5	Cost of Tender documents Rs.5900/- including GST (Non-Refundable) in the form of E-Challan.	Our query is how to make the payment of cost of tender documents in the form E-Challan . please clarify.	The bank Receipt enclosed with the tender. Tender condition prevails.

4. M/s International Sea Port Dredging Private Limited (M/s ISDPL)

Item	Clause	Page	Bid Conditions	Questions / Actions	
Notice Inviting Tender					
1	4	4 of 80	Mobilization Period: 15 days from the date of work order	It is proposed that the mobilization period shall be 45 days from the date of Work order since it requires more time for preparing CSD for mobilization.	Mobilisation period 30 days from the date of work order.
2	7	5 of 80	Last date of receipt of Tenders: 13-01-2020 up to 1500 Hrs.	Due to long holiday season for Christmas and New Year, most of our officials are on leave and will be back only after second week of January 2020.Hence it is requested to extend the Bid submission date up to 24 January 2020.	Tender condition prevails
Section-II-Instructions to Bidders					
3	10.1	14 of 80	Prices shall be quoted in Indian Rupees only	It is proposed to consider for payment of exchange variation between Euro and INR	Tender condition prevails
4	22.4	19 of 80	Bill of quantities shall be inclusive of all Port dues, berth hire charges, anchorage etc. for plying permissions ..,……..	It is proposed that the bidder's offer shall be exclusive of Port dues and Pilotage and the same shall be extended for the vessels to be deployed. In addition, Berth for Bunkering/Maintenance shall be provided free of charge for a maximum period of 3 days in a month.	Port dues, pilotage , berth hire charges etc are chargeable as per PPT scale of rates.
5	26	20 of 80	**Right to Vary Period of Contract at Time of Award:** ……. …… …… DCI reserves right regarding giving extension / curtailment, deciding period of extension / curtailment and decision in the matter will be final, binding on the Contractor and will not subject to the Arbitration.	The following is clarified on the subject provision. • In case of reduction in quantity in excess of 20% of BOQ quantities, the rates are to be renegotiated. • Execution of additional quantity in excess of 20% of BOQ quantity shall be based on vessel planning of the Contractor since the vessels are to be committed well in advance. • Any curtailment of the Contract shall be based on the above principles and shall be notified sufficiently in advance and cannot be 7 days' notice. • Extension of time shall be applicable in case of increase in BOQ quantity but not after 20% increase.	Tender condition prevails
Section-III- General Conditions of Contract					

6	1.1.12	27 of 81	Expected Risks	It is proposed that the following may be added to the Expected Risks in line with FIDIC Conditions of Contract which are applied for dredging and reclamation works. • Any operations of forces of nature affecting the site and /or works which was unforeseeable or against which an experienced contractor could not reasonably have been expected to take precautions. • Physical obstructions or physical conditions encountered at site during performance of works which obstructions or conditions were not reasonably foreseeable by an experienced contractor and which the contractor has immediately notified to the Engineer. • Climatic conditions more adverse than specified in the contract. • Any change to the law of country after the date 28 days prior to the latest date of bid submission.	Tender condition prevails
7	4.3	28 of 80	**Interpretation of Contract Document – Engineers' Power:……** the Engineer shall have the power to correct the same and his decision shall be final and binding on the parties to the Contract	It is clarified that such decisions of Engineer are always subjected to provisions under clause 20.2 - Settlement of Disputes through Arbitration.	Tender condition prevails
8	4.5	28 of 80	**Contractors' Price is Inclusive of All Costs.:** Unless otherwise specified, the Contractor shall be deemed to have included in his Tender / Offer all his cost of…….port dues, wharfage / jetty charges,……	It is proposed that the bidder's offer shall be exclusive of Port dues and Pilotage and the same shall be extended for the vessels to be deployed. In addition, Berth for Bunkering/Maintenance shall be provided free of charge for a maximum period of 3 days in a month.	Tender condition prevails
9	4.8	29 of 80	**Responsibility for Damages** The Contractor shall…., which may be interfered with or affected or disturbed or endangered and shall indemnify and keep the DCI indemnified against claim for injury, loss or damage cause by the Contractor.	Terms such as disturbed, endangered, affected and interfered are vague and open for interpretation. It is proposed to limit the indemnification clause for any damages, loss of equipment, injuries or casualty caused by the Contractor's operations.	Tender condition prevails

10	5.2.3	30 of 80	The Contractor should make his own arrangements at his cost for a suitable berth during non-working time, repair and maintenance, breakdown and any other purpose etc. when CSD/crafts are not being engaged by DCI.	It is proposed that suitable berth for repair, maintenance and bunkering is to be provided free of charge for a period of 3 days in a month during execution of contract Works.	Tender condition prevails
11	5.2.7	30 of 80	The CSD/crafts should be available for operations round the clock	It is proposed to include provisions for interruptions related to bunkering, regular maintenance, minor repairs, etc.	Tender condition prevails
12	5.4	31 of 80	The work has to be carried out by the Contractor causing the minimum hindrance for any maritime traffic or surface traffic	While every effort will be made to co-ordinate with PPT and DCI and to minimize the traffic delays, if the Contractor's equipment is idle for more than 7 hours in a week on cumulative basis for reasons not attributable to Contractor , the idle time is payable.	Tender condition prevails
13	6.5.6	31 of 80	The performance security will be discharged by the DCIL and returned to the Contractor not later than thirty (30) days following the date of completion of the Contractor's performance obligations, including any warranty obligations, clearance of final bill, under the Contract	It is clarified that this being a dredging contract, there is no defect liability period and the PBG shall be returned on issue of taking over certificate.	Tender condition prevails
14	7	31 of 80	**Insurance**	It is clarified that all insurance policies shall be in the name of Contractor and endorsement of Co-insurance and waiver of subrogation in favor of DCI and PPT would be issued.	Tender condition prevails
15	8.5	33 of 80	**Payment: ……..**	Payment are to be made within 28 days of submission of statement independent of receipt of payment by DCI from PPT.	Tender condition prevails
16	8.6	33 of 80	**……** Provident Fund and other recoveries of the crew / workers and payment wage slip must be attached to the Bill……..	It is clarified that since the Contractor is fully responsible for meeting the statutory the contractor would submit his PF Registration document with the Employer and no additional documents on wage slips etc. would be enclosed to the Bill.	PF registration document is sufficient.

17	15.1	35 of 80	**Liquidated Damages:…….** DCIL shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to 0.5% per day of the contract price will be charged for delay in mobilization/ completion of whole work……..	It is proposed that the percentage of LD shall be 1% per week or part there off in place of 0.5% per day I.	Tender condition prevails
18	17.2	36 of 80	**Force Majeure:……** "Force Majeure" means an event beyond the control of the Contractor and not involving the Contractor's fault……Such events may include but not restricted to, act of DCIL contractual capacity ……	Please clarify what does it mean acts of the DCIL contractual capacity. It is further clarified that if the Contractor is prevented from performing any of its obligations under the Contract due to force majeure, the Contractor shall be entitled to extension of time and payment of cost	Only extension of time will be allowed.
19	19	36 of 80	T**ermination for Convenience:** The DCIL may, by written notice sent to the Contractor, terminate the Contract, in whole or in part, at any time for its convenience…….	It is clarified that in case of termination of contract by DCIL for its convenience, the Contract shall be paid for the Works executed as on date of Termination, cost of demobilization of its personnel and equipment and 10% of balance value of unexecuted Works.	Tender condition prevails..
20	25	38 of 80	Taxes and Duties: Contractor shall pay all taxes, levies, duties, etc. excluding GST which he / she may be liable to pay to the State Government or Government of India or any other authority under any law for the time being in force as on the date of submission of tender in respect of or in accordance with the execution of contract. The GST will be reimbursed to the contractor subject to production of payment of proof for the previous bill for the subject work. Any change in legislation during the contract period with regard to taxes, same will be applicable to this contract	The following are clarified in respect of Taxes and duties. • Contractor price shall include taxes and duties as applicable (excluding GST) as on base date i.e. 28 days prior to bid submission. • Any liability arising due to change in legislation or in due to change in interpretation of existing laws after the base date(28 days prior to bid submission date) shall be to the account of Employer. .. • GST shall be payable along with invoice payment against the Tax invoice to be raised by the Contractor in compliance with the GST Law and there is no need to submit a separate proof of payment for payment of GST.	Taxes and Duties : BOQ rate is inclusive of all taxes, duties, levies etc excluding GST. The GST will be reimbursed to the contractor subject to production of payment for the previous bill for the subject work. Any change in legislation during the contract period with regard to the taxes. Same will be applicable to this contract.

21	26	39 of 80	**Income Tax Deduction/Tax deducted at source:** Deduction of income tax and other taxes like WCT,etc. shall be made from any amount payable to the contractor as per the relevant provisions of the Income Tax Act	It is clarified that no WCT is applicable for dredging Contract and hence no amount can be deducted towards WCT.	Deduction of Income tax shall be made from any amount payable to the contractor as per the relevant provisions of the Income Tax Act.
Section V-Special Conditions of Contract(SCC)					
22	I.3)	43 of 80	…….It is envisaged that, the dredging material is predominantly sand, silt, soft/stiff clay and is amenable to CSD. However, stones, boulders, tree roots etc. may present in the proposed location and no additional payment / claims are allowed for clearing the same.	It is clarified that the Contractor price shall be for dredging and pumping of material as described. In case of variation in soil conditions, the prices shall be readjusted. In addition any delays due to obstructions and production lass if any due to encountering of obstructions shall be to the account of DCIL. DCIL is also requested to provide soil investigation reports if any in the dredging area to understand the nature of material to be dredged.	Tender condition prevails.
23	6	43 of 80	……Total quantity may vary up to + or – 20%. In case the quantity exceeds +20%, extension of time will be granted to complete the work with same rate, terms and condition	It is clarified that the completion period shall be for the BOQ quantity and in case of increase in quantity, proportionate extension on of time is to be provided. Further, if the quantity is less than 20% of BOQ prices, the rates are to be renegotiated..	Tender condition prevails.
24	I.7)	44 of 80	Dredging period of 4 months shall be given to complete the work. Contractor has to submit detail methodology of completing the work in above period of 4 months with bar chart along with tender submission.	It is clarified that such execution period shall vary with the actual quantities per pre-dredge survey, in case the quantities exceed the expected bill quantities.	Tender condition prevails.
25	1.10	44 of 80	While carrying out dredging, if any underwater obstruction/ debris encountered or any visible debris , same should be brought to the notice of PPI/ DCIL	It is clarified that in case of encountering such obstructions or debris, time for clearing of such obstructions and production loss if any due to such obstructions shall be to the account of DCIL.	Tender condition prevails.
26	I.10)	44 of 80	Slopes & Tolerance: b) Vertical Tolerance of +0.20 and side slopes at 1:3 or as directed by PPT shall be considered for payment	Para a) is missing It is proposed that payable vertical tolerance of 0,5 m be considered since the present dredging is with CSD and it is a capital dredging. It is clarified that our BOQ price shall be based on payment of slopes at 1:6	**Slopes & Tolerances**: a)Slope below the Jetty level:1:3 b) Northern side and Eastern side 1:6 or at actuals. c) Vertical Tolerance of +0.20M

27	1.18	45 of 80	The party shall quote their rate in the enclosed BOQ. The offered rates shall be inclusive of mob/demob, fuel, Lube oil, men and material, idle time charges watch keeping, repair cost, spares cost, all taxes but excluding GST	It is clarified that the BOQ price does not cater for idle charges and idle charges are payable extra in case of Contractor's dredging spread is idle for reasons not attributable to the Contractor.	Tender condition prevails.
28	1.19	45 of 80	……Any claim for idling of contract's plant and machinery or any other input shall not be entertained for reasons whatsoever.	It is clarified that idle charges are payable extra in case of Contractor's dredging spread is idle for reasons not attributable to the Contractor	Tender condition prevails.
29	IV-5	45 of 80	The BG submitted against performance security will be discharged by DCIL and returned to the Contractor not later than thirty (60) days following the date of completion of the Contractor's performance obligations, including any warranty obligations, clearance of final bill, under the Contract	Since there is no defect liability period for dredging, BG shall be returned after issue of Taking over certificate and shall not be linked with final bill clearance.	Tender condition prevails.
30	V	46 of 80	**Price Variation Clause (GCC Clause 9;**	It is clarified that from 1 st January 2010, only Low Sulphur fuel shall be used the fuel escalation shall be based on the price of Low Sulphur fuel and not diesel. Or it may be changed to main fuel to be used on dredger.. It is further clarified that the fuel escalation amount shall be payable along with the bill for dredging works within 28 days of submission of statement by the Contractor independent of payment by PPT to DCI.	Tender condition prevails. Tender condition prevails.
31	VIII-24.2	47 of 80	**Provident Fund Contributions:…… …….** A Certificate from the Regional Provident Fund Commissioner (RPFC) shall be furnished by the contractor stating that PF has been deducted from the employees and remitted to the concerned RPF Commissioner along with PF Number before releasing any payment to the Contractor……..	It is clarified that PF registration certificate should be sufficient and no need of additional certification form PF Commissioner.	Proof of remittance of PF if applicable shall be submitted for releasing the payments.

Section-IV-2-Price Schedule					
32	4	55 of 80	The rate to be quoted should be inclusive of mob/demob charges, fuel, Lube oil, men and material, watch keeping, repair cost, spares cost, idle time charges, all taxes but excluding GST	It is proposed to include separate BOQ item for Mobilization and demobilization. It is further clarified that the BOQ rate for dredging does not include idle time charges and idle time charges are payable extra in case the Contractor's equipment is idle for reasons not attributable to the Contractor.	Tender Condition prevails
33	EMD BG	58 of 80	Notwithstanding anything herein contained, our liability under this guarantee is limited to Rs……/- (Rupees ……..only) and will remain in force up to 90 days from the date of opening of Second Cover / Finance Bid…….	Since the Contractor's Bid is valid for maximum of 90 days (60+30), there is no need to keep the EMD BG for 90 days from opening of financial bid .Moreover, the Bank cannot issue a BG with unknown date. Hence it is proposed that the EMD BG will be kept valid for 120 days from the date of submission of tender.	EMD shall be valid up to 60 days from the date of Opening of Tender
34	CSD Details	65 of 80	NOTE: (1) If the Tenderer is not the Owner, hire agreement / willingness of the Owner of the CSD/crafts should be submitted on stamp paper duly notarized along with Tender	Since the CSD to be deployed is from our Group Companies, we shall be submitting irrecoverable and unconditional letter from owner duly notarized confirming the availability of vessel for Project.	Tender condition prevails
35		80 of 80	**Drawing**	Kindly provide georeferenced drawing in pdf and dwg format	The available chart is already enclosed with the tender documents.
36	Others		-	• Please provide the complete soil investigation reports available at your end for the proposed dredging area. • Latest Bathymetry of the proposed dredging area. • Topographic map of the reclamation area including the present layout of the shore pipe laid by DCI .	

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SOIL TEST REPORT

BH - 1 to 13 (D.B – 01 TO 11,SP – 03&05)

SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTH AT PARADIP PORT DISTRICT - JAGATSINGHPUR.

Office: Vidyut Marg, Telanga Sahi, Balasore - 756001, Odisha
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CONTENTS

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1. INTRODUCTION

A. It has been proposed to dredging of basin for development of deep draught coal and iron ore berths at PARADIP PORT, Jagatsinghpur, in the state of Orissa.The Engineer in charge is awarded the preliminary Soil Investigation work to Mr.Binod kumar hati for a thorough assessment of sub- soil strata at 17 locations in order to facilitate the dredging of basin.

B. The present report is a part of the whole project. The scope of work comprised of boring of 17 no of bore well at the proposed site. The field work includes making of boreholes in the soil by Auger & Shell boring method. The scope included conducting standard Penetration tests at regular intervals and collecting soil samples for identification and logging purposes. Collected Soil samples were tested in the Base Laboratory & all data were analyzed.

C. Based on the above, this report presents the Bore logs, Laboratory & field Test result. On the basis of field & Laboratory test results and their analysis.

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NAME OF THE WORK: - Soil investigation work for dredging of basin for development of deep draught coal and iron ore berths at PARADIP PORT, Jagatsinghpur, in the state of Orissa .

PURPOSE OF TESTING: - Conduct Geo-Technical Investigation for the proposed Site for dredging of basin for development of deep draught coal and iron ore berth at Paradip port.

AGENCY: - BINOD KUMAR HATI
KHAPURIA LABOUR COLONY
Qrt. No. :- 5/5, Madhupatana, Cuttack - 10

LIMITATION: - The scope of Geo – Technical sub soil Investigation work is confined to the limits of client Technical specification. But At the some time field and laboratory tests were carried out as per the codes & standard and the direction of the Engincer-in-charge is final.

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FIELD OPERATIONS

• GENERAL

In an attempt for optimization in the dredging of basin for the proposed deep draught coal and iron ore berths to be dredged at this site, Geo technical Investigation was done. The entire investigation work has been divided mainly into two parts. A) Field works & B) Laboratory Test.

a) Field works determine the types of sub –soil deposit and their characteristics.
b) Laboratory tests helps in determining the relevant geo-technical properties of the sub- surface deposits leading to finalization of dredging depth of the basin.

Final depth of boring and observation of water table for each Bore well. The test conducted during end of the rainy season in the month of September. The Water table found in the terminating depth, but in rain season the water level may be raised. The observed water table data whine in the terminating depth is given below.

BORE HOLE NO.	TERMINATION DEPTH IN Mtr.	WATER TABLE IN Mtr.
BH-1	25.0 Mtr	3.90Mtr.
BH-2	25.0 Mtr	4.05Mtr.
BH-3	25.0 Mtr	3.05Mtr.
BH-4	25.0 Mtr	4.25Mtr.
BH-5	25.0 Mtr	4.50Mtr.
BH-6	25.0 Mtr	2.55Mtr.
BH-7	25.0 Mtr	2.10Mtr.
BH-8	25.0 Mtr	3.80Mtr.
BH-9	25.0 Mtr	5.00Mtr.
BH-10	25.0 Mtr	2.10Mtr.
BH-11	25.0 Mtr	2.93Mtr.
BH-12	25.0 Mtr	1.80Mtr.
BH-13	25.0 Mtr	2.05Mtr.

FIELD WORK: - For investigation of the sub- soil strata at proposed site, the field Work consists of drilling 01 numbers of boreholes to a required depth from ground level. To carry out field test if it is required to collect undisturbed and disturbed samples. The bore hole, Locations, depth boring and ground levels are given by the E.I.C.of client.

The required tools & plants such as Tripod, Augers, Diamond core drilling machines, winch, flush joint casings, Spilt spoon samplers, then walled samplers core barrels, D.T, T.C & different type of Dimond bits soil cutter, pumps, Diesel Engines etc. and available for site with minimum number skilled workers and technical staff for conducting drilling field tests and collection of samples were carried out as per IS 1892.

BORING: - The required Diameter (150mm) drilling proceeded first by manual auger up to the ground water level then followed by wash boring. Drilling tools are lowered with the help of mechanical winch fixed on the tripod. During boring drilling fluied like bentonite solution is pushed simultaneously with boring with driving flush joint casing pipes to keep the borehole preserve for collection of samples and as well as field testing purpose. The drilling fluid flowing out of cutter bottom mixed of with the cut soil and flow to the borehole surface setting tank and back to the slurry tank. Drilling tools are lowered with the help of mechanical which fixed on the tripod. After the drilling is reached up to the desired depth, pumping of the slurry is continued for 10 to 15 minutes for bottom clearing to conduct field tests and sample collection. All the boring operation is conducted strictly.

STANDARD PENETRATION TEST: - To evaluate standard strength data such as 'N' value (Number of blows per 30cm. of penetration) the required spilt spoon sampler is conform to IS-9640. The sampler is lowered to the bottom of borehole of required level with strings of 'A' type drill rods. The drive weight of 63.5 kg is hammered with a free fall of 0.75 mtr through one guide. The number of blows required to detect each 15 cm. penetration is recorded. The first 15 cm is considered as sectory drive. The total blows required for the second & third 15 cm penetration is termed penetrate resistance 'N' where sampler could not penetrate 15 cm. If we applied 50 blows 'N' value is considered as greater than 50 and the depth of penetration is also recorded. The test is carried out at every 1.5 mtr depth of boring as per technical specification IS code. After the end of the test spilt spoon is opened and length and weight of the sample recovered is measured for calculation of bulk density and samples are preserved for laboratory test.

Sampling

UNDISTURBED SOIL SAMPLING: - After these samples are collected by thin walled sampler as per as IS: 2132. The sampling equipment used, consist of two tier assembly of sample tubes, 45cm in length, fitting at its lower end with a cutting shoe. The sampling assembly was driven by means of a jarring link to its full length or as far down as found practicable. After withdrawal, of the tube sealed with paraffin wax and caped before onward transmission to the laboratory,

DISTURBED SOIL SAMPLING: - Disturbed soil samples are also collected for identification & logging purposes.

GROUND WATER LEVEL: - Ground water table is measured as per IS code / Technical specification. The ground water tables are presented in bore log sheets and attached with this reports.

LABORATORY WORK: - Laboratory work consists of mostly physical tests as per technical specification and procedure and I.S code.

The U.D.S samples SPT sample and D.S samples from boreholes are take to conduct laboratory test. The test results are shown in tabular form with proper reference and presented in the Lab test reports sheets.

PARTICLE SIZE DISTRIBUTION: - Grain size analysis is done by standard sieves by mechanical means & silt clay size particles are determined by wet sieve method. And presented in the Lab test reports sheets.

ATTERBERG'S LIMITS IN (%):- Liquid & plastic limits & plasticity index in % are determined from UDS & DS samples as per IS -2720 (part- 5) and presented in the Lab test reports sheets.

FIELD MOISTURE CONTENT: - F.M.C of UDS, DS and SPT samples are determined in the laboratory as per IS – 2720 (part-2) and presented in the Lab test reports sheets.

BULK DENSITY: - Bulk density of soil sample are determined by as per IS-2720 and presented in the Lab test reports sheets.

SHEAR STRENGTH PENEMETERS OF A SPECIMEN:- For find out cohesion © and angle of shearing resistance (Φ) of U.D.S samples. A triaxial compression apparatus is required as per IS -2720 (part-11) under a condition of cell pressure maintain to constant with out measuring the pore water pressure and presented in the Lab test reports sheets.

SPECIFIC GRAVITY: - Specific gravity of U.D.S samples are determined as per IS - 2720 (part-3) and presented in the Lab test reports sheets.

VOIDS RATIO: - Void ratio of U.D.S samples are calculated and presented in the Lab test reports sheets.

DIFFERENTIAL FREE SWELL INDEX: - Differential free swell index are determined by U.D.S samples as per IS-2720 (part-40) and presented in the Lab test reports sheets.

FIELD SPT VALUE: - Field standard penetration values are presented in bore log chart sheet. And presented in the Lab test reports sheets.

CLASSIFICATION OF SOIL: - The soil are properly classified as per the above test results and as per IS- 1498 and presented in the Lab test reports sheets.

SUB-SOIL CONDITION & PROPERTIES

The boring records showing the various soils met with are enclosed. These are prepared from field bore logs after proper modification in the light of laboratory and observation of disturbance & penetrometer soil sample. The result of the S.P.T tests are given as N values in these boring record. When N value is greater then 15, modified value of N is calculated as

$$Ne=15+1/2(N-15)$$

NON -- COHESIVE SOIL

For non cohesive soil, it is not possible to take UDS sample. The SPT is taken regular interval. The C-ϕ values are determined by direct shear Test.

EFFECT OF GROUND WATER TABLE.

The ground water table has significant role on the safe bearing capacity of the soil. For cohesion less soil the safe bearing capacity is reduced by 50%, if the water table is above or near the bearing surface of the soil. If the water table is below the bearing surface of the soil at a distance at least equal to the width of the foundation no such reduction is applicable, for intermediate depth of the water table, proportional of the safe bearing capacity is made.

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BORE LOG CHART

BH - 01

Name of Consultant---

NAME OF WORK - SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTHS AT PARADIP PORT

NAME OF AGENCY - BINOD KUMAR HATI

NAME OF AUTHORITY :- PARADIP PORT

TYPE OF BORING :- AUGER & SHELL

INCLINATION :- Vertical

DATE OF BORING STARTED :- 28/5/2010

DATE OF BORING COMPLETED:- 29/5/2010

LOCATION -DB - 09 (P P T)

SOIL SAMPLE USED - S.P.T

GROUND WATER TABLE - 3.90Mtr.

DIA OF BORE - 150mm

RL - 5.635

Sl. NO	Depth in Mtr	Thickness of soil strata in mtr	Graphical representation of soil strata	Type of soil strata	Type of Sample collected	No of blows for 1st 15cm penetration(1)	No of blows for 2nd 15cm penetration(2)	No of blows for 3rd 15cm penetration(3)	S.P.T. value=2+3=N	Penetration in mtr	RQD %	CORE %	Remarks
1	0.3	4.5		Clay	-	-	-	-	-	-	-	-	-
					D.S	-	-	-	-	-	-	-	D.S COLLECTED
	1.5				-	-	-	-	-	-	-	-	
4					D.S	-	-	-	-	-	-	-	D.S COLLECTED
5					-	-	-	-	-	-	-	-	-
		1.5		Sand	-	-	-	-	-	-	-	-	-
7					-	-	-	-	-	-	-	-	-
8					-	-	-	-	-	-	-	-	-
9		6.8		Clay	S.P.T	3	3	5	8	0.45	-	-	S.P.T COLLECTED
	0.5				-	-	-	-	-	-	-	-	-
					-	-	-	-	-	-	-	-	-
		3.2		Sand	-	-	-	-	-	-	-	-	
					-	-	-	-	-	-	-	-	-
					-	-	-	-	-	-	-	-	-
					-	-	-	-	-	-	-	-	-
					-	-	-	-	-	-	-	-	-
					-	-	-	-	-	-	-	-	-
					-	-	-	-	-	-	-	-	-
		10.8		Sandy clay	-	-	-	-	-	-	-	-	-
					-	-	-	-	-	-	-	-	-
					-	-	-	-	-	-	-	-	-
					-	-	-	-	-	-	-	-	-
21					S.P.T	7	8	10	18	0.46	-	-	S.P.T COLLECTED

BEAU-MONDE ASSOCIATES

Signature of Lab Tech

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BORE LOG CHART

Name of Consultant---

BH - 02

NAME OF WORK :- SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTHS AT PARADIP PORT

NAME OF AGENCY :- BINOD KUMAR HATI

LOCATION -D8 - 10 (P P T)

NAME OF AUTHORITY :- PARADIP PORT

SOIL SAMPLE USED - S.P.T

TYPE OF BORING :- AUGER & SHELL

GROUND WATER TABLE - 4.05Mtr.

INCLINATION :- Vertical

DIA OF BORE - 150mm

DATE OF BORING STARTED :- 30/5/2010

RL - 5.745

ATE OF BORING COMPLETED:- 31/5/2010

Sl. NO	Depth in Mtr	Thickness of soil strata in mtr	Graphical representation of soil strata	Type of soil strata	Type of Sample collected	No of blows for 1st 15cm penetration(1)	No of blows for 2nd 15cm penetration(2)	No of blows for 3rd 15cm penetration(3)	S.P.T value=2+3=N	Penetration mm/b	RQD %	CORE %	Remarks
1	0.5	2.0		Red ore	-	-	-	-	-	-	-	-	-
2	1.0				-	-	-	-	-	-	-	-	-
3	1.5				-	-	-	-	-	-	-	-	-
4	3.0	6.0		Clay	-	-	-	-	-	-	-	-	-
5	4.5				-	-	-	-	-	-	-	-	-
6	6.0				U.S	-	-	-	-	-	-	-	U.S COLLECTED
7	7.5				-	-	-	-	-	-	-	-	-
8	9.0				-	-	-	-	-	-	-	-	-
9	10.0	7.0		Sand	-	-	-	-	-	-	-	-	-
10	11.5				S.P.T	7	8	11	19	0.43	-	-	S.P.T COLLECTED
11	12.0				-	-	-	-	-	-	-	-	
12	13.5				-	-	-	-	-	-	-	-	-
13	15.0				-	-	-	-	-	-	-	-	-
14	16.5	10.0		Sandy clay	-	-	-	-	-	-	-	-	-
15	18.0				-	-	-	-	-	-	-	-	-
16	19.5				-	-	-	-	-	-	-	-	-
17	21.0				-	-	-	-	-	-	-	-	-
18	22.5				-	-	-	-	-	-	-	-	-
19	24.0				-	-	-	-	-	-	-	-	-
20	25.0				S.P.T	4	7	9	16	0.45	-	-	S.P.T COLLECTED

Signature of Lab Technician

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BORE LOG CHART

Name of Consultant---

BH - 03

NAME OF WORK :- SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTHS AT PARADIP PORT

NAME OF AGENCY - BINOD KUMAR HATI

LOCATION -DB - 07 (P P T)

NAME OF AUTHORITY - PARADIP PORT

SOIL SAMPLE USED - S.P.T

TYPE OF BORING - AUGER & SHELL

GROUND WATER TABLE - 3.05Mtr.

INCLINATION Vertical

DIA OF BORE - 150mm

DATE OF BORING STARTED :- 3/6/2010

RL - 5.430

DATE OF BORING COMPLETED:- 4/6/2010

Sl. NO	Depth in Mtr.	Thickness of soil strata in mtr.	Graphical representation of soil strata	Type of soil strata	Type of Sample collected	No of blows for 1st 15cm penetration(1)	No of blows for 2nd 15cm penetration(2)	No of blows for 3rd 15cm penetration(3)	S.P.T. value=2+3=N	Penetration in mtr	TCR %	CORE %	Remarks
1	0.2	1.5		Iron ore	-	-	-	-	-	-	-	-	-
2	1.5				-	-	-	-	-	-	-	-	-
3	3.0	1.5		Sand	-	-	-	-	-	-	-	-	-
4	4.5	4.0		Clay	D.S	-	-	-	-	-	-	-	D.S COLLECTED
5	5.0				S.P.T	1	3	4	7	0.45	-	-	S.P.T COLLECTED
6	7.0				-	-	-	-	-	-	-	-	-
7	7.5	3.2		Sand	-	-	-	-	-	-	-	-	-
8	10.0				-	-	-	-	-	-	-	-	-
9	10.2	2.2		Clay	-	-	-	-	-	-	-	-	-
10	12.0				-	-	-	-	-	-	-	-	-
11	12.4	3.0		Sand	D.S	-	-	-	-	-	-	-	D.S COLLECTED
12	13.5				-	-	-	-	-	-	-	-	-
13	15.0				-	-	-	-	-	-	-	-	-
14	15.0	3.5		Barkly clay	-	-	-	-	-	-	-	-	-
15	16.5				-	-	-	-	-	-	-	-	-
16	18.0				-	-	-	-	-	-	-	-	-
17	19.5				S.P.T	4	6	7	12	0.45	-	-	S.P.T COLLECTED
18	21.0	3.85			-	-	-	-	-	-	-	-	-
19	22.5				-	-	-	-	-	-	-	-	-
20	24.0				-	-	-	-	-	-	-	-	-
21	24.85												

Signature of Lab Tech.

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BORE LOG CHART

Name of Consultant---

BH - 04

NAME OF WORK :- SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTHS AT PARADIP PORT

NAME OF AGENCY :- BINOD KUMAR HATI

LOCATION -DB - 11 (P P T)

NAME OF AUTHORITY :- PARADIP PORT

SOIL SAMPLE USED - S.P.T

TYPE OF BORING :- AUGER & SHELL

GROUND WATER TABLE - 4.25Mtr.

INCLINATION :- Vertical

DIA OF BORE - 150mm

DATE OF BORING STARTED :- 5/6/2010

RL - 5.305

DATE OF BORING COMPLETED:- 6/6/2010

S.NO.	Depth in Mtr.	Thickness of soil strata in mtr.	Graphical representation of soil strata	Type of soil strata	Type of Sample collected	No of blows for 1st 15cm penetration(1)	No of blows for 2nd 15cm penetration(2)	No of blows for 3rd 15cm penetration(3)	S.P.T. value=2+3=N	Penetration in mtr	RQD %	CORE %	Remarks
1	0.5	6.3		Sand	-	-	-	-	-	-	-	-	-
2	1.0				D.S	-	-	-	-	-	-	-	D.S COLLECTED
3	3.0				-	-	-	-	-	-	-	-	-
4	4.5				-	-	-	-	-	-	-	-	-
5	6.0				D.S	-	-	-	-	-	-	-	D.S COLLECTED
6	6.5				-	-	-	-	-	-	-	-	-
7	7.5	4.7		Clay	-	-	-	-	-	-	-	-	-
8	9.0				-	-	-	-	-	-	-	-	-
9	10.5				-	-	-	-	-	-	-	-	-
10	11.0												
11	12.0	4.0		Sand with Peables	S.P.T	25	25	> 50	> 50	0.45	-	-	S.P.T COLLECTED
12	13.5				-	-	-	-	-	-	-	-	
13	15.0				-	-	-	-	-	-	-	-	-
14	16.5	6.0		Clay	-	-	-	-	-	-	-	-	-
15	18.0				-	-	-	-	-	-	-	-	-
16	19.5				-	-	-	-	-	-	-	-	-
17	20.0												
18	21.0	6.0		Sandy clay	-	-	-	-	-	-	-	-	-
19	21.3				S.P.T	2	5	6	11	0.45			S.P.T COLLECTED
20	21.5				-	-	-	-	-	-	-	-	-
21	24.0				-	-	-	-	-	-	-	-	-
22	25.0				-	-	-	-	-	-	-	-	-

Signature of Lab Tech.

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BORE LOG CHART

Name of Consultant---

BH - 05

NAME OF WORK :- SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTHS AT PARADIP PORT

NAME OF AGENCY :- BINOD KUMAR HATI

LOCATION -DB - 08 (P P T)

NAME OF AUTHORITY :- PARADIP PORT

SOIL SAMPLE USED - S.P.T

TYPE OF BORING :- AUGER & SHELL

GROUND WATER TABLE - 4.50Mtr.

INCLINATION :- Vertical

DIA OF BORE - 150mm

DATE OF BORING STARTED :- 6/6/2010

RL - 5.190

DATE OF BORING COMPLETED:- 7/6/2010

Sl NO	Depth in Mtr	Thickness of soil strata in mtr	Graphical representation of soil strata	Type of soil strata	Type of Sample collected	No of blows for 1st 15cm penetration(1)	No of blows for 2nd 15cm penetration(2)	No of blows for 3rd 15cm penetration(3)	S.P.T value=2+3=N	Penetration in mtr	RQD %	CORE %	Remarks
1	0.5	3.0		Sand	-	-	-	-	-	-	-	-	-
2	1.0				-	-	-	-	-	-	-	-	-
3	2.0				D.S	-	-	-	-	-	-	-	D.S COLLECTED
4	1.5				-	-	-	-	-	-	-	-	-
5	4.5	2.0		Clay	-	-	-	-	-	-	-	-	-
6	5.5				-	-	-	-	-	-	-	-	-
7	6.5	7.0		Sand	-	-	-	-	-	-	-	-	-
8	7.5				-	-	-	-	-	-	-	-	-
9	9.5				-	-	-	-	-	-	-	-	-
10	10.5				-	-	-	-	-	-	-	-	-
11	11.0				S.P.T	10	14	19	33	0.45	-	-	S.P.T COLLECTED
12	12.0				-	-	-	-	-	-	-	-	-
13	13.5	3.0		Clay	-	-	-	-	-	-	-	-	-
14	15.0				-	-	-	-	-	-	-	-	-
15	16.5	7.0		Sand	-	-	-	-	-	-	-	-	-
16	16.0				-	-	-	-	-	-	-	-	-
17	19.5				-	-	-	-	-	-	-	-	-
18	20.0				S.P.T	25	23	> 50	> 50	0.45	-	-	S.P.T COLLECTED
19	21.0				-	-	-	-	-	-	-	-	-
20	22.0				-	-	-	-	-	-	-	-	-
21	23.5				-	-	-	-	-	-	-	-	-
22	24.0	3.0		Clay	-	-	-	-	-	-	-	-	-
23	25.0				-	-	-	-	-	-	-	-	-

Signature of Lab Tech

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BORE LOG CHART

Name of Consultant---

BH - 06

NAME OF WORK :- SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTHS AT PARADIP PORT

NAME OF AGENCY :- BINOD KUMAR HATI

LOCATION -DB - 05 (P P T)

NAME OF AUTHORITY :- PARADIP PORT

SOIL SAMPLE USED - S.P.T

TYPE OF BORING :- AUGER & SHELL

GROUND WATER TABLE - 2.55Mtr.

INCLINATION :- Vertical

DIA OF BORE - 150mm

DATE OF BORING STARTED :- 8/6/2010

RL - 5.635

DATE OF BORING COMPLETED:- 9/6/2010

Sl. NO	Depth in Mtr.	thickness of soil strata in mtr.	Graphical representation of soil strata	Type of soil strata	Type of Sample collected	No of blows for 1st 15cm penetration(1)	No of blows for 2nd 15cm penetration(2)	No of blows for 3rd 15cm penetration(3)	S.P.T. value=2+3=N	Penetration in mtr	RQD %	CORE %	Remarks
1	0.5	5.0		Sand	-	-	-	-	-	-	-	-	-
2	1.5				0.S	-	-	-	-	-	-	-	D.S COLLECTED
3	3.0				-	-	-	-	-	-	-	-	-
4	4.5				-	-	-	-	-	-	-	-	-
5	5.0				S.P.T	1	2	4	6	0.45	-	-	S.P.T COLLECTED
6	6.0	2.0		Clay	-	-	-	-	-	-	-	-	-
7	7.0												
8	8.5				-	-	-	-	-	-	-	-	-
9	9.0	4.0		Sand	-	-	-	-	-	-	-	-	-
10	10.5				-	-	-	-	-	-	-	-	-
11	11.0				-	-	-	-	-	-	-	-	-
12	12.0	1.5		Clay	-	-	-	-	-	-	-	-	-
13	13.5												
14	14.5	9.5		Sand	-	-	-	-	-	-	-	-	-
15	15.0				-	-	-	-	-	-	-	-	-
16	16.5				-	-	-	-	-	-	-	-	-
17	18.0				-	-	-	-	-	-	-	-	-
18	19.5				-	-	-	-	-	-	-	-	-
19	21.0				-	-	-	-	-	-	-	-	-
20	22.5	4.0		Sandy Clay	-	-	-	-	-	-	-	-	-
21	24.0				S.P.T	8	9	10	19	0.45	-	-	S.P.T COLLECTED
22	25.0				-	-	-	-	-	-	-	-	-

Signature of Lab Tech.

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Name of Consultant---

BH - 07

NAME OF WORK :- SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTHS AT PARADIP PORT

NAME OF AGENCY :- BINOD KUMAR HATI

LOCATION -DB - 06 (P P T)

NAME OF AUTHORITY :- PARADIP PORT

SOIL SAMPLE USED - S.P.T

TYPE OF BORING :- AUGER & SHELL

GROUND WATER TABLE - 2.10Mtr.

INCLINATION :- Vertical

DIA OF BORE - 150mm

DATE OF BORING STARTED :- 10/6/2010

RL - 5.915

DATE OF BORING COMPLETED:- 12/6/2010

Sl. NO	Depth in Mtr	thickness of soil strata in mtr	Graphical representation of soil strata	Type of soil strata	Type of Sample collected	No of blows for 1st 15cm penetration(1)	No of blows for 2nd 15cm penetration(2)	No of blows for 3rd 15cm penetration(3)	S.P.T. value=2+3=N	Penetration in mtr	RQD %	CORE %	Remarks
1	12.5	3.0		Sand	-	-	-	-	-	-	-	-	-
2	1.5				-	-	-	-	-	-	-	-	-
3	2.0				D.S	-	-	-	-	-	-	-	D.S COLLECTED
4	3.0				-	-	-	-	-	-	-	-	-
5	3.5	0.5		Clay	-	-	-	-	-	-	-	-	-
6	4.17	5.5		Sand	S.P.T	7	8	9	17	0.45	-	-	S.P.T COLLECTED
7	5.0												
8	6.0				-	-	-	-	-	-	-	-	-
9	7.5				-	-	-	-	-	-	-	-	-
10	10.0				-	-	-	-	-	-	-	-	-
11	10.5	9.0		Clay	-	-	-	-	-	-	-	-	-
12	12.0												
13	17.5				-	-	-	-	-	-	-	-	-
14	18.0												
15	15.0	4.0		Sand	-	-	-	-	-	-	-	-	-
16	16.5				-	-	-	-	-	-	-	-	-
17	18.0				-	-	-	-	-	-	-	-	-
18	19.5	7.0		Sandy Clay	-	-	-	-	-	-	-	-	-
19	21.0				-	-	-	-	-	-	-	-	-
20	[illegible]				S.P.T	5	6	5	11	0.45			S.P.T COLLECTED
21	22.5				-	-	-	-	-	-	-	-	-
22	24.0												
23	25.0				D.S	-	-	-	-	-	-	-	D.S COLLECTED

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Signature of Lab Tech.

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BORE LOG CHART

Name of Consultant---

BH - 08

NAME OF WORK - SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTHS AT PARADIP PORT

NAME OF AGENCY - BINOD KUMAR HATI

NAME OF AUTHORITY - PARADIP PORT

TYPE OF BORING - AUGER & SHELL

INCLINATION - Vertical

DATE OF BORING STARTED :- 24/6/2010

DATE OF BORING COMPLETED:- 27/6/2010

LOCATION -DB - 04 (P P T)

SOIL SAMPLE USED - S.P.T

GROUND WATER TABLE - 3.8Mtr.

DIA OF BORE - 150mm

RL - 5.910

Sl. NO	Depth in Mtr	Thickness of soil strata in mtr.	Graphical representation of soil strata	Type of soil strata	Type of Sample collected	No of blows for 1st 15cm penetration(1)	No of blows for 2nd 15cm penetration(2)	No of blows for 3rd 15cm penetration(3)	S.P.T. value=2+3=N	Penetration in mtr	RQD %	CORE %	Remarks
1	0.5	1.2		Filling	-	-	-	-	-	-	-	-	-
2	1.2				-	-	-	-	-	-	-	-	-
3	3.0	3.1		Sandy Clay	D.S	-	-	-	-	-	-		D.S COLLECTED
4	4.3				-	-	-	-	-	-	-	-	-
5	6.0	2.6		Clay	-	-	-	-	-	-	-	-	-
6	7.0				S.P.T	11	14	15	29	0.45			S.P.T COLLECTED
7	7.5				-	-	-	-	-	-	-	-	-
8	9.0				-	-	-	-	-	-	-	-	-
9	10.5				-	-	-	-	-	-	-	-	-
10	12.0	9.7		Sand									
11	13.5				-	-	-	-	-	-	-	-	-
12	15.0				-	-	-	-	-	-	-	-	-
13	16.5				-	-	-	-	-	-	-	-	-
14	17.4	1.0		Clay									
15	19.5	2.0		Sand	S.P.T	12	19	23	42	0.45	-	-	S.P.T COLLECTED
16	21.0				-	-	-	-	-	-	-	-	-
17	22.5	5.6		Sandy Clay	-	-	-	-	-	-	-	-	-
18	24.0				-	-	-	-	-	-	-	-	-
19	25.0				-	-	-	-	-	-	-	-	-

Signature of Lab Tech.

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BORE LOG CHART

Name of Consultant---

BH - 02

NAME OF WORK :- SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTHS AT PARADIP PORT

NAME OF AGENCY :- BINOD KUMAR HATI

LOCATION -DB - 10 (P P T)

NAME OF AUTHORITY :- PARADIP PORT

SOIL SAMPLE USED - S.P.T

TYPE OF BORING :- AUGER & SHELL

GROUND WATER TABLE - 4.05Mtr.

INCLINATION :- Vertical

DIA OF BORE - 150mm

DATE OF BORING STARTED :- 30/5/2010

RL - 5.745

DATE OF BORING COMPLETED:- 31/5/2010

Sl. No.	Depth in Mtr	Thickness of soil strata in mtr	Graphical representation of soil strata	Type of soil strata	Type of Sample collected	No of blows for 1st 15cm penetration(1)	No of blows for 2nd 15cm penetration(2)	No of blows for 3rd 15cm penetration(3)	S.P.T. value=2+3=N	Penetration in mtr	RQD %	CORE %	Remarks
1	0.5	2.0		Iron ore	-	-	-	-	-	-	-	-	-
2	1.0				-	-	-	-	-	-	-	-	-
3	2.0				-	-	-	-	-	-	-	-	-
4	3.0	5.0		Clay	-	-	-	-	-	-	-	-	-
5	4.5				-	-	-	-	-	-	-	-	-
6	5.0				D.S	-	-	-	-	-	-	-	D.S COLLECTED
7	7.5				-	-	-	-	-	-	-	-	-
8	8.0				-	-	-	-	-	-	-	-	-
9	9.0	7.0		Sand	-	-	-	-	-	-	-	-	-
10	10.5				S.P.T	7	8	11	19	0.45	-	-	S.P.T COLLECTED
11	12.0				-	-	-	-	-	-	-	-	
12	13.5				-	-	-	-	-	-	-	-	-
13	15.0				-	-	-	-	-	-	-	-	-
14	16.5	10.0		Sandy clay	-	-	-	-	-	-	-	-	-
15	18.0				-	-	-	-	-	-	-	-	-
16	19.5				-	-	-	-	-	-	-	-	-
17	21.0				-	-	-	-	-	-	-	-	-
18	22.5				-	-	-	-	-	-	-	-	-
19	24.0				-	-	-	-	-	-	-	-	-
20	25.0				S.P.T	8	7	9	16	0.45	-	-	S.P.T COLLECTED

Signature of Lab Tech

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BORE LOG CHART

Name of Consultant--

BH - 09

NAME OF WORK :- SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTHS AT PARADIP PORT

NAME OF AGENCY :- BINOD KUMAR HATI

NAME OF AUTHORITY :- PARADIP PORT

TYPE OF BORING :- AUGER & SHELL

INCLINATION :- Vertical

DATE OF BORING STARTED :- 1/7/2010

DATE OF BORING COMPLETED:- 8/7/2010

LOCATION -SP - 05 (P P T)

SOIL SAMPLE USED - S.P.T

GROUND WATER TABLE - 5.0Mtr.

DIA OF BORE - 150mm

RL - 7.085

Sl. No	Depth in Mtr	Thickness of soil strata in mtr.	Graphical representation of soil strata	Type of soil strata	Type of Sample collected	No of blows for 1st 15cm penetration(1)	No of blows for 2nd 15cm penetration(2)	No of blows for 3rd 15cm penetration(3)	S.P.T. value=2+3=N	Penetration in mtr.	RQD %	CORE %	Remarks
1	0.5	10.3		Sand	"	"	"	"	"	"	"	"	"
2	1.0				"	"	"	"	"	"	"	"	"
3	3.0				D.S	"	"	"	"	"	"	"	D.S COLLECTED
4	4.5				"	"	"	"	"	"	"	"	"
5	6.0				"	"	"	"	"	"	"	"	"
6	7.5				"	"	"	"	"	"	"	"	"
7	8.5				S.P.T	11	13	15	28	0.45	"	"	S.P.T COLLECTED
8	9.0				"	"	"	"	"	"	"	"	"
9	9.25				"	"	"	"	"	"	"	"	"
10	10.5	2.8		Clay	"	"	"	"	"	"	"	"	"
11	12.0				"	"	"	"	"	"	"	"	"
12	13.0				"	"	"	"	"	"	"	"	"
13	13.5	4.5		Sand	"	"	"	"	"	"	"	"	"
14	15.0				"	"	"	"	"	"	"	"	"
15	16.5				"	"	"	"	"	"	"	"	"
16	17.5				"	"	"	"	"	"	"	"	"
17	18.0	7.5		Clay	"	"	"	"	"	"	"	"	"
18	19.5				"	"	"	"	"	"	"	"	"
19	20.5				S.P.T	3	3	2	5	0.45	"	"	S.P.T COLLECTED
20	21.0				"	"	"	"	"	"	"	"	"
21	22.5				"	"	"	"	"	"	"	"	"
22	24.0				"	"	"	"	"	"	"	"	"
23	25.0				"	"	"	"	"	"	"	"	"

Signature of Lab Tech.

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BORE LOG CHART

Name of Consultant---

BH - 10

NAME OF WORK :- SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTHS AT PARADIP PORT

NAME OF AGENCY :- BINOD KUMAR HATI

LOCATION -SP - 03 (P P T)

NAME OF AUTHORITY :- PARADIP PORT

SOIL SAMPLE USED - S.P.T

TYPE OF BORING :- AUGER & SHELL

GROUND WATER TABLE - 2.1Mtr.

INCLINATION :- Vertical

DIA OF BORE - 150mm

DATE OF BORING STARTED :- 9/7/2010

RL - 5.175

DATE OF BORING COMPLETED:- 11/7/2010

SL.NO.	Depth in Mtr.	Thickness of soil strata in mtr.	Graphical representation of soil strata	Type of soil strata	Type of Sample collected	No of blows for 1st 15cm penetration(1)	No of blows for 2nd 15cm penetration(2)	No of blows for 3rd 15cm penetration(3)	S.P.T. Value=2+3=N	Penetration in mtr	RQD %	CORE %	Remarks
1	0.5				-	-	-	-	-	-	-	-	-
2	1.0	3.0		Filling	-	-	-	-	-	-	-	-	-
3	3.0				D.S	-	-	-	-	-	-	-	D.S COLLECTED
4	4.5				-	-	-	-	-	-	-	-	-
5	6.0	4.4		Clay	-	-		-	-	-	-	-	-
6	7.4				-	-	-	-	-	-	-	-	-
7	7.5				-	-	-	-	-	-	-	-	-
8	9.0	3.5		Sand	-	-	-	-	-	-	-	-	-
9	10.5				-	-	-	-	-	-	-	-	-
10	10.9												
11	11.30	0.8		Clay	S.P.T	12	21	25	46	0.45	-	-	S.P.T COLLECTED
12	11.95												
13	12.9												
14	13.5	4.4		Sand	-	-	-	-	-	-	-	-	-
15	15.3				-	-	-	-	-	-	-	-	-
16	16.0				-	-	-	-	-	-	-	-	-
17	16.5				-	-	-	-	-	-	-	-	-
18	17.5				-	-	-	-	-	-	-	-	-
19	18.0				-	-	-	-	-	-	-	-	-
20	19.4				-	-	-	-	-	-	-	-	-
21	21.0	9.0		Savey Clay	-	-	-	-	-	-	-	-	-
22	22.5				-	-	-	-	-	-	-	-	-
23	22.77				S.P.T	4	4	5	9	0.45	-	-	S.P.T COLLECTED
24	24.0				-	-	-	-	-	-	-	-	-
25	25.0				-	-	-	-	-	-	-	-	-

Signature of Lab Tech.

BEAU - MONDE
ASSOCIATES
A COMMITMENT TO CONSTRUCTIVE GOALS
» CIVIL ENGINEERS » ARCHITECTS » SURVEYORS » QUALITY CONTROLLERS

BORE LOG CHART

BH - 11

ame of Consultant---

NAME OF WORK :- SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTHS AT PARADIP PORT

NAME OF AGENCY :- BINOD KUMAR HATI

NAME OF AUTHORITY :- PARADIP PORT

TYPE OF BORING :- AUGER & SHELL

INCLINATION :- Vertical

DATE OF BORING STARTED :- 18/7/2010

DATE OF BORINC COMPLETED:- 22/7/2010

LOCATION - DB - 03 (P P T)

SOIL SAMPLE USED - S.P.T

GROUND WATER TABLE - 2.93Mtr.

DIA OF BORE - 150mm

RL - 5.450

Sl No	Depth in Mtr	Thickness of soil strata in mtr.	Graphical representation of soil strata	Type of soil strata	Type of Sample collected	No of blows for 1st 15cm penetration(1)	No of blows for 2nd 15cm penetration(2)	No of blows for 3rd 15cm penetration(3)	S.P.T. value=2+3=N	Penetration in mtr	RQD %	CORE %	Remarks
1	0.5	3.0		Filling	-	-	-	-	-	-	-	-	-
2	1.0				-	-	-	-	-	-	-	-	-
3	3.0				-	-	-	-	-	-	-	-	-
4	4.5	1.5		Sand	D.S	-	-	-	-	-	-	-	D.S COLLECTED
5	5.5	1.0		Clay	-	-	-	-	-	-	-	-	-
6	7.5	2.0			-	-	-	-	-	-	-	-	-
7	9.1	3.6		Sand	-	-	-	-	-	-	-	-	-
8	10.0				-	-	-	-	-	-	-	-	-
9	12.5	1.7		Clay	-	-	-	-	-	-	-	-	-
10	13.45	0.95		Fine Sand	S.P.T	10	15	9	24	0.45	-	-	S.P.T COLLECTED
11	14.5	4.1		Sand	-	-	-	-	-	-	-	-	-
12	15.00				-	-	-	-	-	-	-	-	-
13	18.6				-	-	-	-	-	-	-	-	-
14	19.0	5.5		Sandy Clay	-	-	-	-	-	-	-	-	-
15	20.5				-	-	-	-	-	-	-	-	-
16	21.0				-	-	-	-	-	-	-	-	-
17	22.5				-	-	-	-	-	-	-	-	-
18	23.1				S.P.T	1	2	2	4	0.45	-	-	S.P.T COLLECTED
19	24.0				-	-	-	-	-	-	-	-	-
20	25.0				-	-	-	-	-	-	-	-	-

Signature of Lab Tech:

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BORE LOG CHART

Name of Consultant---

BH - 12

NAME OF WORK :- SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTHS AT PARADIP PORT

NAME OF AGENCY :- BINOD KUMAR HATI

LOCATION - DB - 01 (P P T)

NAME OF AUTHORITY :- PARADIP PORT

SOIL SAMPLE USED - S.P.T

TYPE OF BORING - AUGER & SHELL

GROUND WATER TABLE - 1.80Mtr.

INCLINATION :- Vertical

DIA OF BORE - 150mm

DATE OF BORING STARTED :- 28/7/2010

RL - 5.500

DATE OF BORING COMPLETED:- 28/7/2010

SL NO	Depth in Mtr	thickness of soil strata in mtr	Graphical representation of soil strata	Type of soil strata	Type of Samples collected	No of blows for 1st 15cm penetration(1)	No of blows for 2nd 15cm penetration(2)	No of blows for 3rd 15cm penetration(3)	S.P.T. value=2+3=N	Penetration in mtr	RQD %	CORE %	Remarks
1	0.5	1.5		Filing	D.S	-	-	-	-	-	-	-	D.S COLLECTED
2	1.0					-	-	-	-	-	-	-	
3	1.5					-	-	-	-	-	-	-	
4	2.0	1.5		Sand	-	-	-	-	-	-	-	-	-
5	4.5	3.0		Clay	-	-	-	-	-	-	-	-	-
6	5.0				S.P.T	2	2	2	4	0.45	-	-	S.P.T COLLECTED
7	6.0				-	-	-	-	-	-	-	-	-
8	7.0	1.0		Sand	-	-	-	-	-	-	-	-	-
9	7.5				-	-	-	-	-	-	-	-	-
10	8.0	5.0		Clay	-	-	-	-	-	-	-	-	-
11	8.5				-	-	-	-	-	-	-	-	-
12	9.0				-	-	-	-	-	-	-	-	-
13	13.5	3.0		Sand	-	-	-	-	-	-	-	-	-
14	15.0				-	-	-	-	-	-	-	-	-
15	15.5	2.7		Clay	-	-	-	-	-	-	-	-	-
16	17.42				S.P.T	2	2	3	5	0.45	-	-	S.P.T COLLECTED
17	17.80				-	-	-	-	-	-	-	-	-
18	18.0				-	-	-	-	-	-	-	-	-
19	19.5	7.5		Sandy Clay	-	-	-	-	-	-	-	-	-
20	21.0				-	-	-	-	-	-	-	-	-
21	22.5				-	-	-	-	-	-	-	-	-
22	24.0				-	-	-	-	-	-	-	-	-
23	25.0				-	-	-	-	-	-	-	-	-

Signature of Lab Tech.

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BORE LOG CHART

Name of Consultant--

BH - 13

NAME OF WORK - SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTHS AT PARADIP PORT

NAME OF AGENCY - BINOD KUMAR HATI

LOCATION - DB - 02 (P P T).

NAME OF AUTHORITY :- PARADIP PORT

SOIL SAMPLE USED - S.P.T

TYPE OF BORING :- AUGER & SHELL

GROUND WATER TABLE - 2.05Mtr.

INCLINATION :- Vertical

DIA OF BORE - 150mm

DATE OF BORING STARTED :- 30/7/2010

RL - 5.120

DATE OF BORING COMPLETED:- 2/8/2010

SL.NO	Depth in Mtr	Thickness of soil strata in mtr	Graphical representation of soil strata	Type of soil strata	Type of Sample collected	No of blows for 1st 15cm penetration(1)	No of blows for 2nd 15cm penetration(2)	No of blows for 3rd 15cm penetration(3)	S.P.T. value=2+3=N	Penetration in mtr	RQD %	CORE %	Remarks
1	0.5	1.5		Filling	-	-	-	-	-	-	-	-	-
2	1.5				S.P.T						-	-	O.S COLLECTED
4	1.0	1.5		Fine Sand	-	-	-	-	-	-	-	-	-
5	4.5	3.0		Clay	-	-	-	-	-	-	-	-	-
6	6.0				-	-	-	-	-	-	-	-	-
7	7.0	3.2		Sand	-	-	-	-	-	-	-	-	-
8	9.2				-	-	-	-	-	-	-	-	-
10	10.4	2.6		Clay	-	-	-	-	-	-	-	-	-
12	13.0	4.2		Sand	S.P.T	9	12	15	27	0.45	-	-	S.P.T COLLECTED
14	13.5				-	-	-	-	-	-	-	-	-
15	15.0				-	-	-	-	-	-	-	-	-
17	16.5	9.0		Clay	-	-	-	-	-	-	-	-	-
18	17.82				-	-	-	-	-	-	-	-	-
20	19.2				S.P.T	4	5	6	11	0.45	-	-	S.P.T COLLECTED
21	19.5				-	-	-	-	-	-	-	-	-
22	21.0				-	-	-	-	-	-	-	-	-
23	22.5				-	-	-	-	-	-	-	-	-
24	24.0				-	-	-	-	-	-	-	-	-
25	25.0				-	-	-	-	-	-	-	-	-

BEAU-MONDE BALASORE

Signature of Lab Tech.

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SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTHS AT PARADIP PORT

BH - 1 (DB-9)

Sl. No	DEPT IN MTR	Type of soil collected	Grain size analysis					Atterberg's Limits in %			Field Moisture Content in %	Bulk density in gm/cc.	Cohesion (C) Kgf/cm2	Angle of shearing resistance	Specific gravity	Void ratio	D.F.S. In %	Field S.P.T. Value	Group of soil
			Fine Gravel In % (20mm To 4.75mm)	Coarse Sand In % (4.75mm To 2.00 mm)	Medium Sand In % (2.0mm To 0.425mm)	Fine Sand in % (0.425mm to 0.075 mm)	Silt & Clay in % (0.075mm to0.001mm)	Liquid Limit In %	Plastic Limit In %	Plasticity Index in %									
1	0.5MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	1.0MT	D.S	0.34	0.46	1.32	21.72	76.16	-	-	-	-	-	-	-	-	-	-	-	-
3	2.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	3.0MT	D.S	0.00	0.00	0.95	9.41	89.64	-	-	-	-	-	-	-	-	-	-	-	-
5	4.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	5.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	6.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	7.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	8.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9.0MT	S.P.T	0.41	0.61	3.59	12.48	82.91	-	-	-	-	-	-	-	-	-	-	-	-
11	10.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	11.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	12.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	13.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	14.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	15.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	16.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	17.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	18.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	19.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	20.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	21.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	22.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	23.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	24.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	25.0MT	S.P.T	13.2	4.81	5.42	48.45	28.12	-	-	-	-	-	-	-	-	-	-	-	-

For Beau-Monde Associates

For Beau-Monde Associates

Er Prabhat Ranjan Jena, CEO

Er Prabhat Ranjan Jena, C.E.O

Signature of Lab Tech.

Signature of Scientist

BEAU - MONDE ASSOCIATES
A COMMITMENT TO CONSTRUCTIVE GO

SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTHS AT PARADIP PORT

BH - 2 (DB-10)

Sl. No	DEPT IN MTR	Type of soil collected	Grain size analysis					Atterberg's Limits in %			Field Moisture Content in %	Bulk density in gm/cc.	Cohesion (C) Kgf/cm2	Angle of shearing resistance	Specific gravity	Void ratio	D.F.S. in %	Field S.P.T. Value	Group of soil
			Fine Gravel in % (20mm To 4.75mm)	Coarse Sand In % (4.75mm To 2.00 mm)	Medium Sand In % (2.0mm To 0.425mm)	Fine Sand in % (0.425mm to 0.075 mm)	Silt & Clay in % (0.075mm to0.001mm)	Liquid Limit in %	Plastic Limit In %	Plasticity Index in %									
1	0.5MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	1.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	2.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	3.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	4.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	5.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	6.0MT	D.S	0.76	0.44	1.66	4.18	92.96	-	-	-	-	-	-	-	-	-	-	-	-
8	7.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	8.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	10.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	11.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	12.0MT	S.P.T	0	0.09	23.56	52.18	23.97	-	-	-	-	-	-	-	-	-	-	-	-
14	13.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	14.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	15.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	16.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	17.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	18.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	19.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	20.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	21.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	22.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	23.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	24.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	25.0MT	S.P.T	0	0	5.01	48.16	46.83	-	-	-	-	-	-	-	-	-	-	-	-

For Beau-Monde Associates

Dr.Prabhat Kumar Jena, CEO

Signature of Lab Tech.

Signature of Scientist

BEAU-MONDE ASSOCIATES
A COMMITMENT TO CONSTRUCTIVE GOALS

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SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTHS AT PARADIP PORT

BH - 3 (DB-7)

SL. No.	Elevation of Bottom of Bore hole	Type of Sample	Grain size analysis				Atterberg's Limits in %			Field Moisture Content in %	Bulk density in gm/cc	Cohesion (C) Kgf/cm2	Angle of shearing resistance	Specific gravity	Void ratio	D.F.S. In %	Field S.P.T. Value	Group of soil
			Fine Gravel In % (20mm To 4.75mm)	Coarse Sand In % (4.75mm To 2.00 mm)	Medium Sand In % (2.0mm To 0.425mm)	Fine Sand In % (0.425mm to 0.075 mm)	Silt & Clay In % (0.075mm to 0.001mm)	Liquid Limit In %	Plastic Limit In %	Plasticity Index In %								
1	0.5MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	1.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	2.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	3.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	4.5MT	D.S	0.60	0.12	0.74	5.47	93.67	-	-	-	-	-	-	-	-	-	-	-
6	5.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	6.0MT	S.P.T	1.37	1.56	2.81	12.64	81.62	-	-	-	-	-	-	-	-	-	-	-
8	7.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	8.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	10.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	11.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	12.0MT	D.S	3.45	12.21	35.67	28.74	19.91	-	-	-	-	-	-	-	-	-	-	-
14	13.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	14.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	15.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	16.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	17.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	18.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	19.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	20.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	21.0MT	S.P.T	0.89	1.33	23.45	41.53	32.74	-	-	-	-	-	-	-	-	-	-	-
23	22.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	23.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	24.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	25.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

For Beau-Monde Associates

Er Prabhat Ranjan Jena, CEO

Signature of Lab Tech

Signature of Scientist

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SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTHS AT PARADIP PORT

BH - 4 (DB-11)

Sl. No	DEPT IN MTR	Type of soil encountered	Grain size analysis					Atterberg's Limits in %			Field Moisture Content in %	Bulk density in gm/cc	Cohesion (C) Kg/cm2	Angle of shearing resistance	Specific gravity	Void ratio	D.F.S. In %	Field S.P.T. Value	Group of soil.
			Fine Gravel In % (20mm To 4.75mm)	Coarse Sand In % (4.75mm To 2.00 mm)	Medium Sand In % (2.0mm To 0.425mm)	Fine Sand In % (0.425mm to 0.075 mm)	Silt & Clay in % (0.075mm to0.001mm)	Liquid Limit in %	Plastic Limit In %	Plasticity Index in %									
1	0.5MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	1.0MT	D.S	3.57	1.74	17.50	56.81	20.38	-	-	-	-	-	-	-	-	-	-	-	-
3	2.0MT	"	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	3.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	4.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	5.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	6.0MT	D.S	0.00	0.00	13.21	62.54	24.25	-	-	-	-	-	-	-	-	-	-	-	-
8	7.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	8.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	10.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	11.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	12.0MT	S.P.T	21.42	15.65	33.84	21.27	7.82	-	-	-	-	-	-	-	-	-	-	-	-
14	13.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	14.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	15.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	16.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	17.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	18.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	19.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	20.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	21.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	22.0MT	S.P.T	0.00	0.00	8.38	52.56	39.06	-	-	-	-	-	-	-	-	-	-	-	-
24	23.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	24.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	25.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

For Beau-Monde Associates

For Beau-Monde Associates

Er Prabhat Ranjan Jena, CEO

Er Prabhat Ranjan Jena, C.E.O

Signature of Lab Tech.

Signature of Scientist

BEAU-MONDE ASSOCIATES
A COMMITMENT TO CONSTRUCTIVE GOALS

SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTHS AT PARADIP PORT

BH - 5 (DB-8)

Sl. No	DEPT IN MTR	Type of soil collected	Grain size analysis					Atterberg's Limits in %			Field Moisture Content in %	Bulk density in gm/cc.	Cohesion (C) Kgf/cm2	Angle of shearing resistance	Specific gravity	Void ratio	D.F.S. In %	Field S.P.T. Value	Group of soil
			Fine Gravel In % (20mm To 4.75mm)	Coarse Sand In % (4.75mm To 2.00 mm)	Medium Sand In % (2.0mm To 0.425mm)	Fine Sand in % (0.425mm to 0.075 mm)	Silt & Clay in % (0.075mm to0.001 mm)	Liquid Limit In %	Plastic Limit In %	Plasticity Index in %									
1	0.5MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	1.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	2.0MT	D.S	0.00	7.36	28.49	44.46	19.69	-	-	-	-	-	-	-	-	-	-	-	-
4	3.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	4.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	5.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	6.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	7.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	8.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	10.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	11.0MT	S.P.T	0.00	5.33	19.74	57.64	17.29	-	-	-	-	-	-	-	-	-	-	-	-
13	12.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	13.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	14.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	15.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	16.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	17.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	18.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	19.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	20.0MT	S.P.T	0.00	0.18	30.28	53.37	16.17	-	-	-	-	-	-	-	-	-	-	-	-
22	21.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	22.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	23.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	24.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	25.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

For Beau-Monde Associates

For Beau-Monde Associates

Er Prabhat Ranjan Jena, CEO

Er Prabhat Ranjan Jena, C.E.O

Signature of Lab Tech.

Signature of Scientist

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SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTHS AT PARADIP PORT

BH - 6 (DB-5)

S.No.	DEPTH IN MTR	Type of test	Grain size analysis					Atterberg's Limits in %			Field Moisture Content in %	Bulk density in gm/cc.	Cohesion (C) Kgf/cm2	Angle of shearing resistance	Specific gravity	Void ratio	D.F.S. In %	Field S.P.T. Value	Group of soil.
			Fine Gravel in % (20mm To 4.75mm)	Coarse Sand In % (4.75mm To 2.00 mm)	Medium Sand In % (2.0mm To 0.425mm)	Fine Sand in % (0.425mm to 0.075 mm)	Silt & Clay in % (0.075mm to0.001mm)	Liquid Limit In %	Plastic Limit In %	Plasticity Index in %									
1	0.5MT		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	1.5MT	D.S	1.92	1.01	7.74	50.51	38.82	-	-	-	-	-	-	-	-	-	-	-	-
3	2.0MT		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	3.0MT		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	4.0MT		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	5.0MT	S.P.T	0.99	0.30	2.76	69.99	25.97	-	-	-	-	-	-	-	-	-	-	-	-
7	6.0MT		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	7.0MT		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	8.0MT		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9.0MT		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	10.0MT		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	11.0MT		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	12.0MT		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	13.0MT		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	14.0MT		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	15.0MT		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	16.0MT		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	17.0MT		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	18.0MT		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	19.0MT		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	20.0MT		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	21.0MT		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	22.0MT		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	23.0MT		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	24.0MT	S.P.T	0	0	19.32	48.27	32.41	-	-	-	-	-	-	-	-	-	-	-	-
26			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

For Beau-Monde Associates.

For Beau-Monde Associates

Er Prabhat Ranjan Jena, C.E.O

Er Prabhat Ranjan Jena, CEO

Signature of Lab Tech.

Signature of Scientist

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SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTHS AT PARADIP PORT

BH - 7 (DB-6)

Sl. No	DEPT IN MTR	Type of soil collected	Grain size analysis					Atterberg's Limits in %			Field Moisture Content in %	Bulk density in gm/cc.	Cohesion (C) Kgf/cm2	Angle of shearing resistance	Specific gravity	Void ratio	D.F.S. In %	Field S.P.T. Value	Group of soil .
			Fine Gravel In % (20mm To 4.75mm)	Coarse Sand In % (4.75mm To 2.00 mm)	Medium Sand In % (2.0mm To 0.425mm)	Fine Sand In % (0.425mm to 0.075 mm)	Silt & Clay In % (0.075mm to0.001mm)	Liquid Limit In %	Plastic Limit In %	Plasticity Index in %									
1	0.5MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	1.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	2.0MT	D.S	0.00	2.58	13.42	59.32	24.68	-	-	-	-	-	-	-	-	-	-	-	-
4	3.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	4.15MT	S.P.T	0.00	1.67	9.45	64.75	24.13	-	-	-	-	-	-	-	-	-	-	-	-
6	5.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	6.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	7.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	8.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	10.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	11.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	12.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	13.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	14.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	15.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	16.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	17.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	18.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	19.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	20.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	21.5MT	S.P.T	0.00	0.00	5.43	48.55	46.02	-	-	-	-	-	-	-	-	-	-	-	-
23	22.5MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	23.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	24.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	25.0MT	D.S	0.00	0.00	11.97	52.68	35.35	-	-	-	-	-	-	-	-	-	-	-	-

For Beau-Monde Associates

For Beau-Monde Associates

Er Prabhat Ranjan Jena, CEO

Signature of Lab Tech.

Signature of Scientist

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BEAU - MONDE ASSOCIATES

A COMMITMENT TO CONSTRUCTIVE GOALS

SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTHS AT PARADIP PORT

BH - 8 (DB-4)

Sl. No	DEPT IN MTR	Type of soil collected	Grain size analysis					Atterberg's Limits in %			Field Moisture Content in %	Bulk density in gm/cc.	Cohesion (C) Kgf/cm2	Angle of shearing resistance	Specific gravity	Void ratio	D.F.S. In %	Field S.P.T. Value	Group of soil
			Fine Gravel In % (20mm To 4.75mm)	Coarse Sand In % (4.75mm To 2.00 mm)	Medium Sand In % (2.0mm To 0.425mm)	Fine Sand In % (0.425mm to 0.075 mm)	Silt & Clay In % (0.075mm to0.001mm)	Liquid Limit In %	Plastic Limit In %	Plasticity Index in %									
1	0.5MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	1.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	2.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	3.0MT	D.S	0.00	2.89	17.43	46.22	33.46	-	-	-	-	-	-	-	-	-	-	-	-
5	4.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	5.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	6.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	7.0MT	S.P.T	1.05	0.43	12.27	69.86	16.39	-	-	-	-	-	-	-	-	-	-	-	-
9	8.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	10.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	11.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	12.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	13.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	14.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	15.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	16.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	17.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	18.0MT	S.P.T	0.00	1.10	10.59	79.44	8.87	-	-	-	-	-	-	-	-	-	-	-	-
20	19.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	20.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	21.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	22.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	23.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	24.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	25.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

For Beau-Monde Associates

Dr Prabhat Ranjan Patra, CEO

Signature of Lab Tech.

Signature of Scientist

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SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTHS AT PARADIP PORT

BH - 9 (SP-5)

Sl. No	DEPT IN MTR	Type of soil collected	Grain size analysis					Atterberg's Limits in %			Field Moisture Content in %	Bulk density in gm/cc.	Cohesion (C) Kgf/cm2	Angle of shearing resistance	Specific gravity	Void ratio	D.F.S. In %	Field S.P.T Value	Group of soil
			Fine Gravel In % (20mm To 4.75mm)	Coarse Sand In % (4.75mm To 2.00 mm)	Medium Sand In % (2.0mm To 0.425mm)	Fine Sand In % (0.425mm to 0.075 mm)	Silt & Clay in % (0.075mm to0.00 1mm)	Liquid Limit In %	Plastic Limit In %	Plasticity Index in %									
1	0.5MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	1.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	2.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	3.0MT	D.S	0.84	1.81	37.65	50.02	9.68	-	-	-	-	-	-	-	-	-	-	-	-
5	4.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	5.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	6.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	7.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	8.5MT	S.P.T	0.00	0.73	17.35	64.16	17.76	-	-	-	-	-	-	-	-	-	-	-	-
10	9.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	10.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	11.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	12.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	13.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	14.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	15.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	16.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	17.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	18.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	19.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	20.45MT	S.P.T	0.00	0.00	1.44	5.55	93.01	-	-	-	-	-	-	-	-	-	-	-	-
22	21.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	22.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	23.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	24.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	25.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

For Beau-Monde Associates

For Beau-Monde Associates

Er Prabhat Ranjan Jena, CEO

Er Prabhat Ranjan Jena, CEO

Signature of Lab Tech.

Signature of Scientific

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SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTHS AT PARADIP PORT

BH - 10 (SP-3)

Sl. No	DEPT IN MTR	Type of soil collected	Grain size analysis					Atterberg's Limits in %			Field Moisture Content in %	Bulk density in gm/cc.	Cohesion (C) Kgf/cm2	Angle of shearing resistance	Specific gravity	Void ratio	D.F.S. In %	Field S.P.T. Value	Group of soil
			Fine Gravel In % (20mm To 4.75mm)	Coarse Sand In % (4.75mm To 2.00 mm)	Medium Sand In % (2.0mm To 0.425mm)	Fine Sand in % (0.425mm to 0.075 mm)	Silt & Clay In % (0.075mm to0.001mm)	Liquid Limit In %	Plastic Limit In %	Plasticity Index In %									
1	0.5MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	1.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	2.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	3.0MT	D.S	7.03	6.54	11.81	15.55	59.07	-	-	-	-	-	-	-	-	-	-	-	-
5	4.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	5.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	6.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	7.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	8.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	10.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	11.55MT	S.P.T	3.77	0.88	6.28	22.36	68.71	-	-	-	-	-	-	-	-	-	-	-	-
13	12.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	13.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	14.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	15.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	16.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	17.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	18.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	19.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	20.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	21.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	22.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	22.77MT	S.P.T	0.00	0.00	6.80	53.92	39.28	-	-	-	-	-	-	-	-	-	-	-	-
25	24.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	25.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

For Beau-Monde Associates

For Beau-Monde Associates

Er Prabhat Ranjan Jena, CEO

Er Prabhat Ranjan Jena, C.E.O

Signature of Lab Tech.

Signature of Scientist

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BOR INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTHS AT PARADIP PORT

BH - 11 (DB-3)

Sl. No	DEPT IN MTR	Type of soil collected	Grain size analysis					Atterberg's Limits in %			Field Moisture Content in %	Bulk density in gm/cc.	Cohesion (C) Kgf/cm2	Angle of shearing resistance	Specific gravity	Void ratio	D.F.S. In %	Field S.P.T. Value	Group of soil
			Fine Gravel In % (20mm To 4.75mm)	Coarse Sand In % (4.75mm To 2.00 mm)	Medium Sand In % (2.00mm To 0.425mm)	Fine Sand In % (0.425mm to 0.075 mm)	Silt & Clay in % (0.075mm to0.001mm)	Liquid Limit in %	Plastic Limit in %	Plasticity Index in %									
1	0.5MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	1.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	2.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	3.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	4.0MT	D.S	0.62	0.00	22.51	52.63	24.24	-	-	-	-	-	-	-	-	-	-	-	-
6	5.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	6.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	7.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	8.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	10.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	11.45MT	S.P.T	0.00	0.53	4.47	73.69	21.31	-	-	-	-	-	-	-	-	-	-	-	-
13	12.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	13.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	14.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	15.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	16.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	17.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	18.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	19.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	20.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	21.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	22.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	22.7MT	S.P.T	0.52	0.29	15.26	44.41	39.72	-	-	-	-	-	-	-	-	-	-	-	-
25	24.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	25.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

For Beau-Monde Associates

Er Prabhat Ranjan Jena, CEO

Signature of Lab Test

Signature of Scientist

BEAU-MONDE ASSOCIATES

SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTHS AT PARADIP PORT

BH - 12 (DB-1)

Sl. No	DEPT IN MTR	Type of soil collected	Grain size analysis					Atterberg's Limits in %			Field Moisture Content in %	Bulk density in gm/cc.	Cohesion (C) Kgf/cm2	Angle of shearing resistance	Specific gravity	Void ratio	D.F.S. in %	Field S.P.T. Value	Group of soil
			Fine Gravel in % (20mm To 4.75mm)	Course Sand in % (4.75mm To 2.00 mm)	Medium Sand in % (2.00mm To 0.425mm)	Fine Sand in % (0.425mm to 0.075 mm)	Silt & Clay in % (0.075mm to0.001 mm)	Liquid Limit in %	Plastic Limit in %	Plasticity Index in %									
1	0.5MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	1.0MT	D.S	1.23	2.57	9.56	46.69	39.95	-	-	-	-	-	-	-	-	-	-	-	-
3	2.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	3.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	4.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	5.0MT	S.P.T	0.00	0.44	1.04	5.55	92.97	-	-	-	-	-	-	-	-	-	-	-	-
7	6.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	7.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	8.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	10.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	11.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	12.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	13.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	14.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	15.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	16.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	17.42MT	S.P.T	2.74	0.80	7.04	28.98	61.34	-	-	-	-	-	-	-	-	-	-	-	-
19	18.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	19.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	20.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	21.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	22.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	23.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	24.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	25.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

For Beau-Monde Associates

For Beau-Monde Associates

Sri Prabhat Ranjan Jyoti, CEO

Sri Prabhat Ranjan Jyoti, C.E.O

Signature of Lab Tech.

Signature of Scientist

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A COMMITMENT TO CONSTRUCTIVE GOALS

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SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTHS AT PARADIP PORT

BH - 13 (DB-2)

Sl. No	DEPT IN MTR	Type of soil collected	Grain size analysis				Atterberg's Limits in %			Field Moisture Content in %	Bulk density in gm/cc.	Cohesion (C) Kgf/cm2	Angle of shearing resistance	Specific gravity	Void ratio	D.F.S. In %	Field S.P.T. Value	Group of soil
			Fine Gravel In % (20mm To 4.75mm)	Coarse Sand In % (4.75mm To 2.00 mm)	Medium Sand In % (2.0mm To 0.425mm)	Fine Sand In % (0.425mm to 0.075 mm)	Silt & Clay in % (0.075mm to0.001mm)	Liquid Limit In %	Plastic Limit In %	Plasticity Index in %								
1	0.5MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	1.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	1.5MT	DS	0.00	0.00	12.25	62.73	25.02	-	-	-	-	-	-	-	-	-	-	-
4	3.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	4.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	5.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	6.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	7.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	8.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	10.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	11.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	12.0MT	S.P.T	0.00	8.59	23.33	54.19	13.89	-	-	-	-	-	-	-	-	-	-	-
14	13.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	14.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	15.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	16.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	17.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	18.0MT	S.P.T	0.00	0.00	0.34	1.55	98.11	-	-	-	-	-	-	-	-	-	-	-
20	19.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	20.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	21.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	22.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	23.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	24.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	25.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

For Beau-Monde Associates

Er Prabhat Ranjan Jena, C.E.O

Signature of Lab Technician

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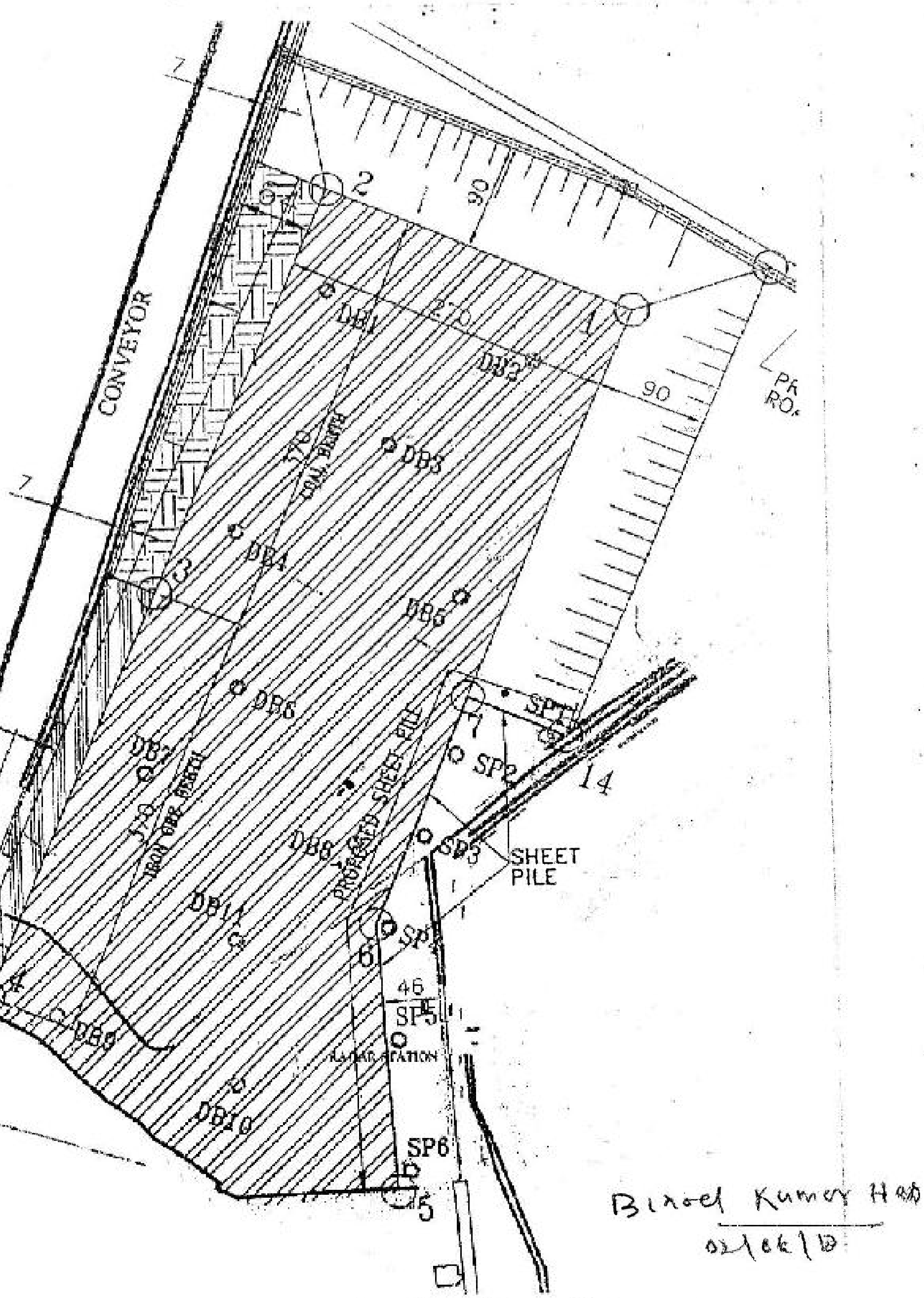

Revised Kumar Hall
02/06/19

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CONCLUSION: - The awarded job is carried out with all precautions according to level, client technical specification, work procedures & IS codes fore grain size analysis. The test result is provided here but the ultimate choice is depends upon the structural designer.

Signature of Lab. Tech.

Signature of Scientist

Beau - Monde Associates.

Er. Prabhat Ranjan Jana, CEO

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SOIL TEST REPORT

BH – 14 (SP – 1)

SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTH AT PARADIP PORT DISTRICT - JAGATSINGHPUR.

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CONTENTS

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1. INTRODUCTION

A. It has been proposed to dredging of basin for development of deep draught coal and iron ore berths at PARADIP PORT, Jagatsinghpur, in the state of Orissa.The Engineer in charge is awarded the preliminary Soil Investigation work to Mr.Binod kumar hati for a thorough assessment of sub- soil strata at 17 locations in order to facilitate the dredging of basin.

B. The present report is a part of the whole project. The scope of work comprised of boring of 17 no of bore well at the proposed site. The field work includes making of boreholes in the soil by Auger & Shell boring method. The scope included conducting standard Penetration tests at regular intervals and collecting soil samples for identification and logging purposes. Collected Soil samples were tested in the Base Laboratory & all data were analyzed.

C. Based on the above, this report presents the Bore logs, Laboratory & field Test result. On the basis of field & Laboratory test results and their analysis.

NAME OF THE WORK: - Soil investigation work for dredging of basin for development of deep draught coal and iron ore berths at PARADIP PORT, Jagatsinghpur, in the state of Orissa .

PURPOSE OF TESTING: - Conduct Geo-Technical Investigation for the proposed Site for dredging of basin for development of deep draught coal and iron ore berth at Paradip port.

AGENCY: - BINOD KUMAR HATI
KHAPURIA LABOUR COLONY
Qrt. No. :- 5/5, Madhupatana, Cuttack - 10

LIMITATION: - The scope of Geo – Technical sub soil Investigation work is confined to the limits of client Technical specification. But At the some time field and laboratory tests were carried out as per the codes & standard and the direction of the Engineer-in-charge is final.

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FIELD OPERATIONS

- **GENERAL**

In an attempt for optimization in the dredging of basin for the proposed deep draught coal and iron ore berths to be dredged at this site, Geo technical Investigation was done. The entire investigation work has been divided mainly into two parts. A) Field works & B) Laboratory Test.

a) Field works determine the types of sub –soil deposit and their characteristics.

b) Laboratory tests helps in determining the relevant geo-technical properties of the sub- surface deposits leading to finalization of dredging depth of the basin.

Final depth of boring and observation of water table for each Bore well. The test conducted during end of the rainy season in the month of September. The Water table found in the terminating depth, but in rain season the water level may be raised. The observed water table data whine in the terminating depth is given below.

BORE HOLE NO.	TERMINATION DEPTH IN Mtr.	WATER TABLE IN Mtr.
BH-14	37.45 Mtr	2.05Mtr.

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FIELD WORK: - For investigation of the sub- soil strata at proposed site, the field Work consists of drilling 01 numbers of boreholes to a required depth from ground level. To carry out field test if it is required to collect undisturbed and disturbed samples. The bore hole, Locations, depth boring and ground levels are given by the E.I.C.of client.

The required tools & plants such as Tripod, Augers, Diamond core drilling machines, winch, flush joint casings, Spilt spoon samplers, then walled samplers core barrels, D.T, T.C & different type of Dimond bits soil cutter, pumps, Diesel Engines etc. and available for site with minimum number skilled workers and technical staff for conducting drilling field tests and collection of samples were carried out as per IS 1892.

BORING: - The required Diameter (150mm) drilling proceeded first by manual auger up to the ground water level then followed by wash boring. Drilling tools are lowered with the help of mechanical winch fixed on the tripod. During boring drilling fluied like bentonite solution is pushed simultaneously with boring with driving flush joint casing pipes to keep the borehole preserve for collection of samples and as well as field testing purpose. The drilling fluid flowing out of cutter bottom mixed of with the cut soil and flow to the borehole surface setting tank and back to the slurry tank. Drilling tools are lowered with the help of mechanical which fixed on the tripod. After the drilling is reached up to the desired depth, pumping of the slurry is continued for 10 to 15 minutes for bottom clearing to conduct field tests and sample collection. All the boring operation is conducted strictly.

STANDARD PENETRATION TEST: - To evaluate standard strength data such as 'N' value (Number of blows per 30cm. of penetration) the required spilt spoon sampler is conform to IS-9640. The sampler is lowered to the bottom of borehole of required level with strings of 'A' type drill rods. The drive weight of 63.5 kg is hammered with a free fall of 0.75 mtr through one guide. The number of blows required to detect each 15 cm. penetration is recorded. The first 15 cm is considered as sectory drive. The total blows required for the second & third 15 cm penetration is termed penetrate resistance 'N' where sampler could not penetrate 15 cm. If we applied 50 blows 'N' value is considered as greater than 50 and the depth of penetration is also recorded. The test is carried out at every 1.5 mtr depth of boring as per technical specification IS code. After the end of the test spilt spoon is opened and length and weight of the sample recovered is measured for calculation of bulk density and samples are preserved for laboratory test.

Sampling

UNDISTURBED SOIL SAMPLING: - After these samples are collected by thin walled sampler as per as IS: 2132. The sampling equipment used, consist of two tier assembly of sample tubes, 45cm in length, fitting at its lower end with a cutting shoe. The sampling assembly was driven by means of a jarring link to its full length or as far down as found practicable. After withdrawal, of the tube sealed with paraffin wax and caped before onward transmission to the laboratory,

DISTURBED SOIL SAMPLING: - Disturbed soil samples are also collected for identification & logging purposes.

GROUND WATER LEVEL: - Ground water table is measured as per IS code / Technical specification. The ground water tables are presented in bore log sheets and attached with this reports.

LABORATORY WORK: - Laboratory work consists of mostly physical tests as per technical specification and procedure and I.S code.

The U.D.S samples SPT sample and D.S samples from boreholes are take to conduct laboratory test. The test results are shown in tabular form with proper reference and presented in the Lab test reports sheets.

PARTICLE SIZE DISTRIBUTION: - Grain size analysis is done by standard sieves by mechanical means & silt clay size particles are determined by wet sieve method. And presented in the Lab test reports sheets.

ATTERBERG'S LIMITS IN (%):- Liquid & plastic limits & plasticity index in % are determined from UDS & DS samples as per IS -2720 (part- 5) and presented in the Lab test reports sheets.

FIELD MOISTURE CONTENT: - F.M.C of UDS, DS and SPT samples are determined in the laboratory as per IS – 2720 (part-2) and presented in the Lab test reports sheets.

BULK DENSITY: - Bulk density of soil sample are determined by as per IS-2720 and presented in the Lab test reports sheets.

SHEAR STRENGTH PENEMETERS OF A SPECIMEN:- For find out cohesion © and angle of shearing resistance (Φ) of U.D.S samples. A triaxial compression apparatus is required as per IS -2720 (part-11) under a condition of cell pressure maintain to constant with out measuring the pore water pressure and presented in the Lab test reports sheets.

SPECIFIC GRAVITY: - Specific gravity of U.D.S samples are determined as per IS - 2720 (part-3) and presented in the Lab test reports sheets.

VOIDS RATIO: - Void ratio of U.D.S samples are calculated and presented in the Lab test reports sheets.

DIFFERENTIAL FREE SWELL INDEX: - Differential free swell index are determined by U.D.S samples as per IS-2720 (part-40) and presented in the Lab test reports sheets.

FIELD SPT VALUE: - Field standard penetration values are presented in bore log chart sheet. And presented in the Lab test reports sheets.

CLASSIFICATION OF SOIL: - The soil are properly classified as per the above test results and as per IS- 1498 and presented in the Lab test reports sheets.

SUB-SOIL CONDITION & PROPERTIES

The boring records showing the various soils met with are enclosed. These are prepared from field bore logs after proper modification in the light of laboratory and observation of disturbance & penetrometer soil sample. The result of the S.P.T tests are given as N values in these boring record. When N value is greater then 15, modified value of N is calculated as

$Ne=15+1/2(N-15)$

NON – COHESIVE SOIL

For non cohesive soil, it is not possible to take UDS sample. The SPT is taken regular interval. The C-ϕ values are determined by direct shear Test.

EFFECT OF GROUND WATER TABLE.

The ground water table has significant role on the safe bearing capacity of the soil. For cohesion less soil the safe bearing capacity is reduced by 50%, if the water table is above or near the bearing surface of the soil. If the water table is below the bearing surface of the soil at a distance at least equal to the width of the foundation no such reduction is applicable, for intermediate depth of the water table, proportional of the safe bearing capacity is made.

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BORE LOG CHART

Name of Consultant---

BH - 14

NAME OF WORK :- SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTHS AT PARADIP PORT

NAME OF AGENCY :- BINOD KUMAR HATI

LOCATION - SP - 01 (P P T)

NAME OF AUTHORITY :- PARADIP PORT

SOIL SAMPLE USED - S.P.T/U.D.S

TYPE OF BORING :- AUGER & SHELL

GROUND WATER TABLE - 2.05Mtr

INCLINATION :- Vertical

DIA OF BORE - 150mm

DATE OF BORING STARTED :- 8/9/2010

RL - 4.800

DATE OF BORING COMPLETED:- 1/10/2010

SL NO	Depth in Mtr	thickness of soil strata in mtr	Graphical representation of soil strata	Type of soil strata	Type of Sample collected	No of blows for 1st 15cm penetration(1)	No of blows for 2nd 15cm penetration(2)	No of blows for 3rd 15cm penetration(3)	S.P.T. value N =2+3	Penetration in mtr	RQD %	CORE %	Remarks
1	0.5	1.50		In organic clays of low plasticity	-	-	-	-	-	-	-	-	-
2	1.5				-	-	-	-	-	-	-	-	D.S COLLECTED
3	3.0	1.95		In organic clays of high plasticity	S.P.T	2	3	4	8	0.45			S.P.T COLLECTED
4	[illegible]				-	-	-	-	-	-	-	-	-
5	4.5				-	-	-	-	-	-	-	-	-
6	6.0				S.P.T	6	8	8	16	0.45	-	-	S.P.T COLLECTED
7	7.5				-	-	-	-	-	-	-	-	-
8	9.0				S.P.T	5	9	3	12	0.45	-	-	S.P.T COLLECTED
9	10.5	13.40		Clayey sands	-	-	-	-	-	-	-	-	-
10	12.0				S.P.T	8	10	13	23	0.45	-	-	S.P.T COLLECTED
11	13.5				-	-	-	-	-	-	-	-	-
12	15.0				S.P.T	21	17	16	33	0.45	-	-	S.P.T COLLECTED
13	16.5				-	-	-	-	-	-	-	-	-
14	[illegible]												
15	[illegible]				S.P.T	1	2	2	4	0.45	-	-	S.P.T COLLECTED
16	[illegible]	2.55		In organic clays of medium plasticity	U.D.S	-	-	-	-	0.45	-	-	U.D.S COLLECTED
17	[illegible]				-						-	-	
18	[illegible]				-	-	-	-	-	-	-	-	-
19	19.5				-	-	-	-	-	-	-	-	-
20	[illegible]				S.P.T	15	13	12	25	0.45			S.P.T COLLECTED
21	21.0	4.60		Silty Sand	-	-	-	-	-	-	-	-	-
22	22.5				-	-	-	-	-	-	-	-	-
23	24.0				U.D.S	-	-	-	-	0.45	-	-	U.D.S COLLECTED
24	25.5	3.00		Clayey sands	-	-	-	-	-	-	-	-	-
25	26.93				S.P.T	28	32	28	60	0.45			S.P.T COLLECTED
26	[illegible]				-	-	-	-	-	-	-	-	-
27	28.5	4.78		In organic clays of low plasticity	-	-	-	-	-	-	-	-	-
28	29.80				S.P.T	28	30	36	66	0.45			S.P.T COLLECTED
29	[illegible]				-	-	-	-	-	-	-	-	-
30	31.3				-	-	-	-	-	-	-	-	-
31	31.78				-	-	-	-	-	-	-	-	-
32	[illegible]				U.D.S					0.45			U.D.S FAILED
33	33.0				-	-	-	-	-	-	-	-	-
34	34.5	3.42		Clayey sands	-	-	-	-	-	-	-	-	-
35	[illegible]				S.P.T	40	32	-	+ 32	0.45			S.P.T COLLECTED
36	[illegible]				-	-	-	-	-	-	-	-	-
37	36.0	2.25		Silty Sand	-	-	-	-	-	-	-	-	-
38	37.45				-	-	-	-	-	-	-	-	-

Signature of Lab Tech

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SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTHS AT PARADIP PORT

BH - 14 (SP-1)

Sl. No	DEPT IN MTR	Type of soil collected	Grain size analysis					Atterberg's Limits in %			Field Moisture Content in %	Bulk density in gm/cc.	Cohesion (C) Kgf/cm2	Angle of shearing resistance	Specific gravity	Void ratio	D.F.S. In %	Field S.P.T. Value	Group of soil .
			Fine Gravel In % (20mm To 4.75mm)	Coarse Sand In % (4.75mm To 2.00 mm)	Medium Sand In % (2.0mm To 0.425mm)	Fine Sand in % (0.425mm to 0.075 mm)	Silt & Clay in % (0.075mm to0.001mm)	Liquid Limit In %	Plastic Limit In %	Plasticity Index in %									
1	0.5MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-------	-
3	3.0MT	S.P.T	0.00	0.00	1.96	5.24	92.80	52	31	21	16.62	1.734	0.48	2	2.52	0.695	45	9	CH
4	3.45MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	4.5MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	6.0MT	S.P.T	0.00	0.04	17.99	61.71	20.26	16	13	3	18.44	1.982	0.10	15	2.69	0.607	12	15	SC
7	7.5MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	9.0MT	S.P.T	0.00	0.00	1.21	54.73	44.06	27	19	8	23.08	1.912	0.17	10	2.58	0.661	22	12	SC
9	10.5MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	12.0MT	S.P.T	0.00	0.00	0.61	51.34	48.05	29	20	9	24.51	1.907	0.17	10	2.57	0.678	25	23	SC
11	13.5MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	15.0MT	S.P.T	0.00	0.00	0.41	79.31	20.28	15	12	3	21.32	1.936	0.10	15	2.69	0.686	11	33	SC
13	16.5MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	16.85MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	17.07MT	S.P.T	0.00	0.00	2.39	9.86	87.75	48	29	19	23.46	2.035	0.45	6	2.73	0.656	42	4	CI
16	17.57MT	U.D.S	U.D.S SLEEPED																-
17	18.10MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

For Beau-Monde Associates

Er Prabhat Ranjan Jena, C.E.O

Er Prabhat Ranjan Jena, CEO

Signature of Scientist

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SOIL INVESTIGATION WORK FOR DREDGING OF BASIN FOR DEVELOPMENT OF DEEP DRAUGHT COAL AND IRON ORE BERTHS AT PARADIP PORT

BH - 14 (SP-1)

Sl. No	DEPT IN MTR	Type of soil collected	Grain size analysis					Attersberg's Limits in %			Field Moisture Content in %	Bulk density in gm/cc	Cohesion (C) Kg/cm2	Angle of shearing resistance	Specific gravity	Void ratio	D.F.S In %	Field S.P.T Value	Group of soil
			Fine Gravel In % (20mm To 4.75mm)	Coarse Sand In % (4.75mm To 2.00 mm)	Medium Sand In % (2.0mm To 0.425mm)	Fine Sand in % (0.425mm to 0.075 mm)	Silt & Clay in % (0.075mm to0.00 1mm)	Liquid Limit In %	Plastic Limit In %	Plasicity Index in %									
18	19.5MT	S.P.T	0.00	1.05	62.51	23.05	13.39	12	-	NP	25.52	2.137	0.08	17	2.71	0.592	10	25	SM
19	21.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	22.5MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	24.0MT	U.D.S	0.00	0.51	5.50	51.74	42.25	26	18	8	26.12	2.056	0.15	13	2.66	0.632	20	.....	SC
22	25.5MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	26.93MT	S.P.T	0.00	0.00	20.82	48.60	30.58	20	15	5	26.67	2.057	0.12	14	2.65	0.632	15	60	SC
24	27.00MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	28.5MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	29.8MT	S.P.T	0.00	0.00	0.96	48.04	51.00	31	20	11	27.03	2.089	0.18	12	2.66	0.618	25	66	CL
27	31.5MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	31.78MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	32.08MT	U.D.S	U.D.S FAILED																-
30	33.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	34.5MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	35.2MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	35.45MT	S.P.T	0.00	0.24	8.49	69.22	22.05	17	14	3	28.43	2.124	0.11	14	2.67	0.614	13	> 50	SM
34	36.0MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	37.45MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

For Beau-Monde Associates

Er Prabhat Ranjan Jena, C.E.O

For Beau-Monde Associates

Er Prabhat Ranjan Jena, C.E.O

Signature of Lab Tech.

Signature

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CALCULATION OF SAFE BEARING CAPACITY FROM STRENGTH PARAMETERS AT 3.0m DEPTH OF BH-14, S.P - 01, P.P.T

Cohesion C =		0.48	Kg/cm^2
Angle of shearing resistance ϕ =		2	Degree
ϕ' =		1	Degree
Void ratio	e =	0.695	Medium
Specific Gravity	Gs =	2.52	
Total Submersible density γ_{sub} =		1	g/cc
Depth (Df) from ground level =		3	m
Diameter	B =	2	m
Over burden pressure			
$q = (Df \times \gamma_{sub}) / 10$		0.3	Kg/cm^2
$B\gamma = (B \times \gamma_{sub}) / 10$		0.2	Kg/cm^2

Bearing capacity factors

ϕ & ϕ'	Nc & Nc'	Nq & Nq'	Nγ & Nγ'		
2	**5.68**	**1.228**	**0.18**		
1	**5.41**	**1.114**	**0.09**		
Sc =	1.3	Sq =	1.2	Sγ =	0.6

$d_c = 1 + 0.2 \times (Df/B) \times \tan(45+\phi/2)$ = 1.311

$d_q = d_\gamma$ = 1 $\quad i_c = i_q = i_\gamma$ = 1 $\quad w'$ = 0.5

In case of general shear failure for circular footing

$Qd = CNcScdcic + q(Nq - 1)Sqdqiq + 0.5B\gamma N\gamma S\gamma d\gamma i\gamma W'$

= 4.647 + 0.082 + 0.005

= 4.734 Kg/cm^2

In case of local shear failure for circular footing

$Qd' = (2/3)CNc'Scdcic + q(Nq' - 1)Sqdqiq + 0.5B\gamma N\gamma' S\gamma d\gamma i\gamma W'$

= 2.95 + 0.041 + 0.003

= 2.994 Kg/cm^2

Ultimate bearing capacity obtained from interpolation = qd 3.473 Kg/cm^2

Net Safe bearing capacity considering factor of safety of 3.0 = 1.158 Kg/cm^2

=> **NSBC** = **11.577** T/m^2

Safe bearing capacity (**SBC**) = **14.577** T/m^2

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CALCULATION OF SAFE BEARING CAPACITY FROM STRENGTH PARAMETERS AT 6.0m DEPTH OF BH-14, S.P - 01, P.P.T

Cohesion C =		0.10	Kg/cm^2
Angle of shearing resistance ϕ =		15	Degree
ϕ' =		10	Degree
Void ratio	e =	0.607	Medium
Specific Gravity	Gs =	2.69	
Total Submersible density γ_{sub} =		1	g/cc
Depth (Df) from ground level =		6	m
Diameter	B =	2	m
Over burden pressure			
$q = (Df \times \gamma_{sub}) / 10$		0.6	Kg/cm^2
$B\gamma = (B \times \gamma_{sub}) / 10$		0.2	Kg/cm^2

Bearing capacity factors

ϕ & ϕ'	Nc & Nc'	Nq & Nq'	Nγ & Nγ'		
15	**10.98**	**3.94**	**2.65**		
10	**8.35**	**2.47**	**1.22**		
Sc =	1.3	Sq =	1.2	Sγ =	0.6

$d_c = 1 + 0.2 \times (Df/B) \times \tan(45+\phi/2)$ = 1.782

$d_q = d_\gamma$ = 1.391 $i_c = i_q = i_\gamma$ = 1 w' = 0.5

In case of general shear failure for circular footing

$Qd = CNcScdcic + q(Nq-1)Sqdqiq + 0.5B\gamma N\gamma S\gamma d\gamma i\gamma W'$

= 2.544 + 2.944 + 0.111

= 5.599 Kg/cm^2

In case of local shear failure for circular footing

$Qd' = (2/3)CNc'Scdcic + q(Nq'-1)Sqdqiq + 0.5B\gamma N\gamma' S\gamma d\gamma i\gamma W'$

= 1.29 + 1.472 + 0.051

= 2.813 Kg/cm^2

Ultimate bearing capacity obtained from interpolation = qd 4.805 Kg/cm^2

Net Safe bearing capacity considering factor of safety of 3.0 = 1.602 Kg/cm^2

=> **NSBC** = **16.017** T/m^2

Safe bearing capacity (**SBC**) = **22.017** T/m^2

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CALCULATION OF SAFE BEARING CAPACITY FROM STRENGTH PARAMETERS AT 9.0m DEPTH OF BH-14, S.P - 01, P.P.T

Cohesion C =		0.17	Kg/cm²
Angle of shearing resistance ϕ =		10	Degree
ϕ' =		7	Degree
Void ratio	e =	0.661	Medium
Specific Gravity	Gs =	2.58	
Total Submersible density γ_{sub} =		1	g/cc
Depth (Df) from ground level =		9	m
Diameter	B =	2	m

Over burden pressure

q = (Df x γ_{sub}) / 10 = 0.9 Kg/cm²

Bγ = (B x γ_{sub}) / 10 = 0.2 Kg/cm²

Bearing capacity factors

ϕ & ϕ'	Nc & Nc'	Nq & Nq'	Nγ & Nγ'
10	**8.35**	**2.47**	**1.22**
7	**7.234**	**1.93**	**0.758**
Sc =	1.3	Sq = 1.2	Sγ = 0.8

$d_c = 1 + 0.2 \times (Df/B) \times \tan(45+\phi/2)$ = 2.073

$d_q = d_\gamma$ = 1.536 $i_c = i_q = i_\gamma$ = 1 w' = 0.5

In case of general shear failure for circular footing

$Qd = CN_cS_cd_ci_c + q(N_q - 1)S_qd_qi_q + 0.5B\gamma N_\gamma S_\gamma d_\gamma i_\gamma W'$

= 3.825 + 2.439 + 0.056

= 6.320 Kg/cm²

In case of local shear failure for circular footing

$Qd' = (2/3)CN_c'S_cd_ci_c + q(N_q' - 1)S_qd_qi_q + 0.5B\gamma N_\gamma' S_\gamma d_\gamma i_\gamma W'$

= 2.209 + 1.543 + 0.035

= 3.787 Kg/cm²

Ultimate bearing capacity obtained from interpolation = qd = 4.914 Kg/cm²

Net Safe bearing capacity considering factor of safety of 3.0 = 1.638 Kg/cm²

=> **NSBC** = **16.380** T/m²

Safe bearing capacity (**SBC**) = **25.380** T/m²

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CALCULATION OF SAFE BEARING CAPACITY FROM STRENGTH PARAMETERS AT 12.0m DEPTH OF BH-14, S.P - 01, P.P.T

Cohesion C =		0.17	Kg/cm^2
Angle of shearing resistance ϕ =		10	Degree
ϕ' =		7	Degree
Void ratio	e =	0.678	Medium
Specific Gravity	Gs =	2.57	
Total Submersible density γ_{sub} =		1	g/cc
Depth (Df) from ground level =		12	m
Diameter	B =	2	m
Over burden pressure			
q = (Df x γ_{sub}) / 10		1.2	Kg/cm^2
Bγ = (B x γ_{sub}) / 10		0.2	Kg/cm^2

Bearing capacity factors

ϕ & ϕ'	Nc & Nc'	Nq & Nq'	Nγ & Nγ'		
10	**8.35**	**2.47**	**1.22**		
7	**7.234**	**1.93**	**0.758**		
Sc =	1.3	Sq =	1.2	Sγ =	0.6

$d_c = 1 + 0.2 \times (Df/B) \times \tan(45+\phi/2)$ = 2.43

$d_q = d_\gamma$ = 1.715 $i_c = i_q = i_\gamma$ = 1 w' = 0.5

In case of general shear failure for circular footing

$Qd = CN_cS_cd_ci_c + q(N_q - 1)S_qd_qi_q + 0.5B\gamma N_\gamma S_\gamma d_\gamma i_\gamma W'$

= 4.484 + 3.63 + 0.063

= 8.177 Kg/cm^2

In case of local shear failure for circular footing

$Qd' = (2/3)CN_c'S_cd_ci_c + q(N_q' - 1)S_qd_qi_q + 0.5B\gamma N_\gamma' S_\gamma d_\gamma i_\gamma W'$

= 2.59 + 2.297 + 0.039

= 4.926 Kg/cm^2

Ultimate bearing capacity obtained from interpolation = qd 6.096 Kg/cm^2

Net Safe bearing capacity considering factor of safety of 3.0 = 2.032 Kg/cm^2

=> **NSBC** = **20.320** T/m^2

Safe bearing capacity (**SBC**) = **32.320** T/m^2

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CALCULATION OF SAFE BEARING CAPACITY FROM STRENGTH PARAMETERS AT 15.0m DEPTH OF BH-14, S.P - 01, P.P.T

Cohesion C =		0.10	Kg/cm^2
Angle of shearing resistance ϕ =		15	Degree
ϕ' =		10	Degree
Void ratio	e =	0.686	Medium
Specific Gravity	Gs =	2.69	
Total Submersible density γ_{sub} =		1	g/cc
Depth (Df) from ground level =		15	m
Diameter	B =	2	m

Over burden pressure

$q = (Df \times \gamma_{sub}) / 10$ = 1.5 Kg/cm^2

$B\gamma = (B \times \gamma_{sub}) / 10$ = 0.2 Kg/cm^2

Bearing capacity factors

ϕ & ϕ'	Nc & Nc'	Nq & Nq'	Nγ & Nγ'		
15	**10.98**	**3.94**	**2.65**		
10	**8.35**	**2.47**	**1.22**		
Sc =	1.3	Sq =	1.2	Sγ =	0.6

$d_c = 1 + 0.2 \times (Df/B) \times \tan(45+\phi/2)$ = 2.955

$d_q = d_\gamma$ = 1.977 $i_c = i_q = i_\gamma$ = 1 w' = 0.5

In case of general shear failure for circular footing

$Qd = CN_cS_cd_ci_c + q(N_q - 1)S_qd_qi_q + 0.5B\gamma N_\gamma S_\gamma d_\gamma i_\gamma W'$

= 4.218 + 10.462 + 0.157

= 14.837 Kg/cm^2

In case of local shear failure for circular footing

$Qd' = (2/3)CN_c'S_cd_ci_c + q(N_q' - 1)S_qd_qi_q + 0.5B\gamma N_\gamma' S_\gamma d_\gamma i_\gamma W'$

= 2.138 + 5.231 + 0.072

= 7.441 Kg/cm^2

Ultimate bearing capacity obtained from interpolation = qd 9.808 Kg/cm^2

Net Safe bearing capacity considering factor of safety of 3.0 = 3.269 Kg/cm^2

=> **NSBC** = **32.693** T/m^2

Safe bearing capacity (**SBC**) = **47.693** T/m^2

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CALCULATION OF SAFE BEARING CAPACITY FROM STRENGTH PARAMETERS AT 17.07m DEPTH OF BH-14, S.P - 01, P.P.T

Cohesion C =		0.45	Kg/cm^2
Angle of shearing resistance ϕ =		6	Degree
ϕ' =		4	Degree
Void ratio	e =	0.656	Medium
Specific Gravity	Gs =	2.73	
Total Submersible density γ_{sub} =		1	g/cc
Depth (Df) from ground level =		17.07	m
Diameter	B =	2	m
Over burden pressure			
q = (Df x γ_{sub}) / 10		1.707	Kg/cm^2
Bγ = (B x γ_{sub}) / 10		0.2	Kg/cm^2

Bearing capacity factors

ϕ & ϕ'	Nc & Nc'	Nq & Nq'	Nγ & Nγ'		
6	**6.862**	**1.75**	**0.604**		
4	**6.22**	**1.456**	**0.36**		
Sc =	1.3	Sq =	1.2	Sγ =	0.6

$d_c = 1 + 0.2 \times (Df/B) \times \tan(45+\phi/2)$ = 2.896

$d_q = d_\gamma$ = 1 $\quad i_c = i_q = i_\gamma$ = 1 $\quad w'$ = 0.5

In case of general shear failure for circular footing

$Q_d = CN_cS_cd_ci_c + q(N_q - 1)S_qd_qi_q + 0.5B\gamma N_\gamma S_\gamma d_\gamma i_\gamma W'$

= 11.625 + 1.536 + 0.018

= 13.179 Kg/cm^2

In case of local shear failure for circular footing

$Q_d' = (2/3)CN_c'S_cd_ci_c + q(N_q' - 1)S_qd_qi_q + 0.5B\gamma N_\gamma' S_\gamma d_\gamma i_\gamma W'$

= 7.025 + 0.934 + 0.011

= 7.970 Kg/cm^2

Ultimate bearing capacity obtained from interpolation = qd 10.418 Kg/cm^2

Net Safe bearing capacity considering factor of safety of 3.0 = 3.473 Kg/cm^2

=> **NSBC** = **34.727** T/m^2

Safe bearing capacity (**SBC**) = **51.797** T/m^2

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CALCULATION OF SAFE BEARING CAPACITY FROM STRENGTH PARAMETERS AT 19.59m DEPTH OF BH-14. S.P - 01, P.P.T

Cohesion C =		0.08	Kg/cm²
Angle of shearing resistance ϕ =		17	Degree
ϕ' =		12	Degree
Void ratio	e =	0.592	Medium
Specific Gravity	Gs =	2.71	
Total Submersible density γ_{sub} =		1	g/cc
Depth (Df) from ground level =		19.59	m
Diameter	B =	2	m
Over burden pressure			
$q = (Df \times \gamma_{sub}) / 10$		1.959	Kg/cm²
$B\gamma = (B \times \gamma_{sub}) / 10$		0.2	Kg/cm²

Bearing capacity factors

ϕ & ϕ'	Nc & Nc'	Nq & Nq'	Nγ & Nγ'		
17	12.52	4.924	3.746		
12	9.402	3.058	1.792		
Sc =	1.3	Sq =	1.2	Sγ =	0.6

$d_c = 1 + 0.2 \times (Df/B) \times \tan(45+\phi/2)$ = 3.647

$d_q = d_\gamma$ = 2.324 $i_c = i_q = i_\gamma$ = 1 w' = 0.5

In case of general shear failure for circular footing

$Qd = CNcScdcic + q(Nq - 1)Sqdqiq + 0.5B\gamma N\gamma S\gamma d\gamma i\gamma W'$

= 4.749 + 21.438 + 0.261

= 26.448 Kg/cm²

In case of local shear failure for circular footing

$Qd' = (2/3)CNc'Scdcic + q(Nq' - 1)Sqdqiq + 0.5B\gamma N\gamma' S\gamma d\gamma i\gamma W'$

= 2.377 + 11.243 + 0.125

= 13.745 Kg/cm²

Ultimate bearing capacity obtained from interpolation = qd 23.78 Kg/cm²

Net Safe bearing capacity considering factor of safety of 3.0 = 7.927 Kg/cm²

=> NSBC = **79.267** T/m²

Safe bearing capacity (**SBC**) = **98.857** T/m²

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Regd. Off.: BRIT MIG PLOT NO-9, AT/PO: BALIA, DIST: BALASORE, ODISHA
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Ph. 91-6782-267769/268154 (O), Fax : (06782) 267769, Mob: 9437067769, 9937067769
email: priena@rediffmail.com, info@beaumondeindia.com, Web Site: www.beaumondeindia.com

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CALCULATION OF SAFE BEARING CAPACITY FROM STRENGTH PARAMETERS AT 24.0m DEPTH OF BH-14, S.P - 01, P.P.T

Cohesion C =		0.15	Kg/cm^2
Angle of shearing resistance ϕ =		13	Degree
ϕ' =		9	Degree
Void ratio	e =	0.632	Medium
Specific Gravity	Gs =	2.66	
Total Submersible density γ_{sub} =		1	g/cc
Depth (Df) from ground level =		24	m
Diameter	B =	2	m
Over burden pressure			
$q = (Df \times \gamma_{sub}) / 10$		2.4	Kg/cm^2
$B\gamma = (B \times \gamma_{sub}) / 10$		0.2	Kg/cm^2

Bearing capacity factors

ϕ & ϕ'	Nc & Nc'	Nq & Nq'	Nγ & Nγ'		
13	**9.928**	**3.352**	**2.078**		
9	**7.978**	**2.29**	**1.066**		
Sc =	1.3	Sq =	1.2	Sγ =	0.6

$d_c = 1 + 0.2 \times (Df/B) \times \tan(45+\phi/2)$ = 4.017

$d_q = d_\gamma$ = 2.509 $i_c = i_q = i_\gamma$ = 1 w' = 0.5

In case of general shear failure for circular footing

$Qd = CN_cS_cd_ci_c + q(N_q - 1)S_qd_qi_q + 0.5B\gamma N_\gamma S_\gamma d_\gamma i_\gamma W'$

= 7.777 + 16.995 + 0.156

= 24.928 Kg/cm^2

In case of local shear failure for circular footing

$Qd' = (2/3)CN_c'S_cd_ci_c + q(N_q' - 1)S_qd_qi_q + 0.5B\gamma N_\gamma' S_\gamma d_\gamma i_\gamma W'$

= 4.166 + 9.321 + 0.08

= 13.567 Kg/cm^2

Ultimate bearing capacity obtained from interpolation = qd 20.27 Kg/cm^2

Net Safe bearing capacity considering factor of safety of 3.0 = 6.757 Kg/cm^2

=> **NSBC** = **67.567** T/m^2

Safe bearing capacity (**SBC**) = **91.567** T/m^2

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CALCULATION OF SAFE BEARING CAPACITY FROM STRENGTH PARAMETERS AT 26.93m DEPTH OF BH-14, S.P - 01, P.P.T

Cohesion C =	0.12	Kg/cm^2	
Angle of shearing resistance ϕ =	14	Degree	
ϕ' =	9	Degree	
Void ratio e =	0.632	Medium	
Specific Gravity Gs =	2.65		
Total Submersible density γ_{sub} =	1	g/cc	
Depth (Df) from ground level =	26.93	m	
Diameter B =	2	m	

Over burden pressure

$q = (Df \times \gamma_{sub}) / 10$ = 2.693 Kg/cm^2

$B\gamma = (B \times \gamma_{sub}) / 10$ = 0.2 Kg/cm^2

Bearing capacity factors

ϕ & ϕ'	Nc & Nc'	Nq & Nq'	Nγ & Nγ'		
14	**10.454**	**3.646**	**2.364**		
9	**7.978**	**2.29**	**1.066**		
Sc =	1.3	Sq =	1.2	Sγ =	0.6

$d_c = 1 + 0.2 \times (Df/B) \times \tan(45+\phi/2)$ = 4.447

$d_q = d_\gamma$ = 2.723 $i_c = i_q = i_\gamma$ = 1 w' = 0.5

In case of general shear failure for circular footing

$Qd = CN_cS_cd_ci_c + q(N_q - 1)S_qd_qi_q + 0.5B\gamma N_\gamma S_\gamma d_\gamma i_\gamma W'$

= 7.252 + 23.284 + 0.193

= 30.729 Kg/cm^2

In case of local shear failure for circular footing

$Qd' = (2/3)CN_c'S_cd_ci_c + q(N_q' - 1)S_qd_qi_q + 0.5B\gamma N_\gamma' S_\gamma d_\gamma i_\gamma W'$

= 3.69 + 11.352 + 0.087

= 15.129 Kg/cm^2

Ultimate bearing capacity obtained from interpolation = qd 24.333 Kg/cm^2

Net Safe bearing capacity considering factor of safety of 3.0 = 8.111 Kg/cm^2

=> **NSBC** = **81.110** T/m^2

Safe bearing capacity (**SBC**) = **108.040** T/m^2

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CALCULATION OF SAFE BEARING CAPACITY FROM STRENGTH PARAMETERS AT 29.8m DEPTH OF BH-14, S.P - 01, P.P.T

Cohesion C =		0.18	Kg/cm^2
Angle of shearing resistance ϕ =		12	Degree
ϕ' =		8	Degree
Void ratio	e =	0.618	Medium
Specific Gravity	Gs =	2.66	
Total Submersible density γ_{sub} =		1	g/cc
Depth (Df) from ground level =		29.8	m
Diameter	B =	2	m

Over burden pressure

$q = (Df \times \gamma_{sub}) / 10$ = 2.98 Kg/cm^2

$B\gamma = (B \times \gamma_{sub}) / 10$ = 0.2 Kg/cm^2

Bearing capacity factors

ϕ & ϕ'	Nc & Nc'	Nq & Nq'	$N\gamma$ & $N\gamma'$		
12	**9.402**	**3.058**	**1.792**		
8	**7.606**	**2.11**	**0.912**		
Sc =	1.3	Sq =	1.2	$S\gamma$ =	0.6

$d_c = 1 + 0.2 \times (Df/B) \times Tan(45+\phi/2)$ = 4.68

$d_q = d_\gamma$ = 2.84 $i_c = i_q = i_\gamma$ = 1 W' = 0.5

In case of general shear failure for circular footing

$Qd = CNcScdcic + q(Nq - 1)Sqdqiq + 0.5B\gamma N\gamma S\gamma d\gamma i\gamma W'$

= 10.296 + 20.901 + 0.153

= 31.350 Kg/cm^2

In case of local shear failure for circular footing

$Qd' = (2/3)CNc'Scdcic + q(Nq' - 1)Sqdqiq + 0.5B\gamma N\gamma' S\gamma d\gamma i\gamma W'$

= 5.553 + 11.273 + 0.078

= 16.904 Kg/cm^2

Ultimate bearing capacity obtained from interpolation = qd 26.438 Kg/cm^2

Net Safe bearing capacity considering factor of safety of 3.0 = 8.813 Kg/cm^2

=> **NSBC** = **88.127** T/m^2

Safe bearing capacity (**SBC**) = **117.927** T/m^2

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SUMMARY OF SAFE BEARING CAPACITY OF SP - 1 , BH - 14

SL.No.	BH-No.	TYPE OF SAMPLE COLLECTED	DEPTH IN (Mtr.)	S.B.C - T/m^2	REMARKS
1	14 (SP - 1)	S.P.T	3.00	14.577	
2		S.P.T	6.00	22.017	
3		S.P.T	9.00	25.380	
4		S.P.T	12.00	32.320	
5		S.P.T	15.00	47.693	
6		S.P.T	17.07	51.797	
7		S.P.T	19.59	98.857	
8		U.D.S	24.00	91.567	
9		S.P.T	26.93	108.040	
10		S.P.T	29.80	117.927	
11		S.P.T	35.45	161.880	

Signature of Lab Tech

Signature of Scientist

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CALCULATION OF SAFE BEARING CAPACITY FROM STRENGTH PARAMETERS AT 35.45m DEPTH OF BH-14, S.P - 01, P.P.T

Cohesion C =		0.11	Kg/cm^2
Angle of shearing resistance ϕ =		14	Degree
ϕ' =		9	Degree
Void ratio	e =	0.614	Medium
Specific Gravity	Gs =	2.67	
Total Submersible density γ_{sub} =		1	g/cc
Depth (Df) from ground level =		35.45	m
Diameter	B =	2	m

Over burden pressure

$q = (Df \times \gamma_{sub}) / 10$ = 3.545 Kg/cm^2

$B\gamma = (B \times \gamma_{sub}) / 10$ = 0.2 Kg/cm^2

Bearing capacity factors

ϕ & ϕ'	Nc & Nc'	Nq & Nq'	Nγ & Nγ'		
14	**10.454**	**3.646**	**2.364**		
9	**7.978**	**2.29**	**1.066**		
Sc =	1.3	Sq =	1.2	Sγ =	0.6

$d_c = 1 + 0.2 \times (Df/B) \times \tan(45+\phi/2)$ = 5.537

$d_q = d_\gamma$ = 3.269 $i_c = i_q = i_\gamma$ = 1 w' = 0.5

In case of general shear failure for circular footing

$Qd = CNcScdcic + q(Nq-1)Sqdqiq + 0.5B\gamma N\gamma S\gamma d\gamma i\gamma W'$

= 8.277 + 36.796 + 0.232

= 45.305 Kg/cm^2

In case of local shear failure for circular footing

$Qd' = (2/3)CNc'Scdcic + q(Nq'-1)Sqdqiq + 0.5B\gamma N\gamma'S\gamma d\gamma i\gamma W'$

= 4.211 + 17.939 + 0.105

= 22.255 Kg/cm^2

Ultimate bearing capacity obtained from interpolation = qd 37.929 Kg/cm^2

Net Safe bearing capacity considering factor of safety of 3.0 = 12.643 Kg/cm^2

=> **NSBC** = **126.43** T/m^2

Safe bearing capacity (**SBC**) = **161.880** T/m^2

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RECOMMENDATION & CONCLUSION

As per field test it is seen that in BH-14 (SP - 1) upto 1.5mtr the Soil strata is inorganic clays of low plasticity with moderate expansiveness, at 1.5mtr to 3.45 mtr. The Soil strata is inorganic clays of high plasticity with highly expansiveness, at 3.45mtr to 16.85 mtr. The Soil strata is clayey sands with low to moderate expansiveness, at 16.85mtr to 19.4 mtr. The Soil strata is inorganic clays of medium plasticity with highly expansiveness, at 19.4mtr to 24.0 mtr. The Soil strata is silty sand with low expansiveness, at 24.0mtr to 27.0 mtr. The Soil strata is clayey sand with low expansiveness, at27.0mtr. to 31.78mtr. the Soil strata is inorganic clays of low plasticity with moderate expansiveness, at 31.78mtr to 35.2 mtr. The Soil strata is clayey sand with low expansiveness, at 35.2mtr to 37.45 mtr. The Soil strata is silty sand with low expansiveness.

CONCLUSION: - The awarded job is carried out with all precautions according to level, client technical specification, work procedures & IS codes fore Grain size analysis, Soil strength parameters (C, Ø), Atterberg limits, Natural moisture content and Specific gravity of the D.S, U.D.S & S.P.T samples. The test result is provided here but the ultimate choice is depends upon the structural designer.

Signature of Lab. Tech

Signature of Scientist

Beau - Monde Associates.

For Beau-Monde Associates

Er.Prabhat Ranjan Jana. EHO

Office: Vidyut Marg, Telanga Sahi, Balasore - 756001, Odisha
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DREDGING CORPORATION OF INDIA LIMITED
HEAD OFFICE: VISAKHAPATNAM

DCI/OPS/PDP/SUB-CONT/2019 Date: 20-12-2019

TENDER

FOR

CHARTERING OF CUTTER SUCTION DREDGER ON CU.M BASIS AND DISPOSAL THROUGH SHORE AND FLOATING PIPELINE AT NORTHERN SEA SHORE AT A DISTANCE OF 1.5 KM FOR CARRYING OUT DREDGING AT NORTH BOT COMPLEX (NDC) AT PARADIP PORT.

TENDER ISSUED TO:

M/s.
……

……

……

……

HOD (OPS)
DREDGING CORPORATION OF INDIA LTD.,
VISAKHAPATNAM

CONTRACTOR

DREDGING CORPORATION OF INDIA LIMITED
(A GOVERNMENT OF INDIA UNDERTAKING)
"DREDGE HOUSE", PORT AREA
VISAKHAPATNAM

DCI/OPS/PDP/SUB-CONT /2019 Date: 20-12-2019

"TENDER

FOR

CHARTERING OF CUTTER SUCTION DREDGER ON CU.M BASIS AND DISPOSAL THROUGH SHORE AND FLOATING PIPELINE AT NORTHERN SEA SHORE AT A DISTANCE OF 1.5 KM FOR CARRYING OUT DREDGING AT NORTH BOT COMPLEX (NDC) AT PARADIP PORT.

DUE DATES:

1.	Issue of Tenders	:	20-12--2020 to 10-01-2020 up to 1730 Hrs.
2.	Date of Pre-Bid meeting	:	27-12-2019 at 1100 Hrs at DCIL, HO
3.	Last date of receipt of Tenders	:	13-01-2020 up to 1500 Hrs.
4.	Opening of Techno commercial Bids (Cover -A)	:	13-01-2020 at 1530 Hrs at DCIL, HO.

HOD (Ops)
Dredging Corporation of India Ltd.,
Dredge House, Port Area
VISAKHAPATNAM- 530 001
ANDHRA PRADESH (INDIA)
Telephone No.0891-2871344
E-mail IDs:hodops@dcil.co.in, svprasad@dcil.co.in ,suryakant@dcil.co.in,
blmurthy@dcil.co.in,

INDEX TO SECTIONS

SECTION - I

INVITATION FOR BIDS

(IFB)

DCI/OPS/PDP/SUB -CONT /2019 Date: 20-12-2019

SECTION-I

INVITATION FOR BIDS (IFB)

(NOTICE INVITING TENDER)

Sealed Tenders are invited in two covers system (i.e.) Cover-A "Techno-Commercial Bid" and Cover-B "Price Bid" by DREDGING CORPORATION OF INDIA LIMITED, VISAKHAPATNAM from experienced contractors for the work of "CHARTERING OF CUTTER SUCTION DREDGER ON CU.M BASIS AND DISPOSAL THROUGH SHORE AND FLOATING PIPELINE AT NORTHERN SEA SHORE AT A DISTANCE OF 1.5 KM FOR CARRYING OUT DREDGING AT NORTH BOT COMPLEX (NDC) AT PARADIP PORT."

.

1.	Name of Work	:	CHARTERING OF CUTTER SUCTION DREDGER ON CU.M BASIS AND DISPOSAL THROUGH SHORE AND FLOATING PIPELINE AT NORTHERN SEA SHORE AT A DISTANCE OF 1.5 KM FOR CARRYING OUT DREDGING AT NORTH BOT COMPLEX (NDC) AT PARADIP PORT.
2.	Estimated Cost		Rs.36.00 Crores (Excl.GST).
3.	Period of Contract	:	Four months exclusive of mobilization period.
4	Mobilization Period		15 days from the date of work order.
5.	Earnest Money Deposit	:	Rs.18,00,000/-. The EMD shall pay through E-payment/ Bank Guarantee. Bank details as follows: Bank Name : Syndicate Bank DCI Current account No. 35833070000014 Branch Name: DCILTD PORT AREA BRANCH, Visakhapatnam – 530 001. IFSC/ RTGS No. SYNB0003583 Swift Code No. SYNBINBB032. (e- receipt to be enclosed)

6.	Date of down load of Tender document from DCI website	:	From 20-12-2020 to 10-01-2020 upto 1730 Hrs.
8	Date of Pre bid	:	27-12-2020 at 1100 hrs at Head Office
7.	Last date of receipt of Tenders	:	13-01-2020 upto 1500 Hrs in the Office of Head of the Department (OPS), Operations Department, DCIL, Dredge House, Port Area, Visakhapatnam-530 001.
8.	Opening of Techno-Commercial Bids	:	13-01-2020 at 1530 Hrs in the Office of HOD (OPS), Operations Department, DCIL, Dredge House, Port Area, Visakhapatnam- 530 001
9.	Cost of Tender Documents	:	Rs.5,900/- including GST (Non-refundable) in the form of e- challan (copy to be enclosed in technical Bid/cover)

Pre-Qualification Criteria:

Experience of having successfully completed similar works of carrying out maintenance dredging /capital dredging by deploying TSHDs/CSDs.

1. During the last seven years, ending last day of month previous to the one in which tenders are invited should be any of the following:

    a. Three similar completed works each costing not less than the amount of Rs. 14.40 Crores, exclusive of GST.

    OR

    b. Two similar completed works each costing not less than the amount of Rs. 18.00 Crores, exclusive of GST.

    OR

    c. One similar completed work costing not less than the amount of Rs. 28.80.00 Crores, exclusive of GST.

2. Average annual financial turn over during the last 3 years ending 31st March 2019 should be at least Rs. 10.80 Crores, exclusive of GST.

Interested eligible Tenderers may obtain the Tender documents from the websites: www.dredge-india.com, http://eprocure.gov.in

Alternatively, tenderers may contact at the following address for clarifications regarding sale of Tender documents, submission, receipt of tender etc:

Head of Department (OPS)
Dredging Corporation of India Ltd.,
Dredge House, Port Area,
Visakhapatnam – 530 001
Andhra Pradesh (India)
Telephone No.0891-2871344
E-mail IDs:hodops@dcil.co.in, svprasad@dcil.co.in ,suryakant@dcil.co.in,
blmurthy@dcil.co.in,

The detailed NIT and complete Tender Document is hosted on websites www.dredge-india.com, and http://eprocure.gov.in. Interested parties may visit the same. The blank proposal document can also be down loaded from our Website. In such a case, the party is required to submit the tender along with the cost of tender document in the form e- challan (copy to be enclosed in technical Bid/cover). The downloaded document is required to be registered by forwarding a request letter to DCI Ltd., indicating their expression of interest of participation in bidding, credentials of experience, PAN Number if allotted and enclosing cost of tender document as said above, so as to reach DCI Ltd., before the closing date as afore said, through an authorized person / agent / or by Registered Post / Speed Post / Courier. The downloading of document shall be carried out strictly as per the provision provided on the website. No editing, addition, deletion of matter shall be permitted. If such action is observed at any stage, such proposals are liable for outright rejection.

Dredging Corporation of India Ltd. reserves the right to:

1. Accept or reject any or all Tenders without assigning any reason whatsoever.
2. Cancel the tender enquiry at any stage without assigning any reason.
3. Accept the tender in whole or part.
4. Reject the tender received with counter conditions.

HEAD OF THE DEPARTMENT (OPS)

SECTION - II

INSTRUCTIONS TO BIDDERS

(ITB)

SECTION II

INSTRUCTIONS TO BIDDERS

TABLE OF CLAUSES

SECTION - II

INSTRUCTIONS TO BIDDERS

(ITB)

A. Introduction

1. Eligible Bidders

1.1 This Invitation for Bids is open to Dredging Contractors who satisfy the conditions stipulated in the bid document.

1.2 Bidders should not be associated, or have been associated in the past, directly or indirectly, with a firm or any of its affiliates which have been engaged by the Dredging Corporation of India Limited (DCI) to provide consulting services for the preparation of the design, specifications, and other documents to be used for the procurement of the services under this Invitation for Bids.

1.3 Government-owned enterprises in India may participate only if they are legally and financially autonomous, if they operate under commercial law, and if they are not a dependent agency of DCIL.

1.4 Bidders shall not be under a declaration of ineligibility for corrupt and fraudulent practices issued by DCI or any other Government agencies / DCI's Clients in accordance with ITB Clause 31.1.

2. Cost of Bidding

2.1 The Bidder shall bear all costs associated with the preparation and submission of its bid, and DCIL will in no way be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

B. **Bidding Documents**

3. Content of Bidding Documents

3.1 The services required, bidding procedures and contract terms are prescribed in the Bidding Documents. In addition to the Invitation for Bids (IFB), the Bidding Documents include:

a) Instructions to Bidders (ITB)
b) General Conditions of Contract (GCC)
c) Special Conditions of Contract (SCC)
d) Technical Specifications
e) Sample Forms containing the following:
   - Bid Form

- Price Schedules
- Proforma For Bank Guarantee for Earnest Money Deposit
- Agreement Form
- Performance Security Form
- Qualification Requirements

3.2 The Bidder is expected to examine all instructions, forms, terms and specifications in the Bidding Documents. Failure to furnish all information required by the Bidding Documents or submission of a bid not substantially responsive to the Bidding Documents in every respect will be at the Bidder's risk and may result in the rejection of its bid.

4. Clarification of Bidding Documents

4.1 Pre-bid meeting will be held on 27-12-2019 at 1100 Hrs at DCIL, HO. Prospective bidders are requested to forward their queries by e-mail on or before 26-12-2019. Bidders who wish to attend for the pre-bid meeting has to intimate the same in advance by e-mail along with their details and ID proof to obtain necessary permissions etc.

The clarifications requested by the bidders will be suitably hosted in DCI website one week before last date of submission. No press notification for any amendment will be issued. However, prospective bidders have to visit the websites www.dredge-india.com, http://eprocure.gov.in two days before the date of submission for any corrigendum/ addendum.

5. Amendment of Bidding Documents

5.1 At any time prior to the deadline for submission of bids, DCIL may, for any reason, whether on its own initiative or in response to a clarification requested by prospective bidder, modify the Bidding Documents by amendment.

5.2 The amendment will be placed on websites only. Respective bidders are requested to see the website accordingly.

5.3 In order to afford prospective Bidders reasonable time in which to take the amendment into account in preparing their bids, DCIL may, at its discretion, extend the deadline for the submission of bids.

C. Preparation of Bids

6. Language of Bid

6.1 The bid prepared by the Bidder, as well as all correspondence and documents relating to the bid exchanged by the Bidder and DCIL shall be in English only.

7. **Documents Comprising the Bid**

7.1 The Bids shall be in Two Cover System consisting of

- **Techno Commercial Bid (Cover -A); and**
- **Price Bid (Cover- B)**

7.2 The "Techno Commercial Bid" (Cover A) prepared by the Bidder shall comprise the following components:

7.2.1 A Bid Form except the Price Schedule completed in accordance with ITB Clause 8

7.2.2 A list of works tendered for and in hand/being executed as on the date of submission of tender.

7.2.3 A detailed list of vessels / equipment available with the tenderer and which is proposed for deployment for the work under consideration including their specification.

7.2.4 Documentary evidence established in accordance with ITB Clause 11 that the Bidder is eligible to bid and is qualified to perform the contract if its bid is accepted including audited balance sheet for the last three years ending 31st March 2019.

7.2.5 The dredging work assigned to the bidder has to be tentatively started by last week of Jan'20. Dredging period of 4 months shall be given to complete the work. Contractor has to submit detail methodology of completing the work in above period of 4 months with bar chart along with tender submission.

7.2.6 Earnest money deposit in the form of e- challan (e- receipt to be enclosed) / Bank Guarantee furnished in accordance with ITB Clause 12.

7.2.7 PAN Number issued by Income Tax Authorities.

7.2.8 GST Registration Number.

7.2.9 Registration with Provident Fund Authorities.

7.2.10 Power of Attorney on stamp paper, in favour of the person authorized to sign the tender document.

7.2.11 Copies of original document defining the constitution or legal status, place of registration and principal place of business of the company or partnership**.**

7.2.12 Information regarding any current litigation in which the tenderer is involved.

7.2.13 Copies of original certificates of registration etc., CSD/ crafts proposed to be offered to DCI Ltd., including copy of the existing insurance policy covering Third Party if any.

7.2.14 Copy of clear title of the ownership of the Cutter suction dredger and crafts proposed for deployment. If the tenderer is not the owner of the CSD/ crafts, necessary documents in support of the authorisation or lease granted by the owner of the CSD/ crafts to the tenderer to offer and operate the CSD/ crafts by the tenderer. This authorisation or lease shall be executed on a stamp paper/letter duly notarized.

7.2.15 The tenderer will have to give a certificate that he is not related to any officer of DCI or any officer of the rank of Asst. Secretary or above in the Ministry of Shipping, Government of India. The Contractor should give a declaration along with his tender about the names of the relatives, who are employed in the Dredging Corporation of India Ltd. **(Annexure-I)**

7.2.16 The Tenderer shall give an undertaking that they have not made any payment or illegal gratification to any person/ authority connected with the bid process so as to influence the bid process and have not committed any offence under the PC Act in connection with the bid. **(Annexure-II)**

7.2.17 The Tenderer shall disclose any payments made or proposed to be made to any intermediaries (agents etc.) in connection with the bid (**Annexure-II)**.

7.2.18 The Tenderer shall disclose any information regarding any current litigation in which the tenderer is involved (**Annexure-III)**.

7.2.19 Vender Registration form (**Annexure –IV)**

7.2.20 Downloaded / Purchased Tender Document duly signed on all the pages by tenderer.

DCI reserves its right to inspect CSDs/ crafts proposed for deployment and seek any other details / documents to ascertain the competence of the tenderer. Suitability of the CSD/ crafts as per tender conditions will be decided by Committee appointed to inspect CSD/ crafts. As per Committee report, if CSD/ crafts is not meeting the desired requirement for the intended work as per tender conditions, then the tender will be technically disqualified and offer of the Bidder will be rejected.

8. **Bid Form**

8.1 The Bidder shall complete the Bid Form except the Price Schedule furnished in the Bidding Document along with the enclosures specified in Clause 7.2 of ITB and enclose the same in the cover containing the “Techno-Commercial Bid” - (Cover A) and properly sealed.

9. Bid Prices

9.1 The Bidder shall indicate in the Price Schedule the unit prices (where applicable) and total bid price of the services it proposes to provide under the contract and include it in the cover containing the "Price Bid" - (Cover B) and properly sealed.

9.2 The bidder shall quote his prices only in Price Schedule furnished in the bidding document and enclose it in the Price Bid. The bidder should not indicate the prices anywhere directly or indirectly in the "Techno Commercial Bid". Any such offer or indication shall disqualify the bidder. Similarly, the Price Bid should not contain any conditions. Conditional tenders are liable for summary rejections.

10. **Bid Currencies**

10.1 Prices shall be quoted in Indian Rupees only.

11. Documents Establishing Bidder's Eligibility and Qualifications

11.1 Pursuant to ITB Clause 7, the Bidder shall furnish, as part of its bid, documents establishing the Bidder's eligibility to bid and its qualifications to perform the contract if its bid is accepted.

11.2 The documentary evidence of the Bidder's qualifications to perform the contract if its bid is accepted shall establish to DCIL's satisfaction that the Bidder has the financial & technical, capability and competency necessary to perform the contract as per Qualification Requirements Form No.6 in Section VI;

11.3 The bidder should furnish the details of the Cutter suction CSD and other connected crafts / allied equipment proposed for hiring in Form No.7 of Section VI of Sample Forms.

12. Earnest Money Deposit (EMD)

12.1 Pursuant to ITB Clause 7, the Bidder shall furnish, the Earnest Money Deposit by the way of e-challan for an amount of **Rs.18,00,000**/- submitted to the bank as detailed from any Scheduled or Nationalized Indian Bank or unconditional, irrevocable Bank Guarantee drawn from any Scheduled or Nationalised Indian Bank as per enclosed sample. The same should be attached with the tender and placed in "Cover-A". The Earnest Money Deposit shall not carry any interest.

12.2 The Earnest money is required to protect DCIL against the risk of Bidder's conduct, which would warrant the earnest money forfeiture, pursuant to ITB Clause 12.6.

12.3 The earnest money deposit submitted by e-payment or a bank guarantee issued shall be valid for thirty (30) days beyond the validity of the bid.

12.4 Any bid not secured in accordance with ITB Clauses 12.1 and 12.3 will be rejected by DCIL as non-responsive, pursuant to ITB Clause 21.

12.5 Unsuccessful bidders' earnest money deposit will be discharged or returned as promptly as possible, but not later than thirty (30) days after the expiration of the period of bid validity prescribed by DCIL pursuant to ITB Clause 13 without interest.

12.6 The earnest money deposit may be forfeited:

(a) If a Bidder:

(i) withdraws its bid during the period of bid validity specified by the Bidder on the Bid Form, or

(ii) does not accept the correction of errors pursuant to ITB Clause 21.2; or

(b) in the case of a successful Bidder, if the Bidder fails:

(i) to sign the contract in accordance with ITB Clause 29; or

(ii) to furnish performance security in accordance with ITB Clause 30.

13. **Period of Validity of Bids**

13.1 The Tenderer should keep open the validity of the Bid for 6**0 days** from the date fixed for its opening or from the date of its opening whichever is later. It is also obligatory for the Tenderer to keep the validity open for another 30 days in case a request in writing or by e-mail/ Fax by DCI is made before the expiry of the initial validity period of 60 days stated above. The date of receipt of the request from DCI should be acknowledged. Should any Tenderer withdraw his tender before validity period, EMD submitted by the Tenderer shall be forfeited automatically without prejudice to the other rights of DCI.

13.2 In case DCI asks for extension in validity of bid, the earnest money deposit provided under ITB Clause 12 shall also be suitably extended.

14. **Format and Signing of Bid**

14.1 Special care shall be taken to write the rates in figures as well as in words in the price schedule such a way that no interpolation is possible. In case of figures words "Rupees" should be written before and words, "Paise" after decimal figures.

14.2 Any interlineations, erasures, or overwriting shall be valid only if they are initialed by the person or persons signing the bid.

D. Submission of Bids

15. **Sealing and Marking of Bids**

15.1 The Techno- Commercial Bid along with all enclosures to be put in a sealed cover super scribed with the words - Cover-A “Techno-Commercial Bid” for the work “ Chartering of Cutter suction dredger on Cu. M basis and disposal through shore and floating pipeline at Northern sea shore at a distance of 1.5 Km(Approx) for carrying out dredging at North BOT complex (NDC) at Paradip Port.” to be submitted on or before 1500 Hrs on 13-01-2020.

15.2 The Price Bid containing only tendered amount is required to be put in another sealed cover super scribed with the words – Cover-B “Price Bid” for the work “Chartering of Cutter suction dredger on Cu. M basis and disposal through shore and floating pipeline at Northern sea shore at a distance of 1.5 Km (Approx) for carrying out dredging at North BOT complex (NDC) at Paradip Port.” to be submitted on or before 1500 Hrs on 13-01-2020.

15.3 Tenderer should ensure that his tendered amount as per Cover-B is not mentioned in any other document directly or indirectly. The duly sealed covers A & B are to be put in a separate main sealed cover super scribed with the words for the work “Chartering of Cutter suction CSD on Cu. M basis and disposal through pipeline at Northern sea shore at a distance of 1.5 Km (Approx) for carrying out dredging at North BOT complex (NDC) at Paradip Port.” to be submitted on or before 1500 Hrs on 13-01-2020.” to be submitted to the HOD (OPS), Operations Department, 4th Floor, Dredging Corporation of India Limited, ‘Dredge House’, Port Area, Visakhapatnam-530 001 on or before stipulated due date & time for submission of tender.

15.4 If the outer cover is not sealed and marked as required by ITB Clause 15.3, DCIL will assume no responsibility for the bid’s misplacement or premature opening.

16. **Deadline for Submission of Bids**

16.1 Bids must be received by DCIL at the address specified under Invitation of Bids (ITB) no later than the time and date specified therein. In the event of specified date for the submission of bids, being declared a holiday for DCIL, the bids will be received up to the appointed time on the next working day.

16.2 DCIL may, at its discretion, extend this deadline for the submission of bids by amending the bidding documents in accordance with ITB Clause 5, in which case

all rights and obligations of DCIL and bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

17. **Late Bids:**

17.1 Any bid received by DCIL after the deadline for submission of bids prescribed by DCIL pursuant to ITB Clause 16 due to reason as mentioned in 16.1 will be rejected and returned unopened to the Bidder.

18. Modification of Bids

18.1 The Bidder cannot modify or withdraw its bid after the bid's submission.

E. Opening and Evaluation of Bids

19. **Opening of Bids by DCI**

19.1 DCIL will open all the outer covers containing both sealed Covers "A" and "B" of the bids and the Cover "A" Techno-Commercial Bids only in the presence of bidders' representatives who wish to attend, at the time, on the date, and at the place specified in the Invitation for Bids. The bidders' representatives who are present shall sign on a Tender opening register, evidencing their attendance.

19.2 All the Covers "B" containing the Price Bids will be placed in a separate Cover and sealed and kept under safe custody.

19.3 The bidders' names, bid modifications or withdrawals and the presence or absence of requisite earnest money deposit and such other details as DCIL, at its discretion, may consider appropriate, will be announced at the opening of the "Techno-Commercial Bid". No bid shall be rejected at bid opening, except for late bids, which shall be returned unopened to the Bidder pursuant to ITB Clause 17.

20. Clarification of Bids

20.1 During technical evaluation of the bids, DCIL may, at its discretion, ask the Bidder for a clarification of its bid. The request for clarification and the response shall be in writing, and no change in the prices or substance of the bid shall be sought, offered, or permitted.

21. Preliminary Examination

21.1 DCIL will examine the Techno-Commercial Bids to determine whether they are complete, whether required earnest money deposit have been furnished, whether the documents have been properly signed, and whether the bids are generally in order, in line with the pre-qualification criteria given in NIT.

21.2 DCIL may waive any minor informality, non-conformity, or irregularity in a bid which does not constitute a material deviation, provided such waiver does not prejudice or affect the relative ranking of any Bidder.

21.3 Prior to the detailed evaluation, pursuant to ITB Clause 22, DCIL will determine the substantial responsiveness of each bid to the bidding documents. For purposes of these Clauses, a substantially responsive bid is one, which conforms to all the terms and conditions of the bidding documents without material deviations. Deviations from, or objections or reservations to critical provisions, such as those concerning Earnest Money Deposit (ITB Clause 12), Applicable Law (GCC Clause 23), and Taxes and Duties (GCC Clause 25), Performance Security (GCC Clause 5), and Force Majeure (GCC Clause 17) will be deemed to be a material deviation. DCIL's determination of a bid's responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence and shall be final and binding on the Bidder.

21.4 If a bid is not substantially responsive, it will be rejected by DCIL and may not subsequently be made responsive by the Bidder by correction of the nonconformity.

22. Evaluation and Comparison of Bids

22.1 The "Cover-B" containing the Price Bids will be opened of only those tenderers who have been qualified in the Techno-Commercial Bid at a later date. The date and time of opening of "Cover B" - Price Bid shall be notified to all the technically qualified bidders and will be opened in the presence of such authorized persons or representatives who wish to be present.

22.2 Arithmetical errors will be rectified on the following basis:

If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail, and the total price shall be corrected. If there is a discrepancy between words and figures, the amount in words will prevail. If the .Contractor does not accept the correction of the errors, its bid will be rejected, and its bid security may be forfeited.

22.3 The CSD/crafts proposed for deployment shall have the following amenities / arrangements / provisions to utilize at Paradip Port as specified in the scope of work.

22.3.1 Adequate radio / VHF communication, all statutory requirements such as Life saving Appliances, Fire Fighting Appliances etc. as per relevant rules.

22.4 Bill of quantities shall be inclusive of all expenditure viz man power , material, Port dues, berth hire charges, anchorage etc, plying permissions, mobilizing & demobilizing of Cutter suction dredger /crafts, Idle time charges,, fuel including Lube oils and all consumable items for the CSD.

23. Contacting the Dredging Corporation of India Ltd. (DCI)

23.1 From the time of Bid opening to the time of Contract award, if any Bidder wishes to contact DCI on any matter related to the Bid, it should do so in writing.

23.2 Any effort by a Bidder to influence DCIL in its decisions on bid evaluation, bid comparison, or contract award may result in the rejection of the Bidder's bid.

F. Award of Contract

24. Post –qualification

24.1 In the absence of pre-qualification, DCIL will determine to its satisfaction whether the Bidder is qualified to perform the contract satisfactorily, in accordance with the criteria listed in the Bidding Document from the evaluation of the Techno-Commercial Bid.

24.2 The determination will take into account the Bidder's financial and technical capabilities. It will be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, as well as such other information as DCIL deems necessary and appropriate.

25. Award Criteria

Subject to ITB Clause 28, DCIL will award the contract to the successful Bidder whose bid has been determined to be the lowest evaluated bid. However, DCI reserves the right to accept or reject any bid as specified in Clause 27 of ITB.

26 Right to Vary Period of Contract at Time of Award:

Contract period is for **Four months.** Rates quoted should be valid and operative for the extendable period, in case of excess in quantity for which contract is extended as per requirement. DCI may by written notice intimate the Contractor to extend the contract further depending on requirement. For all extensions given by DCI, Contractor has to execute the work as per rates quoted in Schedule of Rates / Negotiated Rates and as per Contract Conditions laid in

Tender Document. DCI reserves right regarding giving extension / curtailment, deciding period of extension / curtailment.

In case of curtailment of the contract period at any stage, the tenderer shall be informed of the same in advance by serving One week notice. In this case the tenderer shall not have any additional claim whatsoever. During the contract period and extended period, Contract shall be terminated by giving 7 days notice by the Project Office, Paradip if the services of the tenderer are found to be inadequate or unsatisfactory or in violation of the terms/ conditions of the contract, without prejudice to its rights and remedies.

The quoted/ negotiated rates should be valid and operative during entire contract period inclusive of extension if any.

Contractor has to execute the work within 4 months with±20% BOQ quantity. If the quantity is more than +20%, extension of time period will be granted proportionately.

27. **Right to Accept Any Bid and to Reject Any or All Bids**

27.1 DCIL reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to award of Contract, without assigning any reason thereby incurring any liability to the affected Bidder or Bidders.

28. **Notification of Award**

28.1 Prior to the expiration of the period of bid validity, DCI will notify the successful Bidder in writing by registered letter or fax/ e-mail, to be confirmed in writing by registered letter, that its bid has been accepted.

28.2 The notification of award will constitute the formation of the Contract.

29. **Signing of Contract**

29.1 At the same time as DCIL notifies the successful Bidder that its bid has been accepted, Bidder has to execute Contract Agreement with DCI at his cost.

30. **Performance Security**

30.1 Within Ten (10) days of the receipt of notification of award from the DCI, the successful Bidder shall furnish the performance security in accordance with the Conditions of Contract, in the Performance Security Form provided in the Bidding Documents. Failure of the successful Bidder to comply with the requirement of

ITB Clause 29 or ITB Clause 30 shall constitute sufficient ground for the annulment of the award of contract and forfeiture of the bid security / EMD.

31. **Corrupt or Fraudulent Practices**

DCIL requires that the Bidders / Contractors / Contractors observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, DCIL:

31.1.1 defines, for the purposes of this provision, the terms set forth below as follows:

31.1.1.1 "corrupt practice" means the offering, giving, receiving or soliciting of any thing of value to influence the action of a public official in the procurement process or in contract execution; and

31.1.1.2 "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the DCI, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the DCI of the benefits of free and open competition;

31.1.1.3 will reject a proposal for award if it determines that the Bidder has recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;

31.1.1.4 will declare a firm or company ineligible, either indefinitely or for a stated period of time, to be awarded a contract by DCI if it at any time determines that the firm or company has engaged in corrupt or fraudulent practices in competing for, or in executing, a contract with DCI.

31.2 Furthermore, Bidders shall be aware of the provision stated in Clause 21.1 of the General Conditions of Contract.

32. General:

32.1 Bid Documents are not transferable.

32.2 Where the Bidder fails to enter a price or a rate in any, or part of the bills, then for the item or items for which no price or rate has been entered, the cost shall be deemed to be fully covered by the prices or rates entered into the other items in the Price Schedule.

32.3 The bidder shall produce documentary evidence for the technical data included in the tender, as far as possible.

32.4 All Signatures in the Document shall be dated.

32.5 All Tender Documents shall be treated as private and confidential and must be returned to DCI, without defacing or altering.

32.6 Canvassing in connection with this tender is strictly prohibited and the tenders submitted by the bidders who resort to canvassing will be liable for rejection.

32.7 All correspondences must be made to DCIL, Head Office, Visakhapatnam till placing of work order and to DCIL, Project office, Paradip thereafter.

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SECTION - III

GENERAL CONDITIONS OF CONTRACT

(GCC)

SECTION - III

GENERAL CONDITIONS OF CONTRACT

(GCC)

TABLE OF CLAUSES

SECTION - III

GENERAL CONDITIONS OF CONTRACT

(GCC)

1. **Definitions**

1.1. In this Contract, the following terms shall be interpreted as indicated:

1.1.1. "Corporation" means the Dredging Corporation of India Limited (DCI).

1.1.2. "MD" means the Managing Director of DCI.

1.1.3. "The Contract" means the agreement entered into between DCIL and the Contractor, as recorded in the Contract Form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.

1.1.4. "The Contract Price" means the price payable to the Contractor under the Contract for the full and proper performance of its contractual obligations.

1.1.5. "The Contractor" means the individual or firm or company supplying the Services under this Contract and named in SCC.

1.1.6. "The Services" means all of the services, which the Contractor is required to supply to DCIL under the Contract.

1.1.7. "Work" means the Work to be executed in accordance with the Contract and includes authorized "Extra Works" and "Excess Works" and "Temporary Works".

1.1.8. "Specifications" means the relevant and appropriate Bureau of Indian Standard's Specifications (latest revisions) for materials and workmanship unless stated otherwise in the Tender.

1.1.9. "Engineer" means DCIL's official who has invited the tender on its behalf and includes or other official as may be appointed from time to time by the employer, with written notification to the Contractor, to act as Engineer for the purpose of the Contract, in place of the "Engineer" so designated.

1.1.10. "Engineer's Representative" means any subordinate Engineer or Assistant to the Engineer or any other official appointed from time to time by the Engineer to perform the duties of the Engineer.

1.1.11. "Contractor" means the person or persons, firm or company who's tender / offer has been accepted by DCIL and includes the Contractor's Representatives, heirs, successors and assigns, if any permitted by DCIL.

1.1.12. "Excepted Risks" are riot in so for as it is uninsurable, war, invasion, act of foreign enemies, hostilities (whether war be declared or not) Civil War, rebellion,

revolution, insurrection or military or usurped power or use or occupation by DCIL of any portion of the works in respect of which a certificate of completion has been issued (all of which are herein collectively referred to as the excepted risks).

1.1.13. "GCC" means the General Conditions of Contract contained in this section.

1.1.14. "SCC" means the Special Conditions of Contract.

1.1.15. "Day" means calendar day.

1.1.16. "Month" means the English calendar month.

1.1.17. "Singular / Plural" Word importing the singular only, also includes the plural and vice-verse where the context so requires.

1.1.18. "The heading / Marginal Notes" in these General Conditions of Contract shall not be deemed to be part thereof or be taken into consideration in the interpretation or construction thereof or of the contract.

2. Application

These General Conditions shall apply to the extent that they are not superseded by provisions in this and other parts of the Contract.

3. Standards

The services provided under this contract shall conform to the Standards mentioned in "Technical Specifications".

4. The Contract & General Obligations of Contractor:

4.1 Applicability of Laws on the Contract:

The contract shall be governed by all relevant Indian Acts as applicable only within the jurisdiction of the High Court at Andhra Pradesh, India, including the following Acts.

4.1.1 The Indian Contract Act, 1872

4.1.2 The Major Port Trust Act, 1963

4.1.3 The Workmen's Compensation Act, 1923

4.1.4 The Minimum Wages Act, 1948

4.1.5 The Contract Labour (Regulation & Abolition) Act, 1970.

4.1.6 The Dock Workers' Act, 1948

4.1.7 The Indian Arbitration and Conciliation Act (1996)

4.2 **Contractor to Execute Contract Agreement:**

After receipt of work order and within 10 days, the Contractor shall, at his own expense, enter into and execute a Contract Agreement to be prepared by him in the form annexed hereto. Until such Contract Agreement is executed, the other

documents referred to in the definition of the term “Contract” here in before, shall collectively be the Contract.

4.3 **Interpretation of Contract Document – Engineers’ Power**

Several documents forming the contract are to be taken as mutually explanatory of one another. Should there be any discrepancy, the Engineer shall have the power to correct the same and his decision shall be final and binding on the parties to the Contract.

4.4 **Contractor Cannot Sub-let the Work**

The Contractor shall not directly or indirectly transfer, assign or sublet the Contract or any part thereof without the written permission of the Engineer. Even if such permission be granted, the Contractor shall remain responsible (a) for the acts, defaults and neglect of any sub-contractor, his agents, servants, or workmen as fully as if these were the acts, defaults or neglects of the Contractor himself or his agents, servants or workmen, and (b) for his full and entire responsibility of the contract and for active superintendence of the works by him despite being sublet, provided always that the provision of labourers on a “Piece rate” basis shall not be deemed to be subletting under this clause.

4.5 **Contractors’ Price is Inclusive of All Costs.**

Unless otherwise specified, the Contractor shall be deemed to have included in his Tender / Offer all his cost of man power, fuel and lubes, spares, watch-keeping, running expenses of the Cutter suction dredger /crafts, pipeline, wages of crew, port dues, wharfage / jetty charges, pilotage charges, contractor’s office/ accommodation , payment of fees, duties and taxes excluding GST.

4.6 Contractor is Responsible for safety of the Cutter suction dredger/crafts including men and material:

The Contractor shall be solely responsible for all adequacy, stability and safety of all site operations, even if any prior approval thereto has been taken from the Engineer or his Representative.

4.7 **Contractor to Supervise the Works**

Necessary and adequate supervision shall be provided by the contractor during execution of contract. The contractor or his competent and authorized agent or representative shall constantly be at site and instructions given to him by the

Engineer or his Representative in writing shall be binding upon the Contractor subject to limitation specified in the Contract. The Contractor shall inform the engineer or his Representative in writing about such representative / agent of him at site.

4.8 Contractor is Responsible for all Damages to Other Structures/ Persons, Caused by him in Executing the Work

The Contractor shall at his own cost protect, support and take all precautions in regard to the personnel or structure or services or properties belonging to DCIL or not, which may be interfered with or affected or disturbed or endangered and shall indemnity and keep indemnified DCIL against claim for injury, loss or damage caused by the Contractor in connection with the execution of the work to the aforesaid properties, structures and services and / or to any person including the Contractor's workmen. Cost of insurance Cover, if any, taken by the Contractor shall not be reimbursed by DCIL, unless otherwise stipulated in the Contract. Contractor is deemed to indemnify PPT and DCI for any of damage to third party on account of his operations in PPT waters.

The contractor shall at his own protect and take all precautions in regard to the personnel or structure or services or properties belonging to the PPT/DCI shall indemnify and keep indemnified the PPT/DCI against claim for injury, loss or damage caused by the Contractor in connection with the execution of the work to the aforesaid properties, structures and services and/or to any person including the Contactor's workmen. Cost of insurance cover, if any in Paradip port waters.

4.9 **Fossils, Treasures troves etc are DCI's property**

The contractor shall immediately inform the Engineer's representative if any fossil, coins, articles of value or antiquity and structures and other remains or things of geological or archeological importance be discovered at site which shall remain the property of DCIL and protect them from being damaged by his workmen and arrange for disposal of them at DCIL's expense as per the instruction of the Engineers representative.

5. **Contractor to Indemnify DCIL/ PPT against all Claims for Loss**, **Damages etc.**

5.1 The Contractor shall be deemed to have indemnified DCIL against all claims, demands, actions and proceedings and all costs arising there from on account of:

5.2 Payment of all royalties, rent, toll charges, local taxes, other payments or compensation, if any, for getting all materials and equipment required for the work.

5.2.1 Un-authorized obstruction or nuisance caused by the Contractor in respect of Public or Private road, railway tracks, footpaths, crane tracks, waterways, quays and other properties belonging to DCIL or any other person.

5.2.2 Damage / injury caused to waterway and bridge on account of the movement of Contractor's plants and materials in connection with the work.

5.2.3 The Contractor should make his own arrangements at his cost for a suitable berth during non-working time, repair and maintenance, breakdown and any other purpose etc. when CSD/crafts are not being engaged by DCI.

5.2.4 The CSD/crafts should be adequately lit as per port rules / Concern Authority norms and regulations and should have adequate lighting arrangements during operation.

5.2.5 The Contractor has to follow all safety regulations for un-interrupted dredging operations.

5.2.6 In the event of the breakdown / deficiency in CSD/crafts deployed, the Contractor has to replace the same within 15 days. The replaced CSD/crafts should not be changed in specifications as agreed previously. In the event the Contractor fails to make arrangement for substitute CSD/crafts, DCI will arrange a substitute at the risk and cost of the Contractor. No mobilization or de-mobilization will be paid for the substitute CSD/crafts.Maximum 15 days will be permitted to replace the CSD in case of major breakdown with the same completion schedule.

5.2.7 The CSD/crafts should be available for operations round the clock.

5.3 Notice to Contractor

Every direction or notice to be given to the Contractor shall be deemed to have been duly served on or received by the Contractor, if the same is posted or sent by hand to the address given in the tender or to the Contractor's Site Office or in case of DCI's enlisted Contractor to the address as appearing in DCIL's Register or to the Registered Office of the Contractor. Notice will be informed through e-mail.

5.4 Work to Cause Minimum Possible Hindrance to Traffic Movement

The work has to be carried out by the Contractor causing the minimum hindrance for any maritime traffic or surface traffic.

6 Performance Security

6.5.1 Within Ten (10) days after receipt of notification of award of the Contract, the Bidder shall furnish Performance Security at 10% of the contract value to DCI.

6.5.2 The proceeds of the Performance Security shall be payable to DCIL as compensation for any loss resulting from the Bidders failure to complete its obligations under the Contract.

6.5.3 A sum equal to 10% of the of the contract as indicated in work order shall be deposited by the contractor by e- payment or by way of irrevocable, unconditional Bank Guarantee from Scheduled / Nationalised Indian Bank as Performance Security Deposit in favour of **Dredging Corporation of India Limited** payable at **Visakhapatnam** as per Performa at Annexure enclosed. Bank Guarantee shall be valid for 180 days and shall be extended in case of further extension of work.

6.5.4 At the option of contractor, EMD can be converted at part of Performance Security and balance performance security shall be submitted in the form of BG/e- payment to DCI Syndicate Bank as per account details given.

6.5.5 In case the contract is further extended by giving additional quantity, sum equal to 10% of the contract value for the extended period of contract shall be deposited within 10 days after receiving a letter of extension of contract from DCI. Performance Security Deposit will not carry any interest. The same will be returned after completion of work duly certified by Project Manager. If Bank Guarantee is submitted against Performance Security, it should be valid till completion of work including extended period if any.

6.5.6 The performance security will be discharged by DCIL and returned to the Contractor not later than Sixty (60) days following the date of completion of the Contractor's performance obligations, including any warranty obligations, clearance of final bill, under the contract.

7 Insurance

7.1 The contractor shall without limiting his or DCIL's obligations and responsibilities insure in the joint names of the contractor and DCIL:

7.2 The contractor's equipment and other things brought on to the site by the contractor for the sum sufficient to provide for their replacement at the site.

7.3 Against liabilities for death of or injury to any person or loss of or damage to any property arising out of the performance of the contract (Third Party Insurance).

7.4 Against any liability in respect of any damages or compensation payable to any workmen or other person in the employment of the contractor or any sub-contractor (Insurance against Accident to Workmen)

7.5 The CSD/crafts shall have required number of life jackets, safety devices, fenders, anchors etc. The CSD/crafts along with crew shall be insured for any mishaps.

7.6 The contractor shall provide evidence to DCI, prior to the start of the work at site, that the insurances required under the contract have been affected.

7.7 The contractor shall notify the insurers of changes in the nature, extent or programme for the execution of the works and ensure the adequacy of the insurance at all times.

7.8 If the contractor fails to effect and keep in force any of the insurances required under the contract or fails to provide the policies to DCIL, then and in any such case DCIL may effect and keep in force any such insurances and pay any premium as may be necessary for that purpose and from time to time deduct the amount so paid from the any monies due or become due to the contractor and recover the same as a debt due from the contractor.

7.9 In the event that the contractor fails to comply with conditions imposed by the insurance policies affected pursuant to the contract, the contractor shall indemnify DCI against all losses and claims arising from such failure.

The contractor shall without limiting his or DCIL's obligation and responsibilities, endorsement of Co-insurance and waiver of subrogation in favour of DCI and PPT to be issued.

8. **Payment:**

8.1 The Contractor's request(s) for payment shall be made to the Project-in-Charge, DCIL, Paradip in writing, accompanied by an invoice describing, as appropriate, the services performed and upon fulfillment of other obligations stipulated in the Contract.

8.2 The Bill for Services rendered will be scrutinized by PIC, PO, Paradip and forwarded to Head Office for releasing the same on monthly basis. No cash payment or Advance for the work done or any other advance whatsoever will be payable to the Contractor.

8.3 In addition to Performance Security, retention amount of 5% of bill will be deducted from monthly bill value and same shall be refunded along with Performance security.

8.4 PPT shall conduct at their cost Pre- dredge survey after placing work order on L-1 bidder jointly with DCIL and contractors representative . These signed charts by contractor, PPT and DCIL will form basis for releasing of RA Bills.

8.5 Monthly bill survey will be carried out jointly by PPT/DCI/Third party appointed by PPT or DCI at the cost of PPT. The payment will released by DCI to contractor on back to back basis. (Back to back means the quantity allowed by PPT as per the survey). The monthly payment will be released by DCI to contractor within 15 days upon receipt of payment from PPT.

Check surveys also shall be carried out by PPT depending upon availability of launch. In case PPT charges for the same, same shall be deducted from monthly running bills.

8.6 Contractor is free to conduct additional check surveys, progress surveys at his own cost, if desired. The payment will be made only for services provided as per Price Bid / Negotiated Rates. Payment shall be made promptly by DCIL, Head Office within 15 days from receipt of the payment by DCI from PPT for the quantity certified. Provident Fund and other recoveries of the crew / workers and payment wage slip must be attached to the Bill. PPT may release the monthly payment to DCIL tentatively in 30 days from date of submission of the same to PPT.

9. **Prices**

Prices charged by the Contractor for Services performed under the Contract shall not vary from the prices quoted by the Contractor in its bid subject to Clause 3 of SCC.

10. **Change Orders**

10.1 DCIL may at any time by a written order give to the Contractor make changes within the general scope of the Contract for the services to be provided by the Contractor.

10.2 If any such change causes an increase or decrease in the cost of or the time required for the Contractor's performance of any part of the work under the Contract, whether changed or not changed by the order, an equitable adjustment

shall be made in the Contract Price or time for completion, or both and the Contract shall accordingly be amended. Any claims by the Contractor for adjustment under this clause must be asserted within thirty (30) days from the date of the Contractor's receipt of DCIL's change order.

11. **Contract Amendments**

Subject to GCC Clause 10, no variation or modification of the terms of the Contract shall be made except by written amendment signed by the parties**.**

12. Assignment

The Contractor shall not assign, in whole or in part, its obligations to perform under the Contract except with DCIL's prior written consent.

13. **Subcontracts**

The Contractor shall not subcontract any part of the work without written permission of DCI.

14. **Delays in the Contractor's Performance**

14.1 The performance of Services shall be made by the Contractor in accordance with the time schedule prescribed by DCIL.

14.2 If at any time during performance of the Contract, the Contractor or its subcontractor(s) should encounter conditions impeding timely performance of Services, the Contractor shall promptly notify DCIL in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the Contractor's notice, DCIL shall evaluate the situation and may at its discretion extend the Contractor's time for performance, with or without liquidated damages, in which case the extension shall be ratified by the parties by amendment of Contract.

14.3 Except as provided under GCC Clause 17, a delay by the Contractor in the performance of its service obligations shall render the Contractor liable to the imposition of liquidated damages pursuant to GCC Clause 15, unless an extension of time is agreed upon pursuant to GCC Clause 14.2 without the application of liquidated damages.

15. **Liquidated Damages**

15.1 Subject to GCC Clause 17, if the Contractor fails to perform the Services within the period(s) specified in the Contract, DCIL shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as liquidated

damages, a sum equivalent to 0.5% per day of the contract price will be charged for delay in mobilization/ completion of whole work subject to maximum ***10%*** of the contract price. Once the maximum is reached, DCIL may consider termination of the Contract pursuant to GCC Clause 16.

In case of completion of work as per schedule in spite of delay in mobilization , the LD deducted will be refunded along with performance security.

16. **Termination for Default**

16.1 DCIL, without prejudice to any other remedy for breach of Contract, by written notice of default sent to the Contractor, may terminate this Contract in whole or in part:

16.2 if the Contractor fails to provide the service vide clause No.15 of GCC , or within any extension thereof granted by DCIL pursuant to GCC Clause 14; or

16.3 if the Contractor fails to perform any other obligation(s) under the Contract.

16.4 if the Contractor, in the judgment of DCIL, has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.

For the purpose of this clause:

"Corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value to influence the action of a public official in the procurement process or in contract execution.

"fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of DCIL, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive DCIL of the benefits of free and open competition.

16.5 In the event DCIL terminates the Contract in whole or in part, pursuant to GCC Clause 16.1, DCIL may procure, upon such terms and in such manner, as it deems appropriate, Services similar to those undelivered, and the Contractor shall be liable to DCIL for any excess costs for such similar Services. However, the Contractor shall continue performance of the Contract to the extent not terminated.

17. **Force Majeure**

17.1 Notwithstanding the provisions of GCC Clauses 14, 15, 16 the Contractor shall not be liable for forfeiture of its performance security, liquidated damages or termination for default if and to the extent that, it's delay in performance or other

failure to perform its obligations under the Contract is the result of an event of **Force Majeure.**

17.2 For purposes of this Clause, "Force Majeure" means an event beyond the control of the contractor and not involving the Contractor's fault or negligence and not foreseeable. Such events may include, but are not restricted to, acts of DCIL contractual capacity, wars or revolutions, fire, floods , Tsunami, epidemics, quarantine restrictions and freight embargoes. In the event of Force Major continues for a period of 28 days, either party may then give notice of termination that shall take effect 7 days after giving of the notice.

17.3 If a Force Majeure situation arises, the Contractor shall promptly notify DCIL in writing of such conditions and the cause thereof. Unless otherwise directed by DCIL in writing, the Contractor shall continue to perform its obligations under the Contract as far as is reasonably practical and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

18. **Termination for Insolvency**.

DCIL may at any time terminate the Contract by giving written notice to the Contractor, without compensation to the Contractor, if the Contractor becomes bankrupt or otherwise insolvent, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to DCIL.

19. T**ermination for Convenience**

DCIL may, by written notice sent to the Contractor, terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for DCIL's convenience, the extent to which performance of work under the Contract is terminated, and the date upon which such termination becomes effective. A notice period of one week will be given.

Contractor shall be paid for the works executed as on date of Termination after receipt of payment from PPT.

20. Settlement of Disputes/ Arbitration clause

20.1 If any dispute or difference of any kind whatsoever shall arise between Owner/Charterer and DCI in connection with or arising out of the Charter

Agreement, the parties shall make every effort to resolve amicably such dispute or difference by mutual consultation. Departmental Resolution Committee nominated by Chief General Manager/ Director (Operations & Technical) of DCI will try to resolve the dispute in an amicable way with the consent of DCI management.

20.2 If, after thirty (30) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either Owner/Charterer (or) DCI may give notice to the other party of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given and the disputes herein shall be settled by arbitration under the provisions of Indian Arbitration and Conciliation Act-1996.

Each party shall appoint an arbitrator and Arbitrators so appointed shall appoint a third Arbitrator who shall be the Presiding Arbitrator and the award of Arbitrators shall be final and binding upon the parties hereto, subject to the provisions of the Arbitration and Conciliation Act,1996 (Act 26 of 1996). The Arbitrators shall give a reasoned award within six months from the date of the appointment of the 3rd Arbitrator. The contract shall be governed by Indian Laws.

The dispute arising out or under the contract will be subject to the exclusive jurisdiction of the Courts at Visakhapatnam only.

20.3 The Arbitrator shall give a reasoned Award and it shall be in accordance with the provisions of Arbitration & Conciliation Act, 1996 or any statutory modifications or re-enactment thereof. The venue for the Arbitration shall be Visakhapatnam and the Court at Visakhapatnam shall have exclusive jurisdiction on all matters with reference to this contract.

21. Limitation of Liability:

Except in cases of negligence or willful misconduct, the Contractor shall not be liable to DCIL, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the Contractor to pay liquidated damages to DCIL.

22 Governing Language:

The contract shall be written in English. All correspondence and other documents pertaining to the Contract which are exchanged by the parties shall be written in English only.

23. Applicable Law

The Contract shall be interpreted in accordance with the laws of India.

24. Compliance with Statutory Requirements:

The contractor shall at all times during the continuance of the contract comply fully with all existing acts, regulations and bye-laws including all statutory amendments and re-enactment of state or central government and other local authorities and any other enactments and acts that may be passed in future either by the state or the central government or local authority including Indian Workmen's Compensation Act, Contract Labour (Regulation and Abolition) Act 1970 and Equal Remuneration Act 1976, Factories Act, Minimum Wages Act, Provident Fund Regulations, Employees Provident Fund Act, Merchant Shipping Act and other Maritime Legislations / Rules / Regulations etc. in so far as they are applicable to this contract. The Contractor shall indemnify and keep DCIL indemnified in case any proceedings are taken or commenced by any authority against DCI for any contravention of any of the Laws, Bye-laws or scheme by the Contractor. If as a result of Contractor's failure, negligence, omission, default or non-observance of any provisions of any laws, DCIL is called upon by any authority to pay or reimburse or require to pay or reimburse any amount, DCIL shall be entitled to deduct the same from any monies due or that may become due to the contractor under this contract or any other contract or otherwise recover from the contractor any sums which DCIL is required or called upon to pay or reimburse on behalf of the contractor.

25. **Taxes and Duties**

The contractor shall pay all taxes, levies, duties, etc. excluding GST which he / she may be liable to pay to the State Government or Government of India or any other authority under any law for the time being in force as on the date of submission of tender in respect of or in accordance with the execution of contract.

The GST will be reimbursed to the contractor subject to production of payment of proof for the previous bill for the subject work.

Any change in legislation during the contract period with regard to taxes, same will be applicable to this contract.

26. **Income Tax Deduction/Tax deducted at source:**

Deduction of income tax and other taxes like WCT,etc shall be made from any amount payable to the contractor as per the relevant provisions of the Income Tax Act.

27. **Employment of Relatives:**

The bidder shall enclose a certificate that “he / she is not related to any officer of the Dredging Corporation of India Limited or any other officer of the rank of Under Secretary or above in the Ministry of Shipping, Government of India”. The bidder shall also furnish a declaration along with his tender enclosing the names of the relatives who are employed in DCI.

28. **Notices**

28.1 Any notice given by one party to the other pursuant to the Contract shall be sent in writing or by e-mail or Fax and confirmed in writing to the address specified for that purpose in the Special Conditions of Contract.

28.2 A notice shall be effective when delivered or on the notice’s effective date, whichever is later.

28.3 The tenderer shall have to give a Certificate that the Contractor had not made any payment or illegal gratification to any person / authority connected with the bid process so as to influence the bid process and have not committed any offence the bid process and have not committed any offence under the PC Act in connection with the bid.

28.4 The tenderer shall have to give a Certificate that the Contractor shall disclose any payments made or proposed to be made to any intermediaries (Agents etc) in connection with the bid.

28.5 As DCI is an ISO 14001: 2004 (Environmental Management System) certified company, DCI committed for prevention of pollution by implementing Environmental friendly operational procedures. Hence, the contractor shall comply with all statutory and regulatory requirements pertaining to Environmental protection. Also, the contractor shall adopt the Environmental friendly procedures for execution of the work to the maximum possible extent.

28.6 If the contractor abandons the contract or fails to commence the work without valid reasons or unable to maintain sufficient progress as per the agreed program, DCI may after giving one week notice in writing to the contractor, will carryout the

remaining work in full or part as deemed necessary at the cost and risk of the contractor. The cost incurred due to the contractors default as above, will be deducted from any payment due or becomes due to the contractor from this contract or from any other contract without prejudice to any other method of recovery.

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SECTION - IV

SPECIAL CONDITIONS OF CONTRACT

(SCC)

SECTION - IV

SPECIAL CONDITIONS OF CONTRACT

(SCC)

TABLE OF CLAUSES

SECTION -IV

SPECIAL CONDITIONS OF CONTRACT

(SCC)

The following Special Conditions of Contract shall supplement the General Conditions of Contract. Whenever there is a conflict, the provisions herein shall prevail over those in the General Conditions of Contract. The corresponding clause number of the General Conditions is indicated in parentheses.

I. SCOPE OF WORK:

1) DCI intends to Charter CSD on Cu.M basis and dispose the material through shore and floating pipeline at Northern sea Shore at a distance of 1.5 KM for carrying out dredging at North BOT complex (NDC) at Paradip Port.
2) The quantity measured as per surveys is payable on back to back basis certified by PPT.
3) The quantities mentioned in BOQ are only indicative and the actual quantities may vary by + or – 20% with respect to the pre-dredge surveys. It is envisaged that, the dredging material is predominantly sand, silt, soft/stiff clay and is amenable to CSD. However, stones, boulders, tree roots etc may present in the proposed location and no additional payment / claims are allowed for clearing the same. The dredged spoil will be dumped through the combination of shore and floating pipeline at a distance of 1.5 KM at Northern sea shore. All required pipeline and accessories are to be arranged by contractor at his cost.
4) DCIL has shore and floating pipeline already laid and available at Paradip. In case if the tenderer intends to utilize DCI shore and floating pipeline, DCI will spare the pipeline on hire basis.
   Length of shore MS pipeline of 800 Mtrs dia laid = 1100 Mtrs
   Length of Floating pipeline of 800 MM dia with proper reducers = 500 Mtrs.
   The hire charges per day for Shore MS pipeline of 800 MM dia 1100 Mts = 1.00 Lakhs
   The hire charges per day for Floating pipeline of 500 Mtrs = 0.65 Lakh
5) The contractor has to provide vehicle/routine boat as and when required basis as per instructions of DCI/PPT to visit the site and CSD proposed to be deployed .
6) Dredging will be carried out on in-situ quantity basis and difference in depths between pre and progressive/post dredge surveys will be considered for calculating the dredging quantity for payment as certified by PPT. Total quantity may vary up to + or – 20%. In case the quantity

exceeds +20%, extension of time will be granted to complete the work with same rate, terms and conditions.

7) Dredging period of 4 months shall be given to complete the work. Contractor has to submit detail methodology of completing the work in above period of 4 months with bar chart along with tender submission.

8) The CSD deployed shall be suitable to carry out dredging at the proposed site in Paradip Port waters.

9) The necessary clearance from PPT and other statutory agencies with regard to entry/exist of the Cutter suction dredger / Crafts shall be to the account of contractor during entire contract period /extended period if any.

10) While carrying out dredging, if any under water obstruction/ debries encountered or any visible debries , same should be brought to the notice of PPI/ DCIL.

11) Slopes & Tolerance :

b) Vertical Tolerance of +0.20 and side slopes at 1:3 or as certified by PPT shall be considered for payment.

12) Daily dredging reports shall be maintained onboard the CSD and should be submitted on daily basis to DCIL for monitoring the work.

13) The cutter suction dredger should be equipped with dredging instrumentations like production meter, cutter ladder depth indicator, position fixing / Dredging software, etc in working condition.

14) All the allied crafts, plants and machinery deployed by the contractor shall strictly adhere to the relevant IMO regulations, MARPOL convention 79/78 and other statutory regulations.

15) All crafts, plants and machinery should have valid insurances as per statutory norms and contractor to indemnify DCI and PPT from any damages, losses to PPT and DCI property.

16) The Allied Crafts proposed for deployment should follow PPT rules and regulations.

17) Adequate radio/ VHF communication system, all statutory requirements such as lifesaving appliances, fire fighting appliances etc as per relevant rules should be available on board at any given time.

18) The party shall quote their rate in the enclosed BOQ. The offered rates shall be inclusive of mob/demob, fuel, Lube oil, men and material, idle time charges watch keeping, repair cost, spares cost, all taxes but excluding GST.

19) The contractor shall allow in his rates for any loss of working hours due to weather, surveying, position of crafts, shifting of CSD and other equipment from one area/place to other area/place depending upon the traffic operations or for maintenance. Any claim for idling of contract's plant and machinery or any other input shall not be entertained for reasons whatsoever.

II. **Bunkering and Fresh Water:-**

Contractor has to make his own arrangement of bunkering and fresh water as well as obtaining berth from PPT at his own cost. DCI shall assist for the berth if required.

III. **Environmental Control:-**

All oil and greasy wastes on board contractor's equipment, floating vessels, crafts etc shall be collected in containers and disposed away on land as directed by PPT/DCI and shall not be let into sea.

IV. Performance Security (GCC Clause 6):

1) Within ten (10) days after receipt of the notification of award of the contract, the Contractor shall furnish Performance Security to DCIL in the amount specified in the Special Conditions of Contract.

2) The proceeds of the Performance Security shall be payable to DCIL as compensation for any loss resulting from the Contractor's failure to complete its obligations under the Contract.

4) A sum equal to 10% of the contract as indicated in the work order shall be deposited by the contractor as Performance Security Deposit/ by e- payment or in the form of BG with DCI as per Performa enclosed. Performance Security Deposit will not carry any interest. The same will be returned after completion of work duly certified by Project-in-Charge.

5) The BG submitted against performance security will be discharged by DCIL and returned to the Contractor not later than thirty (60) days following the date of

completion of the Contractor's performance obligations, including any warranty obligations, clearance of final bill, under the Contract.

V. Price Variation Clause (GCC Clause 9)

Any variation (increase/decrease) in the price of main fuel of the dredger shall be paid/adjusted as per the standard variation clause as detailed below:

V= (P-Po) x R x Q

V= Variation in Price on account of diesel during the month under Consideration.

Po= Price of diesel in the concerned area ie Paradip as on date of submission of tender.

P = Price of diesel for the month under consideration.
Q = Diesel Element factor.
R = Value of work during the month under consideration.

IOCL/BPCL/HPCL official fuel circular shall be used for calculation of Po and P in the Fuel escalation formula. The amount in terms of this clause shall be paid by the DCI within 15 days on receipt of payment from PPT.

VI. Liquidated Damages (GCC Clause 15)

GCC 15.1—Applicable rate: 0.5% per week.

Maximum deduction: 10%

VII. Settlement of Disputes / Arbitration Clause (GCC Clause 20)

The decision of the Chief General Manager (CGM) shall be final, conclusive and binding on all parties to the contract upon all questions relating to the meaning of the specifications, designs, drawings and instructions and as to the quality of workmanship, or materials used on the work or any matter arising out or relating to the specifications and instructions concerning the works or the execution or failure to execute the same arising during the course of work. The above shall not be subjected to arbitration and in no case shall the works be stopped consequent on such a dispute arising and the work shall also be carried out by the contractor strictly in accordance with the instructions of the CGM.

If, after thirty (30) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either Owner/Charterer (or) DCI may give notice to the other party of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given and the disputes herein shall be settled by arbitration under the provisions of Indian Arbitration and Conciliation Act-1996.

Each party shall appoint an arbitrator and Arbitrators so appointed shall appoint a third Arbitrator who shall be the Presiding Arbitrator and the award of Arbitrators shall be final and binding upon the parties hereto, subject to the provisions of the Arbitration and Conciliation Act,1996 (Act 26 of 1996). The Arbitrators shall give a reasoned award within six months from the date of the appointment of the 3rd Arbitrator. The contract shall be governed by Indian Laws

The Arbitrator shall give a reasoned Award and it shall be in accordance with the provisions of Arbitration & Conciliation Act, 1996 or any statutory modifications or re-enactment thereof. The venue for the Arbitration shall be Visakhapatnam and the Court at Visakhapatnam shall have exclusive jurisdiction on all matters with reference to this contract.

VIII. Compliance with Statutory Requirements (GCC Clause 24)

Add as Clause 24.2

24.2 **Provident Fund Contributions:**

The bidder shall process an independent PF Code number obtained from the concerned PF Commissioner and submit the photocopy of the same along with the tender. If the same is not submitted with the tender the bidder shall obtain the same and produce to DCI before the issue of the work order.

A Certificate from the Regional Provident Fund Commissioner (RPFC) shall be furnished by the contractor stating that PF has been deducted from the employees and remitted to the concerned RPF Commissioner along with PF Number before releasing any payment to the Contractor. If the contractor fails to adhere to this condition DCI shall deduct 25.16%, namely,

- Contribution of the worker - 12%
- Matching contribution of the Employer - 12%
- Inspection charges payable to RPFC - 1.16%

of labour component value from the bill and remit the amount to DCIL ECPF Fund.

The above is subject vary as per instructions of GOI from time to time.

IX. Notices (GCC Clause 28)

GCC 28.1—Contact address for notice purposes:

HOD (OPS)
DREDGING CORPORATION OF INDIA LTD.
“DREDGE HOUSE”, PORT AREA,
VISAKHAPATNAM - 530 001.
ANDHRA PRADESH (INDIA)
TELEPHONE No. 0891-2871344

X. Sunken Equipment:

If any equipment (floating or otherwise) belonging to the Contractor or Sub-contractor or any material or things therein or thereafter sink from any cause whatsoever, it shall immediately be reported by the Contractor to the Competent Authority and Contractor shall forthwith at his own cost raise and remove any such equipment, material or things or otherwise deal with the same as port / DCI may direct.

The fact that the sunken equipment, material or things are insured or have been declared a total loss or do not represent any further value shall not absolve the Contractor from his obligations under this clause to raise and remove the same.

Until such sunken equipment, material or things have been raised and removed, the Contractor shall set such buoys and display at night such lights and do all such things for the safety as may be required by the Competent Authority / port / DCI.

In the event of the Contractor not carrying out the obligations imposed upon him by this Clause, the port/DCI may cause to set buoys and display at night lights on such equipment and raise and remove the same without prejudice to the right of the port/DCI to hold the Contractor liable and all expenses and consequences thereon and incidental thereto shall be borne by the Contractor and shall be recoverable from him as a debt by the port/DCI or may be deducted by the port/ DCI from any money due or which may become due to the Contractor.

XI. RIGHT OF FIRST REFUSAL: The Indian company owning Indian Flag dredger shall have the First right of Refusal if the rate is within 10% of the lowest valid offer. If more than one company owning Indian Flag dredger participates in the tender, the right of refusal will go to that Indian company which has quoted the lowest rate and is within 10% of the lowest offer, if the lowest price is matched.

If Indian flag vessel is not available, then ”Indian Controlled ships” shall be accorded higher priority in the Right of First Refusal than Non-Indian Flag vessels**.**

XII. INTEGRITY PACT: The Integrity Pact has been included to this subject Tender and to be signed on Rs.100/- non-judicial stamp paper and submitted by the Bidders in 2 (two) originals as per the Form 10. This Integrity Pact will form part of the Tender Document.

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SECTION - V

TECHNICAL SPECIFICATIONS

SECTION - V

TECHNICAL SPECIFICATION

As specified in Scope of Work under Special Conditions of Contract (SCC)

SECTION - VI

SAMPLE FORMS

SECTION – VI

SAMPLE FORMS

TABLE OF FORMS

SECTION – VI

SAMPLE FORMS

Notes on the Sample Forms

The Bidder shall complete and submit with its Techno-Commercial bid (Cover-A) the Bid Form.

The Price Schedules shall be submitted only along with the Price Bid (Cover-B).

The Proforma for Bank Guarantee for Earnest Money Deposit duly filled in should be submitted along with the Techno-Commercial Bid.

The Contract Form, when it is finalized at the time of contract award, should incorporate any corrections or modifications to the accepted bid resulting from price corrections, acceptable deviations etc.

The Performance Security form should not be completed by the bidders at the time of their bid preparation. Only the successful Bidder will be required to provide performance security in accordance with one of the forms indicated herein or in another form acceptable to DCIL.

The Qualification Requirements form should specify, for example, requirement for a minimum level of experience in providing services in a similar type of activity for which the Invitation for Bids is issued.

The Details of the CSD/crafts proposed for deployment duly filled in should be submitted along with the Techno-Commercial Bid.

Vender Registration Form (Pan No. , GST No. & Bank details etc.

Integrity Fact. (As per Proforma)

1. Bid Form

Date: _____

To:
The Dredging Corporation of India Limited,
'Dredge House', Port Area,
Visakhapatnam – 530 001.

Gentlemen:

Having examined the bidding documents including Addenda Nos. ***[insert numbers],*** the receipt of which is hereby duly acknowledged, we, the undersigned, offer to supply and deliver ***[description of services]*** in conformity with the said bidding documents for the sum or such other sums as may be ascertained in accordance with the Schedule of Prices submitted separately as a Price Bid and made part of this Bid.

We undertake, if our Bid is accepted, to provide the services in accordance with the schedule specified in the Schedule of Requirements.

If our bid is accepted, we undertake to provide a performance security in the form, in the amounts, and within the times specified in the Bidding Documents.

We agree to abide by this Bid for the Bid Validity Period specified in the document and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

Until a formal Contract is prepared and executed, this Bid, together with your written acceptance thereof and your notification of award, shall constitute a binding Contract between us.

We understand that you are not bound to accept the lowest or any bid you may receive.

We certify / confirm that we comply with the eligibility requirements as specified in the bidding documents.

Dated this _____ day of _____ 2019_____.

_____ _____

[signature] ***[in the capacity of]***

Duly authorized to sign Bid for and on behalf of _____

2. PRICE SCHEDULE

PREAMBLE TO PRICE BID

1. The items given in the Bill of Quantities are for Chartering of cutter suction dredger on CU.M basis and disposal the material through shore and floating pipeline at Northern sea shore at a distance of 1.5 KM for carrying out dredging at North BOT Complex (NDC) at Paradip Port.

2. The payment would be made for relevant items of Bill of Quantities as detailed in Payment Clause.

3. No other charges, other than those specified in the tender conditions shall be payable.

4. The rate to be quoted should be inclusive of mob/demob charges, fuel, Lube oil, men and material, watch keeping, repair cost, spares cost, idle time charges, all taxes but excluding GST.

BILL OF QUANTITIES

Name of the work: Chartering of cutter suction dredger on CU.M basis and disposal the material through shore and floating pipeline at Northern sea shore at a distance of 1.5 KM for carrying out dredging at North BOT Complex (NDC) at Paradip Port.

Sl. No	Description	Quantity (Cum)	Unit	Rate/ Unit (Rs)	Total (Rs)
1.	Capital dredging at North BOT Complex by deploying one Cutter suction dredger and disposal of the material through shore and floating pipeline at Northern sea shore at a distance of 1.5 KMs (Aprox) . The rate inclusive of Mobilization, demobilization, idle time ,fuel, lube oil, man power, material, Cost of laying of pipeline , repair, spares, taxes, duties etc but excluding GST. The approximate dimensions of the proposed dredging area is : Length = 450 Mtrs Width =270 Mtrs Depth to be achieved = -17.1M Present levels are = -6.00 mtrs to +3.00 Mtrs (Approximate)	25,00,000	Cu.M		

Note : The contractor at his option may deploy TSHD at a later stage depending upon availability of adequate flotation for early completion of project at the same rate, terms and conditions.

The dredged material shall be dumped at the designated offshore dumping area which is 3 to 4 Nautical miles from the Break waters.

No Mob/Demob is payable for deployment of TSHD.

3. BANK GUARANTEE FOR EARNEST MONEY DEPOSIT

Bank Guarantee No.
Date

To
The Dredging Corporation of India,
Dredge House, Port Area,
Visakhapatnam – 530 001

WHERE AS (hereinafter) called "the Tenderer" has submitted its tender dated ……for the execution of (name of work)……..(hereinafter called "the Tender") in favour of DREDGING CORPORATION OF INDIA LIMITED, Dredge House, Port Area, Visakhapatnam – 530 001 hereinafter called the "CORPORATION".

KNOW ALL MEN by these presents that we, (Bankers full address)

(Hereinafter called "the Bank" is bound unto the Corporation for the sum of Rs……./- (Rupees …….. only) for which payment will and truly to be made to the said Corporation, the Bank binds itself, its successors and assigns by these presents:

THE CONDITIONS of this obligation are:

1. If the Tenderer withdraws his Tender
   (a) during the period of Tender validity specified in the Tender,

   or

   (b) having been notified of the acceptance of his Tender by the Corporation during the period of Tender Validity.
2. Fails or refuses to submit the Performance security / execute the Agreement.

We undertake to pay to the Corporation up-to the above amount upon receipt of his first written demand, without the Corporation having to substantiate his demand, provided that in his demand the Corporation will note that the amount claimed by him is due to him owing to the occurrence of one or both of the conditions, specifying the occurred condition or conditions.

CONTRACTOR

Notwithstanding anything herein contained, our liability under this guarantee is limited to Rs……/- (Rupees ……..only) and will remain in force upto 90 days from the date of opening of Second Cover / Finance Bid, and any demand in respect thereof must reach the Bank not later than the date of expiry of this guarantee failing which all the rights of the Corporation under the guarantee shall be forfeited and the Bank shall be deemed to be relieved or discharged from all liabilities hereunder.

Dated……..day of ……2019

For

…….
(Indicate Name of the Bank)

4. FORM OF CONTRACT AGREEMENT

This agreement made this _____day of _____BETWEEN the …….. , a body corporate under …… having its registered office at …… (Hereinafter called "the Employer", "which expression shall unless excluded by or repugnant to the context, be deemed to include their successors in office) of the One Part AND_____

(name and address of the CONTRACTOR if any individual and of all partners if a Partnership with all their addresses) (Hereinafter called the "CONTRACTOR" which expression shall unless excluded by or repugnant to the context, be deemed to include his/their heirs, executors, administrators, representatives and assigns or successors in office) of the Other Part.

WHERE AS the "Employer" is desirous of _____

_____

_____and the Contractor has offered to

_____

_____

AND WHEREAS the CONTRACTOR has deposited a sum of Rs._____as Performance Security in the form of _____for the due fulfillment of all the Conditions of the Contract:

NOW THIS AGREEMENT WITNESSETH as follows:

1. That in this agreement words and expression shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.
2. That the following documents shall be deemed to form and be read and construed as part of this agreement viz:
   - The Contract Agreement
   - The Letter of Acceptance
   - The Tender submitted by the Contractor
   - Instructions to Tenderer
   - Conditions of Contract
   - Specification for the Works

- Price Bid
- Correspondence exchanged before the issue of letter of acceptance by which the Conditions of Contract are amended, varied or modified in any way by mutual consent (to be enumerated).

3. That the Contractor hereby covenants with the Employer to complete the Contract in conformity, with the provisions of the Contract in all respects.
4. That the Employer hereby covenants to pay the Contractor in consideration of such completion of the Contract, the "Contract Price" of Rs._____(Rupees_____ _____) at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereunto have set their hands and seals the day and year first above written.

Signed and sealed by:

CONTRACTOR

Signature	:	Signature:
Name	:	Name :
Designation	:	Designation
Seal	:	Seal :

In the presence of

Witness

a)	Signature	Signature
	Name & Address:	Name & Address:

5. FORM OF BANK GUARANTEE BOND
(IN LIEU OF PERFORMANCE SECURITY)

Bank Guarantee No.
Date

To
Dredging Corporation of India Limited
……..
……..

In consideration of Dredging Corporation of India Limited, a Company incorporated under the Companies Act, 1956 and having its Registered Office at Core No.-2, First Floor, SCOPE MINAR, Plot No. 2A & 2B, Laxmi Nagar District Center, DELHI – 110 091, India (herein after called the "DCI") having agreed to exempt M/s …….. having its Registered Office at ……(herein after called the said "Contractor" from the demand under the terms and conditions of an Agreement / Contract / Work Order dated ……made between DCI and Contractor for ……..(herein after called the said "Agreement"), of Security Deposit for the due fulfillment by the said Contractor of the terms and conditions contained in the said Agreement, on production of a Bank Guarantee for ……
……. only), we ……. (Hereinafter referred (indicate the name of the Bank) to as "the Bank" at the request of M/s……. (Contractor) do hereby undertake to pay to DCIL an amount not exceeding ……..against any loss or damage caused to or suffered or would be caused to or suffered by DCIL by reason of any breach of the said Contractor of any of the terms and conditions contained in the said Agreement.

2. We, ……..
(Indicate the name of Bank)

do hereby undertake to pay the amounts due and payable under this guarantee without any demur merely on a demand and without reference to the Contractor from DCIL stating that the amount claimed is due by way of loss or damage caused to or would be caused to or suffered by DCIL by reason of breach by the said Contractor of any of the terms or conditions contained in the said Agreement or by reason of the Contractor's failure to

perform the said Agreement. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding …… (say) ……. ……..only).

3. We undertake to pay to DCIL any money so demanded not withstanding any dispute or disputes raised by the Contractor in any suit or proceeding pending before any Court or Tribunal relating thereto our liability under this present being absolute and unequivocal. The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the Contractor shall have no claim against us for making such payment.

4. We …….. further

(Indicate name of the Bank)

agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of DCIL under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till DCI certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said Contractor and accordingly discharge this guarantee. Unless a demand or claim in writing under this guarantee has been received by us on ……., we shall be discharged from all liability under this guarantee thereafter.

5. We, …….. further agree

(Indicate name of the Bank)

that DCIL shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Agreement or to extend time of performance by the said Contractor from time to time or to postpone for any time or from time to time any of the powers exercisable by DCIL against the said Contractor and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Contractor or for any forbearance, act or omission on the part of DCIL or any indulgence by DCIL to the said Contractor or by any

such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

6. This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor.

7. We, …… lastly undertake not to
(Indicate name of the Bank)
revoke this guarantee during its currency except with the previous consent of DCIL in writing.

8. This guarantee will remain in force until …….. All claims under this guarantee must be made in writing and dispatched to us by Registered Post, Hand Delivery or by Courier against acknowledgment. Notwithstanding what is stated above, our liability under this guarantee will be limited to ……(…… Only).

Dated the …….day of …….2020.

CONTRACTOR

6. Qualification Requirements

(Referred to in Clause 11.2 of ITB)

A) Financial Qualification:

The bidder should furnish

i) Audited balance sheet for the last three years as required under Clause 7.2.4 of ITB.

B) Technical Qualification:

The documentary evidence of bidder's technical competence should include a Certificate from Employers for having successfully completed works of similar nature. The certificate should include the following information:

- Brief description of the work
- List of equipments deployed
- Contract amount
- Time limit for completion
- Whether the work has been completed within the time
- Whether any liquidated damages have been levied.

Details of the Cutter suction Dredger proposed for Deployment

1. Name of the Cutter suction CSD :

2. Name of the owner :

3. Builder's name and Address :

4. Year of built :

5. Main dimensions :
   Length :
   Breadth :
   Depth :
   Draft :

6. Make & Model of Engine :

7. Horse Power of Engine :

8. Particulars of registry of CSD and year of registry. :

9. Average loaded speed in Knots(in case of TSHD) :

10. Maximum draft :

11. Registration Certificate :

12. Communication system held in Operational condition on board. :

13. LSA (Life Saving Appliances) & FFA (Fire Fighting Appliances):

14. Place where the CSD/crafts is presently available:

NOTE: (1) If the Tenderer is not the Owner, hire agreement / willingness of the Owner of the CSD/crafts should be submitted on stamp paper duly notarized along with Tender.

SECTION - VII

CHECK LIST FOR

TECHNO-COMMERCIAL BID

SECTION – VII

CHECK LIST FOR TECHNO- COMMERCIAL BID

1. A Bid Form except the Price Schedule
2. A list of works tendered for and in hand/being executed as on the date of submission of tender.
3. A detailed list of vessels / equipment available with the tenderer and which are proposed for deployment for the work.
4. Details of CSDs or any other kind of equipment/CSD with suitable dredging methodology.
5. Documentary evidence to establish that the Bidder is eligible to bid and is qualified to perform the contract if its bid is accepted consisting of
   - Audited balance sheet for the last three years;
   - Certificate from Employers for having successfully completed works of similar nature. The certificate should include the following information:
   - Brief description of the work
   - List of equipments deployed
   - Contract amount
   - Time limit for completion
   - Whether the work has been completed within the stipulated time.
   - Whether any liquidated damages have been levied.
6. Earnest money deposit in the form of
   - e- challan or
   - Bank Guarantee
7. PAN Number
8. Registration with Provident Fund Authorities
9. Vender Registration Form
10. Integrity Pact: The Integrity Pact has been included to the subject Tender and is to be signed on Rs.100/- non-judicial stamp paper and submitted by the Bidders in 2 (Two) as per the Form 10. This Integrity Pact will form part of the Tender Document
11. Power of Attorney on stamp paper, in favour of the person authorized to sign the tender document.
12. Copies of original document defining the constitution or legal status, lace of registration and principal place of business of the company or firm or partnership.

13. Information regarding any current litigation in which the tenderer is involved.
14. Copies of original certificates of registration etc. of the CSD/crafts proposed to be offered to DCI including copy of the existing insurance policy covering the Hull, crew and third party.
15. Copy of clear title of the ownership of the CSD/crafts If the tenderer is not the owner of the CSD/crafts, necessary documents in support of the authorisation granted by the owner of the CSD/crafts to the tenderer to offer and operate the CSD/crafts by the tenderer. (This authorisation shall be executed on a stamp paper duly notarised).
16. The bidder shall have to give a Certificate as specified in Clause 27 of GCC.
17. Downloaded / Purchased Tender Document duly signed on all the pages by tenderer.

****

Annexure-I

PROFORMA

Date:

To
The HOD (Ops),
Dredging Corporation of India Limited,
Dredge House, Port Area,
VISAKHAPATNAM – 530 001
Tel. No.0891-2871344

Sir,

Sub: Chartering of cutter suction dredger on CU.M basis and dispose the material through shore and floating pipeline at Northern shore at a distance of distance of 1.5 KM for carrying out dredging at North BOT Complex (NDC) at Paradip Port - reg

A. With reference to your Tender No DCI/OPS/PDP/SUB-CONT /2019 dated: 00.00.2019 and as per Clause No.7.2.16 of Instructions to Bidders of Contract, we hereby certify that, we are not related to any Officer of Dredging Corporation of India Ltd., or any Officer of the rank of the Asst. Secretary or above in the Ministry of Shipping, Government of India and also certify that we do not have any relatives employed in the Dredging Corporation of India Ltd.

'or'

B. We hereby certified that my relative(s) working as Officer in Dredging Corporation of India Ltd., or any Officer of the rank of the Asst. Secretary or above in the Ministry of Shipping, Government of India are given below:

1……

2……

3……

4……

Thanking you,

Yours faithfully,

*Strike out 'A' or 'B', whichever is not applicable.

CONTRACTOR

Annexure-II

PROFORMA

Date:

To
The HOD (Ops),
Dredging Corporation of India Limited,
Dredge House, Port Area,
VISAKHAPATNAM – 530 001
Tel. No.0891-2871344

Sir,

Sub: Chartering of cutter suction dredger on CU.M basis and dispose the material through shore and floating pipeline at Northern shore at a distance of distance of 1.5 KM for carrying out dredging at North BOT Complex (NDC) at Paradip Port – reg

A. With reference to your Tender No. DCI/OPS/PDP/SUB-CONT /2019, dated 00.00.2019 and as per Clause No.7.2.17 of Instructions to Bidders of Contract, we hereby undertake that, we have not made any payment or illegal gratification to any person/ authority connected with the bid process so as to influence the bid process and we have not committed any offence under the PC Act in connection with the bid.

and,

B. As per Clause No. 7.2.18 of Instructions to Bidders of Contract, we hereby certified that we have nothing to disclose any payments made or proposed to be made to any intermediaries (agents etc.) in connection with the bid.

Thanking you,

Yours faithfully,

Annexure-III

CONTRACTOR

PROFORMA

Date:

To
The HOD (Ops),
Dredging Corporation of India Limited,
Dredge House, Port Area,
VISAKHAPATNAM – 530 001
Tel. No.0891-2871344

Sir,

Sub: Chartering of cutter suction dredger on CU.M basis and dispose the material through shore and floating pipeline at Northern shore at a distance of DISTANCE of 1.5 KM for carrying out dredging at North BOT Complex (NDC) at Paradip Port - reg.

A. With reference to your Tender No. DCI/OPS/PDP/SUB-CONT /2019, dated: 23.05.16 and as per Clause No.7.2.19 of Instructions to Bidders of Contract, we hereby certify that, we do not have any current litigation with any party/firms.

'or'

B. We hereby certified that presently we are having litigation with the following party/firms:

1……..

2……..

3……..

4……..

Thanking you,

Yours faithfully,

*Strike out 'A' or 'B' , whichever is not applicable.

Annexure -IV

8. VENDOR REGISTRATION FORM

1. **Vender Details**

a) Name of the Vendor :

b) Address :

c) Place of Registration :

d) Principal place of business :

e) Email ID :

f) Contact No. :

2. Taxation and Other Registration Details (Supporting copies need to be attached)

a) PAN No. :

b) GSTIN :

c) Type of Vendor : Registered / Unregistered / Composite Dealer (Tick whichever is applicable)

3. Bank Details (Copy of cancelled cheque needs to be attached)

a) Bank Name, Branch & City :

b) Bank Account Number :

c) IFSC :

9. INTEGRITY PACT (FORM 10)

INSTRUCTIONS FOR EXECUTION OF THIS INTEGRITY PACT

1. As per GCC Clause 29 of the Bidding Documents, the accompanying 'Integrity Pact' is to be executed in two (02) originals.

2. Indian Bidder shall submit the Integrity Pact on a non-judicial stamp paper of Rs.100/- duly signed by the person(s) signing the bid. Foreign Bidder may submit the Integrity Pact on its company's Letter Head, duly signed by the person(s) signing the bid.

2.1 The non-judicial stamp papers are to be purchased on the name of the Bidder or EMPLOYER and the date of purchase should not be earlier than six months of date of execution. The same is to be attached with this bound volume mentioning the following on the stamp paper:
"This stamp paper is an integral part of the Integrity Pact executed by us for _____*[Insert the name of the package]* Package and Specification Number_____[Insert Specification Number: package]"**[Sample is given overleaf]**

2.2 Incase of a foreign bidder, the Letter Head is to be attached with this bound volume mentioning the following on the Letter Head:

"The Integrity Pact executed by us for_____*[Insert the name of the package]* Package and Specification Number_____*[Insert Specification Number of the package]* is enclosed herewith**"[Sample is given overleaf]**

3. Bidders are required to clearly indicate the name of the package and its specification number on the stamp paper/covering letter and first page of the Integrity Pact.

4. All the pages of the integrity pact are to be signed by the Bidder. If the Bidder is a partnership or a consortium, the Integrity Pact shall be signed by all the partners or consortium members.

5. Bidders are required to clearly indicate the name and designation of the signatory (ies) as well as the name and address of the witnesses.

6. The Bidder shall not change the contents of the Integrity Pact.

7. Bidder may note that Bidder's failure to submit the Integrity Pact duly signed along with the Bid shall lead to outright rejection of the Bid.

Note: The word EMPLOYER has been used in place of PIA short name. The same may be changed accordingly.

(These are instructions for execution and does not form part of the Integrity Pact)

Rs. 100/- Non-judicial Stamp paper

INTEGRITY PACT

Between

Dredging Corporation of India Limited (DCIL) hereinafter referred to as "The Principal",

And

(_____) hereinafter referred to as "The Bidder/Contractor"

Preamble

The Principal intends to award, under laid-down organizational procedures, contract(s) for the tender No. DCI/OPS/PDP/SUB-CONT /2019, dated 20-12.2019. The principal values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness/transparency in its relations with its Bidder(s)/Contractor(s).

In order to achieve these goals, the Principal will appoint an Independent External Monitor (IEM), who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

Section I - Commitments of the Principal:

1. The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:

   a) No employee of Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or other benefit which he/she is not legally entitled to.

   b) The Principal will, during the tender process treat all Bidder(s) with equity and fairness. The principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.

   c) The Principal will exclude from the process all know prejudiced persons.

2. If the Principal obtains information on the conduct of any of its

employees which is a criminal offence under the IPC/PC Act, or it there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer and in addition can initiate disciplinary actions.

Section 2 - Commitments of the Bidder(s) / Contractor(s)

1. The Bidder(s)/Contractor(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution:

   a) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm, offer promise or give to any of the Principal's employee involved in the tender process or the execution of the contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage during the execution of the contract.

   b) The Bidder(s)/Contractor(s) will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or actions to restrict competitiveness or to introduce cartelization in the bidding process.

   c) The Bidder(s)/Contractor(s) will not commit any offence under the relevant IPC / PC Act; further the Bidder(s)/Contractor(s) will not use improperly, for purpose of competition or personal gain, or passion to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

   d) The Bidder(s)/Contractor(s) of foreign origin shall disclose the name and address of the Agents/representatives in India, if any. Similarly, the Bidder(s)/Contractor(s) of Indian Nationality shall furnish the name and address of Foreign Principals, if any. Further details as mentioned in the "Guidelines of Indian Agents of Foreign Suppliers" shall be disclosed by the Bidder(s)/Contractor(s). Further, as mentioned in the Guidelines all the payments made to the India Agent / representative have to ne in Indian Rupees only. Copy of the "Guidelines on Indian Agents of Foreign Suppliers" as Annexed and marked as Annexure.

   e) The Bidder(s)/Contractor(s) will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.

2. The Bidder(s)/Contractor(s) will not instigate third persons to commit

offences outlined above or be an accessory to such offences.

Section 3: Disqualification from tender process and exclusion from future contracts:

If the Bidder(s)/Contractor(s), before award or during execution has committed a transgression through a violation of Section - 2, above or in any other form such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/Contractor(s) from the tender processor take action as per the procedure mentioned in the "Guidelines on Banning of business dealings" will be followed.

Section 4:- Compensation for Damages.

1. If the Principal has disqualified the Bidder from the tender process prior to the award according to Section-3, the Principal is entitled to demand and recover the damages equivalent to Earnest Money Deposit / Bid security.

2. If the Principal has terminated the contract according to Section-3, the Principal is entitled to terminate the contract according to Section-3, the Principal shall be entitled to demand and recover from the Contractor Liquidated Damages of the Contract value or the amount equivalent to Performance Bank Guarantee.

Section 5: Previous Transgression.

1. The Bidder shall declares that no previous transgressions occurred in the last three with any other company in any country confirming to the anti corruption approach or with any Public Sector Undertakings / Enterprises in India that could justify his exclusion from the tender process.

2. If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process for action can be taken as per the procedure mentioned in "Guidelines on Banning of business dealings".

Section 6: Equal treatment to all Bidders/Contractors/Subcontractors.

1. The Bidder(s)/Contractor(s) undertake(s) to demand from all subcontractors a commitment inconformity with this Integrity Pact, and to submit it to the Principal before contract signing.

2. The Principal will enter into agreements with identical conditions as this one with all Bidders, contractors and subcontractors.

3. The principal will disqualify from the tender process all bidders who does not sign this Pact or violate its provisions.

Section 7: Criminal charges against violation Bidder(s)/Contractor(s).
If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer (CVO).

Section 8: Independent External Monitor(s).

1. The Principal appoints competent and credible Independent External Monitors (IEMs) for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.

2. The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the Chairman, DCIL.

3. The Bidder(s)/Contractor(s) accepts that the Monitor has the right to access without restriction to all the project documents of the principal including that provided by the Contractor. The Contractor will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/Contractor(s)/Subcontractor(s) with confidentiality.

4. The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the Principal and Contractor. The parties Offer to the Monitor the option to parties in such meetings.

5. As soon as the Monitor notices, or believes to notice, a violation of this agreement, he will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or to take other relevant action. The Monitor can in this regard submit non-binding recommendations. Beyond this, the monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.

6. The Monitor will submit a written report to the Chairman, DCIL within 8 to 10 weeks from the date of reference or intimation to him by the Principal and, should the occasion arise, submit Proposals for correcting problematic situations.

7. The Monitor shall be entitle to compensation on the same terms as being extended to / provided to Independent Directors on DCILL Board.

8. If the Monitor has reported to the Chairman, DCIL, a substantiated suspicion of an offence under relevant IPC / PC Act, and the Chairman, DCIL has not, within the reasonable time taken visible action to proceed against such offence or report it to the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Central Vigilance Commissioner.

9. The word 'Monitor' would include both singular and plural.

Section 9: Pact Duration

1. This Pact begins when both parties have legally signed it. It expires for the Contractor 08 Months after the last payment under the contract, and for all other Bidders 08 months after the contract has been awarded.
2. If any claim is made/ lodged during this time, the same shall be binding and continue to be valid despite the lapse of this Pact as specified above, unless it is discharged /determined by the Chairman of DCIL.

Section 10: Other provisions.

1. This agreement is subject to Indian Law. Place of performance and jurisdiction is the Registered Office of the Principal, i.e., New Delhi.

2. Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.

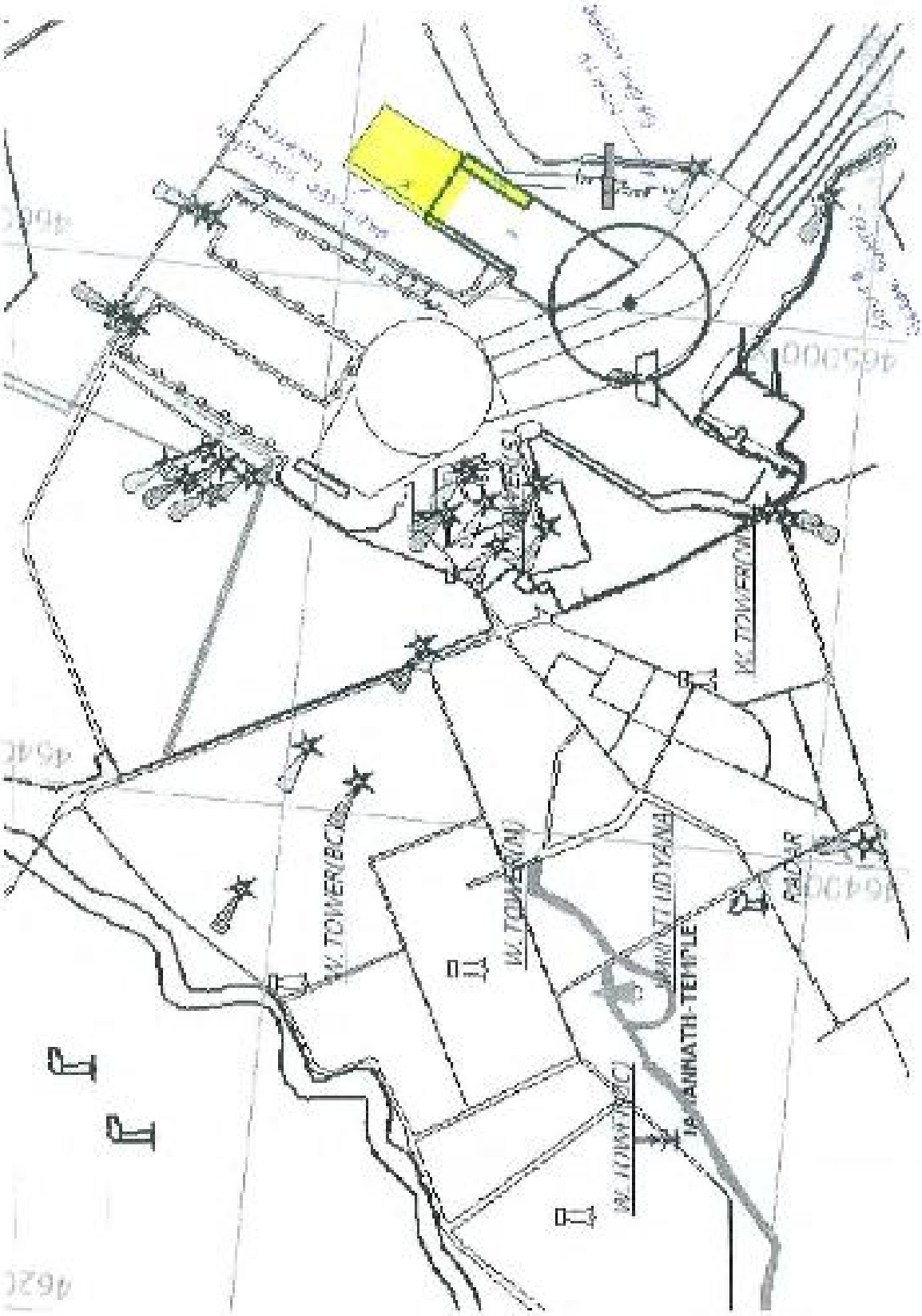
3. If the Contractor is a partnership firm or a consortium, this agreement must be signed by all partners or consortium members.

4. Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

5. Issues like warranty/ Guarantee etc. shall be outside the purview of Monitors

6. In the event of any contradiction between the Integrity Pact and its Annexure, the clause in the Integrity Pact will prevail.

_____	_____
(For & On behalf of Principal)	(For & On behalf of Bidder/Contractor)
(Office Seal)	(Office Seal)
Place: _____	Witness 1 :_____
	(Name & Address) _____
Date: _____	_____
	_____
	Witness 2 : _____
	(Name & Address) _____
	_____
	_____


W. TOWER ROAD
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W. TOWER ROAD
W. TOWER ROAD
JAGANNATH-TEMPLE

CONTRACTOR