

## CORRIGENDUM – III

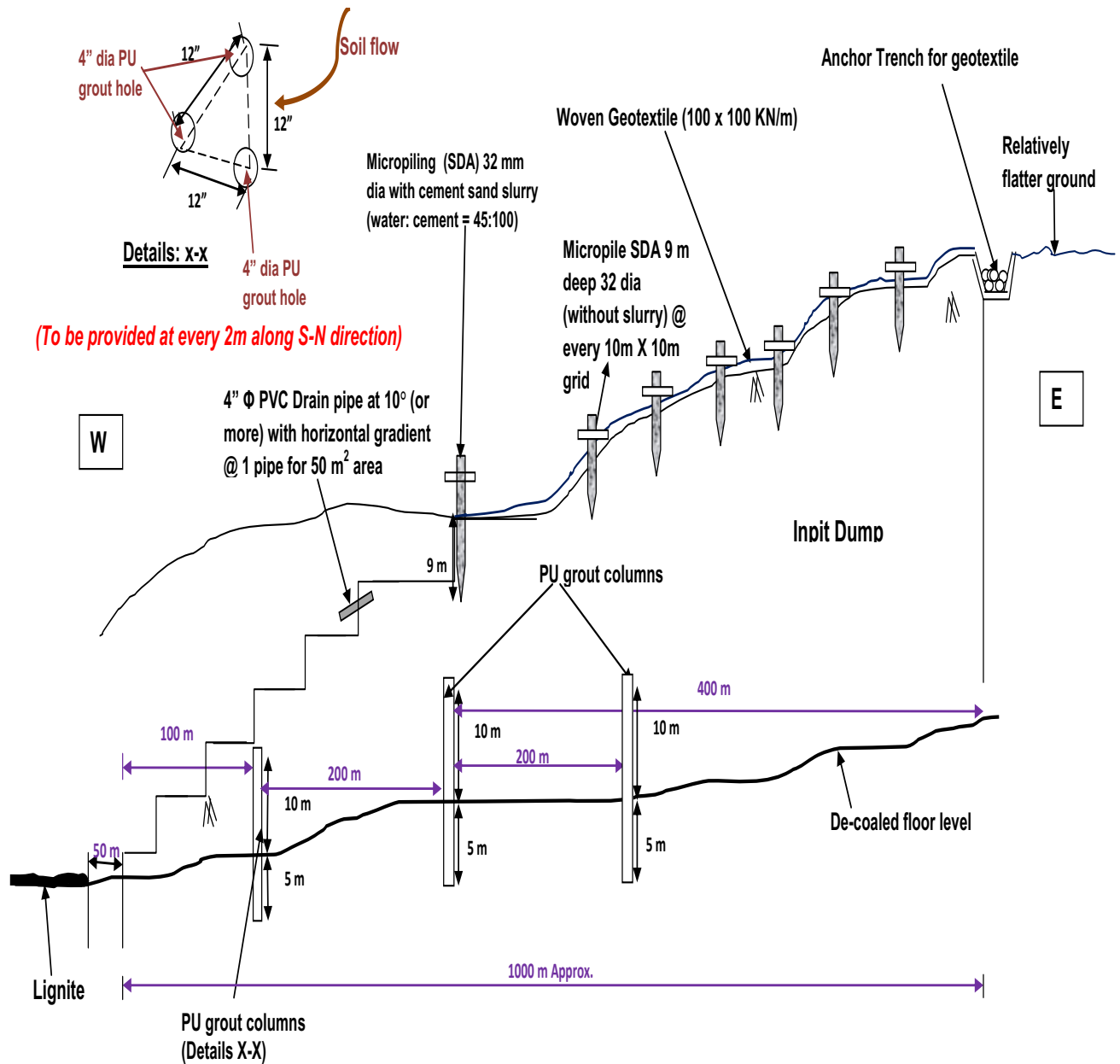
**RFP no: GMDC/CGM/02/23-24 - RFP for remediation of Mine Dumps including Chemical Grouting, Micropiling self drilling anchor (SDA) and Perched Reinforced Soil Slope, Erosion Control Measures as Pilot Project at Tadkeshwar Lignite Mine**

Sr. No	Clause No of RFP & page no	Present Clause	Amended Clause
1	Section II page -11  Last Paragraph of clause 1	RFP scope of work is valid upto completion of work as per RFP.  "By following these advanced tips and considerations, Successful Bidder can develop a comprehensive action plan under the guidance of IITR for slope stabilization that addresses technical challenges, minimizes risks, and ensures the long-term stability and safety of the slope"	"The entire scope of work will be carried out as per design and guidance of IITR only"
2	1.1 (c) Page - 12	Select appropriate grout materials based on site-specific conditions, such as the composition of the mine dump, groundwater chemistry, and desired treatment objectives	"Material to be used as per the specification mentioned in BOQ"
3	1.1 (d) Page - 12	Develop a grout mix design considering factors such as grout viscosity, strength, permeability, and compatibility with dump materials. Select appropriate injection equipment, such as grout pumps, packers, and monitoring instruments, capable of delivering the desired grout volume, pressure, and accuracy.	"Develop a grout mix as per specification mentioned in the BOQ considering factors such as grout viscosity, strength, permeability, and compatibility with dump materials. Select appropriate injection equipment, such as grout pumps, packers, and monitoring instruments, capable of delivering the desired grout volume, pressure, and accuracy".
4	1.2 (b) Micropiling page no.13	Select appropriate micropile types and configurations based on site-specific conditions, structural requirements, and construction constraints.	"Select appropriate micropile as per BOQ"
5	1.2 (c) Micropiling page no.13	Design micropile elements considering factors such as diameter, length, reinforcement, grout type, and	"Develop micropile elements as per BOQ considering factors such as diameter, length, reinforcement, grout type, and

		installation method (e.g., rotary drilling, impact driving etc.)	installation method (e.g., rotary drilling, impact driving etc.)
6	1.2 (d) Micropiling page no.13	Perform structural analysis and load testing to verify the adequacy of the micropile design and ensure compatibility with existing structures or foundations.	“Perform structural analysis and load testing to verify the adequacy of the micropile design and ensure compatibility with existing structures or foundations inconsistent with BOQ”.
7	1.2 (e) Micropiling page no.13	Approval of schemes from IITR and the work to be carried out in coordination with IITR	“Work to be carried out as per BOQ under the guidance of IITR”.
8	1.3 (b) Slope Protection (page no.13)	Select appropriate 3D Reinforced geo textile, etc and configurations based on site specific conditions.	“Geo textile to be used as per BOQ”.
9	1.3 (c) Slope Protection (page no.13)	Select and appropriate the SDA Anchors required for fixing of 3D Mats in positions.	“SDA Anchors required for fixing of geotextile as per BOQ and Drawing”.
10	1.3 (d) Slope Protection (page no.13)	Provide construction Methodology.	“The work to be carried out as per BOQ and under the guidance of IITR”.
11	1.3 (f) Slope Protection (page no.13)	Approval of Schemes from IITR and the work to be carried out in coordination with IITR.	“Work to be carried out as per BOQ under the guidance of IITR”.
12	Drawing page 75	Drawing	The revised drawing is attached with this corrigendum.
13	BOQ – page 76 to 78	BOQ	Revised BOQ is attached with this corrigendum and the price to be submitted as per this format only.

## Revised Drawing

### Remediation of Mine Dumps including Chemical Grouting, Micropiling self drilling anchor (SDA) and Perched Reinforced Soil Slope, Erosion Control Measures as Pilot Project



#### Notes

- (1) The above plan shall be done as per mining situation at the time of execution
- (2) Above plan is in East-West direction
- (3) The plan width of above treatment (as pilot) scheme is 200 m (S-N) in eastern side backfill dump
- (4) Above drg. is not to scale.
- (5) The above work is of specialized nature, hence shall be carried out as per the regular guidelines of GMDC & IITR.

Dated: 5 March 2024

(SATYENDRA MITTAL)

## REVISED BILL OF QUANTITIES (BOQ)

**Name of Work: Remediation of Mine Dumps including Chemical Grouting, Micropiling self drilling anchor(SDA) and Perched Reinforced Soil Slope, Erosion Control Measures as Pilot Project**

OLD BOQ						REVISED BOQ				
Sr. No.	Description of Items	Unit	Qty	Rate(Rs)	Amount (Rs)	Description of Items	Unit	Qty	Rate per unit (Rs)	Total amount (Rs)
1	<p>Injecting Two-component Poly Urethane Chemical Grout having chemical component as listed below; Modified Polyol, 4,4'-Diphenylmethane Diisocyanate (MDI), Poly-methylene Poly-phenyl Polyisocyanate. The Chemical grout should comply the technical specifications of DrucPietra as follow;</p> <p>Density of component A: 1.005 ± 0.020 gm per cc, Density of component B : 1.220 - 1.240 gm per cc, Viscosity of component A : 130 - 170 (mPa . s), Viscosity of component B: 150 - 280 (mPa . s), pH Component A: 11 .5 ± 0.5, pH Component B: Neutral.</p> <p>The depth of the grout hole should be varied between average 35-50 m in which chemical should be injected into the hole by utilizing the TAM assembly and suitable size of inflatable packer only in it 15 m (5m beneath the de-coal area + 10 m above the de-coal level), above of the termination depth of grout hole. The temporary steel casing is required to install during the drilling of grout hole to maintain the borehole stability and installation of the TAM</p>	Kg	13500 0.00			<p>Injecting Two-component Poly Urethane Chemical Grout having chemical component as listed below; Modified Polyol, 4,4'-Diphenylmethane Diisocyanate (MDI), Poly-methylene Poly-phenyl Polyisocyanate. The Chemical grout should comply the technical specifications of DrucPietra or equivalent with same specification as follow;</p> <p>Density of component A: 1.005 ± 0.020 gm per cc, Density of component B : 1.220 - 1.240 gm per cc, Viscosity of component A : 130 - 170 (mPa . s), Viscosity of component B: 150 - 280 (mPa . s), pH Component A: 11 .5 ± 0.5, pH Component B: Neutral.</p> <p>The product is to be approved by IITR before use.</p> <p>The depth of the grout hole should be varied between average 35-50 m in which chemical should be injected into the hole by utilizing the TAM assembly and suitable size of inflatable packer only in it 15 m (5m beneath the de-coal area + 10 m above the de-coal level), above of the termination depth of grout hole. The temporary steel casing is required to install during the drilling of grout hole to</p>	Kg	13500 0.00		

	<p>assembly into the grout hole to avoid damage. After the installation of TAM Assembly, temporary steel casing should be removed for reuse in further drilling process.</p> <p>The chemical grout should be injected using a two-component injection pump equipped with a static in-line mixer nozzle capable of mixing ratio (A+B) of 1: 1 Parts by volume, including appropriate size of compressor able to produce minimum pressure of 5-6 bar that may increase as per the site condition.</p> <p>During the grouting process, grouting pressure needs to be maintained and monitored till the completion of the grouting process. The chemical grout material injected through injectable packer should mixed at the end of the packer nozzles. The Packer grouting should be done in the multiple stages of 1-2 m of increment in each stage by bottom-top approach in the grout hole of mine dumps using suitable attachments, including all manpower, drilling of 4-inch size hole, installing temporary casing in grout hole, installing suitable size of Tube a Manchette in grout hole, all the safety measures like helmet, safety belt and adequate labour insurance, supervision etc. complete, as per the requirement of site and directions of Engineer-in-Charge. (The Rate should be quoted in kg for the consumption of the chemical used for grouting which will cover all above said requirement and material for the grouting process including installation.)</p>					<p>maintain the borehole stability and installation of the TAM assembly into the grout hole to avoid damage. After the installation of TAM Assembly, temporary steel casing should be removed for reuse in further drilling process.</p> <p>The chemical grout should be injected using a two-component injection pump equipped with a static in-line mixer nozzle capable of mixing ratio (A+B) of 1: 1 Parts by volume, including appropriate size of compressor able to produce minimum pressure of 5-6 bar that may increase as per the site condition.</p> <p>During the grouting process, grouting pressure needs to be maintained and monitored till the completion of the grouting process. The chemical grout material injected through injectable packer should mixed at the end of the packer nozzles. The Packer grouting should be done in the multiple stages of 1-2 m of increment in each stage by bottom-top approach in the grout hole of mine dumps using suitable attachments, including all manpower, drilling of 4-inch size hole, installing temporary casing in grout hole, installing suitable size of Tube a Manchette in grout hole with perforated holes in the bottom of the tube/pipe upto 15 meters from the bottom for discharge of chemical , all the safety measures like helmet, safety belt and adequate labour insurance, supervision etc. complete, as per the requirement of site and directions of Engineer-in-Charge. (The Rate should be quoted in kg for the consumption of the chemical used for grouting which will cover all above said requirement and material for the grouting process including installation.)</p>				
2	Supply and installation of biaxial geotextile(woven) strength mass per unit area 400 grams/sqm , Longitudinal Tensile strength , including fixing of U pins of 8mm diameter of	Sq m	18000 0.0			Supply and installation of woven geotextile biaxial (100 x 100), Nominal tensile strength (ASTM D4595/EN ISO 103/9)105 kN/m (MD) and (CMD) at elongation 10%, (MD) and 12% (CMD) with ±	Sqm	18000 0.0		

	typical depth 1000 mm at 6m c/c spacing, with elongation at nominal strength (ASTM D4595/EN ISO 10319 +- 2% ) 10%, with creep limited strength as 105.6 kN/m, Roll weight 240kg ), all the stips/ rolls of biaxial geotextile(woven) shall be overlapped at edge for stitching the joints for making a single piece as and where required all other ancillary works, material, machinery, labour, etc. complete with all leads and lifts and as directed by Engineer - In - Charge.					2%, creep reduction factor at 30° C (120 yrs design life) as 1.45, creep limited strength 68.9 kN/m (MD), roll width 5.8 m, roll length 100 m, Mass 400 GSM, include fixing of u-pins of 8 mm dia of typical depth of 1000 m at 6 m c/c. All the stips/ rolls of biaxial woven geotextile shall be overlapped at edge for stitching the joints for making a single piece as and when required , all other ancillary works, material, machinery, labour, etc. complete with all leads and lifts and as directed by Engineer - In - Charge.				
3	Supply and Installation of Self Drilling Anchors / Continuous threaded anchor rod dia of 50 mm diameter and appropriate matching bit, yield load > 230 kN / 400kN, and full length grouting with cement slurry including all ancillary items for anchoring and as per technical specifications etc. complete as per detailed technical specifications and as directed by Engineer - In – Charge	RMT	360.0			Supply and Installation of Self Drilling Anchors / Continuous threaded anchor rod dia of <b>32 mm diameter(with Cement sand slurry)</b> and appropriate matching bit, yield load > 230 kN / 400kN, and full length grouting with cement slurry including all ancillary items for anchoring and as per technical specifications etc. complete as per detailed technical specifications and as directed by Engineer - In – Charge	RMT	360.0		
4	Supply and Installation of Self Drilling Anchors / Continuous threaded anchor rod dia of 32mm diameter and appropriate matching bit, yield load > 230 kN / 400kN, hexagonal nut, including all ancillary items for anchoring and as per technical specifications etc. complete as per detailed technical specifications and as directed by Engineer - In – Charge	RMT	7200.0			Supply and Installation of Self Drilling Anchors / Continuous threaded anchor rod dia of 32mm diameter( <b>with Cement sand slurry</b> ) and appropriate matching bit, yield load > 230 kN / 400kN, hexagonal nut, including all ancillary items for anchoring and as per technical specifications etc. complete as per detailed technical specifications and as directed by Engineer - In – Charge	RMT	7200.0		
5	Anchor plate of 150mm*150mm dia with central hole of 34 mm dia and hexagonal nut 32mm	Each	800.0			Anchor plate of 150mm*150mm dia with central hole of 34 mm dia and hexagonal nut 32mm	Each	840		

6	Anchor plate of 200mm*200mm dia with central hole of 52 mm dia and hexagonal nut 50 mm	Each	40.0							
7	Drill bit (in case of self drilling anchors) dia of bit should be matching with 32 mm threaded rod		800.0			Drill bit (in case of self drilling anchors) dia of bit should be matching with 32 mm threaded rod	Each	840		
8	Drill bit (in case of self drilling anchors) dia of bit should be matching with 52 mm threaded rod		40.0							
9	Coupler to join drill rods of anchor rod dia of 50 mm		40.0			Coupler to join drill rods of anchor rod dia of 32 mm	Each	840		
10	Coupler to join drill rods of anchor rod dia of 32 mm		800.0							
11	PVC 4 inch dia drain pipe ISI mark, duly perforated on half periphery with each hole of 0.5 inch dia, at spacing of 2 inch c/c between 2 holes, supplied with couplers, To be fixed duly wrapped with geotextile filter cloth, pipe, complete with all leads and lifts as directed by engineer in charge. (Specification of geotextile filter: permittivity = 0.5 sec-1 AOS <= 1.8 D85 (or >=3 D15 or less than 0.3mm), weight 130GSM (minimum), grab tensile strength in each direction 0.4kN (minimum) elongation at break 40% toughness (% elongation x grab tensile strength): 20 (minimum). overlapping length: 450mm (minimum))	RM	8000			PVC 4 inch dia drain pipe ISI mark, duly perforated on half periphery with each hole of 0.5 inch dia, at spacing of 2 inch c/c between 2 holes, supplied with couplers, To be fixed duly wrapped with geotextile filter cloth, pipe, complete with all leads and lifts as directed by engineer in charge. (Specification of geotextile filter: permittivity = 0.5 sec-1 AOS <= 1.8 D85 (or >=3 D15 or less than 0.3mm), weight 130GSM (minimum), grab tensile strength in each direction 0.4kN (minimum) elongation at break 40% toughness (% elongation x grab tensile strength): 20 (minimum).overlapping length: 450mm(minimum))	RM	8000		
						Each pipe will be inserted about 2.5 mtrs and 0.5 mtr will be outside exposed for discharge of seepage water (Refer Drawing) of ITR document. Higher length of drain pipe may also be provided (through couplers) at some places if site conditions demand. Payment on Pro-rata basis may be done in that case. This will be in loose in-pit dump.				

12						<p>Sensor to be placed before the 1<sup>st</sup> raw of chemical grouting from the west to monitor the sliding movement after chemical grouting (this may be 04 in numbers at the distance of 50 meter each for covering 200 meter length south to north).</p> <p><i>“The bidder should have installed sensors successfully at any open cast mine/ related project/land strata/ equivalent nature of work and certificate thereof regarding the successful and satisfactory completion of the work from the client shall be attached by bidder.”</i></p>	Each	4		
<b>Total Amount (Rs)</b>						<b>Total Amount (Rs)</b>				

# Rate are excluding GST

Notes:

- (1) The Bidders shall be required to quote Service Fees for execution of scope of work specified in section II.
- (2) The above quoted rates represent remuneration of Bidder’s staff, Travel expense, expense towards dime, hotel stay, office rents, conveyance, stationary expense and any other expense to be incurred for executing Terms of Reference.
- (3) The Bidder to quote Service Fees in table above inclusive of all other taxes except applicable GST. Applicable GST, over and above approved Service Fees, at the time of invoicing shall be reimbursed by GMDC. The risk of applicability of any taxes, duties and levies except GST, shall rest with the Agency.
- (4) GMDC shall be entitled to deduct tax at source as may be applicable. The TDS certificate(s) shall be submitted as per the due date specified in the Income Tax Act.
- (5) Fees/ Rates shall be paid as per the payment terms specified in Part IV.
- (6) The rates quoted for different components (e.g, chemical, anchor, geotextile etc) shall be fixed and non-changeable upto 30<sup>th</sup> June 2025.
- (7) Successful bidder is required to execute the entire work as per guidance of IITR and GMDC only.

Each Bidder must quote his rates after through reading of this RFP document and Estimates of his cost thorough detailed due diligence of the site, statutory laws/regulations. **Authority reserves right to seek any clarifications regarding price quoted from bidders before any decisions.**