



**WESTERN COALFIELDS LIMITED
(A SUBSIDIARY OF Coal India Limited)**

MATERIALS MANAGEMENT WING, COAL ESTATE, CIVIL LINES, NAGPUR - 440 001.
PHONE : PBX : 0712-2611381, 2510691 Extn : 5606, 5861, Fax : 0712-2 510284

Supply Order No. 12000110118154

DT: 04.12.2018

SUPPLY ORDER

To,
M/s BEML Limited
Vth Floor, Unity Building,
J C Road, Bangalore - 560002

Vendor Code : 416002
Vendor Category : Manufacturer
FAX : 0712-2249997

Dear Sir,

- Sub : Formal Order for supply of 60T capacity Dumpers with 1+3 Years Guaranteed Spares.
Ref : 1. WCL Tender Enquiry no: WCL-hq-Pur-yvr-ra-e034-2018-19 opened on 27.08.2018,
Tender id 2018_WCL_107965_1, Price bid / reverse Auction held on 23.10.2018
2. Your offer / Bid ID number: 324305 and subsequent submission of shortfall /
confirmatory documents
3. Your emails dated 19.10.2018 and 20.10.2018
4. Your letter no BEML/MN/209/WCL/BH60M/643 dt 20.10.2018
5. WCL's counter offer letter no NGP/WCL/C2(D)/Sec-1A/YVR/e-72760/ 60Tdumper/
1534 dt 24.11.18
6. Your letter no BEML/MN/209/WCL/BH60M/965 dt 24.11.2018, confirming the counter
offer acceptance

This has reference to above. We are pleased to place Formal Order on you for the supply of 60T capacity Dumpers on rates, following terms and conditions given:-

Description	Ordered Qty (nos)	Unit Price Rs.	Extended value Rs.
BEML BH60M DUMP TRUCK powered by CUMMINS INDIA diesel engine model QSK-19-C, self propelled wheeled mechanical rigid Rear Dumper as per scope of supply and detailed technical specifications enclosed as Annexures "A" to "E" Material Code: 11646000006	7	1,95,00,000.00	13,65,00,000.00
Freight for 7 equipments @ Rs. 2,56,349.00 / equipment			17,94,443.00
Insurance for 7 equipments @ Rs.3,900.00 / equipment			27,300.00
GST on equipment alongwith freight & Insurance @ 28%			3,87,30,088.04
Sub-Total value of Equipment, freight, Insurance alongwith GST			17,70,51,831.04
Spares & Consumables for initial 12 months for each machine as per Annexure C) for 7 dumpers @ Rs. 7,37,207.00 / equipment			51,60,449.00
GST on above spares and consumables (for initial 12 months of operation) for 7 Dumpers @ Rs. 1,50,569.76 / equipment, as per Annexure "C"			10,53,988.32
Spares & Consumables for 2nd year of operation for each machine (as per Annexure C) for 7 dumpers @ Rs. 10,30,734.00 / equipment			72,15,138.00
GST on above spares and consumables (for 2nd year of operations) for 7 Dumpers @ Rs. 2,15,319.62 / equipment, as per Annexure "C"			15,07,237.34
Spares & Consumables for 3rd year of operation for each machine (as per Annexure C) for 7 dumpers @ Rs.11,08,943.00 / equipment			77,62,601.00
GST on above spares and consumables (for 3rd year of operation) for 7 Dumpers @ Rs.2,41,749.94 / equipment, as per Annexure "C"			16,92,249.58
Spares & Consumables for 4th year of operation for each machine (as per Annexure C) for 7 dumpers @ Rs.17,11,250.00 / equipment			1,19,78,750.00
GST on above spares and consumables (for 4th year of operation) for 7 Dumpers @ Rs.4,16,855.00 / equipment, as per Annexure "C"			29,17,985.00
Total cost of equipment, freight, insurance, spares for 4 years			21,63,40,229.28

Total Value: Rs.21,63,40,229.28 (Rupees Twenty one Crores sixty three lakhs forty Thousand two Hundred and twenty nine and paise twenty eight Only).

Terms and Conditions:

1. Price: The Prices are FIRM on FOR Destination basis inclusive of packing & forwarding charges. However, for FOR destination supply, Freight and transit insurance shall be paid extra at actual

M/F

Signature

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subject to maximum ceiling of @ Rs. 2,56,349.00 and Rs. 3,900.00 per Dumper respectively against documentary evidence. Safe arrival of the consignment at destination shall be your responsibility. Supply of Equipment will be made from BEML Ltd Mysore / KGF and supply of spares will be made from BEML Ltd, Chandrapur.

2. **GST:** GST shall be paid extra at actual against documentary evidence as applicable at the time of dispatch within the stipulated delivery period. The Current rate of GST is 28% on Equipment. GST on spares shall be extra as applicable and present rate is given in Annexure "C". Input tax Credit shall be availed by the paying authority / consignee, for which you must submit GST Compliant Invoice to enable WCL to avail GST. In case of any failure on your account the penalty including interest (if any) borne by WCL shall be recovered from you.
3. **Delivery:** The delivery shall be completed immediately or within 3 months to be reckoned from the 7th day of order date.
4. **Guarantee / Warranty / Special Guarantee:** (Also refer B.6 and B.7 of Annexure "A")
 - a. You must ensure that there is no major breakdown due to manufacturing/ design defect during the warranty period. In case such breakdown occurs, the purchase will reserve the right to extend the warranty period suitably.
 - b. **Special Guarantee :** The complete Equipment consisting of all Assemblies/ sub assemblies/ components e.g. Engine, Transmission, Differential, Final Drive, Air conditioning Systems, AFDSS, Centralized Lubrication system, Suspension system, Hyd System, Chassis/ structure, Break system. Engine Hour Meter & Auto Electrical etc. shall be covered for suitable replacement. Repairs (on merits of the case), free from all costs to the purchaser, during total 48 (forty eight) months from accepted date of commissioning.

You will be required to stock spares parts to take care of entire performance period. Spares should be available immediately for replacement against the breakdown.

5. **Performance Guarantee:** - You shall guarantee that the availability of the Equipment shall be not less than 85% (Eighty Five percent) for a period of initial 12 months and 80% (Eighty percent) subsequent 36 months from the accepted date of commissioning (to be calculated annually). PBG (as indicated at relevant clause) must be valid for a period of 54 months of from the date of receipt and acceptance of materials (of the last consignment against the subject order) to cover the guarantee period of 48 months and the same shall be released on receipt of satisfactory performance throughout the guarantee period. The Bank Guarantee shall be released after successful completion of the guarantee/warranty period after confirmation from GM(EXCV)HOD, WCL(HQ)s or extended as deemed fit. Any short fall of performance availability, deduction shall be made as per technical specification. The PBG must be submitted within 15 days from the date of receipt and acceptance of the equipment. No Payment shall be made without submission of PBG.
6. **Performance Bank Guarantee:** You have to submit performance bank guarantee for 10% of the order value (landed cost) of equipment plus 1st, 2nd, 3rd and 4th year spares and consumables i.e. for Rs. **Rs. 2,16,34,023.00** (Rupees Two Crore sixteen Lakhs thirty four thousand and twenty three Only) (BG for each machine can be submitted separately) valid for a period of 54 months of from the date of receipt and acceptance of EQUIPMENT to cover the guarantee period and the same shall be released on receipt of satisfactory performance throughout the guarantee period. The PBG extension if any shall be done on or before expiry of original date of expiry of bank guarantee. The Bank Guarantee shall be released after successful completion of the guarantee/warranty and Performance Guarantee period after confirmation from GM(EXCV)HOD, WCL(HQ)s.

The Bank Guarantee issued by the issuing bank on behalf of the supplier in the favour of Western Coalfields Ltd. Shall be in paper form as well as issued under "**Structured financial messaging system**". The details of beneficiary for issue of BG under SFMS platform is furnished below:

Name of beneficiary and details	
Name	Western Coalfields Ltd.
Area	Head Quarter

S. K. Sharma
S. K. Sharma

[Signature]

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Bank A/c No: / Cust ID	Current Account No: 005905018053; Customer Id : 556096497 ICICI Bank Ltd., Vishnu Vaibhav, 222, Palm Road, Civil Lines, Nagpur
IFSC code	ICIC0000059
Bank Manager Name & Ph. No.	Hrushikesh Sakalkale Ph. No. +91-9923202096

BG advising message - 760COV / 767 COV via SFMS

Field number	Particulars
7035	ICICI000059
7037	WCL556096497

The original bank guarantee issued by issuing bank shall be sent by the issuing bank to " Genral Manager (MM) I/c, Materials Management Wing, Western Coalfields Limited, HQ, Coal Estate, Civil Lines, Nagpur - 440001, Maharashtra" by **Registered Post/AD**.

Any extension / amendments to the BG shall be done following the same procedure as above.

7. Inspection:

a. Pre-despatch Inspection : Pre dispatch inspection shall be carried out by CM(Excav), CIL, Bangalore / representative of GM(Excav) I/C, WCL Hqrs or any other agency appointed by WCL and Final inspection of the consignment shall be carried out at the destination stores, which will be arranged by the consignee on receipt of stores. The equipment must be delivered at Consignee's project within 15 days or earlier from the date of inspection and clearance by CIL's / WCL's representative.

b. Final Inspection: Final inspection shall be carried out at the consignee stores

8. Payment Terms:

A. Equipment and initial spares and consumables for 12 months to be supplied along with equipment: Payment for 80% of the Invoice value (landed value of the equipment including taxes and duties and excluding installation and commissioning charges (if any)) shall be made within 21 days from the date of receipt and acceptance of the materials at the Consignee stores and against acceptance of the Performance Bank Guarantee or submission of bills whichever is later. Payment for balance 20% of the Invoice value (landed value of the equipment including taxes and duties) and 100% installation & commissioning charges (if any) shall be made within 21 days after successful commissioning of the equipment as well as free training imparted to end users and performance testing is done at the allocated locations.

B. Spares and consumables for 2nd to 4th year of operation: Payment for 100% of the invoice value shall be made within 21 days of receipt and acceptance of materials or submission of bills whichever is later.

9. Security Deposit: Exempted being PSU.

10. Consignee & Allocation:- **GSTIN no 27AAACW1578L1ZW** (for areas in Maharashtra State)

QTY	PROJECT	AREA	POSTAL ADDRESS OF THE CONSIGNEE
1 No	Gauri I & II merger Expn	Ballarpur	The Depot Officer, Regional Stores, Western Coalfields Limited, Ballarpur Area, PO : Sasti, Distt:-Chandrapur (M.S) 442 701
3 Nos	New Majri Sec 1A & 2A Exp	Majri	The Depot Officer, Regional Stores, Western Coalfields Limited, Majri Area, PO: Shivaji Nagar, Dist:-Chandrapur (M.S) 442 603
3 Nos	Junad OCM Extn	Wani North	The Depot Officer, Regional Stores, Western Coalfields Limited, PO: Ukni, Dist. Yavatmal (M.S.)Pin:445304

11. Paying Authority: General Manager (Finance), Western Coalfields Limited, Coal Estate, Civil Lines, Nagpur - 440 001 for the equipment and 1st year spares (to be supplied alongwith the equipment) and Area Finance Managers of respective areas for the Spares and consumables for 2nd to 4th year of operation.

W. S. S. S.
W. S. S. S.

D. S. S. S.

-3/71

12. EFT Details (as confirmed in your offer):-

Name of the Bank	State Bank of India
Branch & Location	Kingsway, Nagpur
Account Number	11 172255258
Nature of Account	Current Account
IFS CODE of the Branch	SBIN0000432

13. Mode of dispatch: All the stores securely packed are to be dispatched by road transport to the consignee on Freight paid basis.

14. Liquidated Damages clause and Risk Purchase clause:- In the event of failure to deliver or dispatch the stores within the stipulated date / period in accordance with the samples and/or specification mentioned in the supply order, and in event of breach of any terms and conditions mentioned in the supply order, Coal India Limited shall have the right,

a. To recover from the successful bidder as agreed liquidated damages, a sum not less than 0.5% (half percent) of the price of any stores which the successful bidder has not been able to supply as aforesaid for each week or part of a week during which the delivery of such stores may be in arrears limited to 10% can be increased to 15% at the discretion of Head of MM division.

b. To purchase elsewhere, after due notice to the successful bidder on the account and at the risk of the defaulting supplier the stores not supplied or others of a similar description without canceling the supply order in respect of the consignment not yet due for supply, or

c. To cancel the supply order or a portion thereof, and if so desired to purchase the stores at the risk and cost of the defaulting supplier and also-

d. To extend the period of delivery with or without penalty as may be considered fit and proper, the penalty, if imposed shall not be more than the agreed Liquidated Damages referred to in clause (a) above.

e. To forfeit the security deposit full or in part.

f. Whenever under this contract a sum of money is recoverable from any payable by the supplier, Coal India Limited and its subsidiary companies shall be entitled to recover such sum by appropriating, in part or in whole by deducting any sum from any other contract should this sum be not sufficient to cover the full amount recoverable. The successful bidder shall pay Coal India Limited and its subsidiary companies on demand the remaining balance. The supplier shall not be entitled to any gain on any such purchase.

15. SUBMISSION OF BILLS:

a. **For claiming 80% payment**, following documents are to be submitted along with original bills as per terms of the supply order to the consignee.

(i) Pre-receipted and stamped GST compliant Invoice as per GST rules and Act indicating HSN code

(ii) Packing list in original list giving details of bill of materials, if applicable. (Invoice should be strictly as per GST rule 2017), if applicable.

(iii) Consignment note / RR/ LR in original.

(iv) Warranty / Guarantee certificate, if applicable.

(v) Manufacturer's test certificate, if applicable.

(vi) DGMS / BIS / Pre dispatch inspection certificates / any other document, if required as per the contract.

(vii). Any other document indicated elsewhere in the order

b. For Claiming 20% payment, the following documents are to be submitted

(i) Pre-receipted and stamped bill for 20% payment.

(ii) Commissioning Certificate from the respective Area Manager / Staff Officer (Excv)

(iii) Any other document indicated elsewhere in the order

16. Force Majeure Clause: If the execution of the contract/supply order is delayed beyond the period stipulated in the contract/supply order as a result of outbreak of hostilities, declaration of an embargo or blockade, or fire, flood, acts of nature or any other contingency beyond the supplier's control due to act of God then Coal India Limited or its subsidiary companies may allow such additional time by extending the delivery period, as It considers to be justified by the

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circumstances of the case and its decision shall be final. If and when additional time is granted by the Coal India Limited and its subsidiary companies, the contract/supply order shall be read and understood as if it had contained from its inception the delivery date as extended.

17. **Manufacturing certificate:** : As the order is being placed on the basis of consideration that you are a manufacturer of the ordered material, you will have to provide a certificate to the following effect on the body of each bill.

"Certified that the items supplied and included in this bill/ invoice are our own make and have been actually manufactured in our works situated at _____ (address of the factory)

18. **INTEGRITY PACT:** Integrity Pact as per format (Annexure F of the NIT) signed and furnished by you along with the offer shall remain valid and applicable for this contract.
The name of the IEMs for this tender are:

Shri A.K.BAJAJ, Ex-Chairman, CWC, A-167, Defence Colony, New Delhi 110024
Shri A.K.Mohapatra, Qrs no B-5/9, Unit - 9, Bhoi Nagar, Bhubaneswar 751022

19. **Arbitration Clause:** In the event of any dispute or difference relating to the interpretation and application of the provisions of the contracts, such dispute or difference shall be referred by either party for Arbitration to the Sale Arbitrator in the Department of Public Enterprises to be nominated by Secretary to the Govt. of India in-charge of the Department of Public Enterprises. The Arbitration and Conciliation Act, 1996 shall not be applicable to arbitration under this clause. The award of the Arbitrator shall be binding upon the parties to the dispute, provided, however, any party aggrieved by such award may take further reference for setting aside or revision of the award to the Law Secretary, Department of Legal Affairs, Ministry of Law & Justice, Govt. of India. Upon such reference the dispute shall be decided by the Law Secretary or the Special Secretary/Additional Secretary, when so authorized by the Law Secretary, whose decision shall bind the parties finally and conclusively. The Parties to the dispute shall share equally the cost of arbitration as intimated by the Arbitrator".

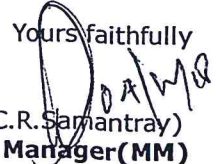
20. **Price Fall Certificate:** As undertaken by you in your offer You shall undertake that you have not supplied / are not supplying similar product systems or sub systems at a price lower than that ordered price in respect of any other ministry/ department of the Govt. of India or a PSU and if it is found at any stage that similar product / Systems / Sub - systems was supply by you to any other Ministry / Department of the Government of India or a PSU at a lower price, then that very price with due allowance for elapsed time, will be applicable to the present case and the difference in the cost would be refunded by you to WCL, if the contract has already been concluded, you will furnish the certificate to the Consignee / Paying authority along with the bills to this effect.

Failure in submission of aforesaid certificate by the contract holder, may result in with holding of the payment of their bills against supply.

Unless otherwise specified above, the purchase order shall also be governed by the terms and conditions given in the General terms and conditions enclosed.

This order is issued with this acceptance. Kindly acknowledge the receipt of this order.


041218
(Y. Venkata Ramana)
Sr. Manager(MM)

Yours faithfully

(C.R. Samantray)
Chief Manager(MM)

Enclosures: -

Annexure-A : Scope of supply and Technical specifications

Annexure B: List of Standard, Special Tools and Electronic Diagnostic Tools

Annexure-C: List of SPARES AND CONSUMABLES required for 1st, 2nd, 3rd and 4th year of operation

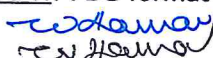
Annexure-D: Major Bought out items list

Annexure-E: Oil and Lubricant chart

Annexure-F: Erection chart

Annexure-G: General Terms & Conditions

Annexure-H: PBG format



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Copy to :

1. GM(Excv) HOD, WCL(HQ), Nagpur
2. AGM / SO(Excv)/SO(MM)/AFM/Depot Officer, WCL, Ballarpur/ Majri / Wani North Areas.
3. GM(CP)/ GM(Fin.) , WCL Hq., Nagpur
4. GM(P&P), WCL(HQ), Nagpur
5. GM(MM), SECL, MCL, CCL, BCCL, ECL, NCL
6. RD, CMPDIL, RI IV, Nagpur
7. TS to DT(P&P), WCL, Nagpur
8. Sr. Manager(MM/Admn.), WCL(HQ) – The Landed value of the order is Rs. **21,63,40,229.28**
9. IEM, Shri A.K.BAJAJ, Ex-Chairman, CWC, A-167, Defence Colony, New Delhi 110024
10. IEM, Shri A.K.Mohapatra, Qrs no B-5/9, Unit – 9, Bhoi Nagar, Bhubaneswar 751022
11. GM(Excv), EED, Coal India Ltd., "Coal Bhawan", Premises no 04 MAR, Plot No AF III Action Area 1A, New Town, Rajarhat, Kolkatta 700156, West Bengal
11. Chief Manager (Excv) EED, CIL, Regional Sales Officer, Geeta Mansion, 4th floor, KG Road, Bangalore

This is issued with the approval of Board of Directors in their 306th meeting held on 16.11.2018, whose relevant excerpts from the minutes are circulated by Company Secretary vide WCL/BD/SECTT/BM-306/2018/734 dt 24.11.2018.

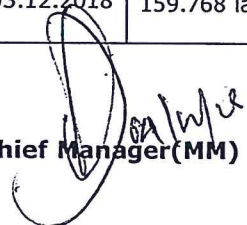
Indent details: Indent.No. 1468 dated 12.11.2018.

Budget Reference: **Capital budget:** FA/WCL/CAP/BC/HEMM/311 dated 03.12.2018 for Rs.3732.39 lakhs

Revenue budget:

Year	BC reference	BC Date	Value Rs.
2019-20	BC/WCL/Rev/GM(Excv)/2019-20/HEMM Spares /9/11/171	03.12.2018	17.752 lakhs
2020-21	BC/WCL/Rev/GM(Excv)/2020-21/HEMM Spares /9/11/171	03.12.2018	174.71 lakhs
2021-22	BC/WCL/Rev/GM(Excv)/2021-22/HEMM Spares /9/11/171	03.12.2018	207.62 lakhs
2022-23	BC/WCL/Rev/GM(Excv)/2022-23/HEMM Spares /9/11/171	03.12.2018	159.768 lakhs


Sr. Manager(MM)


Chief Manager(MM)

Detailed Technical Specifications for 60T Dumper

1. SCHEDULE OF REQUIREMENT: **Dumpers- 60T capacity**, including necessary Spares & Consumables for **48 months** from accepted date of commissioning, as per the technical specifications indicated below:

Technical specification of the Equipment:

Preface - Instructions to Bidders

Introduction: These Technical Specifications identify the technical requirements of the Goods and Services which are the subject of this Tender. The Technical Specifications are presented in three parts as follows:

A. Scope of Supply

B. General Requirements

- i. Geography and Climatic Conditions
- ii. Goods (Equipment and Machinery)
- iii. Standards
- iv. Supplier's Responsibility
- v. Spare Parts Provisions
- vi. Composite Warranty / Guarantee
- vii. Performance Guarantee
- viii. Quality Assurance

C. Equipment Specifications

2. **Conformity with Specifications**

The Equipment to be provided shall conform with the requirements defined in these parts. Where stated requirements conflict, the order in which the specifications shall prevail is as follows:

Part A followed by

Part B followed by

Part C

A. Scope of Supply:

A.1 Equipment Package

The Supplier is required to provide a complete package of Equipment for the supply of Dumper 60 Ton capacity, Accessories, Spare Parts, Consumables for 4 Years (48 months) operation and Training, Installation, Testing & Commissioning at coal mining projects of WCL, Nagpur.

The purchaser will make available to the Supplier, at no cost, at project/site within the site(s) boundaries as may reasonably be required by the Supplier for the purposes of erecting the Equipment and for storage of Goods and Supplier's plant, tools etc. pending acceptance.

A.2 Supplementary Items

All sort of Spares for Operational, Maintenance and standby/ contingency, Filters (including standard Engine filters), O-rings/ Gaskets etc, pertaining to all the systems of Equipment and Consumables including Battery, Auto Electricals, excluding TYRES (herein after collectively referred to as "**Spare Parts and Consumables**" unless the context specifies otherwise).

The Consumables for operation shall not include Diesel/ Fuel, Oils, Lubricants (POL) and TYRES.

(I) Following items shall be supplied, along with each Equipment:-

- a. Spare Parts and Consumables, required for initial 12 Months.
- b. First fill of all Oils, Grease and Lubricants needed for test and commissioning of each equipment.
- c. A comprehensive tool kit, which shall include necessary special tools required for erection, commissioning and for the maintenance & repair of the Equipment.

Special Tools for maintenance shall include Accumulator charging kit, Suspension/ Nitrogen charging kit & Cartridge filter opening tool etc.

(II) Spare Parts & Consumables for 3 years (36 months) operation, out of total 4 years (48 months), in accordance with the supplier's recommendations shall be delivered periodically (in minimum two lots, Annually), throughout the balance period of 3 years (thirty six Months), of the total Guaranteed period of 4 years (forty eight months) from the accepted date of commissioning.

A.3 Information and Drawings

The Supplier shall provide following manuals / documents with EACH Equipment, before commissioning:-

- a. One suitably illustrated Operating, Repair and Maintenance Instructions for all the equipment, Written in the English language, substantially bound in book form, with Each Equipment.
- b. One suitably illustrated, detailed Spares Parts Manuals covering all plant, Equipment & accessories substantially bound in book form; as well as soft copy (in pen drive/ CD), with Each Equipment. ONE set of Manuals (Hard & soft copies) shall be supplied to the O/o GM(Excv)HOD, Excavation deptt WCL(HQ) Nagpur. The Supplier shall also submit the data identified in the specifications for each item of Equipment. In addition to the Equipment drawings, the Supplier shall supply detailed drawings illustrating erection/

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assembly site, foundation for such items as drive motors, switch installations etc (where appropriate) and accommodation requirements (if any).

A.4 Erection/Assembly, Commissioning and Performance Testing

The Supplier shall provide the Services of Specialist Technicians/ Service Engineer to supervise the installation/erection/assembly, commissioning and any performance testing of the plant, Equipment and accessories supplied.

The Service Engineer / Technicians shall remain at site following commissioning until all necessary Personnel are fully conversant with the maintenance and operation of the Equipment, and shall be available throughout the Warranty/ performance period.

A.5 Training: The Supplier shall also be responsible for the provision and delivery content of any suitable training programmes necessary for operation and maintenance of the Equipment.

B. General Requirements

B.1 Geography and Climatic Conditions

Elevation: The natural surface varies from 100 to 1000m above mean sea level.

Climate: The climate is sub-tropical to tropical, dusty, with a hot and humid atmosphere. Monsoon rains occur in the period from June to October.

Ambient Conditions	Relative Humidity	-	Maximum 98%
	Temperature	-	Minimum 00 C
			Maximum 500 C

Rainfall: The mean annual rainfall is 1,000 mm, 90 to 95% of which may fall in rainy season from June to October.

Wind	April to September	-	South to South Westerly
	October to March	-	North Westerly
	Speed	-	8 km per hr average, 100 km per hr maximum

Under foot Slushy and highly abrasive.

B.2 Goods (Equipment and Machinery)

Detailed specifications of the Equipment to be supplied are given in Part-'C' of this section.

In general, all items shall be:

- a) new, unused and of the current design (incorporating latest proven features) and not likely to be discontinued or become obsolete in near future
- b) designed and constructed to handle without overload and for the working hours stated, the maximum volumes/rates specified;
- c) designed to facilitate ready access, cleaning, inspection, maintenance and repair of component parts;
- d) designed to facilitate rapid changeover of consumable items.

The component parts of all items shall, wherever possible, be selected from the standard ranges of reputable manufacturers.

The Equipment and accessories shall be physically robust and where necessary capable of dismantling for transportation and ready re-assembly using simple tools. All Equipment items provided shall be designed to be compatible within the proposed overall Scope of Supply. Electrical Equipment shall provide all protection devices, controls and interfaces for the Equipment to operate safely and efficiently. All workmanship and materials shall be of first class quality in every respect.

All parts and surfaces which are exposed to corrosive environments shall be suitably protected to prevent any effects of corrosion or erosion.

B.3 Standards: In compliance to Safety & functional aspect of dumpers as per ARAI guidelines, following provisions shall be made :-

i. All dumpers shall permanently carry sign stating "NOT MEANT FOR RUNNING ON PUBLIC ROADS" (Preferably White colour sheeting on Black Background) in retro reflective colour sheeting, which shall be visible from the front side and rear side of the vehicle.

ii. REFLEX REFLECTORS, each having dimension MORE THAN 28.5 Sq. CMS. (Circular/ Rectangular) made of good quality FIBER / other suitable material to ensure durability, shall be fitted to all the Dumpers at Front, Rear and at All Sides. The distance between two Reflectors should be between 2.8 to 3.0 Mtrs. The details of Reflectors, to be fitted to EACH Dumper, are as under:-

I. AT FRONT: WHITE REFLEX REFLECTORS- TWO Nos.

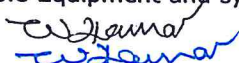
II. At REAR: RED REFLEX REFLECTORS- TWO Nos.

III. EACH SIDE OF DUMPER : AMBER COLOUR REFLEX REFLECTORS- THREE Nos (Min.)

2. Beside conforming to the Standards specified in the Equipment Specification in Part-'C', the Equipment shall also have to meet approval of the Statutory Government Authorities including Director General of Mines Safety (DGMS) having jurisdiction over the Equipment and its use. The system of units for all measurements shall be the *Système International Unités* (S.I.).

B.4 Suppliers Responsibility

The Purchaser requires that the Supplier shall accept responsibility for the provision of complete operable and compatible Equipment and systems within the Scope of Supply. This document identifies only the major





items required for the installation and the Supplier shall ensure that the total supply includes all necessary Equipment for it to function effectively and safely. Any additional items the Supplier considers necessary to ensure compliance with such a requirement shall be identified and included.

If the Supplier observes that this Specification document contains any anomalies, ambiguities, flaws, errors or omissions, the Supplier shall immediately bring these to the attention of the Purchaser.

The Supplier shall be responsible for the testing and commissioning of the Equipment and ensure that it meets the requirements as specified. The commissioning and setting to work of the whole Equipment - Supply package shall be carried out under the supervision of the Supplier in conjunction with the Purchaser's nominated personnel

B.5 Spare Parts Provisions

B.5.1 Availability of Spare Parts: All items and Equipment proposed shall be of current design and manufacture. The Supplier shall warrant that sufficient spares and servicing facilities will be available to maintain the Equipment in use throughout its life.

B.5.2 Provisions of Spare Parts.

B.5.2.1 Within the Contract Price, the Purchaser will agree to purchase all Operational, Maintenance and standby/ contingency Spare Parts, Filters (including standard Engine filters), O-rings/ Gaskets etc, pertaining to all the systems of Equipment and Consumables including Battery, Auto Electricals, excluding TYRES (herein after collectively referred to as "Spare Parts and Consumables" unless the context specifies otherwise), in accordance with the supplier's recommendations for 4 years (forty eight Months) from the accepted date of Commissioning.

Necessary Oil & Lubricant, required for Commissioning & Testing shall be supplied by the Supplier, as per the contract.

The Consumables for operation shall not include Diesel/ Fuel, Oils, Lubricants (POL) and TYRES.

Necessary Spares & Consumables, required for initial 12 Months (5,000 working hours), shall be supplied with each equipment as per the list submitted by you which is placed at Annexure C.

All Spare Parts & Consumables, required with for the balance 36 (thirty six) months period, (beyond initial twelve months), as per the list submitted by you which is placed at Annexure "D", "E", "F", shall be delivered periodically (in two separate lots for each year).

B.5.2.2 You should supply Spare parts & Consumable requirements shall be based upon the expected 4,500 (four thousand five hundred) +/- 500 working hours per year.

However, Any shortfall in quantity of these spares and any other spares over and above the list submitted with offer during the period of 48 months; shall have to be supplied by the supplier at free of cost. Any shortfall in quantity of above items during the period of 48 months, if required beyond 20,000 working hours, shall be supplied by you at extra cost.

B.5.2.3 In the event that the Spare Parts and Consumables, as recommended by you, in any way fall short of actual requirements during the period for which they are said to be adequate, the supplier shall provide such additional Spare Parts and Consumables, as are necessary at the final destination. Such additional Spare Parts and Consumables shall be provided by the Supplier to the Purchaser free of all cost and shall be transported to Site by air freight internationally and by air, rail or fast road transport within India.

B.5.2.4 The supplier shall not be liable for the supply of additional Spare parts and Consumable, if these are required by reasons of unforeseen accidents, negligence or misuse on the part of the purchaser.

B.5.2.5 In the event that the operation of the plant is inhibited or frustrated as a direct result of lack of Spare parts and Consumables pursuant to clause B.5.2.2 hereof, then the period referred to in clause 'B.5.2.1' hereof shall be extended by a period of not less than the period during which operation as aforesaid was inhibited or frustrated.

B.5.2.6 In the event that the spare parts and consumables, as recommended by the supplier are in excess of the actual requirements, The purchaser at its option may -:

Retain such excess spares and consumables as, in discretion, it may elect to do so.

The Supplier to reprocess or repatriate or otherwise dispose off such excess spare parts in exchange for payment to the purchaser, at the contact Price of the spare parts and consumables concerned. The purchaser shall notify the supplier, in writing of it's requirement under the clause within Sixty (60) day after completion of the contact period of 36 months.

The supplier shall stock sufficient fast moving & maintenance and other spares in their Local Depots to ensure maximum availability of their equipment.

The supplier shall warrant that sufficient stock of spares parts will be maintained in the office/ depot and servicing facilities, preferably at the coal mining area of WCL/ at Nagpur, to meet any situation of exigencies to maintain the Equipments in use through out its life.

B.5.3 Emergency Spare Parts

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The supplier shall ensure that Spare Parts required urgently by the Purchaser for repair of breakdown equipment are supplied at over-riding priority.

B.5.4 Lifetime Spare Parts

The Supplier undertakes and guarantees to produce and maintain stocks, to be available for purchase by the Purchaser under separate agreement, of all Spare Parts and Consumables as may be required for maintenance and repair of the Plant throughout its working life. In the event that the Supplier wishes to terminate production of such Spare Parts, the Supplier shall:

- give not less than six months notice in writing of its intention to terminate production in order to permit the Purchaser reasonable time in which to procure needed requirements; and
- immediately following termination, provide to the Purchaser at no cost, manufacturing drawings material specifications and all necessary permissions to facilitate manufacture of the Spare Parts elsewhere.

In any event, the Supplier shall not seek to terminate manufacture of spare parts for a period of not less than ten (10) years from Taking-Over.

B.5.5 Oils, Lubricants and Fluids

The Supplier shall provide to the purchaser a detailed schedule of all necessary oils, lubricants, fluids for the operation and maintenance of equipment and specify the appropriate Grades, Indian and International standard references (whichever is applicable), suitable for different assemblies.

B. 5.6 Support Infrastructure

The necessary after sales service & Support Net work for the offered Equipment should be available in India, preferably nearer to the mining areas of WCL/ Nagpur to support the product. Availability of sufficient skilled service personnel and spare parts depot/ ware house, to support the Equipment in WCL mines should be maintained by the supplier.

B.5.7 General

Nothing in this Clause B.5 shall relieve the Supplier of any Guarantee, Availability, Performance or other obligations or liabilities under the Contract.

B.6 Composite Warranty / Guarantee

You shall warrant that the equipment supplied under this contract is:--

- In accordance with the contract specifications.
- The equipment shall have no defects arising out of design, material or workmanship & the Complete Equipment shall be covered for total 12 months from the accepted date of commissioning. The warranty shall cover for total equipment so that ultimate responsibility lies only with the Equipment Bidder although components may be supplied by different suppliers, to the Bidder.
- The equipment will be warranted against any manufacturing defects/ workmanship for a period of 12 months from the date of commissioning. Any defect observed on this accounts shall be attended to immediately.

In the event of any breakdown or failure of performance due to defects in materials, designs, workmanship, spare parts etc. WCL shall promptly notify the supplier in writing of any claims arising under this warranty. The repairs, replacement or rectification work shall be carried out by the supplier at site, immediately at no cost to the purchaser, or latest within 21 days of settlement of warranty claims.

"At no cost to the Purchaser" means, the supplier will have to bear all the expenses upto the destination site i.e. Ex-works prices, Excise Duty, sales tax, Insurance, inland transportation charges etc., as applicable to ensure free delivery of warranty replacement at WCL sites.

B 7 Performance Guarantee

B.7.1 Introduction

B.7.1.1 The Supplier shall guarantee that the Equipment supplied pursuant to this Contract shall be available for use by the Purchaser and shall meet the performance criteria specifications at the level and in accordance with the terms and conditions of the Availability Guarantee herein contained.

B.7.1.2 Where Equipment supplied under the Contract fails to meet the criteria of the Availability Guarantee, the Supplier shall, at its own cost, provide suitably qualified and experienced personnel at Site to demonstrate to the Purchaser's satisfaction that the required level of availability can be achieved and maintained.

B.7.1.3 The Supplier shall provide the Services of such personnel at Site within seven (7) days of notification by the Purchaser that the availability criteria has not been met in any one (1) month.

B.7.2 Guarantee

B.7.2.1 The Supplier shall guarantee that the Equipment supplied pursuant to the Contract shall be available to the Purchaser at the level hereinafter defined to perform to criteria of not less than that defined in the Technical Specifications incorporated in the Contract.

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B.7.2.2 The Supplier shall guarantee that the Equipment shall be available to perform its duty to minimum criteria and to the minimum availability percentage level as defined in the individual Equipment Specifications included as the Attachment to the Technical Specifications. The method of assessment applied shall be as follows:

Method of Assessment:

The following calculation shall determine the availability of the Equipment:

$$\% \text{ Availability} = \frac{\text{Scheduled Available Time} - \text{Down Time}}{\text{Scheduled available Time}} \times 100$$

Scheduled Available Time shall equate to 24 hours.

Downtime shall mean all hours of work lost due to mechanical, electrical or other failure, **including:** -
A) routine servicing and maintenance in accordance with the manufacturer's published recommendations, including:

- a) changing oils, oil filters and air filters; lubrication;
- b) changing identified consumable or wear parts.

B) planned preventative maintenance Programmes; It shall however, **not include:** -

- i. damage due to abusive use or incorrect operation methods by the Purchaser;
- ii. accidents;
- iii. strikes or stoppage of work by the Purchaser's personnel;
- iv. natural disaster;
- v. lack of Spare Parts not attributable to a failure of the Supplier, its Agents or Representatives.

Downtime shall also specifically include all hours lost due to failures determined to be guarantee failures.

The Supplier shall state the number of hours per day required to carry out (a) and (b) above. The time stated shall, with the agreement of the Purchaser, form the basis of the assessment of the availability.

The Purchaser will assist the Supplier, without relieving the Supplier of any other obligations under the Contract, to achieve the guaranteed availability by:

- i. Providing suitable semi-skilled & un-skilled manpower for repair & maintenance.
- ii. Carrying out normal and proper maintenance, including preventative maintenance in accordance with the Supplier's standard/published recommendations, and making all necessary repairs using only genuine manufacturer's spares.
- iii. Providing co-operation to all Supplier's authorised representatives, complying with all reasonable procedural suggestions to improve efficiency of machine operation or reduce downtime.
- iv. Where appropriate, providing and maintaining such conditions as:
 - a) Proper electrical Supply
 - b) Terrain Area
 - c) Bench preparation
 - d) Reasonable floor conditions
- v. Providing all Supplier's authorised representatives access at all reasonable times to the machine service and repair facilities.
- vi. Maintaining a log-book for each shift wherein the working hours, breakdown times, maintenance hours, idle time, etc. shall be recorded. This record will be available for examination and signature by the Supplier's representative.

B.7.3 Effect and Duration of the Performance Guarantee

B.7.3.1 This Guarantee shall become effective on the day on which the Equipment is commissioned at the Site. Commissioning shall be evidenced by the issue of the Purchaser's Acceptance Certificate.

B.7.3.2 This Guarantee shall remain effective for 48 (forty eight) months from the date of commissioning, irrespective of the hours operated by the Equipment during the period of the guarantee.

B.7.3.3 In the event that the Equipment fails to achieve the guaranteed Availability during total 48 months period (to be calculated annually) during first or second or third or for twelve (12) month period, the Supplier shall be liable to pay to the Purchaser, as Penalty , a sum equal to, as indicated here under for each equipment : -

- a) 1% of the contract price of the equipment for every percentage reduction from the Guaranteed Availability for the first 5%
- b) 10% of the contract price of the equipment for reduction beyond 5% from the Guaranteed Availability.

B.7.3.4 When the supplier is unable to supply the replacement of a failed part under warranty within 21 days of giving intimation by the consignee and if the machine is commissioned by using the spare from the stock of the project the period (after 21 days) till the supplier replaces the part under warranty shall be

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treated as "Deemed Breakdown" (the credit for keeping machine available shall not be given to the supplier).

B.8 Quality Assurance

B.8.1 The Supplier should furnish in detail its quality assurance plan for various stages of manufacture. The Quality Assurance plan shall comply with an internationally recognised quality assurance standard such as ISO 9000.

B.8.2 The Supplier shall provide facilities to Purchaser or their authorised representatives for progress inspection during manufacture at his works and furnish all test data available in this regard for quality control, both for bought out items and his own manufactured items.

B.8.3 The Purchaser or his agent, when so required by him, shall also be provided with samples of "bought-out" materials for the purposes of undertaking independent tests which independent tests shall be at the expense of the Purchaser.

PART - 'C'

1. EQUIPMENT SPECIFICATION OF 60 Ton (54.42Tonne) REAR DUMPER

1. Scope of Specification

This specification is intended to cover the technical requirements for the design, manufacture, testing, delivery, on-site erection and commissioning of a diesel powered, self-propelled, wheeled Rear Dumper with 60 Ton (54.42 Tonne) Rock Body.

2. References

The following International Standards with latest amendments, are referred to in, and form part of, the Specification:

ISO 2867 Earth-moving machinery - Access systems

ISO 3450 Earth-moving machinery - Wheeled machines - Performance requirements and test procedures for braking systems

ISO 3457 Earth-moving machinery - Guards and shields - Definitions and specifications

ISO 3471 Earth-moving machinery - Roll-over protective structures - Laboratory tests and performance requirements

ISO 5010 Earth-moving machinery - Rubber-tyred machines - Steering requirements ISO 6014 Earth-moving machinery - Determination of ground speed

ISO 6405-1 Earth-moving machinery - Symbols for operator controls and other displays - Part 1: Common symbols

ISO 6405-2 Earth-moving machinery - Symbols for operator controls and other displays - Part 2: Specific symbols for machines, equipment and accessories ISO 6483 Earth-moving machinery -

Dumper bodies - Volumetric rating

ISO 6682 Earth-moving machinery - Zones of comfort and reach for controls

ISO 6750 Earth-moving machinery - Operation and maintenance - Format and content of manuals ISO 7132

Earth-moving machinery - Dumpers - Terminology and commercial specifications

ISO 7457 Earth-moving machinery - Measurement of turning dimensions of wheeled machines ISO 9249

Earthmoving machinery - Engine test code - Net power

ISO 10268 Earth-moving machinery - Retarders for dumpers and tractor-scrappers - Performance tests ISO

10968 Earth-moving machinery - Operator's controls

3. Design Criteria

The dumper shall be capable of continuous operation for protracted periods on a system of 3 shifts each of 8 hours duration per day throughout the year.

The dumper shall be suitable for 2:1 heap loading by 3 to 7 m³ excavators with rock having a density, after blasting, of 1,800 kg/m³.

4. Technical Requirements

4.1 Engine: The dumper shall be powered by an electronically governed direct injection 4-stroke diesel engine of not less than 475 kw net power measured between 1700 and 2200 r/min according to ISO 9249. The engine shall be provided with 24 V electric starting, dry type 2-stage air-cleaner with suitable dust evacuator and dust level indicator and 2-stage fuel filter with water separator. The Engine should be equipped with fully integrated electronically controlled fuel management & monitoring system with built-in protection and self diagnostic features, environment friendly & fuel efficient.

The engine shall have a water jacket cooling system, thermostatically controlled, using an engine driven water pump, with the cooling water re-circulated through a heavy-duty radiator. The system shall be capable of providing sufficient cooling to allow the dumper to continuously operate at the full rated output at the maximum ambient temperature. The moving parts of the engine shall be lubricated by an engine driven oil pump, with full flow oil filtration and cooling.

The Engine shall be equipped with an over-speed governor or suitable equivalent system. The Engine shall be provided with a heavy-duty guard (if applicable).

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The Engine is to be environmentally certified / compliant (for minimum EPA tier-I) (self certification of engine manufacturer will also be accepted), fuel efficient having fully integrated electronically controlled monitoring system and self diagnostic features with built in protections. The engine electronic control module should be integrated with operating load conditions and be capable to monitor operator's and sensor's input for optimum Engine performance & reduced emission level to match EPA-non road regulation tier - I (minimum) exhaust emission limits.

The diagnostic information stored shall be for abnormal machine condition / or incorrect machine operation and prognostic information for better maintenance support. The Engine, Transmission shall provide diagnostic capability to store and retrieve sufficient data both on board as well as off board such as active, intermittent and calculated data etc of at least one month, in its memory before it is downloaded with electronic (laptop) for analysis.

4.2 Transmission: The dumper shall be provided with an off-highway minimum 6-speed fully automatic power shift hydraulic transmission with lock-up clutch. The dumper shall be provided with downshift and reverse inhibitors. Suitable protection of the transmission pan from external damage should be provided. The pan guard should be designed to minimize accumulation of dirt and debris.

Suitable interlocking arrangement to be provided between parking brake and transmission gear shifting system. Facility to be provided in the dumper to restrict/control the speed of the dumper whenever required.

4.3 Drive System: A dynamically balanced propel shaft with universal joints at both ends should be utilised for transmission of power. Adequate means/shaft guard should be provided to prevent damage to other components in the event of failure of the universal joints. There shall be provision of retarder and spin regulator in the dumper.

The final drive shall comprise a heavy duty differential with high quality bevel gear and pinions, a heavy duty planetary gear system and drive axle.

4.4 Suspension: Front and rear suspension shall be of hydra-air type to absorb road shocks and prolong tyre life. Both the front and rear suspension should be capable to sustain rated load.

4.5 Steering: Full hydraulic orbitrol power steering and emergency steering which complies with ISO 5010 shall be provided. Emergency steering shall be automatically activated in the event of failure of the normal steering power source. Suitable steering locking device shall be provided in steering linkage to avoid unwanted rotation of wheel when man at work under the machine in engine running condition.

4.6 Hoses: All hoses shall be fire/heat resistant / retarded type, grouped as far as possible and suitably clipped to reduce damage from scuffing. Hoses in the hot zones shall be provided with anti fire cover.

4.7 Brakes

Suitable reliable service, secondary and parking brakes which comply with ISO 3450 shall be provided.

(1) Service brakes

The front service brakes shall be air and / or oil actuated calliper type.

The rear service brakes shall be air and/or oil actuated multiple disc type and should operate automatically in the event of low air/oil pressure.

They should preferably be fully enclosed to prevent entry of dust and water, and designed for low maintenance.

(2) Emergency Brake

Provision of Automatic Emergency Brake alongwith manual Emergency Braking system, which shall be operative in the event of failure of Brake pedal, shall be provided.

(3) Parking brakes

The parking brakes should be operational even at zero air or oil pressure.

(4) Retarder

Suitable retarding system to control speed while descending gradient shall be provided.

4.8 Tyres: Rock duty, cut-resistant tyres size 24.00 x 35 - 42/ 48PR (E4 type)/ Radial, shall be provided.

4.9 Frame: The frame should be a rugged, durable construction of high strength steel and free from any stress concentration. The design must take care of all forces encountered during the operation of the dumper.

4.10 Dump Body: The type of body required on the dumper is for handling "Rock". The body capacity should have a minimum 54.42 Tonne payload based upon 2:1 heap loading. The body should be an exhaust heated, heavy duty type with high hardness abrasion resistant side, front and bottom plates. The width of the body should be such that it protrudes over the tyres to prevent damage due to spillage of material from

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the body. The body design should be such that the stability of the machine is maintained in all operating conditions especially during turning. A body position indicator shall be provided.

4.11 Fuel Tank: The fuel tank shall be of sufficient capacity to allow 16 hours operation without re-fuelling and be provided with a level indicator and lockable hinged filler cap. Construction of the tank should be such that it provides for easy accumulation and drainage of water with minimum loss of fuel.

4.12 Lubrication System: A centralised automatic lubrication system of positive pressure type should be provided with warning alarms for identification of failed points.

4.13 Operator's Cab: A fully insulated, sound suppressed, air-conditioned operator's cab with safety glass, power windows, rear-view mirrors, windshield wipers & washers and ROPS which complies with ISO3471, shall be provided. Fully adjustable operator's Seat, passenger Seat, seat belt, floor mat and Blind Spot Mirror/ other suitable device (other than side and rear view mirrors) shall be provided. Steps and Handrails which comply with ISO 2867 shall be provided for access to the operator's cab.

All operating controls, gauges(with colour indication for safe and unsafe working), monitoring and working signals shall be conveniently located within easy reach of the operator and comply with ISO6405-1, ISO6405-2, ISO6682 and ISO10968.

4.14 Gauges and Indicators

The following shall be provided as a minimum:

- a) Water temperature
- b) Engine oil pressure
- c) Converter/ Brake oil temperature
- d) Fuel capacity
- e) Engine tachometer/ RPM meter
- f) Engine hour-meter
- g) Speedometer
- h) Air pressure (if applicable)

4.15 Warning Alarms/Lights

Audio/ Visual Warning Alarm/ Lights Systems shall be provided for the following:

(I) **Audio Visual Warning Alarm for Reversing with flashers**, Approved type confirming to Specifications as per DGMS (Approval)/ AVA/01 dated 25-05-2010 of DGMS, with provision for:-

- a) Protection against splashing of mud and water on the pressure switch shall be provided by HEMM manufacturer.
 - b) Mechanical lock may be provided to prevent un authorised tempering of the alarm
- (II) Parking brake actuation
(III) High Torque Converter temperature
(IV) Brake oil temperature
(V) Low air pressure (if applicable)
(VI) Emergency steering
(VII) Low engine oil pressure
(VIII) High coolant temperature
(IX) Dumping buzzer
(X) Alarm for lubrication failure.

4.16 Electrical Equipment

The dumper shall be provided with the following:

- a) 24V DC electrical system with suitably rated alternator of reputable make
- b) 24V DC Electric start
- c) Reputable makes high capacity Batteries
- d) Battery isolation switch

All electrical circuits shall be protected by adequately rated fuses/ MCB which shall be easily accessible for maintenance. At least two spare fuses (if applicable) of each size shall be provided in each fuse box. The electric wire should be heat resistant. Wires in hot zone should be properly conduit (heat resistant) to avoid any fire.

4.17 Lighting

Adequate lighting shall be provided for safe nightshift operation, including the following:

- a) 4 (no) Headlights
- b) Stop and tail lights
- c) Turn signal lights (left and right) on both front and rear
- d) Fog Lamps

Headlights and rear lights shall be fitted in steel protective enclosures.

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4.18 Guards and Shields: Adequate guards and shields which comply with ISO 3457 shall be provided on the dumper.

4.19 AUTOMATIC FIRE DETECTION & SUPPRESSION SYSTEM (AFDSS): Automatic fire suppression system, suitable for protection from fire hazards, shall be provided on the dumper. The system should be capable for efficient operation in the extreme mining conditions with dust, dirt, water & vibrations. The system shall be confirmed to the relevant IS/BS standards and shall be suitably mounted to cover all major points on the equipments. The system shall be DGMS approved type.

4.20 Fire Extinguishers Two numbers of fire extinguishers shall be provided at strategic points on the equipment, suitably mounted in heavy duty brackets for ease of removal. The extinguishers shall be dry power (cartridge type) with a minimum capacity of 5 kg and shall comply with Indian Standard IS:2 171.

5. Ancillary Equipment and Other Requirements

The following shall be provided on the Equipment :

- a) Full Cabin Canopy/ Cab protection spill guard.
- b) Pressurised radiator cap
- c) Head light high-beam indicator.
- d) Front and rear tow hooks and two lifting loops.
- e) Safety provision for holding the dump body in hoist condition/ Body Locking Device.
- f) Air-dryer Water separators in air lines (if applicable).
- g) Rock ejector bars/ Suitable Steel Inik Chain, between each set of dual rear wheels
- h) Tyre inflator & tyre inflation kit (if applicable)
- i) Pay Load Monitoring & Management System : Suitable diagnostic information storage for all system events, Pay-load Monitoring system (Load Cell), abnormal machine condition/ or incorrect machine operation and prognostic information for better maintenance support shall be provided. The Pay load Monitoring with Engine, Transmission & Braking System monitoring. System shall have diagnostic capability to store and retrieve sufficient data , on board as-well-as off board such as active, intermittent and calculated data etc. of at least one month in it's memory before it is downloaded with electronic device (laptop) for analysis. The Diagnostic Tools with all accessories such as Laptop (8 nos), loaded with required software, 1 no Laptop Computer shall be provided to all projects as per allocation. This Laptop shall be suitable for monitoring & storing the data & parameters of Engine etc.

6. Safety Features to be incorporated on the Equipment:-

- a) Rear View Mirror
- b) Blind Spot Mirror
- c) Propeller Shaft Guard
- d) Tail Lamp Guard Kit
- e) Audio Visual Alarm in Reverse With Flasher (**DGMS approved type**).
- f) Alternative Braking Arrangement/Two Brakes
- g) Emergency Steering
- h) Fire/ Heat Resistant Hoses
- i) All sleeve/ conduits, where Cables/ Wires are passed, shall be **Fire/ Heat Resistant**
- j) Turbo Charger Guard & Exhaust Tube Treated with Insulated Paint
- k) Baffle plate (side of turbo charger & exhaust tubes for properly shielding from the hot zone)
- l) Mechanical Steering Lock
- m) Battery Cut-off Switch
- n) Rear Vision System: The system shall be provided with a Monitor, installed inside the Operators Cabin and Automatic Switch on the reverse gear actuates ultra low light camera with sufficient number of infra red LEDs installed at the rear of the Dumper which provides Supply of picture in nearly pitch dark and in poor weather conditions and a clear & sharp picture is displayed on the Monitor. The monitor and camera shall be connected by a suitable detachable cable with water proof joints and the system shall be suitable for operation in extreme climatic conditions in the Indian Open cast mines. The camera shall be housed in a fully water proof, dust proof and shock & vibration resistant case which is suitable for high pressure washing.
- o) Proximity Warning Device : Proximity Warning Device / System with water proof Sensors, Joints & fittings, suitable for operation in extreme climatic conditions in the Indian Open Cast Mines shall be installed. The system shall be fully water proof, dust proof and shock & vibration resistant. Copy of Type Approval, issued by the competent Authority, for the specific model of Proximity Warning device shall be provided by the supplier before commissioning of the Equipment.
- p) Suitable Auto Dipping switch/ device of Reputed make
- q) Retractable Seat Belts: Similar to the seat belts fitted on front seats of the commercial passenger Cars.

7. Performance Guarantee:

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"In accordance with the provisions of clause B.7.2.2 and B.7.3.2 of the Technical Specifications, the Supplier shall guarantee that the availability of the Equipment shall be not less than 85% (Eighty Five percent) for a period of initial 12 months and 80% (Eighty percent) subsequent 36 months from the accepted date of commissioning (to be calculated annually)".

8. Specification Parameter*

8.1. The Make, Model	Make: BEML, Model: BH60M
8.2 The type of Equipment	Type: Dumper
8.3 Dimensions, Weights, Technical & Performance Details	
8.3.1 Dimensions :	
8.3.1 a) Maximum overall length	9180 mm
8.3.1 b) Maximum overall width	5100 mm
8.3.1 c) Maximum overall height, without body	4190 mm
8.3.1.d) Maximum overall height, with body	4740mm
8.3.1.e) Loading height	3730 mm
8.3.1.f) Dump height	8850mm
8.3.1.g) Discharge height	770mm
8.3.1.h) Maximum body depth	1550 mm
8.3.1.i) Body target area (inside length and width at top)	6730 mm X 4000 mm
8.3.1.j) Wheel Base	4060 mm
8.3.2 Weights :	
8.3.2 a.1) Empty Vehicle - Front Axle	21385 kg
8.3.2 a.2) Empty Vehicle - Rear Axle	22115 kg
8.3.2 a.3) Empty Vehicle Total	43500 kg
8.3.2 b.1) Loaded Vehicle - Front Axle	33040 kg
8.3.2 b.2) Loaded Vehicle - Rear Axle	64960 kg
8.3.2 b.3) Loader Vehicle Total	98000 kg
8.3.3 Engine :	
8.3.3 a) Manufacturer's NAME & Model NAME	Cummins, QSK19C
8.3.3 b) Number of cylinders	6 nos
8.3.3 c) Bore	159 mm
8.3.3 d) Stroke	159 mm
8.3.3. e) Displacement	19 litres
8.3.3 f) ISO Net Power and rated rpm	480 kW @ 2000RPM
8.3.3 g) Maximum Torque and rated rpm	2875 Nm @ 1400RPM
8.3.4 Transmission :	
8.3.4 a) Make & Model	AVTEC Make, Model M6610A / TC 682 torque converter
8.3.4 b) Type	Powershift automatic (AVTEC) transmission M6610A with CEC-2 Control
8.3.4 c) Number of Gear speeds (forward & reverse)	Forward(F) -6, Reverse (R) -2
8.3.4 d) Speeds (forward and reverse)	Annexure A-1
8.3.5 Differential :	
8.3.5 a) Type and Make	Plug-in Differential, BEML Make
8.3.5 b) Ratio	3.85:1
8.3.6 Final Drive	
8.3.6 a) Type and make	Planetary Final Drive, BEML Make
8.3.6 b) Ratio	5.70:1
8.3.7 Suspension	
8.3.7.1 Front Suspension	
8.3.7 a) Type and Make	Frame mounted hydro-pneumatic with integral rebound control, BEML Make
8.3.7 b) Stroke	276 mm
8.3.7 c) c) Load - deflection rate, loaded and empty	Loaded- 2401 kg/cm, Empty- 637 kg/cm
8.3.7.1 Rear Suspension	
8.3.7 a) Type and Make	Axle mounted, Hydro-Pneumatic with integral rebound control, BEML Make
8.3.7 b) Stroke	276 mm
8.3.7 c) Load - deflection rate, loaded and empty	Loaded- 24385 kg/cm, Empty- 435 kg/cm
8.3.8 Steering	
8.3.8 a) Type & Make	Orbitrol full time power steering. Steering Control Unit-EATON Make.

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8.3.8 b) Emergency steering : Type & make	Both Accumulator and Electrical Motor & pump is provided.
8.3.9 Brakes	
8.3.9.1 Service brakes	
8.3.9.1.1 Front Service Brakes	
8.3.9.1.1 a) Type	Dry type Disc Caliper
8.3.9.1.1 b) Actuating system	All hydraulic actuated.
8.3.9.1.1 Rear Service Brakes	
8.3.9.1.1 a) Type	Oil cooled wet multiple disc.
8.3.9.1.1 b) Actuating system	All hydraulic actuated.
8.3.9.1.1 Secondary Service Brakes	
8.3.9.1.1 a) Type	Front or Rear Brakes independently meets secondary braking requirement
8.3.9.1.1 b) Actuating system	Actuation is automatic & also a manual control switch is provided.
8.3.9.1.1 Parking Service Brakes	
8.3.9.1.1 a) Type	Wet multiple disc type inbound in Rear Axle.
8.3.9.1.1 b) Actuating system	Spring applied & hydraulically released.
8.3.9.1.1 Retarder Service Brakes	
8.3.9.1.1 a) Type	Oil cooled wet multiple disc.
8.3.9.1.1 b) Actuating system	Hydraulically actuated
8.3.10 Tyres:	
8.3.10 a) Make	Goodyear/MRF/CEAT/BKT/JK/ Apollo
8.3.10 b) Size and type	24.00 X 35, E-4 Type, Tubeless Bias Tyre
8.3.10 c) Tread	Deep Tread Rockgrip.
8.3.10 d) Ply rating	48 PR
8.3.10 e) Rim size	17 X 35
8.3.11 Hydraulic System	
8.3.11 a) Make & model, number, flow rates, operating pressures of pumps	Annexure A-2
8.3.11 b) Make & model, number, piston diameters, stroke lengths of cylinders	Annexure A-2
8.3.11 c) Relief valve operating pressures	Annexure A-2
8.3.12 Electrical System :	
8.3.12 (a) Starter Make and Model	Delco Remy / REIL Make model : -50MT
8.3.12 (b) Alternator make and model	Delco Remy Make, Model No. 33SI
8.3.12 (c) Batteries, number of plates and ratings	2 x12V, 200 AH Low maintenance battery of PRESOLITE /EXIDE / CUMMINS
8.3.12 (d) Lighting details	Annexure A-3

9. Guarantee - Warranty / Special Guarantee:

1 The suppliers must ensure that there is no major breakdown due to manufacturing/ design defect during the warranty period. In case such breakdown occurs, the purchase will reserve the right to extend the warranty period suitably.

2 Special Guarantee : The complete Equipment consisting of all Assemblies/ sub assemblies/ components e.g. Engine, Transmission, Differential, Final Drive, Air conditioning Systems, AFDSS, Centralized Lubrication system, Suspension system, Hyd System, Chassis/ structure, Break system. Engine Hour Meter & Auto Electrical etc. shall be covered for suitable replacement. Repairs (on merits of the case), free from all costs to the purchaser, during total 48 (forty eight) months from accepted date of commissioning.

The supplier will be required to stock spares parts to take care of entire performance period. Spares should be available immediately for replacement against the breakdown.

10. ERECTION & SUPERVISION

The supplier shall be responsible for the erection and commissioning within 15 days of the receipt of complete equipment at site. However, the purchaser will assist in providing necessary erection tools & tackles etc. and unskilled manpower for this purpose.

11. INSPECTION AND TESTS

i. The purchaser or its authorized representative shall have the right to inspect and / or to test the goods to confirm their conformity to the contract. The purchaser shall notify the supplier in writing of the identify of any representative retained for these purposes.

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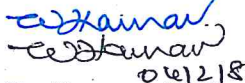
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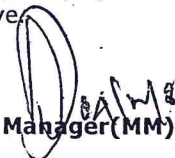
Supply Order no 12000110118154 dt 04.12.2018 for supply of 60T Dumpers; M/s BEML Ltd

- ii. The inspections and tests may be conducted at the premises of the supplier or its subcontractor(s), at point of delivery and/or at the goods final destination when conducted on the premises of the supplier or its subcontractor(a), all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors at no charge to the purchaser.
- iii. Should any inspected or tested Goods fail to conform to the specifications, the purchaser may reject them and the supplier shall either replace the rejected goods or make all alternatives necessary to meet specification requirements free of cost to the Purchaser.
- iv. The materials will be inspected on arrival at site by the consignee, which will be considered as final. This shall in no way be limited or waived by reason of the goods having previously been inspected, tested and passed by the Purchaser or its representatives prior to the dispatch of the Goods.
- v. Nothing in these documents shall in any way release the supplier from any warranty or other obligations under this contract.

12. FINAL INSPECTION / PRE-DESPATCH INSPECTION:

Final Inspection shall be carried by Consignee at Site. However, WCL reserves its right to get the Equipment inspected before despatch by CM(Excv) CIL, Bangalore or the representative of GM(Excv) I/C, WCL Hqrs or any other agency appointed by WCL. In case it is decided to carry out pre despatch inspection by CIL / WCL's representative then equipment has to be delivered at Consignee project within 15 days or earlier from the date of inspection and clearance by CIL / WCL's representative.


04/12/18
Sr. Manager(MM)


Chief Manager(MM)