BOKARO POWER SUPPLY COMPANY (P) LIMITED
COMPLIANCE REPORT of CTO

Ref NO.: JSPCB/HO/RNC/CTO-412695/2019/2533 Dated : 2019-12-23

A. GENERAL CONDITIONS	COMPLIANCE STATUS
(1) The occupier shall maintain the National Ambient Air Quality Standard	**Complied**, Monitoring of ambient air quality is being carried out by a NABL accredited firm M/s. Pollution and Project consultants, Kolkata
(2) the occupier shall maintain the emission quality within the standard and the quantity	**Complied**, Online stack monitoring system has been deployed and data is being transferred to JSPCB and CPCB on real time basis.
(3) the occupier shall keep process effluent in close-circuit and the quality of effluent from other sources in conformity with the standard (s) and the discharge quantity	**Complied**, Effluent is being discharged to outfall of Bokaro Steel Plant after necessary treatment. The outfall of BSL is equipped with Zero liquid discharge system which is also used by BPSCL as a common facility. The effluent after passing through ZLD is released to cooling Pond for re-circulation in close circuit. Online effluent monitoring system has been installed and data (PH, COD, BOD, TSS) is being sent to JSPCB and CPCB through M/s. NEVCO server on real time basis.
(4) the occupier shall dispose of solid wastes	**Complied,** Solid wastes like used & damaged cables, CT&PT, other items are being auctioned. Used/Burnt industrial and transformer oil is auctioned to recyclers registered under PCBs. Batteries are procured under buy back policy and used batteries are taken back for reuse by the battery manufacturers registered by PCBs. Ferrous Scrap is being re-used by BSL through co-processing in high temperature furnace.
(5) the occupier shall keep D G Set(s) within acoustic enclosure and shall keep the height(s) of exhaust pipe(s) as per Central Pollution Control Board norm	**Complied.** The DG set is has been housed inside a masonry building with RCC roof and standard height of exhaust pipe.
(6) the occupier shall install and maintain Central Ground Water Board/ State Ground Water Directorate approved system of rain water harvesting-cum-ground water recharge and submit the photographic view of the structures within a month	**Complied.** Two numbers of cooling ponds are present which acts as rain water harvesting cum ground water recharge unit. Construction of Rain Water Harvesting system for individual building is also under progress.
(7) the occupier shall grow and maintain greenery of the project in the periphery and other available spaces and shall continue enhancing its plant density and biodiversity	**Complied.** New gardens have been developed in front of our new unit and welfare building. Plantation has also been done in ash pond area and peripheral villages. Grass seeds are planted in ash pond area to reduced dust in atmosphere. Vetiver grass having extensive root system has also being planted on ash pond area by means of Bio-stabilization on an area of 5500 sqm. Further Bio-stabilization on an ash dump area of 8800 sqm is in pipeline.
(8) the occupier shall submit environmental statement with supporting stochiometric calculations analyses reports, every year latest by 30th September of the next financial year	**Complied.** .Environment statement are sent regularly within schedule
(9) the occupier shall submit report(s) duly monitored and issued by an NABL accredited / ISO 9001:2008 and OHSAS 18001:2007 certified laboratory in compliance sub-para (2),(3), (4) and (5) of paragraph 3 of this CTO, yearly at periodicity.	**Complied**. Report of M/s. M/s. Pollution and Project consultants a NABL accredited lab is being submitted for compliance.
(10) this CTO is valid subjected to the validity of mining Lease/Mining Plan/Ecofriendly/Environmental Clearance, if applicable. In case of no renewal of Mining Lease/Mining Plan, this consent shall be treated as revoked automatically.	Complied
(11) this CTO is issued from the environmental angle only and does not absolve the occupier from other statutory obligations prescribed under any other law or any other instrument in force. The sole and complete responsibility to comply with these conditions laid down in all other laws for the timebeing in force, rests with the industry/ unit/ occupier	Complied
(12) this CTO shall not in any way, adversely affect or jeopardize the legal proceeding , if any, instituted in the past or that could be , instituted against you by the State Board for violation	Complied

13/6/20

BOKARO POWER SUPPLY COMPANY (P) LIMITED
COMPLIANCE REPORT of CTO

Ref NO.: JSPCB/HO/RNC/CTO-4126951/2019/2533 Dated : 2019-12-23

of the provisions of the Act or the Rules made there under	
(13) the occupier shall comply with all applicable provisions of the Water (Prevention & Control of Pollution) Act, 1974; the Water (Prevention & Control of Pollution) Cess Act, 1977; the Air(Prevention & Control of Pollution) Act, 1981; and the Environment (Protection) Act, 1986 and Rules made there under	Complied

B. SPECIAL CONDITION	COMPLIANCE STATUS
(1) the occupier shall continuously transmit online monitoring data of ambient air quality and stack emission and effluent quality with connectivity to the server of JSPC Board and CPCB, failing which necessary action shall be taken as per law	**Complied** Online stack emission data is being transmitted through Yokogawa server and effluent data through M/s. Neveo server to JSPCB & CPCB. Online ambient air quality is being monitored by BSL,SAIL and BPSCL uses the same as a common facility, since BPSCL is located within the premises of SAIL, BSL.
(2) the occupier shall establish and operate well equipped environmental laboratory with facilities to monitor at least all regulatory parameters and duly accredited by NABL .	**Complied** An in-house environment lab is running for monitoring of regulatory environment parameters pertaining to power Plant.
(3) the occupier shall process solid raw materials and products in covered block having opening in only one side	**Complied** Solid raw material such as coal is processed in covered units like bowl mills and bunkers.
(4) the occupier shall interlock the operation of ESP with turbine operating compact crossed system	**Complied** ESP is in operation continuously with unit operation.
(5) the occupier shall co-process carbon bearing hazardous wastes and plastic wastes (non-chlorinated) and report to the Board	NA
(6) the occupier shall dispose of all non-carbonaceous hazardous wastes in nearest TSDF/ self-prepared secured land fill whichever suit to the plant	**Complied** Non-carbonaceous Hazardous waste like burnt Lubricating and industrial oil is being sold to recyclers authorized by SPCBs and used batteries are being disposed off to battery manufacturers under buy back policy.
(7) the occupier shall fill all Fly ash for cement making and shall dispose off all bottom ash, cinders, innocuous solid wastes in filling the voids of abandoned coal mines of the Coal Companies and he(they) shall submit the copy of the agreement made with the Coal Companies to this effect to the Board within 03 months	**Complied** Fly Ash and Bottom ash is being used for (a) Road construction (NH- 2) by NHAI dhanbad division. 7053 Cum tonne of Ash has been utilized by NHAI, Dhanbad in 2021-22. (b) Filing of low lying areas around and with BSL and BPSCL plant premises. A quantity of 72000 cum ash has been filled for construction of hazardous waste pit of BSL. Approx. 4,60,680 cum of ash has been used in filling up of low lying areas in and around our ash pond and plant premises. (c) In house brick manufacturing machine has already been installed and is functional. In FY 2021-22, 25,462 bricks have been manufactured in house for internal consumption and for supply to BSL. (d) Moreover ash is being supplied to nearby brick manufactures free of cost from our silos. In Fy 2020-21, 3057.90 Cum of ash has been lifted by local brick manufacturers from our silos. (e) Fly ash is also being transported from our silos by containers to cement manufacturing units like Dalmia Cements. (f) Two nos of Fly Ash Bagging Machine have been commissioned for bagging of fly ash and transportation to end users by railway wagons. Agreement has been signed with M/S Orient Exports Pvt. Ltd. for bagging and transportation of Ash by

13/6/22

BOKARO POWER SUPPLY COMPANY (P) LIMITED
COMPLIANCE REPORT of CTO

Ref NO.: JSPCB/HO/RNC/CTO-4126951/2019/2533 Dated : 2019-12-23

		railway wagons. Bagging work is under progress. In Fy. 2021-22, 05 (five) rakes of ash bags amounting to 10566 cum have been sent to darshana, Bangladesh.
(8)	the occupier shall keep waste water in close circuits and no industrial effluent shall be discharged out of premises in any condition	**Complied** Zero liquid discharge has been installed by BSL where BPSCL effluent is discharged. Waste water after treatment is being routed to Cooling Pond (water intake reservoir of BSL & BPSCL) through the ZLD system.
(9)	the occupier shall improve and maintain ground water table, surface water quantity and their quality by implementation of scientific method of rain water harvesting plan, duly approved by Ground Water Directorate , Govt. of Jharkhand	**Complied** Two numbers of cooling ponds are present which acts as rain water harvesting cum ground water recharge unit. Installation of Rain Water Harvesting for individual buildings is under progress.
(10)	the occupier shall comply the CREP condition for Power Plant and shall submit the report to the Board	**Complied** CREP conditions are being complied and report is being submitted to the Board.
(11)	the occupier shall comply specific condition No. 02 of the previous CTO within next four months and report to the Board	**Complied** The environment Lab is set up with facility of monitoring of environment parameters.
(12)	the occupier shall make arrangement to monitor Sox and NOx in online stack emission monitoring system with its connectivity to JSPC Board server as well as CPCB server within the CTO period	**Complied** Installation of online Sox, NOx analyzer is already done in four boilers. Procurement of Sox, NOx analyzer for remaining four boilers along with commissioning of real time data transfer to JSPCB & CPCB is in pipeline.
(13)	the occupier shall make arrangement and submit the details of programme to dump the pond ash into abandoned mines of BCCL/CCL within 03 months	**Being Complied.** Area of backfilling of mines is being explored. Request letters have been sent to CCL,BCCI and SAIL.
(14)	the occupier shall continuously transfer the online monitored data to the server of the Board.failing which consent to operate shall be revoked	**Complied** Online stack emission monitoring system has been installed and working successfully. Monitoring is being done by Yokogawa System and real time data is being displayed in CPCB & JSPCB. Online effluent monitoring system has been installed and real time data(PH, COD, BOD, TSS) is being sent to JSPCB and CPCB through M/s. NEVCO server.
(15)	the occupier shall comply and implement all conditions as mentioned in Environmental Clearance and NOC	**Complied** Conditions of Environment clearance and NOC are attended to. The report is also being sent to MOEF six monthly.
(16)	the occupier shall install the pollution control equipment and report to this office of the same."	**Complied** ESPs have been installed in all the units. Other Pollution control equipment like Dry Fog Dust separation System and sprinklers are also operational. Proposal for installation of Flue Gas De-sulphurization system is in pipeline.
(17)	the occupier shall submit online applications for renewal of consent under section 25 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981 again 120 days prior to the date of expiry of this consent i.e.31.03.2023 with documents showing compliance of all of the above conditions	**Complied.**

13/6/22

A.K. DAS
C.G.M. (MM, Civil & Environment)
Bokaro Power Supply Co. (P) Ltd.
(A Joint Venture of SAIL & DVC)
Bokaro Steel City

13/06/2022
CGM (Environment), BPSCL

Ash generated and Utilized in BPSCL

Sl. No.	Description	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
1	Total Ash Generation (in Cum)	675278	672864	529308	591023	426255	487466
2	Total ash disposed in Road Construction (in Cum)	35680	29320	260400	91023	80960	7053
3	Total ash disposed in low lying area and dyke raising (in Cum)	856173	605466	215818	805533	368537	532680
4	Total ash utilized in Fly ash Brick manufacturing (in Cum)	0	2100	667	180	3260	3077.9
5	No. of Bricks Manufactured in inhouse Plant	-	-	-	13500	213266	25462
6	Total ash utilized in Outside Cement Plant (Through road mode) (in Cum)	-	-	2233	0	0	0
7	Total ash utilized in Outside Cement Plant (Through rail mode) (in Cum)	-	-	0	0	0	10566
8	Total Ash utilisation (in Cum)	891853	636886	476885	896736	452757	553377
	% Utilization	132.07	94.65	90.10	151.73	106.22	113.52

13/6/22

Throughout made

Gmail

ORIENT EXPORTS PRIVATE LIMITED <oeplexports@gmail.com>

Bid Approved EA 22157
1 message

admin@mstcecommerce.com <admin@mstcecommerce.com> Tue, Nov 30, 2021 at 10:36 PM
To: oeplexports@gmail.com

Sale Intimation Letter

Company Name	:	**ORIENT EXPORTS PRIVATE LIMITED/111086**
Contact Person	:	HIMANISH SANYAL
Street	:	7 CAMAC STREET AZIMGUNJ HOUSE 4TH FLOOR
City	:	KOLKATA
Country	:	INDIA
Pin	:	700017
PAN NO ::	:	AAACO3413A
GST No ::	:	19AAACO3413A1Z2
Telephone No ::	:	9007898243
Mobile No ::	:	9007898243

Dear Sir,

à¤" à¥€à¤²à¤¾à¤®à¥€ à¤¸à¤‚à¤–à¥à¤¯à¤¾/Auction Number	:	**MSTC/RNC/Bokaro Power Supply Co. (P) Ltd./1/BOKARO/21-22/22157**
Period of Auction	:	2021-11-30::2021-11-30

We are pleased to inform you that your bid/s against the following item/s of above mentioned Auction has /have been approved by the Seller.

LOT No	QTY	UOM	YOUR BID	MATERIAL VALUE	SD/Mat Val
1	60000.0	MT	25.00	1500000.00	150000.0

Total Security Deposit/Mat Val : INR **150000.00**

You are requested to deposit an amount of INR **150000.0** as per the payment terms of Special Term & Conditions of E-auction in favour of **BOKARO POWER SUPPLY CO. LTD.** within 7 days from the date of close of auction (for approved lot/s) or the period mentioned in Special Terms & Conditions of e-auction whichever is earlier.

After making the payment(s) against Security Deposit and Balance Payment (after issuance of Sale Order), you are requested to submit the details of such payment(s) whether to MSTC or Seller through the link â€œPayment Informationâ€ . The link may be accessed by logging to the e-auction website with your user id and password.

Please note that in case, you fail to make payment towards Security Deposit/Mat Val for any or all lots, your deposit for Entry fee/Registration is liable to be forfeited and/or any action as deemed fit may be initiated against you.

From

MSTC Admin

DO NOT REPLY TO THIS EMAIL ID as this is an auto-generated email. Please refer relevant Auction/Tender document for Contact Details.

…र सप्लाई कम्पनी (प्रा.) लिमिटेड
…ी.सी. का एक संयुक्त उपक्रम)
…म-01, पुराना प्रशासनिक भवन,
…वन, बोकारो स्टील सिटी–827001
…06542-223747 (का. एवं प्र.) 240380 (क्र. एवं स.)
…06542-247062, 246101 (पावर प्लान्ट)

CIN - U40300DL2001PTC112074

Bokaro Power Supply Company (P) Ltd.
(A Joint Venture of SAIL & DVC)
Hall No. M-01, Old ADM Building,
Ispat Bhawan, Bokaro Steel City - 827001
Tel : 06542-223747 (P&A), 240380 (P&C)
Fax : 06542-247062, 246101 (Power Plant)

Ref : BPSCL/MM/21-22/C-107/2607

Date : 20/09/2021

R R Enterprises
Jainamore, P.S - Jaridih
Bokaro (Jharkhand) – 829 301
Contact No.: 9113423366
Email : rrenterprises237@gmail.com

Sub: Lifting Permission for Dry Fly Ash for Fly Ash brick manufacturing.

Ref: 1. Your letter No. : Nil dated 14/09/2021

Dear Sir,

With reference to your above letter, you are allowed to **lift 1350 MT Dry Fly Ash** per month, "free of cost" from Power Plant, Bokaro Power Supply Co. (P) Ltd. The collection and transportation of Fly Ash must be done in close body trucks / trailors to your site for Fly Ash Bricks manufacturing, subject to the following terms and conditions:

1. You shall be liable and responsible for payment towards any taxes, GST, duties, etc. applicable by state / central government from time to time during the tenure of lifting / collection of Fly Ash.
2. Transportation of Fly Ash will be allowed only through covered trucks/ trailers/hywas/bulkers and under no circumstance transportation of Ash in Open vehicle shall be allowed.
3. You will take all possible measures for pollution free loading/unloading and transportation of fly ash complying with all the environmental norms, as per guidelines laid down by MoEF and the prevailing provisions of statutory bodies/ Govt. Agencies.
4. You shall be solely responsible for any non-compliance or any/accidents etc. arising out of and in connection with lifting and transportation of Fly Ash. BPSCL shall not be held responsible for any non compliance or any other incidence related to lifting, transportation, unloading etc of Fly Ash.
5. BPSCL reserves right to inspect your brick manufacturing facility/unit at any time any day to confirm whether proper utilization of fly ash in being done by you.
6. Loading and transportation of fly ash will be your responsibility. BPSCL will not provide any financial assistance to you for lifting & transportation of Fly Ash from Power Plant.
7. You shall follow all statutory rules and procedure regarding lifting & transportation of Fly Ash.
8. You will have to submit Fly Ash Utilization Certificate to BPSCL on quarterly basis.
9. You will have to obtain necessary gate pass/permission for personnel and vehicle movement from the concerned department.
10. Supply of Fly Ash shall be subject to its availability.
11. This lifting permission shall be valid for a period of Six (06) Months from date of issue of this letter and may be extended based on performance and upon mutual consent.
12. You shall arrange for lifting of Fly Ash in coordination with Ash Management Department of BPSCL.
13. **Working Hours:** 09:00 Hrs. to 17:00 Hrs. on all working days except Sunday/Holidays.

For Bokaro Power Supply Company (Pvt.) Limited.

20/09/2021

(A K Das)
CGM (MM)
Email : purchase.bpscl@gmail.com

e.copy to: CFO – for kind information please.

e.copy to:
1. CGM Ex (PP)
2. CGM (P&A)
3. In – Charge (F&A)
4. VO (BPSCL)

Copy to: Office copy

कम्पनी (प्रा.) लिमिटेड
.क संयुक्त उपक्रम)
.ना प्रशासनिक भवन,
ो स्टील सिटी–827001
.747 (का. एवं प्र.) 240380 (क्र. एवं सं.)
/062, 246101 (पावर प्लान्ट)

बो पा बि क लि
B P S C L

CIN : U40300DL2001PTC112074

Bokaro Power Supply Company (P) Ltd.
(A Joint Venture of SAIL & DVC)
Hall No. M-01, Old ADM Building,
Ispat Bhawan, Bokaro Steel City - 827001
Tel : 06542-223747 (P&A), 240380 (P&C)
Fax : 06542-247062, 246101 (Power Plant)

.ef : BPSCL/MM/20-21/C-016/1540

Date : 01/06/2021

Shree Om Traders
Shop No. : 12, Shopping Centre
Co-Operative Colony, Bokaro Steel City – 827 001
Tel : 06542 320852, 320857

Sub: Lifting Permission for Fly Ash for Fly Ash brick manufacturing.

Ref:
1. Our Lifting Permission No. : BPSCL/MM/20-21/C-016/1317 dated 01/06/2020
2. Our letter No. : BPSCL/MM/20-21/C-016/1340 dated 04/06/2020
3. Your mail dated 28/05/2021

Dear Sir,

With reference to your above letter, you are allowed to lift 500 cum Fly Ash per month, "free of cost" from Boiler - 9 silo, Power Plant, Bokaro Power Supply Co. (P) Ltd. The collection and transportation of Fly Ash must be done in close body trucks/ trailers to your site for Fly Ash Bricks manufacturing, subject to the following terms and conditions:

1. You shall be liable and responsible for payment towards any taxes, GST, duties, etc. applicable by state / central government from time to time during the tenure of lifting / collection of Fly Ash.
2. Transportation of Fly Ash will be allowed only through covered trucks/ trailers/hywas/bulkers and under no circumstance transportation of Ash in Open vehicle shall be allowed.
3. You will take all possible measures for pollution free loading/unloading and transportation of fly ash complying with all the environmental norms, as per guidelines laid down by MoEF and the prevailing provisions of statutory bodies/ Govt. Agencies.
4. You shall be solely responsible for any non-compliance or any/accidents etc. arising out of and in connection with lifting and transportation of Fly Ash. BPSCL shall not be held responsible for any non compliance or any other incidence related to lifting, transportation, unloading etc of Fly Ash.
5. BPSCL reserves right to inspect your brick manufacturing facility/unit at any time any day to confirm whether proper utilization of fly ash in being done by you.
6. Loading and transportation of fly ash will be your responsibility. BPSCL will not provide any financial assistance to you for lifting & transportation of Fly Ash from Boiler 9.
7. You shall follow all statutory rules and procedure regarding lifting & transportation of Fly Ash.
8. You will have to submit Fly Ash Utilization Certificate to BPSCL on quarterly basis.
9. You will have to obtain necessary gate pass/permission for personnel and vehicle movement from the concerned department.
10. Supply of Fly Ash shall be subject to its availability.
11. This lifting permission shall be valid for a period of One (01) year from date of issue of this letter i.e., **up to 31.05.2022** and may be extended based on performance and upon mutual consent.
12. You shall arrange for lifting of Fly Ash in coordination with Ash Management Department of BPSCL.
13. **Working Hours:** 09:00 Hrs. to 17:00 Hrs. on all working days except Sunday/Holidays.

Yours faithfully,
For Bokaro Power Supply Company (Pvt.) Limited.

01.06.2021
(A K Das)
GM I/c (MM)
Email : purchase.bpscl@gmail.com

e.copy to: CEO – for kind information please.
e.copy to:
1. CGM I/c (PP)
2. CGM (P&A)
3. In – Charge (F&A)
4. VO (BPSCL)

Copy to: Office copy

प्लाई कम्पनी (प्रा.) लिमिटेड
(ी. का एक संयुक्त उपक्रम)
01, पुराना प्रशासनिक भवन,
, बोकारो स्टील सिटी–827001
542-223747 (का. एवं ब.) 240380 (क. एवं नि.)
6542-247062, 246101 (पावर प्लान्ट)

बो पा सै क लि
B P S C L

CIN : U40300DL2001PTC112074

Bokaro Power Supply Company (P) Ltd.
(A Joint Venture of SAIL & DVC)
Hall No. M-01, Old ADM Building,
Ispat Bhawan, Bokaro Steel City - 827001
Tel : 06542-223747 (P&A), 240380 (P&C)
Fax : 06542-247062, 246101 (Power Plant)

Ref: BPSCL/MM/19-20/C-165/AL-003/ 2393

Date 25/08/2021

FM Enterprises
Qtr. No. : 4013, Sector IV/A
Bokaro Steel City – 827004
Email : fm.enterprises72@yahoo.co.in
Tel: 9934120989 / 9431399685

Sub: Validity Extension of Lifting Permission.
Name of Work : Lifting of Fly Ash from BPSCL.

Ref : i) Lifting Permission No.: BPSCL/MM/19-20/C-165/ 5020/464 dated 14/02/2020
ii) Your letter No.: Nil dated 09.08.2021

Dear Sir,
With reference to above, validity of the lifting permission is hereby extended for **further Six (06) months with effect from 18.08.2021 i.e. up to17.02.2022.** All other Terms and conditions of lifting permission given vide letter under reference (i) will remains same.

Yours faithfully,
For Bokaro Power Supply Company (Pvt.) Limited,

25/08/2021

(A.K. Das)
CGM (MM)
Email: purchase.bpscl@gmail.com

e.copy to : CEO – for kind information

e.copy to :

1. CGM I/c (PP)
2. CGM (P&A)
3. GM (F&A)
4. AGM (Ash Mgmt.)
5. VO (BPSCL)

Copy to: Office copy

बोकारो पावर सप्लाई कम्पनी (प्रा.) लिमिटेड
डी.वी.सी. का एक संयुक्त उपक्रम
ए-एम-01, पुराना प्रशासनिक भवन
इस्पात भवन, बोकारो स्टील सिटी-827001
दूरभाष : 06542-223747 (वा. एवं ले.) 240380 (कं. एवं ले.)
फैक्स : 06542-247962, 246101 (पावर प्लान्ट)

Bokaro Power Supply Company (P) Ltd.
(A Joint Venture of SAIL & DVC)
Hall No. M-01, Old ADM Building,
Ispat Bhawan, Bokaro Steel City - 827001
Tel : 06542-223747 (P&A), 240380 (P&C)
Fax : 06542-247962, 246101 (Power Plant)

Ref: BPSCL/MM/19-20/C-165/50201/464

Date: 14.02.2020

F.M Enterprises
Qtr.No : 4013, Sector IV/A
Bokaro Steel City – 827004
Email : fmenterprises72@yahoo.co.in
Tel : 9934120980 / 9431309685

Sub: Permission letter

Name of work: Lifting of Fly Ash from BPSCL.

Ref.: Your letter No. : Nil dated 03.02.2020

Dear Sir,
With reference to your above letter, you are allowed to lift **350 cum** of Fly Ash per month "free of cost" from BPSCL for Brick manufacturing in B.I.A.D.A, Bokaro (Jharkhand). The collection and transportation of Fly Ash is subject to the following terms and conditions:

1. The cost of loading, transportation, unloading etc. will be borne by you.
2. You shall be liable and responsible for payment towards any taxes, duties, levies, octroi etc applicable/enforced by State / Central government from time to time during the tenure of lifting/collection of Fly Ash.
3. Transport of Fly Ash will be allowed only by vehicles fully covered with tarpaulin / closed body trucks / trailers / bulkers and, under no circumstances, transportation of Ash in Open vehicle shall be allowed.
4. You will take all possible measures for pollution free loading, unloading and transportation of fly ash complying with all the environmental norms, as per guidelines laid down by MoEF and prevailing provisions of statutory bodies/Govt. agencies.
5. You shall be solely responsible for any non – compliance or any incidence / accidents etc. arising out of and in connection with lifting and transportation of Fly Ash. BPSCL shall not be responsible for any non compliance or any other incidence related to lifting, transportation, unloading, etc. of Fly Ash.
6. Loading, lifting and transportation of Fly Ash will be your responsibility. BPSCL will not provide any financial assistance to you for lifting & transportation of Fly Ash from BPSCL.
7. You shall follow all statutory rules and procedure regarding lifting & transportation of Fly Ash.
8. You will have to obtain necessary gate pass / permission for person and vehicle movement from the concerned department / agency.
9. Supply of Fly Ash is subject to its availability.
10. The Fly Ash shall be used only for the purpose specified herein i.e. manufacturing of Fly Ash Bricks.
11. BPSCL shall not be responsible for any defects in the quality of the manufactured Fly Ash Bricks or failure thereof, if any, and shall not be liable to pay any compensation, whatever the reason may be.
12. BPSCL shall not be responsible for any accident or injury to person (s) engaged or otherwise affected in the process of loading, transportation, unloading of Fly Ash for construction of Fly Ash Bricks.
13. The lifting permission is valid for a **period of Six (06) months** from date of issue of this letter and may be extended based on performance of the firm and mutual consent.
14. You shall arrange for lifting of Fly Ash in coordination with Ash Management Department of BPSCL.
15. You are requested to submit Fly Ash utilization certificate.

Yours faithfully,
For Bokaro Power Supply co. (P) Ltd

14-02-2020

(V. Agrawal)
Chief General Manager (MM)

Copy to: CEO – for kind information please.
Copy to:
1. CGM (I/c) Power Plant
2. CGM (P&A)
3. GM (Inst. Cell & Env.) 4. In – Charge (P&A) 5. VO - BPSCL
Copy to : Office Copy

सेल - आर.डी.सी.आई.एस.
SAIL - RDCIS

Date: 19.01.2022

Sub: Utilization of Fly-ash and brick manufacturing facility of BPSCL

As a measure for "Waste to Wealth" initiative, RDCIS Bokaro is carrying out an experiment to utilize the -5 mm processed BOF Slag with Fly-ash for developing a bricks.

Initially RDCIS will make around 400 bricks with two combinations of Fly-ash and -5 mm BOF slag. Fly-ash and Brick manufacturing facility available at BPSCL is required by RDCIS for the experiment.

Therefore, permission may please be given for utilizing fly-ash and brick manufacturing facility to RDCIS. Arrangement of labour, -5 mm processed BOF Slag and other constituent will be done by RDCIS.

Approval may please be given to utilize fly-ash and brick manufacturing facility of BPSCL.

Submitted for approval please.

(signature) 19/1/2022
(Santosh Kumar)
AGM, RDCIS Bokaro

(2)

GGM & HoPC, RDCIS Bokaro Centre

Permission may please be given. (signature) 19/01/2022

(3)

[illegible] BPSCL

Use of Fly-Ash Brick manufacturing machine may be allowed. However, RDCIS will be required to arrange for man power, material or any other input required for the subject work

[illegible] BPSCL

(4)

(signature) 20.01.22

CEO

Approved, yet to be undertaken under information of BPSCL & [illegible]

मुख्य महाप्रबंधक सचिवालय
डायरी/डिस्पैच नं... 730
दिनांक 19/01/2022
आर डी सी आई एस बोकारो

R-4151
21-01-22

P-348
21/1/22
21-01-22

(5)

CGM I/c (PP)

Please
24.01.22

CGM & HoPC RDCIS Bokaro (6)

for necessary action please.

27/01/22

(7)

AGM, RDCIS, Bokaro Steel

Around 200 bricks have been made on 9/3/22 & 10/3/22. The appearance and strength is found to be satisfactory. Another 1000 nos of brick is to be made as directed by ED, RDCIS, SAIL. These bricks will be utilized for wall making at RDC Lab building to check its suitability for boundary wall purpose. Permission may please be given for utilizing BPSCL Brick making facility.

21/3/2022

(8)

CGM & HoPC, RDCIS, Bokaro Steel

Permission may please be given for making another 1000 nos of bricks in BPSCL Brick making facility.

21/03/2022

(9)

CGM I/c (PP), BPSCL

may please be allowed

Please
21.3.22

(10)

23.03.2022

CGM I/c (PP)

Please

Note Sheet

CCIM/HODC RDCIS

OFFICE OF THE CEO, BPSCL D. No. 258 Date 22-03-22

A-4734 24-03-22

P-1478 25/03/22

4. Special Assignment

BOF Slag-Fly ash brick making

In view of utilizing steel slag as a measure for "Waste to Wealth" initiative, RDCIS Bokaro centre has manufactured around 1200 nos. of BOF Slag-Fly ash brick (size: 230x110x75) utilizing a combination of steel slag of steel plant and fly-ash from power plant using internal resources.

BOF Slag- Fly ash Brick

Brick Making Unit

- Phase-I: 200 nos. of bricks made with following three compositions:

Material	Type-1	Type-2	Type-3
Fly-Ash	36.00%	36.00%	
BOF Slag (-5 mm)	31.00%	31.00%	50.00%
Hydrated Lime	5.75%	9.75%	7.75%
Cement	4.00%	---	15.00%
Gypsum	2.00%	2.00%	
Calcium Chloride	0.25%	0.25%	0.25%
Sand	21.00%	21.00%	27.00%
Weight/ brick(kg)	3.25	3.25	3.80

- Strength & Water absorption test Result:

	Type-1			Type-2			Type-3		
Parameters	7 days	14 days	28 days	7 days	14 days	28 days	7 days	14 days	28 days
Compressive strength kg/cm^2	32-44	52-60	88-98	36-40	69-80	96-128	100-128	100-110	96-145
%Water absorption	9.0	9.6	10.5	7.3	4.9	5.4	5.6	4.2	3.1

- Phase –II: Based on strength of brick tested, 1000 Nos. of bricks made with type-2 composition

	Type-2
Material	%
Fly-Ash	36.00%
BOF Slag (-5 mm)	31.00%
Hydrated Lime	9.75%
Cement	Nil
Gypsum	2.00%
Calcium Chloride	0.25%
Sand	21.00%

बोकारो पावर सप्लाई कम्पनी (प्रा.) लिमिटेड
(सेल एवं डी.वी.सी. का एक संयुक्त उपक्रम)
हॉल सं.–एम–01, पुराना प्रशासनिक भवन,
इस्पात भवन, बोकारो स्टील सिटी–827001
दूरभाष : 06542-223747 (कॉ. एवं प्र.) 240380 (कॉ. एवं ले.)
फैक्स : 06542-247062, 246101 (पावर प्लान्ट)

बो पा स. क लि
B P S C L

CIN : U40300DL2001PTC112074

Bokaro Power Supply Company (P) Ltd.
(A Joint Venture of SAIL & DVC)
Hall No. M-01, Old ADM Building,
Ispat Bhawan, Bokaro Steel City - 827001
Tel : 06542-223747 (P&A), 240380 (P&C)
Fax : 06542-247062, 246101 (Power Plant)

WORK ORDER

W.O No.: BPSCL/MM/19-20/C-143/NIT-901/50209/507

Date: 16/02/2021

Jagan Singh
Sector - 4/A, Quarter No : 4070
Bokaro Steel City – 827004
Email: jagansingh_ravi@yahoo.com
Mob: 9939102840

Name of Work: Fly Ash Dump Site Slope Stabilization & Green capping by Implementation of Bioengineering components.

Ref: i) Our NIT No. : BPSCL/MM/19-20/C-143/NIT-901/1611 dated 04/07/2020
ii) Your Offer No. : Nil dated 13/10/2020
iii) Your letter No. : Nil dated 13/01/2021 after RA

Dear Sir,

We are pleased to place an order on you to carry out the above mentioned work on terms & conditions as given below.

SCOPE OF WORK:-

Work of design and installation of fly ash dump site slope stabilization & Green capping by bioengineering components including comprehensive maintenance for 6 months.

1. Details of raw materials needed in the project as per below :
   a) Jute Geo textiles - 500 GSM
   b) Coco Geo Log filled with coco fiber and outer coir net – 20 cm diameter x 1mt. length
   c) Biomass Substrates – Coco pith / Biomass blend substrates
   d) Compost for plant base application
   e) Microbial consortium
   f) Soil amendments
   g) Fertilizers & Hydro gel
   h) Vetiver plants
   i) Bamboo sticks / Pegs & bamboo poles for fixing the jute geotextiles and coir geo logs
   j) Fertilizers for plant growth and maintenance
2. Fly ash dump site slope preparation levelling in 45 degree slope profile with slope bed preparation and compaction of area in area of 5460 sq.m surface area. The slope top area levelling of 2 mt. area and a 1 mt. ht. bump preparation and the bump outer area spread with slag as covering. Preparation of slope and slope compacting in 45-degree angle
3. Preparation of plantation beds and wetting for compacting the fly ash
4. Laying of Jute Geotextiles and fixed with bamboo pegs
5. Preparation of Biomass and Microbial blending for spreading on Jute Geo-textiles
6. Making holes on prepared plantation area
7. Systematic Vetiver plants arrangement for plantation at site
8. Filling with Microbial mixed compost with biomass for filling the holes
9. Plantation of Vetiver plants in holes and watering in Regular basis
10. Comprehensive maintenance of site for six months on plant growth & slope stabilization
11. You have to arrange for Water supply and irrigation systems
12. You have to make slope and carry out plantation in such a manner that proper rain water drainage system is maintained and the vegetation belt is not disturbed by flow of rain water during rainy season.

16/02/2021

QUANTUM AND VALUE OF WORK:-

Sl. No.	Description of Items	Quantity	Rate / unit (Rs.)	Amount (Rs.)
1	Earthwork in excavation in slope of heaps as per designed section & throwing the spoils in layers of 25 cm for making banks as per profile or to deposit the same in any other place within an initial lead of 30 meter and initial lift of 1.5metre including breaking clods, rough dressing etc complete as per direction of the Engineer in Charge.	2,730.00 Cum	108.1182	2,95,102.69
2	Supply of bio-engineering materials at site and implementation of same i.e (i) jute geo textiles (500 GSM) to be fixed with bamboo pegs, (ii) Biomass component [coco pith & compost mix with microbial consortium] & fertilizers for plantation hole filling, (iii) Vetiver plants clumps consider minimum 16 nos. of clumps plants per Sqm) for plantation. Vetiver clumps plantation is to be implemented by making hole (16 holes per sqm) filled with biomass compost, microbial consortium and fertilizers and watering system for plant growth. The scope of work includes detail technical supervision & taking all bio-technical measures at site during execution.	5,460.00 Cum	540.10	29,48,946.00
3	Supply of bio-engineering material at site and execution of same i.e coir log [20 cm diameter x 1.0 mtr. length each] to be fixed with bamboo pegs and wire rope over slope as intermediate wall and toe wall and 10 mts. distance horizontal to the slope as per site condition. Vetiver plantation on both sides of the side of coir log 8 No. Plants per meter. The scope of work includes detail technical supervision & taking all bio-technical measures at site during execution.	560.00 Meter	432.08	2,41,964.80
4	Charges of Comprehensive maintenance of site for all bioengineering components for a period of 6 Months from the date of implementation of scheme.	5,460.00 Sqm	78.56	4,28,937.60
			Total Amount	39,15,011.09 ≈ **39,15,011.00**
Rupees Thirty Nine Lakh Fifteen Thousand Eleven only				

PAYMENT TERMS : -

Payment will be released in following manner duly certified by Engineer in-charge **Mr. M S Mondal / Sr.Manager (Civil)** :

a) **40%** of the payment against Sl.No.1,2 & 3 of "Quantum and Value of work" will be made after completion of work.

b) **40%** of the payment against Sl.No. 1,2 & 3 of Quantum and Value of work will be made after completion of maintenance period.

c) **80%** of the payment against Sl.No. 4 of Quantum and Value will be made after completion of maintenance period.

d) **Balance 20%** will be kept as Security deposit & will be released after the completion of defect liability period after fulfillment the following formalities:-

i) Acceptance of the final measurement recorded by the Engineer-in-Charge.

ii) Rectification of the defects pointed out by the Engineer-in-Charge.

iii) Completion of work in all respect, including clearing of sites, return of surplus material issued by BPSCL immediately on completion of work.

Note: Defect Liability period shall commence after completion of maintenance period and will continue up to 06 months thereafter.

→Engineer In-charge of this job must ensure that the firm has proper labour licence and has signed Agreement before start of the work.

The expression satisfactory execution of the order shall mean fulfillment of all obligation arising out of and in connection with the contract. In case of default in satisfactory execution of the order the security deposit shall be forfeited.

Amount of penalty and/or Liquidated Damages imposed (if any) will be recovered from Bill / Security Deposit. If the amount of Bill / Security Deposit is not sufficient, you will be required to pay the balance amount to BPSCL. If you do not pay the balance amount, the same shall be deducted from any sum or sums which may be due or may become due to you from the BPSCL on any account whatsoever.

16/02/2021

a) **Goods & Services Tax:**

1	**GSTIN No.**	20AUFPS3899C1ZK
2	Service Accounting Code	999492
3	CGST	Extra as applicable (Present rate: 09%)
	SGST	Extra as applicable (Present rate: 09%)

(For re-imbursement of GST, you have to submit your bills / invoice / challan as per GST Acts / rules.)

b) **GST related clauses:**

⇨ You shall have to pass on the tax benefit/savings, if any, on account of output taxes to BPSCL.

⇨ You have to do all things not limited to providing GST invoices or other documentation as per GST Law relating to the above Services, payment of taxes, timely filing of valid statutory returns for the tax period on the Goods and Service Tax Portal etc. that may be necessary to match the invoice on GSTN common portal and enable BPSCL to claim input tax credit in relation to any GST payable under this agreement or in respect of any part under this agreement.

⇨ In case the Input Tax Credit of GST is denied or demand is recovered from BPSCL on account of any non-compliance by you, including non-payment of GST charged and recovered, you shall indemnify BPSCL in respect of all claims of tax, penalty and/or interest, loss, damage, costs, expenses and liability that may arise due to such non-compliance. Further, in case of any differential tax liability on account of any wrong classification/valuation etc. by you, BPSCL will not be liable to reimburse any part of such differential tax, interest, penalty etc. It will be your sole responsibility to discharge appropriate taxes, as applicable.

⇨ You shall have to maintain high GST compliance rating track record at any given point of time.

DURATION OF CONTRACT: Ten (10) Months from the date of commencement of the work, which will constitute of.

a. **Work Execution Period**: 04 months from commencement of work.
(Note: The work will be considered completed only when start of vegetation growth/germination of vetiver seeds is observed
spread over at least 75% of the total area distributed all throughout.)

b. **Comprehensive Maintenance Period**: 06 Months after completion of the stabilization work

TERMS AND CONDITIONS:-

1. You will have to follow and observe the safety & statutory requirements.
2. You will have to be fully responsible for any sort of unsafe activity of your workmen. All working personnel should have proper safety certificates issued by BPSCL before start of work.
3. You will produce medical fitness certificate for your workers. Height passes are to be obtained from safety department, if required.
4. Supervision of the work has to be carried out by you.
5. Work is to be carried out as per work order.
6. In case any of the documents/information submitted by you is/are found to be false or containing any misrepresentation or having any fraudulent declaration in it, then, in such eventuality EMD will be forfeited and legal action (including cancellation of contract, banning of business dealing, criminal proceedings etc.) as deemed fit, may be initiated by BPSCL against you.
7. You will have to strictly adhere to the provision of various labour laws including Payment of Bonus Act 1965.
8. You will have to pay Rs.4/- extra to the working persons above minimum wage of one day, as per BPSCL rules.
9. The manpower (labour and Supervisor) deployed for completion of the job and for compliance of work & safety of the workmen should be adequate. However the compliance and completion of the job cannot be restricted to labour supply but on the actual execution of the job to be certified by the Engineer – In – charge.
10. Paying authority –In - charge (F&A), BPSCL.
11. No idle charge or escalation charges will be considered during the contract period.
12. Entry pass & Storage of materials will be under your scope. However, storage space will be provided by BPSCL.
13. You have to deploy a Biotechnologist with experience in Bio-engineering techniques of environmental bioengineering / Solid waste management / land reclamation.
14. The area is dust prone. Proper health safety measures for the workers shall have to be taken by you.
15. The area of execution lies outside the plant premises. If any local issue arises, the same has to be taken care of by you.
16. **Liquidated Damages:** In case of delay in completion, for reasons attributable to you, a sum equivalent to 0.5% of the value of the delayed work for each week of delay and part thereof subject to maximum of 5% of the total value of the contract will be recovered from contractor as Liquidated Damage (LD).

16/02/2021

17. **Work accident :**

a. You shall be responsible for the safety of the workers employed by you. In the event of any work-accident, major or minor, your representative must take care of the injured person immediately and provide him the required treatment as suggested by the doctor. If you or your representative is not available for arranging medical care, the injured worker will be treated at Bokaro General Hospital and the cost of treatment will be recovered from you.

b. You shall be fully responsible for making payment of compensation to your own workmen in respect of any accident or injury occurring to them. BPSCL will in no way be responsible for it and will remain indemnified against all such claims of compensation in such cases

18. **AWA CLAUSE:** You shall have to pay an amount of Rs 96.15 per day on actual attendance per month (not exceeding Rs 2500/month) to the worker engaged by you in this job as additional welfare amenity (AWA) as per relevant circular/notification of BPSCL and you are requested to include the amount against AWA in your quoted rate, submit the offer accordingly.

19. **FORCE MAJEURE:** Bidder shall not be considered in default if delay occurs due to cause beyond their control such as acts of God, natural calamities, civil wars, fire, strike, frost, floods, riot and acts of unsurpassed power. Only those causes which have duration of more than seven days shall be considered in force majeure clause. In the event of delay due to such clause the delivery / completion period will be extended for a length of time equal to the period of force majeure without imposition of Liquidated Damages at the option of owner.

20. **Banning of Business Dealings:** On arising of any situation or occurrence of any event as mentioned in Clause 6 of the Guidelines on Banning of Business Dealings, the tenderer/bidder or supplier under the tendering process or contract with BPSCL, as the case may be, shall be liable for action under and in accordance with the aforementioned Guidelines. The "Guidelines on Banning of Business Dealings" shall form part of the Tender/Contract and the same can be viewed on our website www.bpscl.com

21. **RISK AND COST:** Failure on Contractor's part to start the work within reasonable time/ the progress of the job is poor/ for any breach of contract will entail termination of the Contract. In such an event, the job will be executed at the risk and cost of the Contractor by alternative arrangements.

22. General Environment, Health & Safety responsibilities of Contractor is ***attached at Annexure*** for compliance during execution of contract.

23. **Penalty Clause:**

a. If you fail to start the work within 01 (one) month from placement of work order, a penalty of 0.5% per week of total contract value will be levied.

b. If you do not start the work even after a reasonable time necessary action will be initiated as per BPSCL terms and conditions including termination of contract and getting the work done at your risk & cost.

c. If the vegetation dries out during the contract period or defect liability period the same shall have to be replaced by you at no extra cost to BPSCL or else a penalty of Rs 1000/- per Sqm. will be levied.

d. **SAFETY CLAUSE :** You shall be liable for penalties mentioned below for violation of safety norms :

i. Upto Rs. 5000/-by Head of safety Engg. Department /Head of the Department where work is being done for 1st violation of safety norm, non use of PPEs(Personal Protective Equipments) like safety shoes, hand gloves, safety helmets, goggles etc as per work requirements by you or your workers. This condition is applicable in case of violations of Road Safety norms also.

ii. Fine upto Rs. 20,000/- on 2nd Violation as mentioned in clause (i) above.

iii. You shall be debarred for one year / deregistered from taking up further contractual work in BPSCL from the date of issue of debarring / deregistering order on 3rd violation as mentioned in clause no (i) above.

iv. Fine upto Rs. 10,000/- for violation in use of Full Body Harness by you or your worker for working at height (above 1.8 meter from immediate floor).

v. Fine Rs. 25,000/- (minimum) to Rs. 50,000/- (Maximum) for serious injuries and disabilities caused by violations as mentioned in Clause No. (i) and (iv) above.

vi. Independent of the above, you shall be fined Rs. 1,00,000/- (1 Lakh) or more and debarred / deregistered from taking up further contractual work in BPSCL from the date of issue of debarring / deregistering the order in case any fatal accident occurs due to violations as mentioned in Clause (i) and (iv) above.

Note: In case penalty is imposed, you will have to reimburse the applicable GST to BPSCL.

Note:

1. Please inform the undersigned immediately about discrepancy, if any. If nothing is heard from you within 10 days from the date of issuance of this order, it will be considered that the order is accepted by you.

16/02/2021

2. **The payment of wages to all categories of contract workers engaged is to be done through Bank Transfer (RTGS/NEFT/IMPS) or any other mode of electronic transfer.**
3. You have to raise your Invoices alongwith your Bank A/c No., Bank Name, Branch Name & IFSC Code.
4. <u>You are requested to submit following papers for preparation of Agreement paper by us:</u>
    1. Non-Judicial Stamp Paper of Rs. 20.00 or above alongwith 2 - 3 dummy papers.
    2. Authenticated copy of work order.
    3. Acknowledgement letter.
    4. Authorization letter of signing authority.

Yours faithfully
For & on behalf of BPSCL.

16/02/2021

(A K Das)
GM I/c (MM)
Email : purchase.bpscl@gmail.com

Copy to: Office copy
e.copy to:
1. CGM I/c (PP)
2. CGM (P&A)
3. GM (Civil)
4. In – charge (F&A)
5. Manager (P&A)
6. Safety Officer
7. VO (BPSCL)

e.copy to: CEO – for kind information please.

Implementation Report on Fly Ash Dump Site Slope Stabilization & Green Capping by Implementation of Bioengineering Components

Project by

BOKARO POWER SUPPLY COMPANY (P) Ltd.
Environment Dept.
ISPAT Bhavan, Bokaro steel City
Bokaro – 827001, Jharkhand

Implementation Contractors

Jagan Singh
Sector -4 /A, Qtr. No. 4070
Bokaro Steel City – 827004, Jharkhand
M: +91 9939102840 I E: jagansingh_ravi@yahoo.com

(Ref. WO No. BPCL /MM/19-20 /C-143 / NIT- 901 /50209 /507)

Project Design & Technical partners

BIOSTARTS VENTURES
Atri Green View, 5 E, Kamalgazi,
Kolkata – 700 103, West Bengal
M: +91 9903323469 I E: prabio@gmail.com

Fly Ash Dumpsite stabilization & Green capping using bio-engineering components

Fly ash dump site has a typical problem of spreading of fly ash by wind, water to create e severe air, water and soil contamination of surrounding area.

This leads to a severe environmental impact and it is very difficult to restore and revive the land through conventional civil and partial remedial approach. In normal conditions green belt development & restoration is very difficult due to the high content of heavy metals in fly ash and complex texture of fly ash in terms of extremely less porosity and distinct properties of fly ash in summer season and rainy season.

Major Environmental & Social Impacts

- Soil Pollution
- Water Pollution
- Air Pollution

Agriculture Land Pollution

Canals, Water bodies & River Pollution

Health & Sanitation problems

Sustainable Eco-friendly Stabilization & Green capping Methodology for pollution mgmt.

The restoration technique based on an integrated approach by using sustainable green technologies to stabilize & restore the fly ash dump site by using natural bio degradable materials, Beneficial Microbes, vetiver plants to stabilize and restore the fly ash dump area.

Vetiver plants grown on fly ash for three to four months showed massive, mesh-like growth of roots which could have a Phyto-stabilization effect. Vetiver is used for phytoremediation of coal fly ash, its shoots can be grown vigorously spreading due to heavy root system formation and abortion of heavy metals.

The Fly ash restoration site preparation has to be done with dozers and rollers. Water sprinklers to be fitted in the area with periodic watering for wetting the area for plantation.

After compacting of fly ash slope are with rollers, the Jute Geotextiles and biomass mass with beneficial microbes' application on the surface for creating a biomass mulch with a blend of Microbial consortium as base substrate for plantation.

Regular watering is required for 3-4 months to make faster growth of plants for stabilizing the dump site.

The fly ash area will be stabilized within 3-4 months and the whole area will be covered as complete green mulch within six months.

Significance of Bio-engineering Techniques

The Fly Ash dump site area fully stabilized and restored by the Application of Jute Geo textiles, Biomass substrates, Beneficial Microbes and sustainable plants (Vetiver) directly on fly ash through Bio-engineering techniques.

The Bio- engineering Techniques of Restoration WITHOUT USING SOIL.

The fly ash dump area RESTORED WITHIN 3 - 4 MONTHS with A PERMANENT NATURAL GREEN CAPPING to control the environmental problems.

The Fly Ash Dump Site Restoration Technique is 100 % ECO-FRIENDLY and practically applicable to the effective CONTROL SOIL, WATER AND AIR POLLUTION.

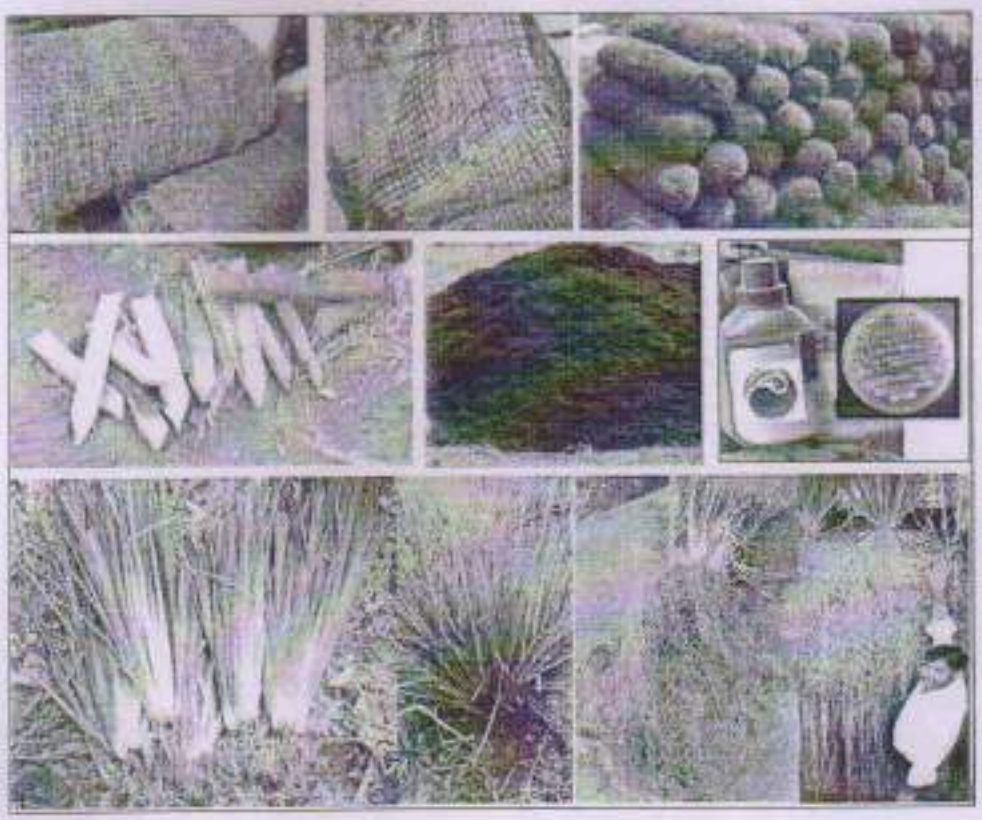
Project site: Bokaro Power Supply Co. (P) Ltd.

Fly Ash dump site stabilization and green capping using Bioengineering Components

Area of work

Slope Ht. / Length - 100 mt.
Slope width - 55 mt.
Total area of Stabilization - 5500 Sq.m

Materials & Methods



Materials used in the project

- Jute Geo textiles - 500 GSM
- Coco Geo Log filled with coco fiber and outer coir net – 20 cm diameter x 1mt. length
- Vetiver plants
- Biomass Substrates – Coco pith / Biomass blend substrates
- Compost for surface covering & plant base application
- Microbial consortium
- Fertilizers & Hydro gel
- Bamboo sticks / Pegs & bamboo poles for fixing the jute geotextiles and coir geo logs
- Fertilizers for plant growth
- Watering & maintenance

The environmental problems in Fly ash dumpsites

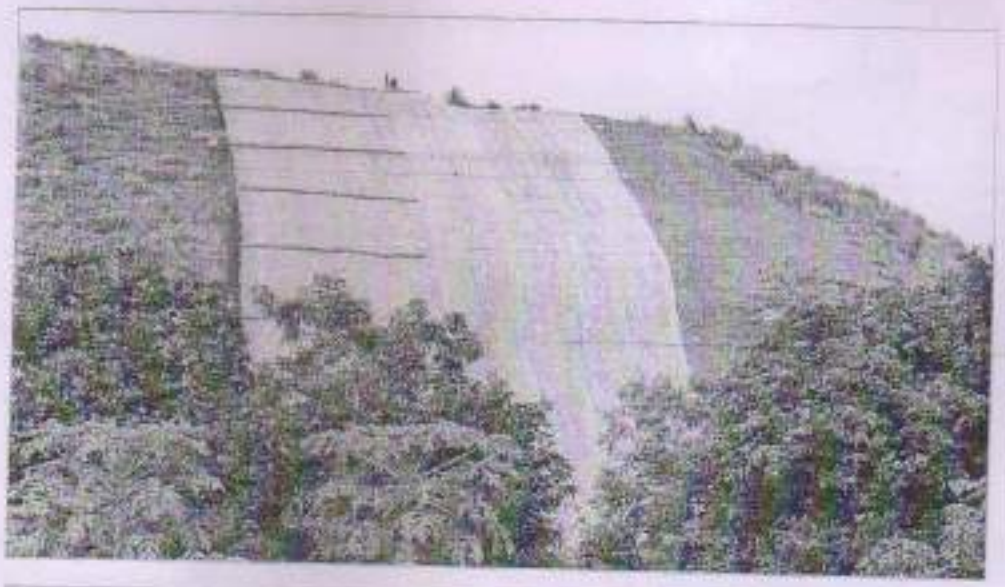
Site preparation for Stabilization

Laying of Jute Geotextiles and fixing with Bamboo pegs

Site preparation for fly ash mount Stabilization

Fixing of Jute geotextiles & Coir logs for ash sliding control and compaction of site for plantation

Site preparation for fly ash mount Stabilization

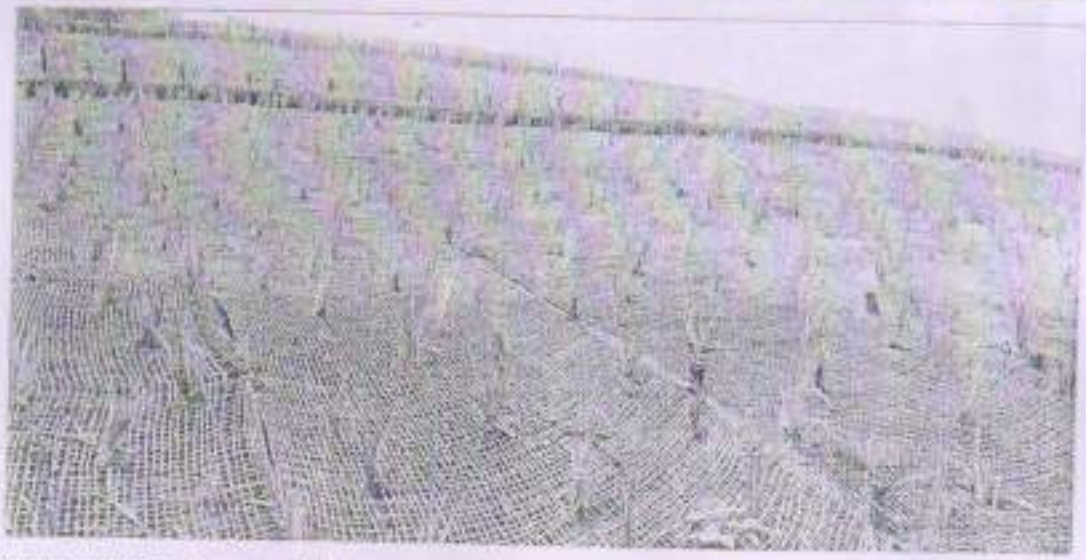


Site Ready for Vetiver plantation

Site preparation for fly ash mount Stabilization

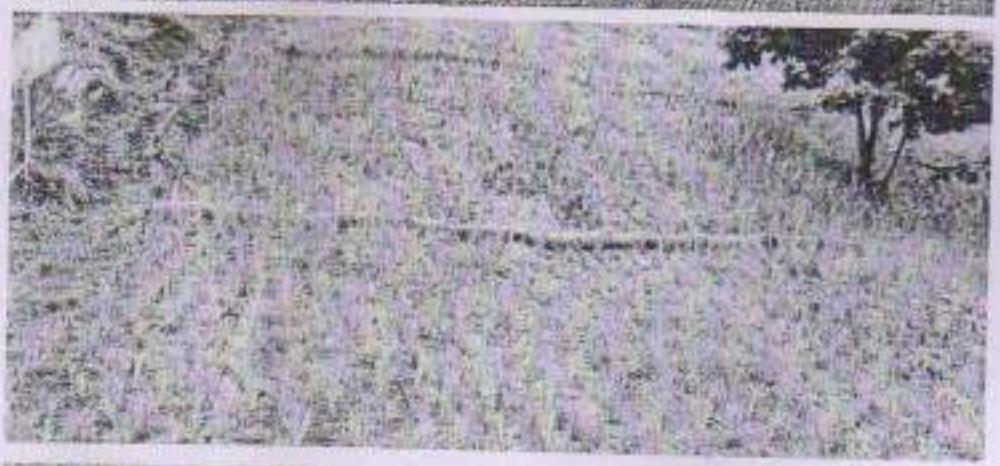
Vetiver plantation with biomass & compost base with Microbial applications

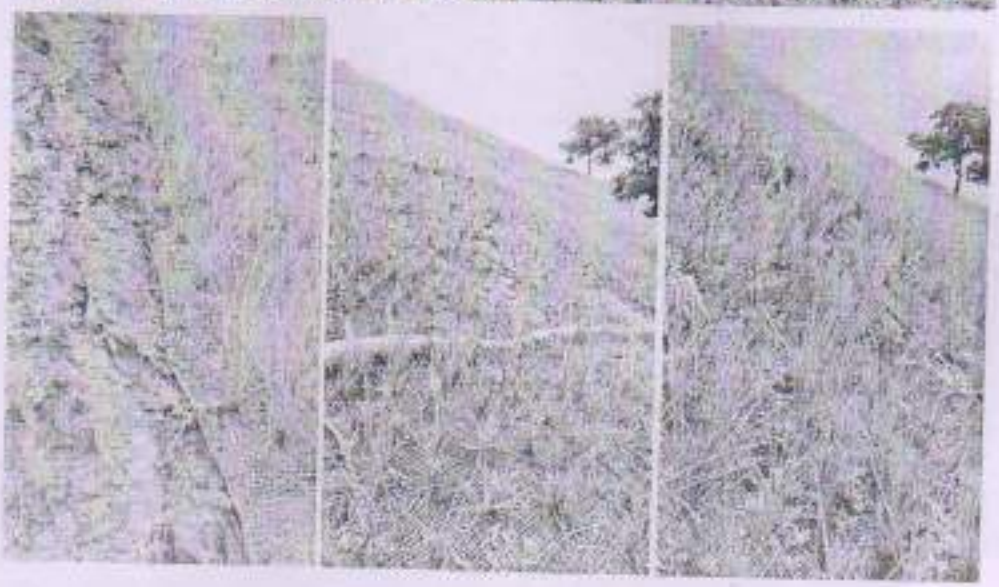
Plantation on compacted Jute geotextiles mulched area



Vetiver plantation growth in one month

Vetiver plant growth on bioengineered fly ash mount





Vetiver plant growth in 2 months

Stabilized fly ash mount by bioengineering plantation developments

Vetiver plant growth in 3 months

Stabilized fly ash mount by bioengineering plantation developments

Area – 100 mt. Height x 55 mt. width - 5500 Sq.m

Fly ash moth stabilization & Pollution control by Bioengineering & Green capping

Project executed by

JAGAN SINGH
Sector - 4 /A, Qtr. No. 4070
Bokaro Steel City – 827004, Jharkhand

M: +91 9939102640 I E: jagansingh_ravi@yahoo.com

Project Design & Implementation support by

BIOSTARTS VENTURES
Atri Green View, 5 E, Kamalgazi,
Kolkata – 700 103, West Bengal

M: +91 9903323469 I E: prabio@gmail.com

Third Party Report by NABL accredited Lab

REPORTS
ON
STACK EMISSION, AMBIENT AIR, NOISE LEVEL & EFFLUENT WATER MONITORING AND ANALYSIS
OF

M/s. BOKARO POWER SUPPLY COMPANY (P) LTD., BOKARO STEEL CITY, JHARKHAND

(PERIOD: FEBRUARY, 2022)

Reports Prepared By:

POLLUTION AND PROJECT CONSULTANTS,
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TEST REPORT
STACK GAS

Customer Name	: M/s. Bokaro Power Supply Company (P) Ltd.,	Report No.	: G/22(02)/12
Address	: Bokaro Steel City, Bokaro, Jharkhand	Report Date	: 03-03-2022
		Date of Sampling	: 23-02-2022
		Time of Sampling	: 10:50 A.M.
		Sample Received Date	: 26-02-2022
Type of Sample	: Stack Air	Sample Id No.	: GS/22(02)/12
Sampling Location	: Boiler Unit # 2	Test Start Date	: 28-02-2022
		Test End Date	: 03-03-2022

A : GENERAL INFORMATION ABOUT STACK :

1	Stack connected to	: Boiler Unit # 2
2	a) Material of construction of the Stack	: R.C.C.
	b) Material of construction of the Duct	: M.S.
3	a) Shape of the stack	: Circular
	b) Shape of the duct	: Rectangular
4	Height of the stack :	
	a) From Ground Level (M)	: 180
	b) From Roof Level (M)	: --
5	Dimension of the duct :	
	a) Top (M)	: --
	b) Bottom (M)	: --
	c) Sampling Point (M)	: 1.5 X 1.3
6	Height of the Sampling Port :	
	a) From Ground Level (M)	: --
	b) From Lower Disturbing Zone (M)	: --
7	Whether Stack is provided with permanent Platform/Ladder	: Yes

C : ANALYSIS/CHARACTERISTICS OF FUEL :

1	Emission due to	: Combustion of Gas
2	Fuel used	: B.F.Gas
3	Fuel consumption	: --
4	Calorific value (k-cal/kg)	: --
5	Sulphur content (% by wt)	: --
6	Ash content (% by wt)	: --
7	Air flow	: --

D : STEAM GENERATION CAPACITY:

	a) Rated	: 220.0 Ton/Hr.
	b) Running load:	: --
	a) Rated	: --
	b) Running	: --

E : Pollution control device : ESP

B : Result of Sampling

Sl.	Parameters tested	Unit	Method of Test (Reference)	Result
1	TEMPERATURE OF EMISSION	deg C	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	157
2	BAROMETRIC PRESSURE	mmHg	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	756
3	VELOCITY OF GAS FLOW	M/Sec	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	21.74
4	QUANTITY OF GAS FLOW	$Nm^3/Hr.$	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	104019.08
5	CONCENTRATION OF PARTICULATE MATTER	mg/Nm^3	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	44
6	PARTICULATE MATTER NORMALISED TO 12% CO_2	mg/Nm^3	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	48.8
7	CONCENTRATION OF SULPHER DIOXIDE	mg/Nm^3	IS 11255 (Part 2): 1985 (RA 2014)	58
8	CONCENTRATION OF NITROGEN DIOXIDE	mg/Nm^3	IS 11255 (Part 7): 2005 (RA 2017)	76
9	CONCENTRATION OF OXYGEN	%v/v	APHA (Air Analysis) (3rd Edition) Method -134	9.2
10	CONCENTRATION OF CARBON DIOXIDE	%v/v	APHA (Air Analysis) (3rd Edition) Method -134	10.4
11	CONCENTRATION OF CARBON MONOXIDE	%v/v	APHA (Air Analysis) (3rd Edition) Method -134	<0.2

The results relate only to the parameter

----end of report ----

Authorized Signatory
For Pollution and Project Consultants

TEST REPORT
STACK GAS

Customer Name	: M/s. Bokaro Power Supply Company (P) Ltd.,	Report No.	: G/22(02)/13
Address	: Bokaro Steel City, Bokaro, Jharkhand	Report Date	: 03-03-2022
		Date of Sampling	: 23-02-2022
		Time of Sampling	: 12:40 P.M.
		Sample Received Date	: 26-02-2022
Type of Sample	: Stack Air	Sample Id No.	: GS/22(02)/13
Sampling Location	: Boiler Unit # 3	Test Start Date	: 26-02-2022
		Test End Date	: 03-03-2022

A : GENERAL INFORMATION ABOUT STACK :

1	Stack connected to	: Boiler Unit # 3
2	a) Material of construction of the Stack	: R.C.C.
	b) Material of construction of the Duct	: M.S.
3	a) Shape of the stack	: Circular
	b) Shape of the duct	: Rectangular
4	Height of the stack :	
	a) From Ground Level (M)	: 180
	b) From Roof Level (M)	: –
5	Dimension of the dutt :	
	a) Top (M)	: –
	b) Bottom (M)	: –
	c) Sampling Point (M)	: 1.5 X 1.3
6	Height of the Sampling Port :	
	a) From Ground Level (M)	: –
	b) From Lower Disturbing Zone (M)	: –
7	Whether Stack is provided with permanent Platform/Ladder	: Yes

C : ANALYSIS/CHARACTERISTICS OF FUEL :

1	Emission due to	: Combustion of Gas
2	Fuel used	: B.F.Gas
3	Fuel consumption	: –
4	Calorific value (k-cal/kg)	: –
5	Sulphur content (% by wt)	: –
6	Ash content (% by wt)	: –
7	Air flow	: –

D : STEAM GENERATION CAPACITY:

	a) Rated	: 220.0 Ton/Hr
	b) Running	: –
Load:		
	a) Rated	: –
	b) Running	: –

E : Pollution control device : ESP

B : Result of Sampling

Sl. No.	Parameters tested	Unit	Method of Test (Reference)	Result
1	TEMPERATURE OF EMISSION	deg C	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	169
2	BAROMETRIC PRESSURE	mmHg	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	756
3	VELOCITY OF GAS FLOW	M/Sec	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	21.52
4	QUANTITY OF GAS FLOW	$Nm^3/Hr.$	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	101412.2
5	CONCENTRATION OF PARTICULATE MATTER	mg/Nm^3	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	41
6	PARTICULATE MATTER NORMALISED TO 12% CO_2	mg/Nm^3	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	46.4
7	CONCENTRATION OF SULPHER DIOXIDE	mg/Nm^3	IS 11255 (Part 2): 1985 (RA 2014)	63
8	CONCENTRATION OF NITROGEN DIOXIDE	mg/Nm^3	IS 11255 (Part 7): 2005 (RA 2017)	72
9	CONCENTRATION OF OXYGEN	% v/v	APHA (Air Analysis) (3rd Edn.) Method -134	9.4
10	CONCENTRATION OF CARBON DIOXIDE	% v/v	APHA (Air Analysis) (3rd Edn.) Method -134	10.6
11	CONCENTRATION OF CARBON MONOXIDE	% v/v	APHA (Air Analysis) (3rd Edn.) Method -134	<0.2

The results relate only to the parameter

.....end of report .....

Tanmoy Chakraborty
Quality Manager
Authorized Signatory
For Pollution and Project Consultants

TEST REPORT
STACK GAS

Customer Name	: M/s. Bokaro Power Supply Company (P) Ltd.,	Report No.	: G/22(02)/14
Address	: Bokaro Steel City, Bokaro, Jharkhand	Report Date	: 03-03-2022
		Date of Sampling	: 23-02-2022
		Time of Sampling	: 02:45 P.M.
		Sample Received Date	: 26-02-2022
Type of Sample	: Stack Air	Sample Id No.	: GS/22(02)/14
Sampling Location	: Boiler Unit # 4	Test Start Date	: 26-02-2022
		Test End Date	: 03-03-2022

A : GENERAL INFORMATION ABOUT STACK :

1	Stack connected to	: Boiler Unit # 4
2	a) Material of construction of the Stack	: R.C.C.
	b) Material of construction of the Duct	: M.S.
3	a) Shape of the stack	: Circular
	b) Shape of the duct	: Rectangular
4	Height of the stack :	
	a) From Ground Level (M)	: 180
	b) From Roof Level (M)	: –
5	Dimension of the duct :	
	a) Top (M)	: –
	b) Bottom (M)	: –
	c) Sampling Point (M)	: 1.5 X 1.3
6	Height of the Sampling Port :	
	a) From Ground Level (M)	: –
	b) From Lower Disturbing Zone (M)	: –
7	Whether Stack is provided with permanent Platform/Ladder	: Yes

C : ANALYSIS/CHARACTERISTICS OF FUEL :

1	Emission due to	: Combustion of Gas
2	Fuel used	: B.F.Gas
3	Fuel consumption	: –
4	Calorific value (k-cal/kg)	: –
5	Sulphur content (% by wt)	: –
6	Ash content (% by wt)	: –
7	Air flow	: –

D : STEAM GENERATION CAPACITY:

	a) Rated	: 220.0 Ton/Hr
	b) Running	: –
Load:		
	a) Rated	: –
	b) Running	: –

E : Pollution control device : ESP

B : Result of Sampling

Sl. No.	Parameters tested	Unit	Method of Test (Reference)	Result
1	TEMPERATURE OF EMISSION	deg C	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	166
2	BAROMETRIC PRESSURE	mmHg	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	756
3	VELOCITY OF GAS FLOW	M/Sec	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	21.82
4	QUANTITY OF GAS FLOW	Nm^3/Hr	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	303439.6
5	CONCENTRATION OF PARTICULATE MATTER	mg/Nm^3	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	43
6	PARTICULATE MATTER NORMALISED TO 12% CO_2	mg/Nm^3	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	48.6
7	CONCENTRATION OF SULPHER DIOXIDE	mg/Nm^3	IS 11255 (Part 2): 1985 (RA 2014)	61
8	CONCENTRATION OF NITROGEN DIOXIDE	mg/Nm^3	IS 11255 (Part 7): 2005 (RA 2017)	79
9	CONCENTRATION OF OXYGEN	% v/v	APHA (Air Analysis) (3rd Edn.) Method -134	9.4
10	CONCENTRATION OF CARBON DIOXIDE	% v/v	APHA (Air Analysis) (3rd Edn.) Method -134	10.6
11	CONCENTRATION OF CARBON MONOXIDE	% v/v	APHA (Air Analysis) (3rd Edn.) Method -134	<0.2

The results relate only to the parameter

.....end of report.....

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TEST REPORT
STACK GAS

Customer Name	: M/s. Bokaro Power Supply Company (P) Ltd.,	Report No.	: G/22(02)/15
Address	: Bokaro Steel City, Bokaro, Jharkhand	Report Date	: 03-03-2022
		Date of Sampling	: 24-02-2022
		Time of Sampling	: 10:35 A.M.
		Sample Received Date	: 26-02-2022
		Sample Id No.	: GS/22(02)/15
Type of Sample	: Stack Air	Test Start Date	: 26-02-2022
Sampling Location	: Boiler Unit # 7	Test End Date	: 03-03-2022

A :	GENERAL INFORMATION ABOUT STACK :		C :	ANALYSIS/CHARACTERISTICS OF FUEL :	
1	Stack connected to	: Boiler Unit # 7	1	Emission due to	: Combustion of Coal
2	a) Material of construction of the Stack	: R.C.C.	2	Fuel used	: Coal
	b) Material of construction of the Duct	: M.S.	3	Fuel consumption	: 850 Ton/day
3	a) Shape of the stack	: Circular	4	Calorific value (k-cal/kg)	: 3500
	b) Shape of the duct	: Rectangular	5	Sulphur content (% by wt)	: 0.65
4	Height of the stack :		6	Ash content (% by wt)	: 35
	a) From Ground Level (M)	: 180	7	Air flow	: --
	b) From Roof Level (M)	: --	D :	STEAM GENERATION CAPACITY:	
5	Dimension of the duct :			a) Rated	: 260 Ton/Hr
	a) Top (M)	: --		b) Running	: --
	b) Bottom (M)	: --	Load:		
	c) Sampling Point (M)	: 3.6 X 1.8		a) Rated	: --
6	Height of the Sampling Port :			b) Running	: --
	a) From Ground Level (M)	: --	E :	Pollution control device	: ESP
	b) From Lower Disturbing Zone (M)	: --			
7	Whether Stack is provided with permanent Platform/Ladder				: Yes

B : Result of Sampling

Sl. No.	Parameters tested	Unit	Method of Test (Reference)	Result
1	TEMPERATURE OF EMISSION	deg C	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	124
2	BAROMETRIC PRESSURE	mmHg	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	756
3	VELOCITY OF GAS FLOW	M/Sec	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	16.82
4	QUANTITY OF GAS FLOW	Nm^3/Hr	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	279480.5
5	CONCENTRATION OF PARTICULATE MATTER	mg/Nm^3	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	73
6	PARTICULATE MATTER NORMALISED TO 12% CO_2	mg/Nm^3	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	79.6
7	CONCENTRATION OF SULPHER DIOXIDE	mg/Nm^3	IS 11255 (Part 2): 1985 (RA 2014)	322
8	CONCENTRATION OF NITROGEN DIOXIDE	mg/Nm^3	IS 11255 (Part 7): 2005 (RA 2017)	334
9	CONCENTRATION OF OXYGEN	% v/v	APHA (Air Analysis) (3rd Edn.) Method -134	8
10	CONCENTRATION OF CARBON DIOXIDE	% v/v	APHA (Air Analysis) (3rd Edn.) Method -134	11
11	CONCENTRATION OF CARBON MONOXIDE	% v/v	APHA (Air Analysis) (3rd Edn.) Method -134	<0.2

The results relate only to the parameter

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Thanapalan
Tanmoy Chakraborty
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TEST REPORT
STACK GAS

Customer Name	: M/s. Bokaro Power Supply Company (P) Ltd.,	Report No.	: G/22(02)/16
Address	: Bokaro Steel City, Bokaro, Jharkhand	Report Date	: 03-03-2022
		Date of Sampling	: 24-02-2022
		Time of Sampling	: 12:25 P.M.
		Sample Received Date	: 26-02-2022
		Sample Id No.	: GS/22(02)/16
Type of Sample	: Stack Air	Test Start Date	: 26-02-2022
Sampling Location	: Boiler Unit # 8	Test End Date	: 03-03-2022

A : GENERAL INFORMATION ABOUT STACK :

1	Stack connected to	: Boiler Unit # 8
2	a) Material of construction of the Stack	: R.C.C.
	b) Material of construction of the Duct	: M.S.
3	a) Shape of the stack	: Circular
	b) Shape of the duct	: Rectangular
4	Height of the stack :	
	a) From Ground Level (M)	: 180
	b) From Roof Level (M)	: --
5	Dimension of the duct :	
	a) Top (M)	: --
	b) Bottom (M)	: --
	c) Sampling Point (M)	: 3.6 X 1.8
6	Height of the Sampling Port :	
	a) From Ground Level (M)	: --
	b) From Lower Disturbing Zone (M)	: --
7	Whether Stack is provided with permanent Platform/Ladder	: Yes

C : ANALYSIS/CHARACTERISTICS OF FUEL :

1	Emission due to	: Combustion of Coal
2	Fuel used	: Coal
3	Fuel consumption	: 850 Ton/day
4	Calorific value (k-cal/kg)	: 3500
5	Sulphur content (% by wt)	: 0.65
6	Ash content (% by wt)	: 35
7	Air flow	: --

D : STEAM GENERATION CAPACITY:

a) Rated	: 260 Ton/Hr
b) Running Load:	: --
a) Rated	: --
b) Running	: --

E : Pollution control device : ESP

B : Result of Sampling

Sl. No.	Parameters tested	Unit	Method of Test (Reference)	Result
1	TEMPERATURE OF EMISSION	deg C	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	121
2	BAROMETRIC PRESSURE	mmhg	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	756
3	VELOCITY OF GAS FLOW	M/Sec	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	16.74
4	QUANTITY OF GAS FLOW	$Nm^3/Hr.$	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	280967.9
5	CONCENTRATION OF PARTICULATE MATTER	mg/Nm^3	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	79
6	PARTICULATE MATTER NORMALISED TO 12% CO_2	mg/Nm^3	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	84.6
7	CONCENTRATION OF SULPHER DIOXIDE	mg/Nm^3	IS 11255 (Part 2): 1985 (RA 2014)	335
8	CONCENTRATION OF NITROGEN DIOXIDE	mg/Nm^3	IS 11255 (Part 7): 2005 (RA 2017)	342
9	CONCENTRATION OF OXYGEN	% v/v	APHA (Air Analysis) (3rd Edn.) Method -134	8.8
10	CONCENTRATION OF CARBON DIOXIDE	% v/v	APHA (Air Analysis) (3rd Edn.) Method -134	11.2
11	CONCENTRATION OF CARBON MONOXIDE	% v/v	APHA (Air Analysis) (3rd Edn.) Method -134	<0.2

The results relate only to the parameter

.....end of report.....

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POLLUTION AND PROJECT CONSULTANTS

ENVIRONMENTAL POLLUTION CONTROL - Air, Effluent, Pharmaceuticals
& Chemical Project Engineers. EIA & Disaster Management Study

TEST REPORT

STACK GAS

Customer Name	: M/s. Bokaro Power Supply Company (P) Ltd.,	Report No.	: G/22(02)/17
Address	: Bokaro Steel City, Bokaro, Jharkhand	Report Date	: 03-03-2022
		Date of Sampling	: 24-02-2022
		Time of Sampling	: 02:45 P.M.
		Sample Received Date	: 26-02-2022
		Sample Id No.	: GS/22(02)/17
Type of Sample	: Stack Air	Test Start Date	: 26-02-2022
Sampling Location	: Boiler Unit # 9	Test End Date	: 03-03-2022

A : GENERAL INFORMATION ABOUT STACK :			C : ANALYSIS/CHARACTERISTICS OF FUEL :	
1	Stack connected to	: Boiler Unit # 9	1 Emission due to	: Combustion of Coal
2	a) Material of construction of the Stack	: R.C.C.	2 Fuel used	: Coal, & Ldgas.
	b) Material of construction of the Duct	M.S.	3 Fuel consumption	: 500 Ton/day
3	a) Shape of the stack	: Rectrangular	4 Calorific value (k-cal/kg)	: 3500
	b) Shape of the duct		5 Sulphur content (% by wt)	: 0.65
4	Height of the stack :		6 Ash content (% by wt)	: 35
	a) From Ground Level (M)	: 180	7 Air flow	: --
	b) From Roof Level (M)	: --	D : STEAM GENERATION CAPACITY:	
5	Dimension of the duct :		a) Rated	: 300 Ton/Hr
	a) Top (M)	:	b) Running	: --
	b) Bottom (M)	: --	Load:	
	c) Sampling Point (M)	: 4.5 X 2.25	a) Rated	: --
6	Height of the Sampling Port :		b) Running	: --
	a) From Ground Level (M)	: --	E : Pollution control device	: ESP
	b) From Lower Disturbing Zone (M)	: --		
7	Whether Stack is provided with permanent Platform/Ladder			: Yes

B : Result of Sampling

Sl. No.	Parameters tested	Unit	Method of Test (Reference)	Result
1	TEMPERATURE OF EMISSION	deg C	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	120
2	BAROMETRIC PRESSURE	mmHg	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	756
3	VELOCITY OF GAS FLOW	M/Sec	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	16.42
4	QUANTITY OF GAS FLOW	$Nm^3/Hr.$	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	437440.5
5	CONCENTRATION OF PARTICULATE MATTER	mg/Nm^3	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	37
6	PARTICULATE MATTER NORMALISED TO 12% CO_2	mg/Nm^3	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	39.6
7	CONCENTRATION OF SULPHER DIOXIDE	mg/Nm^3	IS 11255 (Part 2): 1985 (RA 2014)	262
8	CONCENTRATION OF NITROGEN DIOXIDE	mg/Nm^3	IS 11255 (Part 7): 2005 (RA 2017)	270
9	CONCENTRATION OF OXYGEN	% v/v	APHA (Air Analysis) (5th Edn.) Method -134	9
10	CONCENTRATION OF CARBON DIOXIDE	% v/v	APHA (Air Analysis) (5th Edn.) Method -134	11.2
11	CONCENTRATION OF CARBON MONOXIDE	% v/v	APHA (Air Analysis) (5th Edn.) Method -134	<0.1

The results relate only to the parameter

....end of report ....

Pollution and Project Consultants Kolkata

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For Pollution and Project Consultants

POLLUTION AND PROJECT CONSULTANTS

ENVIRONMENTAL POLLUTION CONTROL - Air, Effluent, Pharmaceuticals
& Chemical Project Engineers. EIA & Disaster Management Study

TEST REPORT
STACK GAS

Customer Name	: M/s. Bokaro Power Supply Company (P) Ltd.,	Report No.	: G/22(02)/17
Address	: Bokaro Steel City, Bokaro, Jharkhand	Report Date	: 03-03-2022
		Date of Sampling	: 24-02-2022
		Time of Sampling	: 02:45 P.M.
		Sample Received Date	: 26-02-2022
		Sample Id No.	: GS/22(02)/17
Type of Sample	: Stack Air	Test Start Date	: 26-02-2022
Sampling Location	: Boiler Unit # 9	Test End Date	: 03-03-2022

A:	GENERAL INFORMATION ABOUT STACK :		C:	ANALYSIS/CHARACTERISTICS OF FUEL :	
1	Stack connected to	: Boiler Unit # 9	1	Emission due to	: Combustion of Coal
2	a) Material of construction of the Stack	: R.C.C.	2	Fuel used	: Coal, Briquettes
	b) Material of construction of the Duct	M.S.	3	Fuel consumption	: 500 Ton/day
3	a) Shape of the stack	: Rectrangular	4	Calorific value (k-cal/kg)	: 3500
	b) Shape of the duct		5	Sulphur content (% by wt)	: 0.65
4	Height of the stack :		6	Ash content (% by wt)	: 35
	a) From Ground Level (M)	: 180	7	Air flow	: –
	b) From Roof Level (M)	: –	D:	STEAM GENERATION CAPACITY:	
5	Dimension of the duct :			a) Rated	: 300 Ton/Hr
	a) Top (M)	:		b) Running	: –
	b) Bottom (M)	: –	Load:		
	c) Sampling Point (M)	: 4.5 X 2.25		a) Rated	: –
6	Height of the Sampling Port :			b) Running	: –
	a) From Ground Level (M)	: –	E:	Pollution control device	: ESP
	b) From Lower Disturbing Zone (M)	: –			
7	Whether Stack is provided with permanent Platform/Ladder				: Yes

B: Result of Sampling

Sl. No.	Parameters tested	Unit	Method of Test (Reference)	Result
1	TEMPERATURE OF EMISSION	deg C	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	120
2	BAROMETRIC PRESSURE	mmHg	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	756
3	VELOCITY OF GAS FLOW	M/Sec	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	16.42
4	QUANTITY OF GAS FLOW	tem^3/Hr.	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	437440.5
5	CONCENTRATION OF PARTICULATE MATTER	mg/Nm^3	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	37
6	PARTICULATE MATTER NORMALISED TO 12% CO_2	mg/Nm^3	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	39.6
7	CONCENTRATION OF SULPHER DIOXIDE	mg/Nm^3	IS 11255 (Part 2): 1985 (RA 2014)	262
8	CONCENTRATION OF NITROGEN DIOXIDE	mg/Nm^3	IS 11255 (Part 7): 2005 (RA 2017)	270
9	CONCENTRATION OF OXYGEN	% v/v	APHA (Air Analysis) (3rd Edn.) Method -134	9
10	CONCENTRATION OF CARBON DIOXIDE	% v/v	APHA (Air Analysis) (3rd Edn.) Method -134	11.2
11	CONCENTRATION OF CARBON MONOXIDE	% v/v	APHA (Air Analysis) (3rd Edn.) Method -134	<0.2

The results relate only to the parameter

.....end of report.....

Authorized Signatory
For Pollution and Project Consultants

POLLUTION AND PROJECT CONSULTANTS

ENVIRONMENTAL POLLUTION CONTROL - Air, Effluent, Pharmaceuticals & Chemical Project Engineers. EIA & Disaster Management Study

TEST REPORT
STACK GAS

Customer Name	: M/s. Bokaro Power Supply Company (P) Ltd.,	Report No.	: G/22(02)/18
Address	: Bokaro Steel City, Bokaro, Jharkhand	Report Date	: 03-03-2022
		Date of Sampling	: 25-02-2022
		Time of Sampling	10:15 A.M.
		Sample Received Date	: 26-02-2022
		Sample Id No.	: GS/22(02)/18
Type of Sample	: Stack Air	Test Start Date	: 26-02-2022
Sampling Location	: D.G Set (500 KVA)	Test End Date	: 03-03-2022

A : GENERAL INFORMATION ABOUT STACK :

1	Stack connected to	: D.G.Set(500KVA)
2	a) Material of construction of the Stack	: M.S.
	b) Material of construction of the Duct	: --
3	a) Shape of the stack	: Circular
	b) Shape of the duct	: --
4	Height of the stack :	
	a) From Ground Level (M)	: --
	b) From Roof Level (M)	: --
5	Dimension of the duct :	
	a) Top (M)	: --
	b) Bottom (M)	: --
	c) Sampling Point (M)	: 0.076
6	Height of the Sampling Port :	
	a) From Ground Level (M)	: 4.5
	b) From Lower Disturbing Zone (M)	: --

C : ANALYSIS/CHARACTERISTICS OF FUEL :

1	Emission due to	: Combustion of Fuel
2	Fuel used	: H.S.D
3	Fuel consumption	: 20 Lit/Hr.(Approx)
4	Calorific value (k-cal/kg)	: --
5	Sulphur content (% by wt)	: --
6	Ash content (% by wt)	: --
7	Air flow	: --

D : STEAM GENERATION CAPACITY:

a) Rated	: --
b) Running Load:	: --
a) Rated	: --
b) Running	: --

E : Pollution control device : NIL

7 Whether Stack is provided with permanent Platform: Used from top of the roof , Ladder : Temporary

B : Result of Sampling

Sl.	Parameters tested	Unit	Method of Test (Reference)	Result
1	TEMPERATURE OF EMISSION	deg C	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	197
2	BAROMETRIC PRESSURE	mmHg	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	756
3	VELOCITY OF GAS FLOW	M/Sec	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	15.94
4	QUANTITY OF GAS FLOW	Nm^3/Hr	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	199.5
5	CONCENTRATION OF PARTICULATE MATTER	mg/Nm^3	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	131
6	PARTICULATE MATTER NORMALISED TO 12% CO_2	mg/Nm^3	IS:11255 (Part 1):1985 RA 2014 & (Part 3) 2008	--
7	CONCENTRATION OF SULPHER DIOXIDE	mg/Nm^3	IS 11255 (Part 2): 1985 (RA 2014)	120
8	CONCENTRATION OF NITROGEN DIOXIDE	mg/Nm^3	IS 11255 (Part 7): 2005 (RA 2017)	117
9	CONCENTRATION OF OXYGEN	% v/v	APHA (Air Analysis) (3rd Edition) Method -134	14.8
10	CONCENTRATION OF CARBON DIOXIDE	% v/v	APHA (Air Analysis) (3rd Edition) Method -134	5.2
11	CONCENTRATION OF CARBON MONOXIDE	% v/v	APHA (Air Analysis) (3rd Edition) Method -134	<0.2

The results relate only to the parameter
Sampling done from top of the stack

.....end of report.....

Thanking you,
Tanmoy Chakrabarty
Quality Manager
Authorized Signatory
For Pollution and Project Consultants

*Test Certificate shall not be reproduced except in full, without written approval of the Chief Executive or Technical Manager.

TEST REPORT
STACK GAS

Customer Name	: M/s. Bokaro Power Supply Company (P) Ltd.,	Report No.	: G/22(02)/19
Address	: Bokaro Steel City, Bokaro, Jharkhand	Report Date	: 03-03-2022
		Date of Sampling	: 25-02-2022
		Time of Sampling	: 02:10 P.M.
		Sample Received Date	: 26-02-2022
Type of Sample	: Stack Air	Sample Id No.	: GS/22(02)/19
Sampling Location	: Boiler Unit # 9	Test Start Date	: 26-02-2022
		Test End Date	: 03-03-2022

A : GENERAL INFORMATION ABOUT STACK :

1	Stack connected to	: Boiler Unit # 9
2	a) Material of construction of the Stack	: R.C.C
	b) Material of construction of the Duct	M.S.
3	a) Shape of the stack	: Rectrangular
	b) Shape of the duct	
4	Height of the stack :	
	a) From Ground Level (M)	: 180
	b) From Roof Level (M)	: --
5	Dimension of the duct :	
	a) Top (M)	:
	b) Bottom (M)	: --
	c) Sampling	: 4.5 X 2.25
6	Height of the Sampling Port :	
	a) From Ground Level (M)	: --
	b) From Lower Disturbing Zone (M)	: --
7	Whether Stack is provided with permanent Platform/Ladder	: Yes

C : ANALYSIS/CHARACTERISTICS OF FUEL :

1	Emission due to	: Combustion of Coal
2	Fuel used	: Coal
3	Fuel consumption	: 500 Ton/day
4	Calorific value (k-cal/kg)	: 3500
5	Sulphur content (% by wt)	: 0.65
6	Ash content (% by wt)	: 35
7	Air flow	: --

D : STEAM GENERATION CAPACITY:

	a) Rated	: 300 Ton/Hr
	b) Running	: --
Load:		
	a) Rated	: --
	b) Running	: --

E : Pollution control device : ESP

B : Result of Sampling

Sl.	Parameters tested	Unit	Method of Test (Reference)	Result
1	TOTAL MERCURY (as Hg)	mg/NM^3	APHA 23rd Edn. 2017 : 3112B	0.0076

The results relate only to the parameter

.....end of report .....

Tanmoy Chakraborty
Quality Manager
Authorized Signatory
For Pollution and Project Consultants

POLLUTION AND PROJECT CONSULTANTS

ENVIRONMENTAL POLLUTION CONTROL - Air, Effluent, Pharmaceuticals
& Chemical Project Engineers. EIA & Disaster Management Study

TEST REPORT

AMBIENT AIR

Customer Name	: M/s. Bokaro Power Supply Company (P) Ltd.,	Report No.	: G/22(02)/20
Address	: Bokaro Steel City, Bokaro, Jharkhand	Report Date	: 03-03-2022
		Sampling Date	: 23-24/02/2022
		Sample Received Date	: 26-02-2022
Type of Sample	: Ambient Air	Sample Id No.	: GA/22(02)/20
Sampling Location	: Near ESP Control Room	Test Start Date	: 26-02-2022
		Test End Date	: 03-03-2022

: Environmental Condition : Clear
Average Temperature (°C) : 29 Average Relative Humidity (%) : 69 Barometric Pressure (mm Hg) : 756

Sl. No.	Parameters	Unit	Standard	Result	Standard Ref. Methods	Time Weighted Average
1	Particulate Matter $_{10}$ (PM_{10})	($\mu g/m^3$)	100	67.8	IS:5182 (Part –23):2006 (RA 2017)	24 Hours
2	Particulate Matter $_{2.5}$ ($PM_{2.5}$)	($\mu g/m^3$)	60	46.5	In house method SOP No. SOP/02/07, Issue No. 02 Dated. 02/04/2015 (prepared based on CPCB Guidelines)	24 Hours
3	Sulpher Di-Oxides (SO_2)	($\mu g/m^3$)	80	22.0	IS:5182 (Part –2):2001 (RA 2017)	24 Hours
4	Nitrogen Di-Oxides (NO_2)	($\mu g/m^3$)	80	43.0	IS:5182 (Part – 6):2006 (RA 2017)	24 Hours

The results relate only to the parameters tested

...end of report...

Authorised Signatory
For Pollution And Project Consultants

FORMAT NO.: PPC/FM/68 ISSUE NO.: 03 ISSUE Dt.: 01/01/2017 (Rev No.:02 Rev. Dt.: 28/05/2018)

TEST REPORT

AMBIENT AIR

Customer Name	: M/s. Bokaro Power Supply Company (P) Ltd.,	Report No.	: G/22(02)/21
Address	: Bokaro Steel City, Bokaro, Jharkhand	Report Date	: 03-03-2022
		Sampling Date	: 23-24/02/2022
		Sample Received Date	: 26-02-2022
Type of Sample	: Ambient Air	Sample Id No.	: GA/22(02)/21
Sampling Location	: Near WCTP Area	Test Start Date	: 26-02-2022
		Test End Date	: 03-03-2022

: Environmental Condition : Clear

Average Temperature (°C) : 29 Average Relative Humidity (%) : 69 Barometric Pressure (mm Hg) : 756

Sl. No.	Parameters	Unit	Standard	Result	Standard Ref. Methods	Time Weighted Average
1	Particulate Matter $_{10}$ (PM_{10})	($\mu g/m^3$)	100	59.0	IS:5182 (Part –23):2006 (RA 2017)	24 Hours
2	Particulate Matter $_{2.5}$ ($PM_{2.5}$)	($\mu g/m^3$)	60	42.0	In house method SOP No. SOP/02/02, Issue No. 02 Dated. 02/04/2015 (prepared based on CPCB Guidelines)	24 Hours
3	Sulpher Di-Oxides (SO_2)	($\mu g/m^3$)	80	21.5	IS:5182 (Part –2):2001 (RA 2017)	24 Hours
4	Nitrogen Di-Oxides (NO_2)	($\mu g/m^3$)	80	38.7	IS:5182 (Part – 6):2006 (RA 2017)	24 Hours

The results relate only to the parameters tested

...end of report...

Tanmoy Chakraborty
Quality Manager
Authorised Signatory
For Pollution And Project Consultants

TEST REPORT

AMBIENT AIR

Customer Name	: M/s. Bokaro Power Supply Company (P) Ltd.,	Report No.	: G/22(02)/22
Address	: Bokaro Steel City, Bokaro, Jharkhand	Report Date	: 03-03-2022
		Sampling Date	: 24-25/02/2022
		Sample Received Date	: 26-02-2022
		Sample Id No.	: GA/22(02)/22
Type of Sample	: Ambient Air	Test Start Date	: 26-02-2022
Sampling Location	: Near CHP Area	Test End Date	: 03-03-2022

: Environmental Condition : Clear

Average Temperature (°C) : 29.4 Average Relative Humidity (%) : 70 Barometric Pressure (mm Hg) : 756

Sl. No.	Parameters	Unit	Standard	Result	Standard Ref. Methods	Time Weighted Average
1	Particulate Matter $_{10}$ (PM_{10})	($\mu g/m^3$)	100	77.0	IS:5182 (Part –23):2006 (RA 2017)	24 Hours
2	Particulate Matter $_{2.5}$ ($PM_{2.5}$)	($\mu g/m^3$)	60	51.0	In house method SOP No. SOP/02/02, Issue No. 02 Dated. 02/04/2015 (prepared based on CPCB Guidelines)	24 Hours
3	Sulpher Di-Oxides (SO_2)	($\mu g/m^3$)	80	23.0	IS:5182 (Part –2):2001 (RA 2017)	24 Hours
4	Nitrogen Di-Oxides (NO_2)	($\mu g/m^3$)	80	46.0	IS:5182 (Part – 6):2006 (RA 2017)	24 Hours

...end of report...

The results relate only to the parameters tested.

Tanmay Chakraborty
Quality Manager
Authorised Signatory
For Pollution And Project Consultants

POLLUTION AND PROJECT CONSULTANTS

ENVIRONMENTAL POLLUTION CONTROL - Air, Effluent, Pharmaceuticals
& Chemical Project Engineers. EIA & Disaster Management Study

TEST REPORT FOR NOISE MONITORING

Name of the Customer	: M/s. Bokaro Power Supply Company (P) Ltd.,		
Address	: Bokaro Steel City, Bokaro, Jharkhand		
Location of Sampling	: Near ESP Control Room	Report No.	: G/22(02)/23
Type of Sample	: Noise	Date of Reporting	: 03-03-2022
Date of Monitoring	: 23-02-2022	Starting Time	: 10:55 A.M.
Sample Received Date	: 26-02-2022	Distance from the Machine	: 3.5(m)
Interval (dt) : 60 min.	Total time : 8 hrs.	Height from Ground Level	: 1.5 (m)

DAY TIME

SL. NO.	SOUND LEVEL (Li) (Hourly data)	ft. = dt/T	ft. x 10^(Li/10)	SUM OF ft. x 10^(Li/10)	RESULT dB(A)
1	73.4	0.1	2734702.029937	18551967.870788	Leq = 72.68
2	74.9	0.1	3862869.290642		
3	72.1	0.1	2027262.621699		
4	70.8	0.1	1502830.543272		
5	73.7	0.1	2930286.019150		
6	70.6	0.1	1435192.026871		
7	72.3	0.1	2122804.565577		
8	71.9	0.1	1936020.773641		

results relate only to the parameters tested. ....end of report.....

Limit in 90 dB(A) Leq (8 hrs./day Exposure)

Authorised Signatory
For Pollution And Project Consultants

TEST REPORT FOR NOISE MONITORING

Name of the Customer	: M/s. Bokaro Power Supply Company (P) Ltd.,		
Address	: Bokaro Steel City, Bokaro, Jharkhand		
Location of Sampling	: Near WCT Plant	Report No.	: G/22(02)/24
Type of Sample	: Noise	Date of Reporting	: 03-03-2022
Date of Monitoring	: 23-02-2022	Starting Time	: 02:20 P.M.
Sample Received Date	: 26-02-2022	Distance from the Machine	: 3.5(m)
Interval (dt) : 60 min.	Total time : 8 hrs.	Height from Ground Level	: 1.5 (m)

DAY TIME

SL. NO.	SOUND LEVEL (Li) (Hourly data)	ft. = dt/T	ft. x 10^(Li/10)	SUM OF ft. x 10^(Li/10)	RESULT dB(A)
1	73.2	0.125000	2611620.163568	20938996.422219	Leq = 73.21
2	72.9	0.125000	2437305.749698		
3	75.6	0.125000	4538475.684626		
4	73.1	0.125000	2552172.430837		
5	69.8	0.125000	1193740.732527		
6	74.2	0.125000	3287834.989869		
7	72.8	0.125000	2381825.897454		
8	71.9	0.125000	1936020.773641		

results relate only to the parameters tested. ...end of report.....

Limit in 90 dB(A) Leq (8 hrs./day Exposure)

Authorised Signatory
For Pollution And Project Consultants

POLLUTION AND PROJECT CONSULTANTS

ENVIRONMENTAL POLLUTION CONTROL - Air, Effluent, Pharmaceuticals & Chemical Project Engineers. EIA & Disaster Management Study

TEST REPORT FOR NOISE MONITORING

Name of the Customer : M/s. Bokaro Power Supply Company (P) Ltd.,
Address : Bokaro Steel City, Bokaro, Jharkhand

Location of Sampling : Near Admn. Building
Type of Sample : Noise
Date of Monitoring : 24-02-2022
Sample Received Date : 26-02-2022
Interval (dt) : 60 min. Total time : 8 hrs.

Report No. : G/22(02)/25
Date of Reporting : 03-03-2022
Starting Time : 10:45 A.M.
Distance from the Machine : 3.5(m)
Height from Ground Level : 1.5 (m)

DAY TIME

SL. NO.	SOUND LEVEL (Li) (Hourly data)	ft. = dt/T	ft. x 10^(Li/10)	SUM OF ft. x 10^(Li/10)	RESULT dB(A)
1	54.1	0.125000	32129.947285	272096.826094	Leq = 54.35
2	52.7	0.125000	23276.089208		
3	55.8	0.125000	47523.674540		
4	53.6	0.125000	28635.845660		
5	52.8	0.125000	23818.258975		
6	54.4	0.125000	34427.858792		
7	52.8	0.125000	23818.258975		
8	56.7	0.125000	58466.892661		

results relate only to the parameters tested. ....end of report.....

Limit in 90 dB(A) Leq (8 hrs./day Exposure)

Tanmoy Chakravarty
Quality Manager
Authorised Signatory
For Pollution And Project Consultants

POLLUTION AND PROJECT CONSULTANTS

ENVIRONMENTAL POLLUTION CONTROL - Air, Effluent, Pharmaceuticals
& Chemical Project Engineers. EIA & Disaster Management Study

TEST REPORT

Water Sample

Customer Name	: M/s. Bokaro Power Supply Company (P) Ltd.,	Report No.	: W/22(02)/10
Address	: Bokaro Steel City, Bokaro, Jharkhand	Report Date	: 03-03-2022
		Sampling Date	: 25-02-2022
		Sample Received Date	: 26-02-2022
		Sample Id No.	: E/10A/2022
		Test Start Date	: 26-02-2022
Type of Sample	: Effluent Water	Test End Date	: 03-03-2022
Sampling Location	: Water Chemical Treatment Plant		

Sl. No.	Chemical Test Parameter	Unit	Results	Methods of Test (Reference)
1	Temperature (Collection Time)	°C	21.0	APHA (23rd Edition) 2550 B : 2017
2	pH	-	7.69	APHA (23rd Edition) 4500 H+B:2017
3	Total Suspended Solid (as TSS)	mg/l	58.0	APHA (23rd Edition) 2540 D:2017
4	Chemical Oxygen Demand (as COD)	mg/l	47.0	APHA (23rd Edition) 5220 B:2017
5	Bio-Chemical Oxygen Demand (as BOD)	mg/l	19.0	IS 3025 (Part 44) : 1993 (RA 2014)
6	Oil & Grease	mg/l	<5.0	APHA (23rd Edition) 5520 B:2017

....end of report...

The results relate only to the parameters tested.

Authorized Signatory
For Pollution and Project Consultants

(In-house Lab report)

ENVIRONMENTAL MONITORING REPORT

of

M/S BOKARO POWER SUPPLY CO.(P)LTD

Bokaro Steel City, Bokaro, jharkhand

for

March - 2022

Prepared by :

ecoMen

(An Approved Laboratory by MoEF and CC)
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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

TEST REPORT OF AMBIENT AIR*

NAME & ADDRESS OF CUSTOMER:	Bokaro Power Supply Company (P) Ltd, Bokaro Steel City, Bokaro, Jharkhand	Test Report No.	ECO/LAB/AA/0102/0109/03/2022
		Issue Date of Test Report	30.03.2022

Type of Sample	Ambient Air Sample		
Sample Registration No.	102	Name of Location	CHP
Sampling Method	As per Reference Method	Sample Collected By	ELPL Representative
Date of Sample Collection	02.03.2022	Time of Sample Collection	10:00 AM
Date of Sample Received	02.03.2022	Time of Sample Received	06:15 PM
Start Date of Analysis	02.03.2022	End Date of Analysis	04.03.2022
Weather Condition	Sunny	Sampling Duration	08 Hrs
Laboratory Environmental Condition	Temperature: 25 ± 5 °C Humidity: 30 - 80 % RH		

Sl. No.	Tests Conducted	Method	Results	Limit of Detection	NAAQ Standards as per CPCB, New Delhi, Nov. 18th, 2009
1.	Particulate Matter (PM_{10}) µg/m³	IS 5182:Part 23:2006:RA 2017	78.61	10 to 1000	100
2.	Particulate Matter ($PM_{2.5}$) µg/m³	IS 5182 : Part 24 : 2019	54.01	10 to 1000	60
3.	Sulphur Di-oxide (SO_2) µg/m³	IS 5182:Part 2:2001:RA2017	24.50	9 to 200	80
4.	Nitrogen Di-oxide (NO_2) µg/m³	IS 5182:Part 6:2006:RA2017	38.39	6 to 200	80

*The results are related only to tested item.

Verified By
Technical Manager

Authorized By
Quality Manager

–End of Report–

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TEST REPORT OF AMBIENT AIR*

NAME & ADDRESS OF CUSTOMER:	Bokaro Power Supply Company (P) Ltd, Bokaro Steel City, Bokaro, Jharkhand	Test Report No.	ECO/LAB/AA/0102/0110/03/2022
		Issue Date of Test Report	30.03.2022

Type of Sample	Ambient Air Sample		
Sample Registration No.	102	Name of Location	WCTP
Sampling Method	As per Reference Method	Sample Collected By	ELPL Representative
Date of Sample Collection	03.03.2022	Time of Sample Collection	10:05 AM
Date of Sample Received	03.03.2022	Time of Sample Received	06:10 PM
Start Date of Analysis	03.03.2022	End Date of Analysis	04.03.2022
Weather Condition	Sunny	Sampling Duration	08 Hrs
Laboratory Environmental Condition	Temperature: 25 ± 5 °C Humidity: 30 - 80 % RH		

Sl. No.	Tests Conducted	Method	Results	Limit of Detection	NAAQ Standards as per CPCB, New Delhi, Nov. 18th, 2009
1.	Particulate Matter (PM_{10}) µg/m³	IS 5182:Part 23:2006:RA 2017	69.18	10 to 1000	100
2.	Particulate Matter ($PM_{2.5}$) µg/m³	IS 5182 : Part 24 : 2019	35.33	10 to 1000	60
3.	Sulphur Di-oxide (SO_2) µg/m³	IS 5182:Part 2:2001:RA 2017	22.96	9 to 200	80
4.	Nitrogen Di-oxide (NO_2) µg/m³	IS 5182:Part 6:2006:RA 2017	36.97	6 to 200	80

*The results are related only to tested item.

Verified By
Technical Manager

Authorized By
Quality Manager

--End of Report--

Ecomen Laboratories Pvt. Ltd.
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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

TEST REPORT OF AMBIENT AIR*

NAME & ADDRESS OF CUSTOMER:	Bokaro Power Supply Company (P) Ltd, Bokaro Steel City, Bokaro, Jharkhand	Test Report No.	ECO/LAB/AA/0102/0111/03/2022
		Issue Date of Test Report	30.03.2022

Type of Sample	Ambient Air Sample		
Sample Registration No.	102	Name of Location	WELFARE BUILDING
Sampling Method	As per Reference Method	Sample Collected By	ELPL Representative
Date of Sample Collection	04.03.2022	Time of Sample Collection	10:10 AM
Date of Sample Received	04.03.2022	Time of Sample Received	06:10 PM
Start Date of Analysis	04.03.2022	End Date of Analysis	05.03.2022
Weather Condition	Sunny	Sampling Duration	08 Hrs
Laboratory Environmental Condition	Temperature: 25 ± 5 °C Humidity: 30 - 80 % RH		

Sl. No.	Tests Conducted	Method	Results	Limit of Detection	NAAQ Standards as per CPCB, New Delhi, Nov. 18th, 2009
1.	Particulate Matter (PM_{10}) µg/m³	IS 5182:Part-23:2006:RA 2017	62.24	10 to 1000	100
2.	Particulate Matter ($PM_{2.5}$) µg/m³	IS 5182 : Part 24 : 2019	49.19	10 to 1000	60
3.	Sulphur Di-oxide (SO_2) µg/m³	IS 5182:Part 2:2001:RA 2017	21.45	9 to 200	80
4.	Nitrogen Di-oxide (NO_2) µg/m³	IS 5182:Part 6:2006:RA 2017	32.60	6 to 200	80

*The results are related only to tested item.

Verified By
Technical Manager

Authorized By
Quality Manager

--End of Report--

Ecomen Laboratories Pvt. Ltd.
Second Floor Hall, House No. B-1/8,
Sector-H, Aliganj, Lucknow-226024

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ecoMen LABORATORIES PVT LTD.

An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

TEST REPORT OF AMBIENT AIR*

NAME & ADDRESS OF CUSTOMER:	Bokaro Power Supply Company (P) Ltd, Bokaro Steel City, Bokaro, Jharkhand	Test Report No.	ECO/LAB/AA/0102/0112/03/2022
		Issue Date of Test Report	30.03.2022

Type of Sample	Ambient Air Sample		
Sample Registration No.	102	Name of Location	RCPH
Sampling Method	As per Reference Method	Sample Collected By	ELPL Representative
Date of Sample Collection	05.03.2022	Time of Sample Collection	10:05 AM
Date of Sample Received	05.03.2022	Time of Sample Received	06:15 PM
Start Date of Analysis	05.03.2022	End Date of Analysis	07.03.2022
Weather Condition	Sunny	Sampling Duration	08 Hrs
Laboratory Environmental Condition	Temperature: 25 ± 5 °C Humidity: 30 - 80 % RH		

Sl. No.	Tests Conducted	Method	Results	Limit of Detection	NAAQ Standards as per CPCB, New Delhi, Nov. 18th, 2009
1.	Particulate Matter (PM_{10}) µg/m³	IS 5182:Part 23:2006:RA 2017	59.20	10 to 1000	100
2.	Particulate Matter ($PM_{2.5}$) µg/m³	IS 5182 : Part 24 : 2019	38.92	10 to 1000	60
3.	Sulphur Di-oxide (SO_2) µg/m³	IS 5182:Part 2:2001:RA 2017	24.36	9 to 200	80
4.	Nitrogen Di-oxide (NO_2) µg/m³	IS 5182:Part 6:2006:RA 2017	36.38	6 to 200	80

*The results are related only to tested item.

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Technical Manager

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Quality Manager

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TEST REPORT OF AMBIENT AIR*

NAME & ADDRESS OF CUSTOMER:	Bokaro Power Supply Company (P) Ltd, Bokaro Steel City, Bokaro, Jharkhand	Test Report No.	ECO/LAB/AA/0102/0113/03/2022
		Issue Date of Test Report	30.03.2022

Type of Sample	Ambient Air Sample		
Sample Registration No.	102	Name of Location	CHP
Sampling Method	As per Reference Method	Sample Collected By	ELPL Representative
Date of Sample Collection	07.03.2022	Time of Sample Collection	10:10 AM
Date of Sample Received	07.03.2022	Time of Sample Received	06:05 PM
Start Date of Analysis	07.03.2022	End Date of Analysis	09.03.2022
Weather Condition	Sunny	Sampling Duration	08 Hrs
Laboratory Environmental Condition	Temperature: 25 ± 5 °C Humidity: 30 - 80 % RH		

Sl. No.	Tests Conducted	Method	Results	Limit of Detection	NAAQ Standards as per CPCB, New Delhi, Nov. 18th, 2009
1.	Particulate Matter (PM_{10}) µg/m³	IS 5182:Part 23:2006:RA 2017	81.76	10 to 1000	100
2.	Particulate Matter ($PM_{2.5}$) µg/m³	IS 5182 : Part 24 : 2019	57.03	10 to 1000	60
3.	Sulphur Di-oxide (SO_2) µg/m³	IS 5182:Part 2:2001:RA2017	20.68	9 to 200	80
4.	Nitrogen Di-oxide (NO_2) µg/m³	IS 5182:Part 6:2006:RA2017	35.54	6 to 200	80

*The results are related only to tested item.

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Technical Manager

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Quality Manager

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TEST REPORT OF AMBIENT AIR*

NAME & ADDRESS OF CUSTOMER:	Bokaro Power Supply Company (P) Ltd, Bokaro Steel City,Bokaro, Jharkhand	Test Report No.	ECO/LAB/AA/0102/0114/03/2022
		Issue Date of Test Report	30.03.2022

Type of Sample	Ambient Air Sample		
Sample Registration No.	142	Name of Location	WCTP
Sampling Method	As per Reference Method	Sample Collected By	ELPL Representative
Date of Sample Collection	08.03.2022	Time of Sample Collection	10:00 AM
Date of Sample Received	08.03.2022	Time of Sample Received	06:15 PM
Start Date of Analysis	08.03.2022	End Date of Analysis	09.03.2022
Weather Condition	Sunny	Sampling Duration	08 Hrs
Laboratory Environmental Condition	Temperature: 25 ± 5 °C Humidity: 30 - 80 % RH		

Sl. No.	Tests Conducted	Method	Results	Limit of Detection	NAAQ Standards as per CPCB, New Delhi, Nov. 18th, 2009
1.	Particulate Matter (PM_{10}) µg/m³	IS 5182:Part 23:2006:RA 2017	67.60	10 to 1000	100
2.	Particulate Matter ($PM_{2.5}$) µg/m³	IS 5182 : Part 24 : 2019	39.60	10 to 1000	60
3.	Sulphur Di-oxide (SO_2) µg/m³	IS 5182:Part 2:2001:RA 2017	25.28	9 to 200	80
4.	Nitrogen Di-oxide (NO_2) µg/m³	IS 5182:Part 6:2006:RA 2017	31.99	6 to 200	80

*The results are related only to tested item.

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Technical Manager

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TEST REPORT OF AMBIENT AIR*

NAME & ADDRESS OF CUSTOMER:	Bokaro Power Supply Company (P) Ltd, Bokaro Steel City, Bokaro, Jharkhand	Test Report No.	ECO/LAB/AA/0102/0115/03/2022
		Issue Date of Test Report	30.03.2022

Type of Sample	Ambient Air Sample		
Sample Registration No.	102	Name of Location	WELFARE BUILDING
Sampling Method	As per Reference Method	Sample Collected By	ELPL Representative
Date of Sample Collection	10.03.2022	Time of Sample Collection	10:05 AM
Date of Sample Received	10.03.2022	Time of Sample Received	06:10 PM
Start Date of Analysis	10.03.2022	End Date of Analysis	11.03.2022
Weather Condition	Sunny	Sampling Duration	08 Hrs
Laboratory Environmental Condition	Temperature: 25 ± 5 °C		
	Humidity: 30 - 80 % RH		

Sl. No.	Tests Conducted	Method	Results	Limit of Detection	NAAQ Standards as per CPCB, New Delhi, Nov. 18th, 2009
1.	Particulate Matter (PM_{10})µg/m³	IS 5182:Part-23:2006:RA 2017	60.89	10 to 1000	100
2.	Particulate Matter ($PM_{2.5}$) µg/m³	IS 5182 : Part 24 : 2019	46.88	10 to 1000	60
3.	Sulphur Di-oxide (SO_2) µg/m³	IS 5182:Part 2:2001:RA 2017	24.51	9 to 200	80
4.	Nitrogen Di-oxide (NO_2) µg/m³	IS 5182:Part 6:2006:RA 2017	41.23	6 to 200	80

*The results are related only to tested item.

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TEST REPORT OF AMBIENT AIR*

NAME & ADDRESS OF CUSTOMER:	Bokaro Power Supply Company (P) Ltd, Bokaro Steel City, Bokaro, Jharkhand	Test Report No.	ECO/LAB/AA/0102/0116/03/2022
		Issue Date of Test Report	30.03.2022

Type of Sample	Ambient Air Sample		
Sample Registration No.	102	Name of Location	CHP
Sampling Method	As per Reference Method	Sample Collected By	ELPL Representative
Date of Sample Collection	11.03.2022	Time of Sample Collection	10:10 AM
Date of Sample Received	11.03.2022	Time of Sample Received	06:15 PM
Start Date of Analysis	11.03.2022	End Date of Analysis	12.03.2022
Weather Condition	Sunny	Sampling Duration	08 Hrs
Laboratory Environmental Condition	Temperature: 25 ± 5 °C Humidity: 30 - 80 % RH		

Sl. No.	Tests Conducted	Method	Results	Limit of Detection	NAAQ Standards as per CPCB, New Delhi, Nov. 18th, 2009
1.	Particulate Matter (PM_{10})µg/m³	IS 5182:Part 23:2006:RA 2017	78.91	10 to 1000	100
2.	Particulate Matter ($PM_{2.5}$) µg/m³	IS 5182 : Part 24 : 2019	53.16	10 to 1000	60
3.	Sulphur Di-oxide (SO_2) µg/m³	IS 5182:Part 2:2001:RA 2017	22.20	9 to 200	80
4.	Nitrogen Di-oxide (NO_2) µg/m³	IS 5182:Part 6:2006:RA 2017	33.40	6 to 200	80

*The results are related only to tested item.

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TEST REPORT OF AMBIENT AIR*

NAME & ADDRESS OF CUSTOMER:	Bokaro Power Supply Company (P) Ltd, Bokaro Steel City, Bokaro, Jharkhand	Test Report No.	ECO/LAB/AA/0102/0117/03/2022
		Issue Date of Test Report	30.03.2022

Type of Sample	Ambient Air Sample		
Sample Registration No.	102	Name of Location	WCTP
Sampling Method	As per Reference Method	Sample Collected By	ELPL Representative
Date of Sample Collection	12.03.2022	Time of Sample Collection	10:05 AM
Date of Sample Received	12.03.2022	Time of Sample Received	06:10 PM
Start Date of Analysis	12.03.2022	End Date of Analysis	14.03.2022
Weather Condition	Sunny	Sampling Duration	08 Hrs
Laboratory Environmental Condition	Temperature: 25 ± 5 °C Humidity: 30 - 80 %RH		

Sl. No.	Tests Conducted	Method	Results	Limit of Detection	NAAQ Standards as per CPCB, New Delhi, Nov. 18th, 2009
1.	Particulate Matter (PM_{10}) $\mu g/m^3$	IS 5182:Part 23:2006:RA 2017	65.70	10 to 1000	100
2.	Particulate Matter ($PM_{2.5}$) $\mu g/m^3$	IS 5182 : Part 24 : 2019	37.03	10 to 1000	60
3.	Sulphur Di-oxide (SO_2) $\mu g/m^3$	IS 5182:Part 2:2001:RA 2017	19.90	9 to 200	80
4.	Nitrogen Di-oxide (NO_2) $\mu g/m^3$	IS 5182:Part 6:2006:RA 2017	27.0	6 to 200	80

*The results are related only to tested item.

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TEST REPORT OF AMBIENT AIR*

NAME & ADDRESS OF CUSTOMER:	Bokaro Power Supply Company (P) Ltd, Bokaro Steel City,Bokaro, Jharkhand	Test Report No.	ECO/LAB/AA/0102/0118/03/2022
		Issue Date of Test Report	30.03.2022

Type of Sample	Ambient Air Sample		
Sample Registration No.	102	Name of Location	CHP
Sampling Method	As per Reference Method	Sample Collected By	ELPL Representative
Date of Sample Collection	14.03.2022	Time of Sample Collection	10:15 AM
Date of Sample Received	14.03.2022	Time of Sample Received	06:10 PM
Start Date of Analysis	14.03.2022	End Date of Analysis	15.03.2022
Weather Condition	Sunny	Sampling Duration	08 Hrs
Laboratory Environmental Condition	Temperature: 25 ± 5 °C		
	Humidity: 30 - 80 % RH		

Sl. No.	Tests Conducted	Method	Results	Limit of Detection	NAAQ Standards as per CPCB, New Delhi, Nov. 18th, 2009
1.	Particulate Matter (PM_{10}) µg/m³	IS 5182:Part 23:2006:RA 2017	76.49	10 to 1000	100
2.	Particulate Matter ($PM_{2.5}$) µg/m³	IS 5182 : Part 24 : 2019	55.02	10 to 1000	60
3.	Sulphur Di-oxide (SO_2) µg/m³	IS 5182:Part 2:2001:RA 2017	22.20	9 to 200	80
4.	Nitrogen Di-oxide (NO_2) µg/m³	IS 5182:Part 6:2006:RA 2017	38.36	6 to 200	80

*The results are related only to tested item.

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TEST REPORT OF AMBIENT AIR*

NAME & ADDRESS OF CUSTOMER:	Bokaro Power Supply Company (P) Ltd, Bokaro Steel City, Bokaro, Jharkhand	Test Report No.	ECO/LAB/AA/0102/0119/03/2022
		Issue Date of Test Report	30.03.2022
Type of Sample	Ambient Air Sample		
Sample Registration No.	102	Name of Location	WCTP
Sampling Method	As per Reference Method	Sample Collected By	ELPL Representative
Date of Sample Collection	15.03.2022	Time of Sample Collection	10:05 AM
Date of Sample Received	15.03.2022	Time of Sample Received	06:10 PM
Start Date of Analysis	15.03.2022	End Date of Analysis	16.03.2022
Weather Condition	Sunny	Sampling Duration	08 Hrs
Laboratory Environmental Condition	Temperature: 25 ± 5 °C Humidity: 30 - 80 % RH		

Sl. No.	Tests Conducted	Method	Results	Limit of Detection	NAAQ Standards as per CPCB, New Delhi, Nov. 18th, 2009
1.	Particulate Matter (PM_{10}) µg/m³	IS 5182:Part 23:2006:RA 2017	62.62	10 to 1000	100
2.	Particulate Matter ($PM_{2.5}$) µg/m³	IS 5182 : Part 24 : 2019	38.36	10 to 1000	60
3.	Sulphur Di-oxide (SO_2) µg/m³	IS 5182:Part 2:2001:RA 2017	21.45	9 to 200	80
4.	Nitrogen Di-oxide (NO_2) µg/m³	IS 5182:Part 6:2006:RA 2017	32.68	6 to 200	80

*The results are related only to tested item.

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Quality Manager

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TEST REPORT OF AMBIENT AIR*

NAME & ADDRESS OF CUSTOMER:	Bokaro Power Supply Company (P) Ltd, Bokaro Steel City, Bokaro, Jharkhand	Test Report No.	ECO/LAB/AA/0102/0120/03/2022
		Issue Date of Test Report	30.03.2022

Type of Sample	Ambient Air Sample		
Sample Registration No.	102	Name of Location	WELFARE BUILDING
Sampling Method	As per Reference Method	Sample Collected By	ELPL Representative
Date of Sample Collection	16.03.2022	Time of Sample Collection	10:05 AM
Date of Sample Received	16.03.2022	Time of Sample Received	06:10 PM
Start Date of Analysis	16.03.2022	End Date of Analysis	17.03.2022
Weather Condition	Sunny	Sampling Duration	08 Hrs
Laboratory Environmental Condition	Temperature: 25 ± 5 °C		
	Humidity: 30 - 80 % RH		

Sl. No.	Tests Conducted	Method	Results	Limit of Detection	NAAQ Standards as per CPCB, New Delhi, Nov. 18th, 2009
1.	Particulate Matter (PM_{10})µg/m³	IS 5182:Part 23:2006-RA 2017	60.62	10 to 1000	100
2.	Particulate Matter ($PM_{2.5}$) µg/m³	IS 5182 : Part 24 : 2019	44.23	10 to 1000	60
3.	Sulphur Di-oxide (SO_2) µg/m³	IS 5182:Part 2:2001:RA 2017	22.98	9 to 200	80
4.	Nitrogen Di-oxide (NO_2) µg/m³	IS 5182:Part 6:2006:RA 2017	31.28	6 to 200	80

*The results are related only to tested item.

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TEST REPORT OF AMBIENT AIR*

NAME & ADDRESS OF CUSTOMER:	Bokaro Power Supply Company (P) Ltd, Bokaro Steel City, Bokaro, Jharkhand	Test Report No.	ECO/LAB/AA/0102/0121/03/2022
		Issue Date of Test Report	30.03.2022

Type of Sample	Ambient Air Sample		
Sample Registration No.	102	Name of Location	CHP
Sampling Method	As per Reference Method	Sample Collected By	ELPL Representative
Date of Sample Collection	21.03.2022	Time of Sample Collection	10:10 AM
Date of Sample Received	21.03.2022	Time of Sample Received	0:05 AM
Start Date of Analysis	21.03.2022	End Date of Analysis	22.03.2022
Weather Condition	Sunny	Sampling Duration	08 Hrs
Laboratory Environmental Condition	Temperature: 25 ± 5 °C		
	Humidity: 30 - 80 % RH		

Sl. No.	Tests Conducted	Method	Results	Limit of Detection	NAAQ Standards as per CPCB, New Delhi, Nov. 18th, 2009
1.	Particulate Matter (PM_{10}) µg/m³	IS 5182:Part 23:2006:RA 2017	83.33	10 to 1000	100
2.	Particulate Matter ($PM_{2.5}$) µg/m³	IS 5182 : Part 24 : 2019	57.46	10 to 1000	60
3.	Sulphur Di-oxide (SO_2) µg/m³	IS 5182:Part 2:2001:RA 2017	28.34	9 to 200	80
4.	Nitrogen Di-oxide (NO_2) µg/m³	IS 5182:Part 6:2006:RA 2017	42.65	6 to 200	80

*The results are related only to tested item.

Verified By
Technical Manager

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Quality Manager

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TEST REPORT OF AMBIENT AIR*

NAME & ADDRESS OF CUSTOMER:	Bokaro Power Supply Company (P) Ltd, Bokaro Steel City, Bokaro, Jharkhand	Test Report No.	ECO/LAB/AA/0102/0122/03/2022
		Issue Date of Test Report	30.03.2022

Type of Sample	Ambient Air Sample		
Sample Registration No.	102	Name of Location	WCTP
Sampling Method	As per Reference Method	Sample Collected By	ELPL Representative
Date of Sample Collection	22.03.2022	Time of Sample Collection	10:00 AM
Date of Sample Received	22.03.2022	Time of Sample Received	06:10 PM
Start Date of Analysis	22.03.2022	End Date of Analysis	13.03.2022
Weather Condition	Sunny	Sampling Duration	08 Hrs
Laboratory Environmental Condition	Temperature: 25 ± 5 °C		
	Humidity: 30 - 80 % RH		

Sl. No.	Tests Conducted	Method	Results	Limit of Detection	NAAQ Standards as per CPCB, New Delhi, Nov. 18th, 2009
1.	Particulate Matter (PM_{10}) µg/m³	IS 5182:Part 23:2006:RA 2017	66.90	10 to 1000	100
2.	Particulate Matter ($PM_{2.5}$) µg/m³	IS 5182 : Part 24 : 2019	40.63	10 to 1000	60
3.	Sulphur Di-oxide (SO_2) µg/m³	IS 5182:Part 2:2001:RA 2017	25.26	9 to 200	80
4.	Nitrogen Di-oxide (NO_2) µg/m³	IS 5182:Part 6:2006:RA 2017	33.41	6 to 200	80

*The results are related only to tested item.

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TEST REPORT OF AMBIENT AIR*

NAME & ADDRESS OF CUSTOMER:	Bokaro Power Supply Company (P) Ltd, Bokaro Steel City, Bokaro, Jharkhand	Test Report No.	ECO/LAB/AA/0102/0123/03/2022
		Issue Date of Test Report	30.03.2022

Type of Sample	Ambient Air Sample		
Sample Registration No.	103	Name of Location	WELFARE BUILDING
Sampling Method	As per Reference Method	Sample Collected By	ELPL Representative
Date of Sample Collection	23.03.2022	Time of Sample Collection	10:05 AM
Date of Sample Received	23.03.2022	Time of Sample Received	06:10 PM
Start Date of Analysis	23.03.2022	End Date of Analysis	24.03.2022
Weather Condition	Sunny	Sampling Duration	08 Hrs
Laboratory Environemental Condition	Temperature: 25 ± 5°C Humidity: 30 - 80 % RH		

Sl. No.	Tests Conducted	Method	Results	Limit of Detection	NAAQ Standards as per CPCB, New Delhi, Nov. 18th, 2009
1.	Particulate Matter (PM_{10})µg/m³	IS 5182:Part-23:2006:RA 2017	62.90	10 to 1000	100
2.	Particulate Matter ($PM_{2.5}$) µg/m³	IS 5182 : Part 24 : 2019	35.18	10 to 1000	60
3.	Sulphur Di-oxide (SO_2) µg/m³	IS 5182:Part 2:2001:RA 2017	24.52	9 to 200	80
4.	Nitrogen Di-oxide (NO_2) µg/m³	IS 5182:Part 6:2006:RA 2017	33.42	6 to 200	80

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TEST REPORT OF AMBIENT AIR*

NAME & ADDRESS OF CUSTOMER:	Bokaro Power Supply Company (P) Ltd, Bokaro Steel City, Bokaro, Jharkhand	Test Report No.	ECO/LAB/AA/0102/0124/03/2022
		Issue Date of Test Report	30.03.2022
Type of Sample	Ambient Air Sample		
Sample Registration No.	102	Name of Location	CHP
Sampling Method	As per Reference Method	Sample Collected By	ELPL Representative
Date of Sample Collection	24.03.2022	Time of Sample Collection	10:05 AM
Date of Sample Received	24.03.2022	Time of Sample Received	06:10 PM
Start Date of Analysis	24.03.2022	End Date of Analysis	25.03.2022
Weather Condition	Sunny	Sampling Duration	08 Hrs
Laboratory Environmental Condition	Temperature: 25 ± 5 °C Humidity: 30 - 80 % RH		

Sl. No.	Tests Conducted	Method	Results	Limit of Detection	NAAQ Standards as per CPCB, New Delhi, Nov. 18th, 2009
1.	Particulate Matter (PM_{10})µg/m³	IS 5182:Part 23:2006:RA 2017	77.51	10 to 1000	100
2.	Particulate Matter ($PM_{2.5}$) µg/m³	IS 5182 : Part 24 : 2019	48.23	10 to 1000	60
3.	Sulphur Di-oxide (SO_2) µg/m³	IS 5182:Part 2:2001:RA 2017	19.16	9 to 200	80
4.	Nitrogen Di-oxide (NO_2) µg/m³	IS 5182:Part 6:2006:RA 2017	36.26	6 to 200	80

*The results are related only to tested item.

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TEST REPORT OF AMBIENT AIR*

NAME & ADDRESS OF CUSTOMER:	Bokaro Power Supply Company (P) Ltd, Bokaro Steel City, Bokaro, Jharkhand	Test Report No.	ECO/LAB/AA/0102/0125/03/2022
		Issue Date of Test Report	30.03.2022
Type of Sample	Ambient Air Sample		
Sample Registration No.	102	Name of Location	WCTP
Sampling Method	As per Reference Method	Sample Collected By	ELPL Representative
Date of Sample Collection	25.03.2022	Time of Sample Collection	10:10 AM
Date of Sample Received	25.03.2022	Time of Sample Received	06:05 PM
Start Date of Analysis	25.03.2022	End Date of Analysis	26.03.2022
Weather Condition	Sunny	Sampling Duration	08 Hrs
Laboratory Environmental Condition	Temperature: 25 ± 5 °C Humidity: 30 - 80 % RH		

Sl. No.	Tests Conducted	Method	Results	Limit of Detection	NAAQ Standards as per CPCB, New Delhi, Nov. 18th, 2009
1.	Particulate Matter (PM_{10}) µg/m³	IS 5182:Part 23:2006:RA 2017	60.45	10 to 1000	100
2.	Particulate Matter ($PM_{2.5}$) µg/m³	IS 5182 : Part 24 : 2019	41.47	10 to 1000	60
3.	Sulphur Di-oxide (SO_2) µg/m³	IS 5182:Part 2:2001:RA 2017	26.05	9 to 200	80
4.	Nitrogen Di-oxide (NO_2) µg/m³	IS 5182:Part 6:2006:RA 2017	33.41	6 to 200	80

*The results are related only to tested item.

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TEST REPORT OF AMBIENT AIR*

NAME & ADDRESS OF CUSTOMER:	Bokaro Power Supply Company (P) Ltd, Bokaro Steel City, Bokaro, Jharkhand	Test Report No.	ECO/LAB/AA/0102/0126/03/2022
		Issue Date of Test Report	30.03.2022
Type of Sample	Ambient Air Sample		
Sample Registration No.	102	Name of Location	CIVIL OFFICE
Sampling Method	As per Reference Method	Sample Collected By	ELPL Representative
Date of Sample Collection	26.03.2022	Time of Sample Collection	10:05 AM
Date of Sample Received	26.03.2022	Time of Sample Received	06:10 PM
Start Date of Analysis	26.03.2022	End Date of Analysis	27.03.2022
Weather Condition	Sunny	Sampling Duration	08 Hrs
Laboratory Environmental Condition	Temperature: 25 ± 5 °C Humidity: 30 - 80 % RH		

Sl. No.	Tests Conducted	Method	Results	Limit of Detection	NAAQ Standards as per CPCB, New Delhi, Nov. 18th, 2009
1.	Particulate Matter (PM_{10}) µg/m³	IS 5182:Part-23:2006:RA 2017	77.04	10 to 1000	100
2.	Particulate Matter ($PM_{2.5}$) µg/m³	IS 5182 : Part 24 : 2019	48.53	10 to 1000	60
3.	Sulphur Di-oxide (SO_2) µg/m³	IS 5182:Part 2:2001:RA 2017	22.80	9 to 200	80
4.	Nitrogen Di-oxide (NO_2) µg/m³	IS 5182:Part 6:2006:RA 2017	37.68	6 to 200	80

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FORMAT NO. ECO/QS/FORMAT/12

TEST REPORT NO: ECOLAB/Stack-01/102/03/22
TEST REPORT ISSUE DATE:04/04/2022

TEST REPORT OF FLUE GAS EMISSIONS MONITORING

Name of the Customer	:	**Bokaro Power Supply Company (P) Ltd.**
Address of the Customer	:	Bokaro Steel City, Bokaro, Jharkhand
Sample Collected by	:	Ecomen Lab Team
Sampling Method	:	IS: 11255
Instrument Used	:	Stack Monitoring Kit
Date of sample collection	:	04.03.2022
Source of monitoring	:	Boiler Composite
Lab Code	:	ECO/AS/0101/03/2022
Detail of Stack		
Material of Construction	:	Mild Sheet
Stack Attached to	:	**Boiler - 2**
Boiler Capacity (Ton/hr.)	:	220 Ton/hr.
Stack Height above the Ground Level (m)	:	180.0
Stack Height above the Plate form (m)	:	-
Stack Shape	:	Circular.
Dimension of duct (m) at sampling point	:	1.5x1.3
Cross sectional area of Duct/Stack (m^2)	:	1.95
Ambient Temperature (°C)	:	30.4
Flue Gas Temperature (°C)	:	165.0
Exit Velocity of Gas (m/s)	:	20.90
Quantity of gas flow (Nm^3/hr)	:	100932.8
Type of Fuel	:	BF Gas

Sl. No.	Tests Conducted	Method	Pollutant Concentration	Standards as per CPCB mg/Nm^3
1.	Particulate Matter (PM) (mg/Nm3)	IS:11255 (Part-1)	43.0	100.0
2.	Sulphur Dioxide (SO_2) (mg/Nm^3)	IS:11255 (Part-2)	95.0	600.0
3.	Nitrogen Oxides (NOx) (mg/Nm3)	IS:11255 (Part-7)	105.0	600.0
4.	Carbon Di-oxide (CO2) (%)	IS:13270	10.4	-
5.	Oxygen (O2) (%)	IS:13270	9.6	-

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FORMAT NO. ECO/QS/FORMAT/12

TEST REPORT NO: ECOLAB/Stack-02/102/03/22
TEST REPORT ISSUE DATE:04/04/2022

TEST REPORT OF FLUE GAS EMISSIONS MONITORING

Name of the Customer	: **Bokaro Power Supply Company (P) Ltd.**
Address of the Customer	: Bokaro Steel City, Bokaro, Jharkhand
Sample Collected by	: Ecomen Lab Team
Sampling Method	: IS: 11255
Instrument Used	: Stack Monitoring Kit
Date of sample collection	: 05.03.2022
Source of monitoring	: Boiler Composite
Lab Code	: ECO/AS/0102/03/2022
Detail of Stack	
Material of Construction	: Mild Sheet
Stack Attached to	: **Boiler - 3**
Boiler Capacity (Ton/hr.)	: 220 Ton/hr
Stack Height above the Ground Level (m)	: 180.0
Stack Height above the Plate form (m)	: -
Stack Shape	: Circular
Dimension of duct (m) at sampling point	: 1.5x1.3
Cross sectional area of Duct/Stack (m^2)	: 1.95...
Ambient Temperature (°C)	: 30.5
Flue Gas Temperature (°C)	: 175.0
Exit Velocity of Gas (m/s)	: 15.60
Quantity of gas flow (Nm^3/hr)	: 102268:8
Type of Fuel	: BF Gas

Sl. No.	Tests Conducted	Method	Pollutant Concentration	Standards as per CPCB mg/Nm^3
1.	Particulate Matter (PM) (mg/Nm3)	IS:11255 (Part-1)	44.0	100.0
2.	Sulphur Dioxide (SO_2) (mg/Nm^3)	IS:11255 (Part-2)	98.0	600.0
3.	Nitrogen Oxides (NOx) (mg/Nm3)	IS:11255 (Part-7)	126.0	600.0
4.	Carbon Di-oxide (CO2) (%)	IS:13270	10.8	-
5.	Oxygen (O2) (%)	IS:13270	9.2	-

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TEST REPORT NO: ECOLAB/Stack-03/102/03/22
TEST REPORT ISSUE DATE:04/04/2022

TEST REPORT OF FLUE GAS EMISSIONS MONITORING

Name of the Customer	:	**Bokaro Power Supply Company (P) Ltd.**
Address of the Customer	:	Bokaro Steel City, Bokaro, Jharkhand
Sample Collected by	:	Ecomen Lab Team
Sampling Method	:	IS: 11255
Instrument Used	:	Stack Monitoring Kit
Date of sample collection	:	08.03.2022
Source of monitoring	:	Boiler Composite
Lab Code	:	ECO/AS/0103/03/2022
Detail of Stack		
Material of Construction	:	Mild Sheet
Stack Attached to	:	**Boiler - 4**
Boiler Capacity (Ton/hr.)	:	**220.0**
Stack Height above the Ground Level (m)	:	180.0
Stack Height above the Plate form (m)	:	-
Stack Shape	:	Circular
Dimension of duct (m) at sampling point	:	1.5x1.3
Cross sectional area of Duct/Stack (m^2)	:	1.95
Ambient Temperature (°C)	:	31.2
Flue Gas Temperature (°C)	:	173.0
Exit Velocity of Gas (m/s)	:	20.07
Quantity of gas flow (Nm^3/hr)	:	104213.4
Type of Fuel	:	BF Gas

Sl. No.	Tests Conducted	Method	Pollutant Concentration	Standards as per CPCB mg/Nm^3
1.	Particulate Matter (PM) (mg/Nm3)	IS:11255 (Part-1)	47.61	100.0
2.	Sulphur Dioxide (SO_2) (mg/Nm^3)	IS:11255 (Part-2)	118.0	600.0
3.	Nitrogen Oxides (NOx) (mg/Nm3)	IS:11255 (Part-7)	124.0	600.0
4.	Carbon Di-oxide (CO2) (%)	IS:13270	10.6	-
5.	Oxygen (O2) (%)	IS:13270	9.4	-

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FORMAT NO. ECO/QS/FORMAT/12

TEST REPORT NO: ECOLAB/Stack-04/102/03/22
TEST REPORT ISSUE DATE:04/04/2022

TEST REPORT OF FLUE GAS EMISSIONS MONITORING

Name of the Customer	:	**Bokaro Power Supply Company (P) Ltd.**
Address of the Customer	:	Bokaro Steel City, Bokaro, Jharkhand
Sample Collected by	:	Ecomen Lab Team
Sampling Method	:	IS: 11255
Instrument Used	:	Stack Monitoring Kit
Date of sample collection	:	10.03.2022
Source of monitoring	:	Boiler Composite
Lab Code	:	ECO/AS/0104/03/2022
Detail of Stack		
Material of Construction	:	Mild Sheet
Stack Attached to	:	**Boiler -6**
Boiler Capacity (Ton/hr.)	:	**220.0**
Stack Height above the Ground Level (m)	:	180.0
Stack Height above the Plate form (m)	:	-
Stack Shape	:	Circular
Dimension of duct (m) at sampling point	:	3.6x1.8
Cross sectional area of Duct/Stack (m^2)	:	6.48
Ambient Temperature (°C)	:	31.2
Flue Gas Temperature (°C)	:	121.0
Exit Velocity of Gas (m/s)	:	16.20
Quantity of gas flow (Nm^3/hr)	:	277426.3
Type of Fuel	:	Coal

Sl. No.	Tests Conducted	Method	Pollutant Concentration	Standards as per CPCB mg/Nm^3
1.	Particulate Matter (PM) (mg/Nm3)	IS:11255 (Part-1)	66.0	100.0
2.	Sulphur Dioxide (SO_2) (mg/Nm^3)	IS:11255 (Part-2)	316.0	600.0
3.	Nitrogen Oxides (NOx) (mg/Nm3)	IS:11255 (Part-7)	330.0	600.0
4.	Carbon Di-oxide (CO2) (%)	IS:13270	11.0	-
5.	Oxygen (O2) (%)	IS:13270	9.0	-

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FORMAT NO. ECO/QS/FORMAT/12

TEST REPORT NO: ECOLAB/Stack-05/102/03/22
TEST REPORT ISSUE DATE:04/04/2022

TEST REPORT OF FLUE GAS EMISSIONS MONITORING

Name of the Customer	:	**Bokaro Power Supply Company (P) Ltd.**
Address of the Customer	:	Bokaro Steel City, Bokaro, Jharkhand
Sample Collected by	:	Ecomen Lab Team
Sampling Method	:	IS: 11255
Instrument Used	:	Stack Monitoring Kit
Date of sample collection	:	11.03.2022
Source of monitoring	:	Boiler Composite
Lab Code	:	ECO/AS/0105/03/2022
Detail of Stack		
Material of Construction	:	Mild Sheet
Stack Attached to	:	**Boiler - 7**
Boiler Capacity (Ton/hr.)	:	**260.0**
Stack Height above the Ground Level (m)	:	180.0
Stack Height above the Plate form (m)	:	-
Stack Shape	:	Circular
ID of Stack (m) at sampling point	:	3.6x1.8
Cross sectional area of Duct/Stack (m^2)	:	6.48
Ambient Temperature (°C)	:	30.5
Flue Gas Temperature (°C)	:	120.0
Exit Velocity of Gas (m/s)	:	16.0
Quantity of gas flow (Nm^3/hr)	:	279059.2
Type of Fuel	:	Coal

Sl. No.	Tests Conducted	Method	Pollutant Concentration	Standards as per CPCB mg/Nm^3
1.	Particulate Matter (PM) (mg/Nm3)	IS:11255 (Part-1)	68.0	100.0
2.	Sulphur Dioxide (SO_2) (mg/Nm^3)	IS:11255 (Part-2)	334.0	600
3.	Nitrogen Oxides (NOx) (mg/Nm3)	IS:11255 (Part-7)	348.0	600.0
4.	Carbon Di-oxide (CO2) (%)	IS:13270	10.8	-
5.	Oxygen (O2) (%)	IS:13270	9.2	-

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FORMAT NO. ECO/QS/FORMAT/12

TEST REPORT NO: ECOLAB/Stack-06/102/03/22
TEST REPORT ISSUE DATE:04/04/2022

TEST REPORT OF FLUE GAS EMISSIONS MONITORING

Name of the Customer	:	**Bokaro Power Supply Company (P) Ltd.**
Address of the Customer	:	Bokaro Steel City, Bokaro, Jharkhand
Sample Collected by	:	Ecomen Lab Team
Sampling Method	:	IS: 11255
Instrument Used	:	Stack Monitoring Kit
Date of sample collection	:	03.03.2022
Source of monitoring	:	Boiler Composite
Lab Code	:	ECO/AS/0106/03/2022
Detail of Stack		
Material of Construction	:	Mild Sheet
Stack Attached to	:	**Boiler - 9**
Boiler Capacity (Ton/hr.)	:	300 Ton/hr
Stack Height above the Ground Level (m)	:	180.0
Stack Height above the Plate form (m)	:	-
Stack Shape	:	Circular
ID of Stack (m) at sampling point	:	4.5x2.25
Cross sectional area of Duct/Stack (m^2)	:	10.125
Ambient Temperature (°C)	:	31.4
Flue Gas Temperature (°C)	:	138.0
Exit Velocity of Gas (m/s)	:	16.0
Quantity of gas flow (Nm^3/hr)	:	430882.5
Type of Fuel	:	Coal

Sl. No.	Tests Conducted	Method	Pollutant Concentration	Standards as per CPCB mg/Nm^3
1.	Particulate Matter (PM) (mg/Nm3)	IS:11255 (Part-1)	42.92	50.0
2.	Sulphur Dioxide (SO_2) (mg/Nm^3)	IS:11255 (Part-2)	284.0	600.0
3.	Nitrogen Oxides (NOx) (mg/Nm3)	IS:11255 (Part-7)	294.0	600.0
4.	Carbon Di-oxide (CO2) (%)	IS:13270	10.6	-
5.	Oxygen (O2) (%)	IS:13270	9.4	-

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FORMAT NO. ECO/QS/FORMAT/12

TEST REPORT NO: ECOLAB/Stack-07/102/03/22
TEST REPORT ISSUE DATE:04/04/2022

TEST REPORT OF FLUE GAS EMISSIONS MONITORING

Name of the Customer	:	**Bokaro Power Supply Company (P) Ltd.**
Address of the Customer	:	Bokaro Steel City, Bokaro, Jharkhand
Sample Collected by	:	Ecomen Lab Team
Sampling Method	:	IS: 11255
Instrument Used	:	Stack Monitoring Kit
Date of sample collection	:	12.03.2022
Source of monitoring	:	Boiler Composite
Lab Code	:	ECO/AS/0107/03/2022
Detail of Stack		
Material of Construction	:	Mild Sheet
Stack Attached to	:	**Boiler - 9**
Boiler Capacity (Ton/hr.)	:	**300 Ton/hr**
Stack Height above the Ground Level (m)	:	180.0
Stack Height above the Plate form (m)	:	-.
Stack Shape	:	Circular
ID of Stack (m) at sampling point	:	4.5x2.25
Cross sectional area of Duct/Stack (m^2)	:	10.125
Ambient Temperature (°C)	:	30.9
Flue Gas Temperature (°C)	:	124.0
Exit Velocity of Gas (m/s)	:	15.90
Quantity of gas flow (Nm^3/hr)	:	430576.8
Type of Fuel	:	Coal

Sl. No.	Tests Conducted	Method	Pollutant Concentration	Standards as per CPCB mg/Nm^3
1.	Particulate Matter (PM) (mg/Nm3)	IS:11255 (Part-1)	43.0	50.0
2.	Sulphur Dioxide (SO_2) (mg/Nm^3)	IS:11255 (Part-2)	280.0	600.0
3.	Nitrogen Oxides (NOx) (mg/Nm3)	IS:11255 (Part-7)	292.0	600.0
4.	Carbon Di-oxide (CO2) (%)	IS:13270	11.2	-
5.	Oxygen (O2) (%)	IS:13270	8.8	-

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FORMAT NO. ECO/QS/FORMAT/12

TEST REPORT NO: ECOLAB/Stack-08/102/03/22
TEST REPORT ISSUE DATE:04/04/2022

TEST REPORT OF FLUE GAS EMISSIONS MONITORING

Name of the Customer	:	**Bokaro Power Supply Company (P) Ltd.**
Address of the Customer	:	Bokaro Steel City, Bokaro, Jharkhand
Sample Collected by	:	Ecomen Lab Team
Sampling Method	:	IS: 11255
Instrument Used	:	Stack Monitoring Kit
Date of sample collection	:	31.03.2022
Source of monitoring	:	Boiler Composite
Lab Code	:	ECO/AS/0108/03/2022
Detail of Stack		
Material of Construction	:	Mild Sheet
Stack Attached to	:	**Boiler - 5**
Boiler Capacity (Ton/hr.)	:	**220 Ton/hr**
Stack Height above the Ground Level (m)	:	180.0
Stack Height above the Plate form (m)	:	-.
Stack Shape	:	Circular
ID of Stack (m) at sampling point	:	1.5x1.3
Cross sectional area of Duct/Stack (m^2)	:	1.95
Ambient Temperature (°C)	:	30.6
Flue Gas Temperature (°C)	:	137.0
Exit Velocity of Gas (m/s)	:	17.21
Quantity of gas flow (Nm^3/hr)	:	100855.2
Type of Fuel	:	BF Gas

Sl. No.	Tests Conducted	Method	Pollutant Concentration	Standards as per CPCB mg/Nm^3
1.	Particulate Matter (PM) (mg/Nm3)	IS:11255 (Part-1)	44.0	100.0
2.	Sulphur Dioxide (SO_2) (mg/Nm^3)	IS:11255 (Part-2)	210.0	600.0
3.	Nitrogen Oxides (NOx) (mg/Nm3)	IS:11255 (Part-7)	120.0	600.0
4.	Carbon Di-oxide (CO2) (%)	IS:13270	10.6	-
5.	Oxygen (O2) (%)	IS:13270	9.4	-

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Ecomen Laboratories Pvt. Ltd.
Second Floor Hall, House No. B-1/8,
Sector-H, Aliganj, Lucknow-226024

ECOMEN LABORATORIES PVT. LTD.
Second Floor Hall, House No. B-1/8, Sector-H, Aliganj, Lucknow - 226 024
Phone No. : 0522 - 4079201/2746252
E-mail: contactus@ecomen.in, Website: www.ecomen.in, CIN - U74210UP1989PTC010601,GSTIN : 09AAACE6076H1ZI
An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

FORMAT NO. ECO/QS/FORMAT/12

TEST REPORT NO: ECOLAB/WN-01/102/03/22
TEST REPORT ISSUE DATE:04/04/2022

TEST REPORT OF WORK AREA NOISE MONITORING
FACTORYACT 1948

Name of the Customer : Bokaro Power Supply Company (P) Ltd.
Address of the Customer : Bokaro Steel City, Bokaro, Jharkhand
Sample Collected by : Ecomen lab Team
Sampling Method : IS: 11255
Instrument Used : Sound Level Meter
Date of sample collection : 02.03.2022 to 01.04.2022

Sl	Sampling Location	Leq Value in dB(A)		Standard
		02.03.2022	04.03.2022	
1.	Ball Mill Boiler -1	84.04	77.72	85.0
2.	Ball Mill Boiler -2	95.12	86.34	85.0
3.	Ball Mill Boiler -3	98.10	95.84	85.0
4.	Ball Mill Boiler -4	95.16	96.32	85.0
5.	Ball Mill Boiler -5	90.08	83.72	85.0
6.	Ball Mill Boiler -6	95.26	97.82	85.0
7.	Ball Mill Boiler -7	96.5	96.85	85.0
8.	Ball Mill Boiler -8	78.74	81.82	85.0
9.	Ball Mill Boiler -9	90.58	88.54	85.0
10.	TG-1	92.46	91.04	85.0
11.	TG-2	94.62	90.68	85.0
12.	TG-3	89.43	89.80	85.0
13.	TG-5	93.76	93.54	85.0
14.	TG-7	95.26	95.12	85.0
15.	TG-8	88.08	86.82	85.0
16.	TG-9	88.35	89.08	85.0
17.	Control Unit-9	68.3	66.26	85.0
18.	UCR-I	64.96	77.38	85.0
19	UCR-II	66.04	61.52	85.0
20.	GCB-I	66.18	67.82	85.0
21.	GCB-II	63.58	63.62	85.0
22.	MCB	57.66	55.26	85.0
23.	ECR-II	61.26	59.66	85.0

Verified By
Technical Manager

Authorized By
Quality Manager

--End of Report--

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ECOMEN LABORATORIES PVT. LTD.

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E-mail: contactus@ecomen.in, Website: www.ecomen.in, CIN - U74210UP1989PTC010601,GSTIN : 09AAACE6076H1ZI

ecoMen
LABORATORIES PVT LTD.

An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

FORMAT NO. ECO/QS/FORMAT/12

TEST REPORT NO: ECOLAB/WN-02/102/03/22
TEST REPORT ISSUE DATE:04/04/2022

TEST REPORT OF WORK AREA NOISE MONITORING
FACTORYACT 1948

Name of the Customer : Bokaro Power Supply Company (P) Ltd.
Address of the Customer : Bokaro Steel City, Bokaro, Jharkhand
Sample Collected by : Ecomen lab Team
Sampling Method : IS: 11255
Instrument Used : Sound Level Meter
Date of sample collection : 02.03.2022 to 01.04.2022

Sl. No.	Sampling Location	Leq Value in dB(A)		Standard
		11.03.2022	14.03.2022	
1.	Ball Mill Boiler -1	74.26	79.2	85.0
2.	Ball Mill Boiler -2	75.22	81.42	85.0
3.	Ball Mill Boiler -3	81.42	77.52	85.0
4.	Ball Mill Boiler -4	84.52	77.94	85.0
5.	Ball Mill Boiler -5	81.30	79.36	85.0
6.	Ball Mill Boiler -6	95.36	93.59	85.0
7.	Ball Mill Boiler -7	95.28	94.58	85.0
8.	Ball Mill Boiler -8	82.28	81.54	85.0
9.	Ball Mill Boiler -9	87.99	90.08	85.0
10.	TG-1	90.22	89.58	85.0
11.	TG-2	91.84	90.94	85.0
12.	TG-3	88.74	87.94	85.0
13.	TG-6	93.42	93.98	85.0
14.	TG-7	94.62	91.82	85.0
15.	TG-8	83.78	85.08	85.0
16.	TG-9	93.48	90.60	85.0
17.	Control Unit-9	67.30	66.30	85.0
18.	UCR-I	64.12	67.38	85.0
19	UCR-II	63.84	66.30	85.0
20.	GCB-I	64.54	65.06	85.0
21.	GCB-II	62.76	62.58	85.0
22.	MCB	65.52	54.06	85.0
23.	ECR-II	61.70	63.28	85.0

Verified By

Technical Manager

Authorized By

Quality Manager

--End of Report--

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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

FORMAT NO. ECO/QS/FORMAT/12

TEST REPORT NO: ECOLAB/WN-03/102/03/22
TEST REPORT ISSUE DATE:04/04/2022

TEST REPORT OF WORK AREA NOISE MONITORING FACTORYACT 1948

Name of the Customer : Bokaro Power Supply Company (P) Ltd.
Address of the Customer : Bokaro Steel City, Bokaro, Jharkhand
Sample Collected by : Ecomen lab Team
Sampling Method : IS: 11255
Instrument Used : Sound Level Meter
Date of sample collection : 02.03.2022 to 01.04.2022

Sl	Sampling Location	Leq Value in dB(A)		Standard
		23.03.2022	25.03.2022	
1.	Ball Mill Boiler -1	77.80	78.58	85.0
2.	Ball Mill Boiler -2	81.84	86.77	85.0
3.	Ball Mill Boiler -3	74.18	80.22	85.0
4.	Ball Mill Boiler -4	76.30	90.59	85.0
5.	Ball Mill Boiler -5	79.56	91.41	85.0
6.	Ball Mill Boiler -6	84.47	92.02	85.0
7.	Ball Mill Boiler -7	82.72	82.78	85.0
8.	Ball Mill Boiler -8	89.59	87.10	85.0
9.	Ball Mill Boiler -9	88.68	86.70	85.0
10.	TG-1	90.54	90.44	85.0
11.	TG-2	91.24	91.00	85.0
12.	TG-3	86.92	89.02	85.0
13.	TG-6	89.28	88.86	85.0
14.	TG-7	94.36	94.60	85.0
15.	TG-8	89.46	88.02	85.0
16.	TG-9	91.04	90.72	85.0
17.	Control Unit-9	63.76	62.82	85.0
18.	UCR-I	63.78	74.78	85.0
19	UCR-II	62.78	58.78	85.0
20.	GCB-I	65.82	57.04	85.0
21.	GCB-II	63.72	67.80	85.0
22.	MCB	57.06	65.74	85.0
23.	ECR-II	61.20	51.08	85.0

Verified By
Technical Manager

Authorized By
Quality Manager

--End of Report--

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An approved Laborstory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

FORMAT NO. ECO/QS/ FORMAT/12

TEST REPORT NO: ECOLAB/WN-04/102/03/22
TEST REPORT ISSUE DATE:04/04/2022

TEST REPORT OF WORK AREA NOISE MONITORING FACTORYACT 1948

Name of the Customer : Bokaro Power Supply Company (P) Ltd.
Address of the Customer : Bokaro Steel City, Bokaro, Jharkhand
Sample Collected by : Ecomen lab Team
Sampling Method : IS: 11255
Instrument Used : Sound Level Meter
Date of sample collection : 02.03.2022 to 01.04.2022

Sl. No.	Sampling Location	Leq Value in dB(A)	Standard
		28.03.2022	
1.	Ball Mill Boiler -1	76.10	85.0
2.	Ball Mill Boiler -2	83.30	85.0
3.	Ball Mill Boiler -3	78.34	85.0
4.	Ball Mill Boiler -4	85.22	85.0
5.	Ball Mill Boiler -5	83.44	85.0
6.	Ball Mill Boiler -6	96.72	85.0
7.	Ball Mill Boiler -7	96.33	85.0
8.	Ball Mill Boiler -8	83.14	85.0
9.	Ball Mill Boiler -9	87.43	85.0
10.	TG-1	90.40	85.0
11.	TG-2	93.96	85.0
12.	TG-3	88.80	85.0
13.	TG-6	85.28	85.0
14.	TG-7	94.32	85.0
15.	TG-8	82.64	85.0
16.	TG-9	93.22	85.0
17.	Control Unit-9	67.70	85.0
18.	UCR-I	69.26	85.0
19	UCR-II	61.88	85.0
20.	GCB-I	69.40	85.0
21.	GCB-II	64.82	85.0
22.	MCB	54.90	85.0
23.	ECR-II	60.06	85.0

Verified By
Technical Manager

Authorized By
Quality Manager

--End of Report--

Ecomen Laboratories Pvt Ltd
Second Floor Hall, House No. B-1/8,
Sector-H, Aliganj, Lucknow-226024

Real time Online effluent report

Click here to Analyzer (http://jsac.jharkhandgov.in/portal/)

Jharkhand State Pollution Control Board

Vendor	Industry	Station ID	Analyzer ID	Select Date	
Navco Engin	Bokaro Powe	66	15BPSCPLP	2022-03-15	Get Data Export

70 Records Found

Sl. No	Industry Name	stationId	analyserId	Parameter	Process Value	Unit	Submitted Date	Timestamp of Analyser
1	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	7.93	pH	16-03-2022 00:10:40	2022-03-15:11:45:00.PM
2	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	7.87	pH	15-03-2022 23:56:55	2022-03-15:11:30:00.PM
3	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	7.86	pH	15-03-2022 23:34:22	2022-03-15:11:15:00.PM
4	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	7.85	pH	15-03-2022 23:25:48	2022-03-15:11:00:00.PM
5	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	7.88	pH	15-03-2022 23:08:56	2022-03-15:10:45:00.PM
6	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	7.92	pH	15-03-2022 22:56:34	2022-03-15:10:30:00.PM
7	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	7.94	pH	15-03-2022 22:40:32	2022-03-15:10:15:00.PM
8	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	7.94	pH	15-03-2022 22:25:38	2022-03-15:10:00:00.PM
9	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	7.95	pH	15-03-2022 22:10:38	2022-03-15:09:45:00.PM
10	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	7.97	pH	15-03-2022 21:55:07	2022-03-15:09:30:00.PM
11	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	8.01	pH	15-03-2022 21:40:16	2022-03-15:09:15:00.PM
12	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	8.04	pH	15-03-2022 21:25:55	2022-03-15:09:00:00.PM
13	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	8.09	pH	15-03-2022 21:04:09	2022-03-15:08:45:00.PM
14	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	8.09	pH	15-03-2022 20:55:41	2022-03-15:08:30:00.PM
15	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	8.07	pH	15-03-2022 20:40:50	2022-03-15:08:15:00.PM
16	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	8.04	pH	15-03-2022 20:17:08	2022-03-15:08:00:00.PM
17	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	8.05	pH	15-03-2022 20:03:31	2022-03-15:07:45:00.PM
18	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	8	pH	15-03-2022 19:47:18	2022-03-15:07:30:00.PM
19	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	7.95	pH	15-03-2022 19:32:56	2022-03-15:07:15:00.PM
20	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	7.94	pH	15-03-2022 19:18:04	2022-03-15:07:00:00.PM
21	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	7.9	pH	15-03-2022 19:02:49	2022-03-15:06:45:00.PM
22	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	7.88	pH	15-03-2022 18:55:28	2022-03-15:06:30:00.PM
23	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	7.92	pH	15-03-2022 18:39:54	2022-03-15:06:15:00.PM
24	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	8	pH	15-03-2022 18:26:11	2022-03-15:06:00:00.PM
25	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	8.03	pH	15-03-2022 18:10:35	2022-03-15:05:45:00.PM

26	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	7.97	pH	15-03-2022 17:49:21	2022-03-15:05:30:00.PM
27	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	7.88	pH	15-03-2022 17:40:46	2022-03-15:05:15:00.PM
28	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	7.84	pH	15-03-2022 17:10:35	2022-03-15:04:45:00.PM
29	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	7.84	pH	15-03-2022 16:55:26	2022-03-15:04:30:00.PM
30	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	7.87	pH	15-03-2022 16:40:45	2022-03-15:04:15:00.PM
31	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	7.87	pH	15-03-2022 16:25:18	2022-03-15:04:00:00.PM
32	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	7.86	pH	15-03-2022 16:10:32	2022-03-15:03:45:00.PM
33	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	7.85	pH	15-03-2022 15:55:31	2022-03-15:03:30:00.PM
34	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	7.86	pH	15-03-2022 14:03:12	2022-03-15:01:45:00.PM
35	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	7.88	pH	15-03-2022 13:55:29	2022-03-15:01:30:00.PM
36	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	7.9	pH	15-03-2022 13:40:29	2022-03-15:01:15:00.PM
37	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	7.88	pH	15-03-2022 13:25:20	2022-03-15:01:00:00.PM
38	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	7.87	pH	15-03-2022 12:55:37	2022-03-15:12:30:00.PM
39	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	7.9	pH	15-03-2022 12:10:41	2022-03-15:11:45:00.AM
40	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	7.99	pH	15-03-2022 11:55:38	2022-03-15:11:30:00.AM
41	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	8.01	pH	15-03-2022 10:46:40	2022-03-15:10:30:00.AM
42	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	8.09	pH	15-03-2022 09:55:18	2022-03-15:09:30:00.AM
43	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	8.09	pH	15-03-2022 09:32:47	2022-03-15:09:15:00.AM
44	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	8.11	pH	15-03-2022 09:24:29	2022-03-15:09:00:00.AM
45	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	8.08	pH	15-03-2022 09:02:23	2022-03-15:08:45:00.AM
46	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	8.12	pH	15-03-2022 08:47:49	2022-03-15:08:30:00.AM
47	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	8.16	pH	15-03-2022 08:32:08	2022-03-15:08:15:00.AM
48	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	8.19	pH	15-03-2022 08:26:32	2022-03-15:08:00:00.AM
49	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	8.16	pH	15-03-2022 08:02:55	2022-03-15:07:45:00.AM
50	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	8.16	pH	15-03-2022 07:47:19	2022-03-15:07:30:00.AM
51	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	8.17	pH	15-03-2022 07:40:46	2022-03-15:07:15:00.AM
52	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	8.19	pH	15-03-2022 07:18:09	2022-03-15:07:00:00.AM
53	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	8.27	pH	15-03-2022 07:03:33	2022-03-15:06:45:00.AM
54	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLP	pH	8.23	pH	15-03-2022 06:40:21	2022-03-15:06:15:00.AM

Jharkhand State Pollution Control Board

Vendor: Nevco Engin | Industry: Bokaro Powe | Station ID: 66 | Analyzer ID: 15BPSCPLC | Select Date: 2022-03-15 | Get Data | Export

83 Records Found

Sl. No	Industry Name	stationId	analyserId	Parameter	Process Value	Unit	Submitted Date	Timestamp of Analyser
1	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.97	mg/l	16-03-2022 00:10:20	2022-03-15:11:45:00.PM
2	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	57.27	mg/l	15-03-2022 23:49:26	2022-03-15:11:30:00.PM
3	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.93	mg/l	15-03-2022 23:33:58	2022-03-15:11:15:00.PM
4	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.67	mg/l	15-03-2022 23:25:35	2022-03-15:11:00:00.PM
5	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	57.03	mg/l	15-03-2022 23:03:46	2022-03-15:10:45:00.PM
6	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.97	mg/l	15-03-2022 22:49:10	2022-03-15:10:30:00.PM
7	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.97	mg/l	15-03-2022 22:33:50	2022-03-15:10:15:00.PM
8	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	57.13	mg/l	15-03-2022 22:18:57	2022-03-15:10:00:00.PM
9	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	57.27	mg/l	15-03-2022 22:10:30	2022-03-15:09:45:00.PM
10	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.9	mg/l	15-03-2022 21:49:27	2022-03-15:09:30:00.PM
11	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.83	mg/l	15-03-2022 21:33:47	2022-03-15:09:15:00.PM
12	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.83	mg/l	15-03-2022 21:19:31	2022-03-15:09:00:00.PM
13	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	57	mg/l	15-03-2022 21:03:12	2022-03-15:08:45:00.PM
14	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.87	mg/l	15-03-2022 20:55:32	2022-03-15:08:30:00.PM
15	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	57	mg/l	15-03-2022 20:40:43	2022-03-15:08:15:00.PM
15	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.93	mg/l	15-03-2022 20:17:07	2022-03-15:08:00:00.PM
17	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.93	mg/l	15-03-2022 20:03:13	2022-03-15:07:45:00.PM
18	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.7	mg/l	15-03-2022 19:47:13	2022-03-15:07:30:00.PM
19	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.9	mg/l	15-03-2022 19:32:26	2022-03-15:07:15:00.PM
20	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.63	mg/l	15-03-2022 19:17:32	2022-03-15:07:00:00.PM
21	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.87	mg/l	15-03-2022 19:02:39	2022-03-15:06:45:00.PM
22	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	57	mg/l	15-03-2022 18:49:32	2022-03-15:06:30:00.PM
23	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.9	mg/l	15-03-2022 18:34:24	2022-03-15:06:15:00.PM
24	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.63	mg/l	15-03-2022 18:19:32	2022-03-15:06:00:00.PM
25	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.9	mg/l	15-03-2022 18:10:22	2022-03-15:05:45:00.PM

26	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.87	mg/l	15-03-2022 17:48:36	2022-03-15:05:30:00.PM
27	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.87	mg/l	15-03-2022 17:40:35	2022-03-15:05:15:00.PM
28	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	58.8	mg/l	15-03-2022 17:04:26	2022-03-15:04:45:00.PM
29	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	57.73	mg/l	15-03-2022 16:49:15	2022-03-15:04:30:00.PM
30	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.83	mg/l	15-03-2022 16:34:33	2022-03-15:04:15:00.PM
31	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.83	mg/l	15-03-2022 16:19:35	2022-03-15:04:00:00.PM
32	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.87	mg/l	15-03-2022 16:04:35	2022-03-15:03:45:00.PM
33	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.9	mg/l	15-03-2022 15:49:46	2022-03-15:03:30:00.PM
34	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.87	mg/l	15-03-2022 15:41:00	2022-03-15:03:15:00.PM
35	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.7	mg/l	15-03-2022 14:16:35	2022-03-15:02:00:00.PM
36	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.7	mg/l	15-03-2022 14:02:28	2022-03-15:01:45:00.PM
37	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.8	mg/l	15-03-2022 13:49:16	2022-03-15:01:30:00.PM
38	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.93	mg/l	15-03-2022 13:34:22	2022-03-15:01:15:00.PM
39	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.87	mg/l	15-03-2022 13:25:12	2022-03-15:01:00:00.PM
40	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.87	mg/l	15-03-2022 13:10:37	2022-03-15:12:45:00.PM
41	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.95	mg/l	15-03-2022 12:55:02	2022-03-15:12:30:00.PM
42	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	57	mg/l	15-03-2022 12:03:21	2022-03-15:11:45:00.AM
43	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	57.3	mg/l	15-03-2022 11:55:25	2022-03-15:11:30:00.AM
44	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	56.9	mg/l	15-03-2022 10:47:49	2022-03-15:10:30:00.AM
45	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	57	mg/l	15-03-2022 10:39:36	2022-03-15:10:15:00.AM
46	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	57.1	mg/l	15-03-2022 09:49:15	2022-03-15:09:30:00.AM
47	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	57.5	mg/l	15-03-2022 09:32:27	2022-03-15:09:15:00.AM
48	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	57.3	mg/l	15-03-2022 09:18:24	2022-03-15:09:00:00.AM
49	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	57.5	mg/l	15-03-2022 09:02:17	2022-03-15:08:45:00.AM
50	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	57.25	mg/l	15-03-2022 08:47:42	2022-03-15:08:30:00.AM
51	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	57.03	mg/l	15-03-2022 08:32:08	2022-03-15:08:15:00.AM
52	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	57.2	mg/l	15-03-2022 08:25:12	2022-03-15:08:00:00.AM
53	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	57.07	mg/l	15-03-2022 08:02:31	2022-03-15:07:45:00.AM
54	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLC	COD	57.13	mg/l	15-03-2022 07:47:13	2022-03-15:07:30:00.AM

Jharkhand State Pollution Control Board

Vendor: Nevco Engin | Industry: Bokaro Powe | Station ID: 66 | Analyzer ID: 15BPSCPLB | Select Date: 2022-03-15 | Get Data Export

83 Records Found

Sl. No	Industry Name	stationId	analyserId	Parameter	Process Value	Unit	Submitted Date	Timestamp of Analyser
1	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.63	mg/l	16-03-2022 00:03:47	2022-03-15 11:45:00 PM
2	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.6	mg/l	15-03-2022 23:48:46	2022-03-15 11:30:00 PM
3	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.63	mg/l	15-03-2022 23:40:16	2022-03-15 11:15:00 PM
4	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.4	mg/l	15-03-2022 23:18:57	2022-03-15 11:00:00 PM
5	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.63	mg/l	15-03-2022 23:03:08	2022-03-15 10:45:00 PM
6	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.63	mg/l	15-03-2022 22:48:30	2022-03-15 10:30:00 PM
7	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.65	mg/l	15-03-2022 22:33:08	2022-03-15 10:15:00 PM
8	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.73	mg/l	15-03-2022 22:25:27	2022-03-15 10:00:00 PM
9	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.83	mg/l	15-03-2022 22:03:19	2022-03-15 09:45:00 PM
10	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.6	mg/l	15-03-2022 21:48:39	2022-03-15 09:30:00 PM
11	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.5	mg/l	15-03-2022 21:33:27	2022-03-15 09:15:00 PM
12	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.53	mg/l	15-03-2022 21:25:33	2022-03-15 09:00:00 PM
13	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.67	mg/l	15-03-2022 21:02:50	2022-03-15 08:45:00 PM
14	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.57	mg/l	15-03-2022 20:48:51	2022-03-15 08:30:00 PM
15	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.63	mg/l	15-03-2022 20:40:12	2022-03-15 08:15:00 PM
16	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.8	mg/l	15-03-2022 20:17:06	2022-03-15 08:00:00 PM
17	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.63	mg/l	15-03-2022 20:02:45	2022-03-15 07:45:00 PM
18	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.43	mg/l	15-03-2022 19:47:10	2022-03-15 07:30:00 PM
19	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.6	mg/l	15-03-2022 19:32:16	2022-03-15 07:15:00 PM
20	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.37	mg/l	15-03-2022 19:17:16	2022-03-15 07:00:00 PM
21	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.57	mg/l	15-03-2022 19:02:16	2022-03-15 06:45:00 PM
22	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.63	mg/l	15-03-2022 18:48:45	2022-03-15 06:30:00 PM
23	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.6	mg/l	15-03-2022 18:38:23	2022-03-15 06:15:00 PM
24	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.4	mg/l	15-03-2022 18:18:48	2022-03-15 06:00:00 PM
25	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.57	mg/l	15-03-2022 18:03:40	2022-03-15 05:45:00 PM

26	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.63	mg/l	15-03-2022 17:48:12	2022-03-15:05:30:00 PM
27	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.55	mg/l	15-03-2022 17:40:09	2022-03-15:05:15:00 PM
28	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	25.9	mg/l	15-03-2022 17:10:10	2022-03-15:04:45:00 PM
29	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	25.2	mg/l	15-03-2022 16:55:01	2022-03-15:04:30:00 PM
30	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.5	mg/l	15-03-2022 16:39:46	2022-03-15:04:15:00 PM
31	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.53	mg/l	15-03-2022 16:18:49	2022-03-15:04:00:00 PM
32	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.57	mg/l	15-03-2022 16:03:43	2022-03-15:03:45:00 PM
33	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.57	mg/l	15-03-2022 15:55:03	2022-03-15:03:30:00 PM
34	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.57	mg/l	15-03-2022 15:33:38	2022-03-15:03:15:00 PM
35	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.45	mg/l	15-03-2022 14:25:06	2022-03-15:02:00:00 PM
36	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.4	mg/l	15-03-2022 14:02:19	2022-03-15:01:45:00 PM
37	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.5	mg/l	15-03-2022 13:48:37	2022-03-15:01:30:00 PM
38	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.6	mg/l	15-03-2022 13:33:35	2022-03-15:01:15:00 PM
39	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.57	mg/l	15-03-2022 13:19:54	2022-03-15:01:00:00 PM
40	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.57	mg/l	15-03-2022 13:03:31	2022-03-15:12:45:00 PM
41	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.6	mg/l	15-03-2022 12:54:37	2022-03-15:12:30:00 PM
42	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.5	mg/l	15-03-2022 12:02:34	2022-03-15:11:45:00 AM
43	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.8	mg/l	15-03-2022 11:48:30	2022-03-15:11:30:00 AM
44	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.5	mg/l	15-03-2022 10:47:29	2022-03-15:10:30:00 AM
45	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.63	mg/l	15-03-2022 10:38:57	2022-03-15:10:15:00 AM
46	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.7	mg/l	15-03-2022 09:48:34	2022-03-15:09:30:00 AM
47	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	25	mg/l	15-03-2022 09:32:17	2022-03-15:09:15:00 AM
48	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.87	mg/l	15-03-2022 09:18:42	2022-03-15:09:00:00 AM
49	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	25	mg/l	15-03-2022 09:02:12	2022-03-15:08:45:00 AM
50	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.85	mg/l	15-03-2022 08:47:25	2022-03-15:08:30:00 AM
51	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.7	mg/l	15-03-2022 08:32:05	2022-03-15:08:15:00 AM
52	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.9	mg/l	15-03-2022 08:19:01	2022-03-15:08:00:00 AM
53	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.7	mg/l	15-03-2022 08:02:18	2022-03-15:07:45:00 AM
54	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLB	BOD	24.73	mg/l	15-03-2022 07:47:10	2022-03-15:07:30:00 AM

Jharkhand State Pollution Control Board

Vendor: Newco Engin | Industry: Bokaro Powe | Station ID: 66 | Analyzer ID: 15BPSCPLT | Select Date: 2022-03-15 | Get Data Export

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Sl. No	Industry Name	stationId	analyserId	Parameter	Process Value	Unit	Submitted Date	Timestamp of Analyser
1	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLT	TSS	19.1	mg/l	16-03-2022 00:10:51	2022-03-15:11:45:00.PM
2	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLT	TSS	18.9	mg/l	15-03-2022 23:55:59	2022-03-15:11:30:00.PM
3	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLT	TSS	18.27	mg/l	15-03-2022 23:40:39	2022-03-15:11:15:00.PM
4	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLT	TSS	18.27	mg/l	15-03-2022 23:09:00	2022-03-15:10:45:00.PM
5	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLT	TSS	18.23	mg/l	15-03-2022 22:55:40	2022-03-15:10:30:00.PM
6	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLT	TSS	18.23	mg/l	15-03-2022 22:40:36	2022-03-15:10:15:00.PM
7	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLT	TSS	18.63	mg/l	15-03-2022 22:25:43	2022-03-15:10:00:00.PM
8	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLT	TSS	18.87	mg/l	15-03-2022 22:10:41	2022-03-15:09:45:00.PM
9	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLT	TSS	17.53	mg/l	15-03-2022 21:55:15	2022-03-15:09:30:00.PM
10	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLT	TSS	17.37	mg/l	15-03-2022 21:40:22	2022-03-15:09:15:00.PM
11	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLT	TSS	17.87	mg/l	15-03-2022 20:55:47	2022-03-15:08:30:00.PM
12	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLT	TSS	18.13	mg/l	15-03-2022 20:40:56	2022-03-15:08:15:00.PM
13	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLT	TSS	17.63	mg/l	15-03-2022 20:17:10	2022-03-15:08:00:00.PM
14	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLT	TSS	18.07	mg/l	15-03-2022 20:09:53	2022-03-15:07:45:00.PM
15	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLT	TSS	17.87	mg/l	15-03-2022 19:47:34	2022-03-15:07:30:00.PM
16	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLT	TSS	18.33	mg/l	15-03-2022 19:33:09	2022-03-15:07:15:00.PM
17	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLT	TSS	17.5	mg/l	15-03-2022 19:25:36	2022-03-15:07:00:00.PM
18	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLT	TSS	18	mg/l	15-03-2022 19:03:24	2022-03-15:06:45:00.PM
19	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLT	TSS	18.5	mg/l	15-03-2022 18:55:35	2022-03-15:06:30:00.PM
20	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLT	TSS	18.17	mg/l	15-03-2022 18:40:25	2022-03-15:06:15:00.PM
21	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLT	TSS	17.37	mg/l	15-03-2022 18:25:27	2022-03-15:06:00:00.PM
22	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLT	TSS	17.77	mg/l	15-03-2022 17:56:00	2022-03-15:05:30:00.PM
23	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLT	TSS	17.77	mg/l	15-03-2022 16:25:23	2022-03-15:04:00:00.PM
24	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLT	TSS	17.63	mg/l	15-03-2022 15:55:35	2022-03-15:03:30:00.PM
25	Bokaro Power Supply Company (P) Ltd	66	15BPSCPLT	TSS	17.03	mg/l	15-03-2022 14:10:09	2022-03-15:01:45:00.PM

26	Bokaro Power Supply Company (P) Ltd	66	158PSCPLT	TSS	17.57	mg/l	15-03-2022 13:56:36	2022-03-15 01:30:00 PM
27	Bokaro Power Supply Company (P) Ltd	66	158PSCPLT	TSS	17.83	mg/l	15-03-2022 13:40:32	2022-03-15 01:15:00 PM
28	Bokaro Power Supply Company (P) Ltd	66	158PSCPLT	TSS	17.8	mg/l	15-03-2022 13:25:23	2022-03-15 01:00:00 PM
29	Bokaro Power Supply Company (P) Ltd	66	158PSCPLT	TSS	17.6	mg/l	15-03-2022 12:10:47	2022-03-15 11:45:00 AM
30	Bokaro Power Supply Company (P) Ltd	66	158PSCPLT	TSS	17.9	mg/l	15-03-2022 11:55:44	2022-03-15 11:30:00 AM
31	Bokaro Power Supply Company (P) Ltd	66	158PSCPLT	TSS	19.1	mg/l	15-03-2022 09:55:25	2022-03-15 09:30:00 AM
32	Bokaro Power Supply Company (P) Ltd	66	158PSCPLT	TSS	18.77	mg/l	15-03-2022 09:33:39	2022-03-15 09:15:00 AM
33	Bokaro Power Supply Company (P) Ltd	66	158PSCPLT	TSS	19.47	mg/l	15-03-2022 09:24:33	2022-03-15 09:00:00 AM
34	Bokaro Power Supply Company (P) Ltd	66	158PSCPLT	TSS	20.03	mg/l	15-03-2022 09:02:37	2022-03-15 08:45:00 AM
35	Bokaro Power Supply Company (P) Ltd	66	158PSCPLT	TSS	19.5	mg/l	15-03-2022 08:48:10	2022-03-15 08:30:00 AM
36	Bokaro Power Supply Company (P) Ltd	66	158PSCPLT	TSS	18.7	mg/l	15-03-2022 08:32:10	2022-03-15 08:15:00 AM
37	Bokaro Power Supply Company (P) Ltd	66	158PSCPLT	TSS	19.37	mg/l	15-03-2022 08:25:40	2022-03-15 08:00:00 AM
38	Bokaro Power Supply Company (P) Ltd	66	158PSCPLT	TSS	19.1	mg/l	15-03-2022 08:09:48	2022-03-15 07:45:00 AM
39	Bokaro Power Supply Company (P) Ltd	66	158PSCPLT	TSS	19.07	mg/l	15-03-2022 07:47:24	2022-03-15 07:30:00 AM
40	Bokaro Power Supply Company (P) Ltd	66	158PSCPLT	TSS	18.2	mg/l	15-03-2022 07:18:26	2022-03-15 07:00:00 AM
41	Bokaro Power Supply Company (P) Ltd	66	158PSCPLT	TSS	18.17	mg/l	15-03-2022 07:04:03	2022-03-15 06:45:00 AM
42	Bokaro Power Supply Company (P) Ltd	66	158PSCPLT	TSS	19.1	mg/l	15-03-2022 06:25:06	2022-03-15 06:00:00 AM
43	Bokaro Power Supply Company (P) Ltd	66	158PSCPLT	TSS	18.5	mg/l	15-03-2022 06:03:26	2022-03-15 05:45:00 AM
44	Bokaro Power Supply Company (P) Ltd	66	158PSCPLT	TSS	18.37	mg/l	15-03-2022 05:47:10	2022-03-15 05:30:00 AM
45	Bokaro Power Supply Company (P) Ltd	66	158PSCPLT	TSS	18.83	mg/l	15-03-2022 05:40:00	2022-03-15 05:15:00 AM
46	Bokaro Power Supply Company (P) Ltd	66	158PSCPLT	TSS	18.67	mg/l	15-03-2022 05:09:14	2022-03-15 04:45:00 AM
47	Bokaro Power Supply Company (P) Ltd	66	158PSCPLT	TSS	18.5	mg/l	15-03-2022 04:55:05	2022-03-15 04:30:00 AM
48	Bokaro Power Supply Company (P) Ltd	66	158PSCPLT	TSS	18.87	mg/l	15-03-2022 04:25:14	2022-03-15 04:00:00 AM
49	Bokaro Power Supply Company (P) Ltd	66	158PSCPLT	TSS	18.3	mg/l	15-03-2022 04:10:10	2022-03-15 03:45:00 AM
50	Bokaro Power Supply Company (P) Ltd	66	158PSCPLT	TSS	18.87	mg/l	15-03-2022 03:55:35	2022-03-15 03:30:00 AM
51	Bokaro Power Supply Company (P) Ltd	66	158PSCPLT	TSS	19.27	mg/l	15-03-2022 03:25:27	2022-03-15 03:00:00 AM
52	Bokaro Power Supply Company (P) Ltd	66	158PSCPLT	TSS	18.57	mg/l	15-03-2022 03:10:06	2022-03-15 02:45:00 AM

Real time Online emission (SPM) report

Jharkhand State Pollution Control Board

Vendor: Knowledgale | Industry: Bokaro Powe | Station ID: STACK_2_B | Analyzer ID: jhar_analyze | Select Date: 2022-03-15 | Get Data Export

55 Records Found

Sl. No	Industry Name	stationId	analyserId	Parameter	Process Value	Unit	Submitted Date	Timestamp of Analyser
1	Bokaro Power Supply Company Pvt Ltd.	STACK_2_Boiler_2	jhar_analyzer_12	PM	52.04	mg/Nm3	15-03-2022 23:23:30	2022-03-15 23:00
2	Bokaro Power Supply Company Pvt Ltd.	STACK_2_Boiler_2	jhar_analyzer_12	PM	51.25	mg/Nm3	15-03-2022 23:08:14	2022-03-15 22:45
3	Bokaro Power Supply Company Pvt Ltd.	STACK_2_Boiler_2	jhar_analyzer_12	PM	52.66	mg/Nm3	15-03-2022 22:53:13	2022-03-15 22:30
4	Bokaro Power Supply Company Pvt Ltd.	STACK_2_Boiler_2	jhar_analyzer_12	PM	54.26	mg/Nm3	15-03-2022 21:53:23	2022-03-15 21:30
5	Bokaro Power Supply Company Pvt Ltd.	STACK_2_Boiler_2	jhar_analyzer_12	PM	53.36	mg/Nm3	15-03-2022 21:24:13	2022-03-15 21:00
6	Bokaro Power Supply Company Pvt Ltd.	STACK_2_Boiler_2	jhar_analyzer_12	PM	52.21	mg/Nm3	15-03-2022 21:08:32	2022-03-15 20:45
7	Bokaro Power Supply Company Pvt Ltd.	STACK_2_Boiler_2	jhar_analyzer_12	PM	52.48	mg/Nm3	15-03-2022 20:23:25	2022-03-15 20:00
8	Bokaro Power Supply Company Pvt Ltd.	STACK_2_Boiler_2	jhar_analyzer_12	PM	51.93	mg/Nm3	15-03-2022 19:38:37	2022-03-15 19:15
9	Bokaro Power Supply Company Pvt Ltd.	STACK_2_Boiler_2	jhar_analyzer_12	PM	52.04	mg/Nm3	15-03-2022 19:08:13	2022-03-15 18:45
10	Bokaro Power Supply Company Pvt Ltd.	STACK_2_Boiler_2	jhar_analyzer_12	PM	52.69	mg/Nm3	15-03-2022 18:24:07	2022-03-15 18:00
11	Bokaro Power Supply Company Pvt Ltd.	STACK_2_Boiler_2	jhar_analyzer_12	PM	52.87	mg/Nm3	15-03-2022 18:08:53	2022-03-15 17:45
12	Bokaro Power Supply Company Pvt Ltd.	STACK_2_Boiler_2	jhar_analyzer_12	PM	52.09	mg/Nm3	15-03-2022 17:38:54	2022-03-15 17:15
13	Bokaro Power Supply Company Pvt Ltd.	STACK_2_Boiler_2	jhar_analyzer_12	PM	54.84	mg/Nm3	15-03-2022 17:08:52	2022-03-15 16:45
14	Bokaro Power Supply Company Pvt Ltd.	STACK_2_Boiler_2	jhar_analyzer_12	PM	54.81	mg/Nm3	15-03-2022 16:39:01	2022-03-15 16:15
15	Bokaro Power Supply Company Pvt Ltd.	STACK_2_Boiler_2	jhar_analyzer_12	PM	54.61	mg/Nm3	15-03-2022 16:23:44	2022-03-15 16:00
16	Bokaro Power Supply Company Pvt Ltd.	STACK_2_Boiler_2	jhar_analyzer_12	PM	54.77	mg/Nm3	15-03-2022 15:38:55	2022-03-15 15:15
17	Bokaro Power Supply Company Pvt Ltd.	STACK_2_Boiler_2	jhar_analyzer_12	PM	56.09	mg/Nm3	15-03-2022 15:24:04	2022-03-15 15:00
18	Bokaro Power Supply Company Pvt Ltd.	STACK_2_Boiler_2	jhar_analyzer_12	PM	54.53	mg/Nm3	15-03-2022 15:09:05	2022-03-15 14:45
19	Bokaro Power Supply Company Pvt Ltd.	STACK_2_Boiler_2	jhar_analyzer_12	PM	54.53	mg/Nm3	15-03-2022 14:38:53	2022-03-15 14:15
20	Bokaro Power Supply Company Pvt Ltd.	STACK_2_Boiler_2	jhar_analyzer_12	PM	53.84	mg/Nm3	15-03-2022 14:23:57	2022-03-15 14:00
21	Bokaro Power Supply Company Pvt Ltd.	STACK_2_Boiler_2	jhar_analyzer_12	PM	53.28	mg/Nm3	15-03-2022 13:08:42	2022-03-15 12:45
22	Bokaro Power Supply Company Pvt Ltd.	STACK_2_Boiler_2	jhar_analyzer_12	PM	53.60	mg/Nm3	15-03-2022 12:54:16	2022-03-15 12:30
23	Bokaro Power Supply Company Pvt Ltd.	STACK_2_Boiler_2	jhar_analyzer_12	PM	53.15	mg/Nm3	15-03-2022 12:39:30	2022-03-15 12:15
24	Bokaro Power Supply Company Pvt Ltd.	STACK_2_Boiler_2	jhar_analyzer_12	PM	53.67	mg/Nm3	15-03-2022 12:08:55	2022-03-15 11:45
25	Bokaro Power Supply Company Pvt Ltd.	STACK_2_Boiler_2	jhar_analyzer_12	PM	54.99	mg/Nm3	15-03-2022 11:53:44	2022-03-15 11:30

Jharkhand State Pollution Control Board

Vendor: Knowledgele | Industry: Bokaro Powe | Station ID: STACK_3_B | Analyzer ID: jhar_analyze | Select Date: 2022-03-15 | Get Data | Export

69 Records Found

Sl. No	Industry Name	stationid	analyserid	Parameter	Process Value	Unit	Submitted Date	Timestamp of Analyser
1	Bokaro Power Supply Company Pvt Ltd.	STACK_3_Boiler_3	jhar_analyzer_12	PM	33.71	mg/Nm3	15-03-2022 23:53:48	2022-03-15 23:30
2	Bokaro Power Supply Company Pvt Ltd.	STACK_3_Boiler_3	jhar_analyzer_12	PM	36.28	mg/Nm3	15-03-2022 23:38:27	2022-03-15 23:15
3	Bokaro Power Supply Company Pvt Ltd.	STACK_3_Boiler_3	jhar_analyzer_12	PM	34.33	mg/Nm3	15-03-2022 23:23:30	2022-03-15 23:00
4	Bokaro Power Supply Company Pvt Ltd.	STACK_3_Boiler_3	jhar_analyzer_12	PM	34.64	mg/Nm3	15-03-2022 23:08:18	2022-03-15 22:45
5	Bokaro Power Supply Company Pvt Ltd.	STACK_3_Boiler_3	jhar_analyzer_12	PM	37.21	mg/Nm3	15-03-2022 22:39:00	2022-03-15 22:15
6	Bokaro Power Supply Company Pvt Ltd.	STACK_3_Boiler_3	jhar_analyzer_12	PM	34.93	mg/Nm3	15-03-2022 22:24:20	2022-03-15 22:00
7	Bokaro Power Supply Company Pvt Ltd.	STACK_3_Boiler_3	jhar_analyzer_12	PM	32.96	mg/Nm3	15-03-2022 21:53:23	2022-03-15 21:30
8	Bokaro Power Supply Company Pvt Ltd.	STACK_3_Boiler_3	jhar_analyzer_12	PM	33.06	mg/Nm3	15-03-2022 21:08:36	2022-03-15 20:45
9	Bokaro Power Supply Company Pvt Ltd.	STACK_3_Boiler_3	jhar_analyzer_12	PM	33.88	mg/Nm3	15-03-2022 20:23:58	2022-03-15 20:00
10	Bokaro Power Supply Company Pvt Ltd.	STACK_3_Boiler_3	jhar_analyzer_12	PM	32.88	mg/Nm3	15-03-2022 19:39:05	2022-03-15 19:15
11	Bokaro Power Supply Company Pvt Ltd.	STACK_3_Boiler_3	jhar_analyzer_12	PM	31.95	mg/Nm3	15-03-2022 19:24:12	2022-03-15 19:00
12	Bokaro Power Supply Company Pvt Ltd.	STACK_3_Boiler_3	jhar_analyzer_12	PM	30.49	mg/Nm3	15-03-2022 19:08:14	2022-03-15 18:45
13	Bokaro Power Supply Company Pvt Ltd.	STACK_3_Boiler_3	jhar_analyzer_12	PM	30.55	mg/Nm3	15-03-2022 18:54:08	2022-03-15 18:30
14	Bokaro Power Supply Company Pvt Ltd.	STACK_3_Boiler_3	jhar_analyzer_12	PM	30.42	mg/Nm3	15-03-2022 18:24:06	2022-03-15 18:00
15	Bokaro Power Supply Company Pvt Ltd.	STACK_3_Boiler_3	jhar_analyzer_12	PM	31.19	mg/Nm3	15-03-2022 17:54:28	2022-03-15 17:30
16	Bokaro Power Supply Company Pvt Ltd.	STACK_3_Boiler_3	jhar_analyzer_12	PM	34.71	mg/Nm3	15-03-2022 17:39:15	2022-03-15 17:15
17	Bokaro Power Supply Company Pvt Ltd.	STACK_3_Boiler_3	jhar_analyzer_12	PM	40.14	mg/Nm3	15-03-2022 17:09:31	2022-03-15 16:45
18	Bokaro Power Supply Company Pvt Ltd.	STACK_3_Boiler_3	jhar_analyzer_12	PM	41.47	mg/Nm3	15-03-2022 16:39:17	2022-03-15 16:15
19	Bokaro Power Supply Company Pvt Ltd.	STACK_3_Boiler_3	jhar_analyzer_12	PM	42.39	mg/Nm3	15-03-2022 16:09:36	2022-03-15 15:45
20	Bokaro Power Supply Company Pvt Ltd.	STACK_3_Boiler_3	jhar_analyzer_12	PM	40.84	mg/Nm3	15-03-2022 15:53:35	2022-03-15 15:30
21	Bokaro Power Supply Company Pvt Ltd.	STACK_3_Boiler_3	jhar_analyzer_12	PM	41.61	mg/Nm3	15-03-2022 15:24:14	2022-03-15 15:00
22	Bokaro Power Supply Company Pvt Ltd.	STACK_3_Boiler_3	jhar_analyzer_12	PM	44.30	mg/Nm3	15-03-2022 15:09:06	2022-03-15 14:45
23	Bokaro Power Supply Company Pvt Ltd.	STACK_3_Boiler_3	jhar_analyzer_12	PM	38.11	mg/Nm3	15-03-2022 14:23:53	2022-03-15 14:00
24	Bokaro Power Supply Company Pvt Ltd.	STACK_3_Boiler_3	jhar_analyzer_12	PM	33.91	mg/Nm3	15-03-2022 13:39:37	2022-03-15 13:15
25	Bokaro Power Supply Company Pvt Ltd.	STACK_3_Boiler_3	jhar_analyzer_12	PM	36.21	mg/Nm3	15-03-2022 13:09:42	2022-03-15 12:45

Jharkhand State Pollution Control Board

CEMS Data Analyzer (http://jsac.jharkhand.gov.in/portal/)

Vendor	Industry	Station ID	Analyzer ID	Select Date	
Knowledgele	Bokaro Powe	STACK_4_B	jhar_analyze	2022-03-15	Get Data Export

61 Records Found

Sl. No	Industry Name	stationId	analyserId	Parameter	Process Value	Unit	Submitted Date	Timestamp of Analyser
1	Bokaro Power Supply Company Pvt Ltd.	STACK_4_Boiler_4	jhar_analyzer_12	PM	66.76	mg/Nm3	15-03-2022 23:53:44	2022-03-15 23:30
2	Bokaro Power Supply Company Pvt Ltd.	STACK_4_Boiler_4	jhar_analyzer_12	PM	60.11	mg/Nm3	15-03-2022 23:39:56	2022-03-15 23:15
3	Bokaro Power Supply Company Pvt Ltd.	STACK_4_Boiler_4	jhar_analyzer_12	PM	56.40	mg/Nm3	15-03-2022 23:23:44	2022-03-15 23:00
4	Bokaro Power Supply Company Pvt Ltd.	STACK_4_Boiler_4	jhar_analyzer_12	PM	60.07	mg/Nm3	15-03-2022 23:08:23	2022-03-15 22:45
5	Bokaro Power Supply Company Pvt Ltd.	STACK_4_Boiler_4	jhar_analyzer_12	PM	63.98	mg/Nm3	15-03-2022 22:09:13	2022-03-15 21:45
6	Bokaro Power Supply Company Pvt Ltd.	STACK_4_Boiler_4	jhar_analyzer_12	PM	61.41	mg/Nm3	15-03-2022 21:54:02	2022-03-15 21:30
7	Bokaro Power Supply Company Pvt Ltd.	STACK_4_Boiler_4	jhar_analyzer_12	PM	66.05	mg/Nm3	15-03-2022 21:38:46	2022-03-15 21:15
8	Bokaro Power Supply Company Pvt Ltd.	STACK_4_Boiler_4	jhar_analyzer_12	PM	58.96	mg/Nm3	15-03-2022 21:08:37	2022-03-15 20:45
9	Bokaro Power Supply Company Pvt Ltd.	STACK_4_Boiler_4	jhar_analyzer_12	PM	57.31	mg/Nm3	15-03-2022 20:38:52	2022-03-15 20:15
10	Bokaro Power Supply Company Pvt Ltd.	STACK_4_Boiler_4	jhar_analyzer_12	PM	57.04	mg/Nm3	15-03-2022 20:23:41	2022-03-15 20:00
11	Bokaro Power Supply Company Pvt Ltd.	STACK_4_Boiler_4	jhar_analyzer_12	PM	57.21	mg/Nm3	15-03-2022 19:53:20	2022-03-15 19:30
12	Bokaro Power Supply Company Pvt Ltd.	STACK_4_Boiler_4	jhar_analyzer_12	PM	57.23	mg/Nm3	15-03-2022 19:38:36	2022-03-15 19:15
13	Bokaro Power Supply Company Pvt Ltd.	STACK_4_Boiler_4	jhar_analyzer_12	PM	58.66	mg/Nm3	15-03-2022 19:08:13	2022-03-15 18:45
14	Bokaro Power Supply Company Pvt Ltd.	STACK_4_Boiler_4	jhar_analyzer_12	PM	59.40	mg/Nm3	15-03-2022 18:08:50	2022-03-15 17:45
15	Bokaro Power Supply Company Pvt Ltd.	STACK_4_Boiler_4	jhar_analyzer_12	PM	59.84	mg/Nm3	15-03-2022 17:38:54	2022-03-15 17:15
16	Bokaro Power Supply Company Pvt Ltd.	STACK_4_Boiler_4	jhar_analyzer_12	PM	66.04	mg/Nm3	15-03-2022 17:08:18	2022-03-15 16:45
17	Bokaro Power Supply Company Pvt Ltd.	STACK_4_Boiler_4	jhar_analyzer_12	PM	62.57	mg/Nm3	15-03-2022 16:54:00	2022-03-15 16:30
18	Bokaro Power Supply Company Pvt Ltd.	STACK_4_Boiler_4	jhar_analyzer_12	PM	67.99	mg/Nm3	15-03-2022 16:39:09	2022-03-15 16:15
19	Bokaro Power Supply Company Pvt Ltd.	STACK_4_Boiler_4	jhar_analyzer_12	PM	54.10	mg/Nm3	15-03-2022 16:23:49	2022-03-15 16:00
20	Bokaro Power Supply Company Pvt Ltd.	STACK_4_Boiler_4	jhar_analyzer_12	PM	59.07	mg/Nm3	15-03-2022 15:53:52	2022-03-15 15:30
21	Bokaro Power Supply Company Pvt Ltd.	STACK_4_Boiler_4	jhar_analyzer_12	PM	62.09	mg/Nm3	15-03-2022 15:39:18	2022-03-15 15:15
22	Bokaro Power Supply Company Pvt Ltd.	STACK_4_Boiler_4	jhar_analyzer_12	PM	58.44	mg/Nm3	15-03-2022 15:24:06	2022-03-15 15:00
23	Bokaro Power Supply Company Pvt Ltd.	STACK_4_Boiler_4	jhar_analyzer_12	PM	65.84	mg/Nm3	15-03-2022 15:09:05	2022-03-15 14:45
24	Bokaro Power Supply Company Pvt Ltd.	STACK_4_Boiler_4	jhar_analyzer_12	PM	64.55	mg/Nm3	15-03-2022 14:24:09	2022-03-15 14:00
25	Bokaro Power Supply Company Pvt Ltd.	STACK_4_Boiler_4	jhar_analyzer_12	PM	62.07	mg/Nm3	15-03-2022 13:08:45	2022-03-15 12:45

Jharkhand State Pollution Control Board

Vendor: Knowledgeis | Industry: Bokaro Powe | Station ID: STACK_6_B | Analyzer ID: jher_analyze | Select Date: 2022-03-15 | Get Data | Export

63 Records Found

Sl. No	Industry Name	stationId	analyserId	Parameter	Process Value	Unit	Submitted Date	Timestamp of Analyser
1	Bokaro Power Supply Company Pvt Ltd.	STACK_6_Boiler_6	jher_analyzer_12	PM	23.00	mg/Nm3	15-03-2022 23:53:35	2022-03-15 23:30
2	Bokaro Power Supply Company Pvt Ltd.	STACK_6_Boiler_6	jher_analyzer_12	PM	23.05	mg/Nm3	15-03-2022 23:39:43	2022-03-15 23:15
3	Bokaro Power Supply Company Pvt Ltd.	STACK_6_Boiler_6	jher_analyzer_12	PM	23.08	mg/Nm3	15-03-2022 23:23:29	2022-03-15 23:00
4	Bokaro Power Supply Company Pvt Ltd.	STACK_6_Boiler_6	jher_analyzer_12	PM	23.07	mg/Nm3	15-03-2022 23:08:21	2022-03-15 22:45
5	Bokaro Power Supply Company Pvt Ltd.	STACK_6_Boiler_6	jher_analyzer_12	PM	23.14	mg/Nm3	15-03-2022 22:24:16	2022-03-15 22:00
6	Bokaro Power Supply Company Pvt Ltd.	STACK_6_Boiler_6	jher_analyzer_12	PM	23.14	mg/Nm3	15-03-2022 21:39:20	2022-03-15 21:15
7	Bokaro Power Supply Company Pvt Ltd.	STACK_6_Boiler_6	jher_analyzer_12	PM	23.15	mg/Nm3	15-03-2022 20:38:24	2022-03-15 20:15
8	Bokaro Power Supply Company Pvt Ltd.	STACK_6_Boiler_6	jher_analyzer_12	PM	23.14	mg/Nm3	15-03-2022 20:23:59	2022-03-15 20:00
9	Bokaro Power Supply Company Pvt Ltd.	STACK_6_Boiler_6	jher_analyzer_12	PM	23.16	mg/Nm3	15-03-2022 20:08:51	2022-03-15 19:45
10	Bokaro Power Supply Company Pvt Ltd.	STACK_6_Boiler_6	jher_analyzer_12	PM	23.15	mg/Nm3	15-03-2022 19:53:15	2022-03-15 19:30
11	Bokaro Power Supply Company Pvt Ltd.	STACK_6_Boiler_6	jher_analyzer_12	PM	23.15	mg/Nm3	15-03-2022 19:38:50	2022-03-15 19:15
12	Bokaro Power Supply Company Pvt Ltd.	STACK_6_Boiler_6	jher_analyzer_12	PM	23.17	mg/Nm3	15-03-2022 19:24:13	2022-03-15 19:00
13	Bokaro Power Supply Company Pvt Ltd.	STACK_6_Boiler_6	jher_analyzer_12	PM	23.16	mg/Nm3	15-03-2022 19:08:14	2022-03-15 18:45
14	Bokaro Power Supply Company Pvt Ltd.	STACK_6_Boiler_6	jher_analyzer_12	PM	23.17	mg/Nm3	15-03-2022 18:54:31	2022-03-15 18:30
15	Bokaro Power Supply Company Pvt Ltd.	STACK_6_Boiler_6	jher_analyzer_12	PM	23.15	mg/Nm3	15-03-2022 18:24:09	2022-03-15 18:00
16	Bokaro Power Supply Company Pvt Ltd.	STACK_6_Boiler_6	jher_analyzer_12	PM	23.15	mg/Nm3	15-03-2022 18:09:09	2022-03-15 17:45
17	Bokaro Power Supply Company Pvt Ltd.	STACK_6_Boiler_6	jher_analyzer_12	PM	23.16	mg/Nm3	15-03-2022 17:54:31	2022-03-15 17:30
18	Bokaro Power Supply Company Pvt Ltd.	STACK_6_Boiler_6	jher_analyzer_12	PM	23.14	mg/Nm3	15-03-2022 17:39:13	2022-03-15 17:15
19	Bokaro Power Supply Company Pvt Ltd.	STACK_6_Boiler_6	jher_analyzer_12	PM	23.00	mg/Nm3	15-03-2022 17:24:19	2022-03-15 17:00
20	Bokaro Power Supply Company Pvt Ltd.	STACK_6_Boiler_6	jher_analyzer_12	PM	22.96	mg/Nm3	15-03-2022 17:09:06	2022-03-15 16:45
21	Bokaro Power Supply Company Pvt Ltd.	STACK_6_Boiler_6	jher_analyzer_12	PM	23.03	mg/Nm3	15-03-2022 16:54:05	2022-03-15 16:30
22	Bokaro Power Supply Company Pvt Ltd.	STACK_6_Boiler_6	jher_analyzer_12	PM	23.16	mg/Nm3	15-03-2022 16:38:59	2022-03-15 16:15
23	Bokaro Power Supply Company Pvt Ltd.	STACK_6_Boiler_6	jher_analyzer_12	PM	22.99	mg/Nm3	15-03-2022 16:08:40	2022-03-15 15:45
24	Bokaro Power Supply Company Pvt Ltd.	STACK_6_Boiler_6	jher_analyzer_12	PM	22.96	mg/Nm3	15-03-2022 15:54:04	2022-03-15 15:30
25	Bokaro Power Supply Company Pvt Ltd.	STACK_6_Boiler_6	jher_analyzer_12	PM	22.98	mg/Nm3	15-03-2022 15:39:21	2022-03-15 15:15

Click to ... Analyzer (http://jsac.jharkhand.gov.in/...)

Jharkhand State Pollution Control Board

Vendor	Industry	Station ID	Analyzer ID	Select Date	
Knowledgele	Bokaro Powe	STACK_5_B	jhar_analyze	2022-03-23	Get Data Export

28 Records Found

SL No	Industry Name	stationid	analyserid	Parameter	Process Value	Unit	Submitted Date	Timestamp of Analyser
1	Bokaro Power Supply Company Pvt Ltd.	STACK_5_Boiler_5	jhar_analyzer_12	PM	38.75	mg/Nm3	24-03-2022 00:08:08	2022-03-23 23:45
2	Bokaro Power Supply Company Pvt Ltd.	STACK_5_Boiler_5	jhar_analyzer_12	PM	38.74	mg/Nm3	23-03-2022 23:21:07	2022-03-23 23:00
3	Bokaro Power Supply Company Pvt Ltd.	STACK_5_Boiler_5	jhar_analyzer_12	PM	38.77	mg/Nm3	23-03-2022 23:08:07	2022-03-23 22:45
4	Bokaro Power Supply Company Pvt Ltd.	STACK_5_Boiler_5	jhar_analyzer_12	PM	38.79	mg/Nm3	23-03-2022 21:36:56	2022-03-23 21:15
5	Bokaro Power Supply Company Pvt Ltd.	STACK_5_Boiler_5	jhar_analyzer_12	PM	38.79	mg/Nm3	23-03-2022 21:21:14	2022-03-23 21:00
6	Bokaro Power Supply Company Pvt Ltd.	STACK_5_Boiler_5	jhar_analyzer_12	PM	38.69	mg/Nm3	23-03-2022 20:50:42	2022-03-23 20:30
7	Bokaro Power Supply Company Pvt Ltd.	STACK_5_Boiler_5	jhar_analyzer_12	PM	38.73	mg/Nm3	23-03-2022 20:36:02	2022-03-23 20:15
8	Bokaro Power Supply Company Pvt Ltd.	STACK_5_Boiler_5	jhar_analyzer_12	PM	38.72	mg/Nm3	23-03-2022 20:06:42	2022-03-23 19:45
9	Bokaro Power Supply Company Pvt Ltd.	STACK_5_Boiler_5	jhar_analyzer_12	PM	38.69	mg/Nm3	23-03-2022 19:36:07	2022-03-23 19:15
10	Bokaro Power Supply Company Pvt Ltd.	STACK_5_Boiler_5	jhar_analyzer_12	PM	38.64	mg/Nm3	23-03-2022 18:51:24	2022-03-23 18:30
11	Bokaro Power Supply Company Pvt Ltd.	STACK_5_Boiler_5	jhar_analyzer_12	PM	38.68	mg/Nm3	23-03-2022 18:36:24	2022-03-23 18:15
12	Bokaro Power Supply Company Pvt Ltd.	STACK_5_Boiler_5	jhar_analyzer_12	PM	38.68	mg/Nm3	23-03-2022 17:21:18	2022-03-23 17:00
13	Bokaro Power Supply Company Pvt Ltd.	STACK_5_Boiler_5	jhar_analyzer_12	PM	38.72	mg/Nm3	23-03-2022 17:06:11	2022-03-23 16:45
14	Bokaro Power Supply Company Pvt Ltd.	STACK_5_Boiler_5	jhar_analyzer_12	PM	38.85	mg/Nm3	23-03-2022 15:51:14	2022-03-23 15:30
15	Bokaro Power Supply Company Pvt Ltd.	STACK_5_Boiler_5	jhar_analyzer_12	PM	38.84	mg/Nm3	23-03-2022 15:36:26	2022-03-23 15:15
16	Bokaro Power Supply Company Pvt Ltd.	STACK_5_Boiler_5	jhar_analyzer_12	PM	38.76	mg/Nm3	23-03-2022 14:51:33	2022-03-23 14:30
17	Bokaro Power Supply Company Pvt Ltd.	STACK_5_Boiler_5	jhar_analyzer_12	PM	38.72	mg/Nm3	23-03-2022 14:36:35	2022-03-23 14:15
18	Bokaro Power Supply Company Pvt Ltd.	STACK_5_Boiler_5	jhar_analyzer_12	PM	38.75	mg/Nm3	23-03-2022 13:06:16	2022-03-23 12:45
19	Bokaro Power Supply Company Pvt Ltd.	STACK_5_Boiler_5	jhar_analyzer_12	PM	38.82	mg/Nm3	23-03-2022 11:51:11	2022-03-23 11:30
20	Bokaro Power Supply Company Pvt Ltd.	STACK_5_Boiler_5	jhar_analyzer_12	PM	38.76	mg/Nm3	23-03-2022 09:51:08	2022-03-23 09:30
21	Bokaro Power Supply Company Pvt Ltd.	STACK_5_Boiler_5	jhar_analyzer_12	PM	38.79	mg/Nm3	23-03-2022 09:06:10	2022-03-23 08:45
22	Bokaro Power Supply Company Pvt Ltd.	STACK_5_Boiler_5	jhar_analyzer_12	PM	38.68	mg/Nm3	23-03-2022 07:20:41	2022-03-23 07:00
23	Bokaro Power Supply Company Pvt Ltd.	STACK_5_Boiler_5	jhar_analyzer_12	PM	38.87	mg/Nm3	23-03-2022 07:06:37	2022-03-23 06:45
24	Bokaro Power Supply Company Pvt Ltd.	STACK_5_Boiler_5	jhar_analyzer_12	PM	38.82	mg/Nm3	23-03-2022 03:20:40	2022-03-23 03:00
25	Bokaro Power Supply Company Pvt Ltd.	STACK_5_Boiler_5	jhar_analyzer_12	PM	38.85	mg/Nm3	23-03-2022 03:06:08	2022-03-23 02:45

Jharkhand State Pollution Control Board

Vendor: Knowledgete | Industry: Bokaro Powe | Station ID: STACK_8_B | Analyzer ID: jhar_analyze | Select Date: 2022-03-23 | Get Data Export

26 Records Found

Sl. No	Industry Name	stationId	analyserId	Parameter	Process Value	Unit	Submitted Date	Timestamp of Analyser
1	Bokaro Power Supply Company Pvt Ltd.	STACK_8_Boiler_8	jhar_analyzer_12	PM	28.07	mg/Nm3	23-03-2022 23:21:06	2022-03-23 23:00
2	Bokaro Power Supply Company Pvt Ltd.	STACK_8_Boiler_8	jhar_analyzer_12	PM	26.29	mg/Nm3	23-03-2022 20:21:04	2022-03-23 20:00
3	Bokaro Power Supply Company Pvt Ltd.	STACK_8_Boiler_8	jhar_analyzer_12	PM	31.97	mg/Nm3	23-03-2022 19:51:49	2022-03-23 19:30
4	Bokaro Power Supply Company Pvt Ltd.	STACK_8_Boiler_8	jhar_analyzer_12	PM	28.60	mg/Nm3	23-03-2022 19:21:17	2022-03-23 19:00
5	Bokaro Power Supply Company Pvt Ltd.	STACK_8_Boiler_8	jhar_analyzer_12	PM	29.07	mg/Nm3	23-03-2022 17:21:30	2022-03-23 17:00
6	Bokaro Power Supply Company Pvt Ltd.	STACK_8_Boiler_8	jhar_analyzer_12	PM	25.54	mg/Nm3	23-03-2022 17:06:14	2022-03-23 16:45
7	Bokaro Power Supply Company Pvt Ltd.	STACK_8_Boiler_8	jhar_analyzer_12	PM	27.88	mg/Nm3	23-03-2022 16:36:20	2022-03-23 16:15
8	Bokaro Power Supply Company Pvt Ltd.	STACK_8_Boiler_8	jhar_analyzer_12	PM	31.21	mg/Nm3	23-03-2022 16:06:28	2022-03-23 15:45
9	Bokaro Power Supply Company Pvt Ltd.	STACK_8_Boiler_8	jhar_analyzer_12	PM	30.65	mg/Nm3	23-03-2022 15:51:14	2022-03-23 15:30
10	Bokaro Power Supply Company Pvt Ltd.	STACK_8_Boiler_8	jhar_analyzer_12	PM	28.47	mg/Nm3	23-03-2022 14:06:30	2022-03-23 13:45
11	Bokaro Power Supply Company Pvt Ltd.	STACK_8_Boiler_8	jhar_analyzer_12	PM	27.67	mg/Nm3	23-03-2022 13:36:26	2022-03-23 13:15
12	Bokaro Power Supply Company Pvt Ltd.	STACK_8_Boiler_8	jhar_analyzer_12	PM	29.56	mg/Nm3	23-03-2022 13:21:18	2022-03-23 13:00
13	Bokaro Power Supply Company Pvt Ltd.	STACK_8_Boiler_8	jhar_analyzer_12	PM	28.28	mg/Nm3	23-03-2022 13:06:21	2022-03-23 12:45
14	Bokaro Power Supply Company Pvt Ltd.	STACK_8_Boiler_8	jhar_analyzer_12	PM	25.68	mg/Nm3	23-03-2022 11:51:37	2022-03-23 11:30
15	Bokaro Power Supply Company Pvt Ltd.	STACK_8_Boiler_8	jhar_analyzer_12	PM	26.36	mg/Nm3	23-03-2022 11:21:14	2022-03-23 11:00
16	Bokaro Power Supply Company Pvt Ltd.	STACK_8_Boiler_8	jhar_analyzer_12	PM	23.74	mg/Nm3	23-03-2022 09:51:11	2022-03-23 09:30
17	Bokaro Power Supply Company Pvt Ltd.	STACK_8_Boiler_8	jhar_analyzer_12	PM	20.51	mg/Nm3	23-03-2022 05:51:09	2022-03-23 05:30
18	Bokaro Power Supply Company Pvt Ltd.	STACK_8_Boiler_8	jhar_analyzer_12	PM	21.92	mg/Nm3	23-03-2022 05:21:19	2022-03-23 05:00
19	Bokaro Power Supply Company Pvt Ltd.	STACK_8_Boiler_8	jhar_analyzer_12	PM	26.37	mg/Nm3	23-03-2022 04:21:43	2022-03-23 04:00
20	Bokaro Power Supply Company Pvt Ltd.	STACK_8_Boiler_8	jhar_analyzer_12	PM	25.64	mg/Nm3	23-03-2022 03:20:53	2022-03-23 03:00
21	Bokaro Power Supply Company Pvt Ltd.	STACK_8_Boiler_8	jhar_analyzer_12	PM	27.91	mg/Nm3	23-03-2022 03:06:04	2022-03-23 02:45
22	Bokaro Power Supply Company Pvt Ltd.	STACK_8_Boiler_8	jhar_analyzer_12	PM	27.55	mg/Nm3	23-03-2022 02:51:30	2022-03-23 02:30
23	Bokaro Power Supply Company Pvt Ltd.	STACK_8_Boiler_8	jhar_analyzer_12	PM	28.90	mg/Nm3	23-03-2022 02:05:58	2022-03-23 01:45
24	Bokaro Power Supply Company Pvt Ltd.	STACK_8_Boiler_8	jhar_analyzer_12	PM	27.15	mg/Nm3	23-03-2022 01:37:25	2022-03-23 01:15
25	Bokaro Power Supply Company Pvt Ltd.	STACK_8_Boiler_8	jhar_analyzer_12	PM	28.49	mg/Nm3	23-03-2022 01:07:49	2022-03-23 00:45

CEMS Data Analyzer (http://jsac.jharkhand.gov.in/...)

Jharkhand State Pollution Control Board

Vendor	Industry	Station ID	Analyzer ID	Select Date	
Knowledgele	Bokaro Powe	STACK_9_B	jhar_analyze	2022-03-15	Get Data Export

59 Records Found

Sl. No	Industry Name	stationid	analyserid	Parameter	Process Value	Unit	Submitted Date	Timestamp of Analyser
1	Bokaro Power Supply Company Pvt Ltd.	STACK_9_Boiler_9	jhar_analyzer_12	PM	25.78	mg/Nm3	15-03-2022 23:53:59	2022-03-15 23:30
2	Bokaro Power Supply Company Pvt Ltd.	STACK_9_Boiler_9	jhar_analyzer_12	PM	30.02	mg/Nm3	15-03-2022 23:23:35	2022-03-15 23:00
3	Bokaro Power Supply Company Pvt Ltd.	STACK_9_Boiler_9	jhar_analyzer_12	PM	25.76	mg/Nm3	15-03-2022 23:08:21	2022-03-15 22:45
4	Bokaro Power Supply Company Pvt Ltd.	STACK_9_Boiler_9	jhar_analyzer_12	PM	27.31	mg/Nm3	15-03-2022 22:54:40	2022-03-15 22:30
5	Bokaro Power Supply Company Pvt Ltd.	STACK_9_Boiler_9	jhar_analyzer_12	PM	25.85	mg/Nm3	15-03-2022 22:38:56	2022-03-15 22:15
6	Bokaro Power Supply Company Pvt Ltd.	STACK_9_Boiler_9	jhar_analyzer_12	PM	26.30	mg/Nm3	15-03-2022 22:24:16	2022-03-15 22:00
7	Bokaro Power Supply Company Pvt Ltd.	STACK_9_Boiler_9	jhar_analyzer_12	PM	27.95	mg/Nm3	15-03-2022 21:53:52	2022-03-15 21:30
8	Bokaro Power Supply Company Pvt Ltd.	STACK_9_Boiler_9	jhar_analyzer_12	PM	24.89	mg/Nm3	15-03-2022 21:39:13	2022-03-15 21:15
9	Bokaro Power Supply Company Pvt Ltd.	STACK_9_Boiler_9	jhar_analyzer_12	PM	32.98	mg/Nm3	15-03-2022 21:23:56	2022-03-15 21:00
10	Bokaro Power Supply Company Pvt Ltd.	STACK_9_Boiler_9	jhar_analyzer_12	PM	25.46	mg/Nm3	15-03-2022 20:38:24	2022-03-15 20:15
11	Bokaro Power Supply Company Pvt Ltd.	STACK_9_Boiler_9	jhar_analyzer_12	PM	26.31	mg/Nm3	15-03-2022 20:23:49	2022-03-15 20:00
12	Bokaro Power Supply Company Pvt Ltd.	STACK_9_Boiler_9	jhar_analyzer_12	PM	26.47	mg/Nm3	15-03-2022 19:39:05	2022-03-15 19:15
13	Bokaro Power Supply Company Pvt Ltd.	STACK_9_Boiler_9	jhar_analyzer_12	PM	26.14	mg/Nm3	15-03-2022 19:08:25	2022-03-15 18:45
14	Bokaro Power Supply Company Pvt Ltd.	STACK_9_Boiler_9	jhar_analyzer_12	PM	26.57	mg/Nm3	15-03-2022 18:54:17	2022-03-15 18:30
15	Bokaro Power Supply Company Pvt Ltd.	STACK_9_Boiler_9	jhar_analyzer_12	PM	26.05	mg/Nm3	15-03-2022 18:09:00	2022-03-15 17:45
16	Bokaro Power Supply Company Pvt Ltd.	STACK_9_Boiler_9	jhar_analyzer_12	PM	25.87	mg/Nm3	15-03-2022 17:54:28	2022-03-15 17:30
17	Bokaro Power Supply Company Pvt Ltd.	STACK_9_Boiler_9	jhar_analyzer_12	PM	25.13	mg/Nm3	15-03-2022 17:39:15	2022-03-15 17:15
18	Bokaro Power Supply Company Pvt Ltd.	STACK_9_Boiler_9	jhar_analyzer_12	PM	26.68	mg/Nm3	15-03-2022 17:09:19	2022-03-15 16:45
19	Bokaro Power Supply Company Pvt Ltd.	STACK_9_Boiler_9	jhar_analyzer_12	PM	24.59	mg/Nm3	15-03-2022 16:39:09	2022-03-15 16:15
20	Bokaro Power Supply Company Pvt Ltd.	STACK_9_Boiler_9	jhar_analyzer_12	PM	28.28	mg/Nm3	15-03-2022 15:53:42	2022-03-15 15:30
21	Bokaro Power Supply Company Pvt Ltd.	STACK_9_Boiler_9	jhar_analyzer_12	PM	30.80	mg/Nm3	15-03-2022 15:24:16	2022-03-15 15:00
22	Bokaro Power Supply Company Pvt Ltd.	STACK_9_Boiler_9	jhar_analyzer_12	PM	25.67	mg/Nm3	15-03-2022 14:23:44	2022-03-15 14:00
23	Bokaro Power Supply Company Pvt Ltd.	STACK_9_Boiler_9	jhar_analyzer_12	PM	26.80	mg/Nm3	15-03-2022 14:09:18	2022-03-15 13:45
24	Bokaro Power Supply Company Pvt Ltd.	STACK_9_Boiler_9	jhar_analyzer_12	PM	26.62	mg/Nm3	15-03-2022 13:54:25	2022-03-15 13:30
25	Bokaro Power Supply Company Pvt Ltd.	STACK_9_Boiler_9	jhar_analyzer_12	PM	28.39	mg/Nm3	15-03-2022 13:39:39	2022-03-15 13:15

Jharkhand State Pollution Control Board

CEMS Data Analyzer (http://sac.jharkhandspcb.org.in/)

Vendor	Industry	Station ID	Analyzer ID	Select Date	
Knowledgele	Bokaro Powe	STACK_7_B	jhar_analyze	2022-03-15	Get Data Export

60 Records Found

Sl. No	Industry Name	stationId	analyserId	Parameter	Process Value	Unit	Submitted Date	Timestamp of Analyser
1	Bokaro Power Supply Company Pvt Ltd.	STACK_7_Boiler_7	jhar_analyzer_12	PM	21.07	mg/Nm3	15-03-2022 23:23:31	2022-03-15 23:00
2	Bokaro Power Supply Company Pvt Ltd.	STACK_7_Boiler_7	jhar_analyzer_12	PM	20.11	mg/Nm3	15-03-2022 23:08:14	2022-03-15 22:45
3	Bokaro Power Supply Company Pvt Ltd.	STACK_7_Boiler_7	jhar_analyzer_12	PM	20.44	mg/Nm3	15-03-2022 22:08:39	2022-03-15 21:45
4	Bokaro Power Supply Company Pvt Ltd.	STACK_7_Boiler_7	jhar_analyzer_12	PM	21.43	mg/Nm3	15-03-2022 21:53:28	2022-03-15 21:30
5	Bokaro Power Supply Company Pvt Ltd.	STACK_7_Boiler_7	jhar_analyzer_12	PM	18.31	mg/Nm3	15-03-2022 21:08:36	2022-03-15 20:45
6	Bokaro Power Supply Company Pvt Ltd.	STACK_7_Boiler_7	jhar_analyzer_12	PM	19.49	mg/Nm3	15-03-2022 20:38:23	2022-03-15 20:15
7	Bokaro Power Supply Company Pvt Ltd.	STACK_7_Boiler_7	jhar_analyzer_12	PM	20.02	mg/Nm3	15-03-2022 20:23:41	2022-03-15 20:00
8	Bokaro Power Supply Company Pvt Ltd.	STACK_7_Boiler_7	jhar_analyzer_12	PM	21.03	mg/Nm3	15-03-2022 19:53:18	2022-03-15 19:30
9	Bokaro Power Supply Company Pvt Ltd.	STACK_7_Boiler_7	jhar_analyzer_12	PM	20.29	mg/Nm3	15-03-2022 19:38:36	2022-03-15 19:15
10	Bokaro Power Supply Company Pvt Ltd.	STACK_7_Boiler_7	jhar_analyzer_12	PM	21.79	mg/Nm3	15-03-2022 19:23:39	2022-03-15 19:00
11	Bokaro Power Supply Company Pvt Ltd.	STACK_7_Boiler_7	jhar_analyzer_12	PM	20.36	mg/Nm3	15-03-2022 19:08:13	2022-03-15 18:45
12	Bokaro Power Supply Company Pvt Ltd.	STACK_7_Boiler_7	jhar_analyzer_12	PM	19.83	mg/Nm3	15-03-2022 18:38:01	2022-03-15 18:15
13	Bokaro Power Supply Company Pvt Ltd.	STACK_7_Boiler_7	jhar_analyzer_12	PM	19.22	mg/Nm3	15-03-2022 18:08:07	2022-03-15 17:45
14	Bokaro Power Supply Company Pvt Ltd.	STACK_7_Boiler_7	jhar_analyzer_12	PM	18.99	mg/Nm3	15-03-2022 17:38:53	2022-03-15 17:15
15	Bokaro Power Supply Company Pvt Ltd.	STACK_7_Boiler_7	jhar_analyzer_12	PM	17.31	mg/Nm3	15-03-2022 17:08:12	2022-03-15 16:45
16	Bokaro Power Supply Company Pvt Ltd.	STACK_7_Boiler_7	jhar_analyzer_12	PM	16.60	mg/Nm3	15-03-2022 16:54:02	2022-03-15 16:30
17	Bokaro Power Supply Company Pvt Ltd.	STACK_7_Boiler_7	jhar_analyzer_12	PM	17.12	mg/Nm3	15-03-2022 16:38:12	2022-03-15 16:15
18	Bokaro Power Supply Company Pvt Ltd.	STACK_7_Boiler_7	jhar_analyzer_12	PM	18.90	mg/Nm3	15-03-2022 16:23:30	2022-03-15 16:00
19	Bokaro Power Supply Company Pvt Ltd.	STACK_7_Boiler_7	jhar_analyzer_12	PM	17.36	mg/Nm3	15-03-2022 15:53:37	2022-03-15 15:30
20	Bokaro Power Supply Company Pvt Ltd.	STACK_7_Boiler_7	jhar_analyzer_12	PM	16.51	mg/Nm3	15-03-2022 15:24:05	2022-03-15 15:00
21	Bokaro Power Supply Company Pvt Ltd.	STACK_7_Boiler_7	jhar_analyzer_12	PM	19.32	mg/Nm3	15-03-2022 14:39:21	2022-03-15 14:15
22	Bokaro Power Supply Company Pvt Ltd.	STACK_7_Boiler_7	jhar_analyzer_12	PM	17.83	mg/Nm3	15-03-2022 14:23:56	2022-03-15 14:00
23	Bokaro Power Supply Company Pvt Ltd.	STACK_7_Boiler_7	jhar_analyzer_12	PM	19.43	mg/Nm3	15-03-2022 13:08:42	2022-03-15 13:45
24	Bokaro Power Supply Company Pvt Ltd.	STACK_7_Boiler_7	jhar_analyzer_12	PM	21.43	mg/Nm3	15-03-2022 12:54:15	2022-03-15 12:30
25	Bokaro Power Supply Company Pvt Ltd.	STACK_7_Boiler_7	jhar_analyzer_12	PM	19.55	mg/Nm3	15-03-2022 12:39:29	2022-03-15 12:15

बोकारो पावर सप्लाई कम्पनी (प्रा.) लिमिटेड
(सेल एवं डी.वी.सी. का एक संयुक्त उपक्रम)
हॉल सं.–एम–01, पुराना प्रशासनिक भवन,
इस्पात भवन, बोकारो स्टील सिटी–827001
दूरभाष : 06542-223747 (का. एवं प.) 240380 (क्र. एवं सं.)
फैक्स : 06542-247062, 246101 (पावर प्लान्ट)

बो पा स क लि
B P S C L

CIN : U40300DL2001PTC112074

Bokaro Power Supply Company (P) Ltd.
(A Joint Venture of SAIL & DVC)
Hall No. M-01, Old ADM Building,
Ispat Bhawan, Bokaro Steel City - 827001
Tel : 06542-223747 (P&A), 240380 (P&C)
Fax : 06542-247062, 246101 (Power Plant)

PURCHASE ORDER

Ref: BPSCL/MM/20-21/PUR-210/NIT-969/90163/351 Date: 01.02.2022

Environnement SA India Pvt. Ltd.,
D-16, 3 & 4, TTC industrial Area,
Turbhe M.I.D.C., Turbhe,
Navi Mumbai-400705,

Contact No.-022-4502000-64
email-sales.in@envea.global

Sub: Supply, Commissioning & Post Warranty Comprehensive Annual Maintenance Contract of SOx, NOx & CO Analyzer System.

Ref: i) Our NIT No. - BPSCL/MM/20-21/PUR-210/NIT-969/600 dated 26.02.2021.
ii) Our Amendment to NIT No.- BPSCL/MM/20-21/PUR-210/NIT-969/AL/1136 dated 16.04.2021.
iii) Your offer no. – ESAI/DEL/042021/30 dated 05.04.2021.

Dear Sir,

Please arrange to supply following material subject to the terms and conditions as given herein:

Sl. No.	Description	Rate/Unit (Rs.)	Quantity	Amount (Rs.)
	SUPPLY OF GOODS:			
1(A)	Cat. No. -16700504251 Supply of online SOx, NOx and CO Analyzer as per the attached specification (Make-ENVEA)	15,23,387.00	04 Nos.	60,93,548.00
	SUPPLY OF SERVICE :			
1(B)	i) Supervision of Erection ii) Testing & Commissioning	50,000.00	04 Nos.	2,00,000.00
1(C)	Post warranty comprehensive Annual Maintenance for 3 years	2,47,500.00	04 systems	9,90,000.00
			TOTAL AMOUNT	**72,83,548.00**
	Rupees Seventy Two Lakh Eighty Three Thousand Five Hundred Forty Eight only			

TERMS & CONDITIONS

1.	Price	FOR BPSCL Stores.	
2.	Packing & forwarding	Inclusive	
3.	Freight	Inclusive	
4.	Transit Insurance	To be arranged and borne by you.	
5.	GST	GSTIN	27AACCE0200B1ZO
		IGST (in %)	Extra as applicable (Present rate is 18%).

GST related Terms & Conditions:

a. You shall do all things not limited to providing GST invoices or other documentation as per GST Law relating to the above services, payment of taxes, timely filing of valid statutory returns for the tax period on the Goods and Service Tax Portal etc. that may be necessary to match the invoice on GSTN common portal and enable BPSCL to claim input tax credit in relation to any GST payable under this agreement or in respect of any part under this agreement.

b. In case the Input Tax Credit of GST is denied or demand is recovered from BPSCL on account of any non-compliance by you, including non-payment of GST charged and recovered, you shall indemnify BPSCL in respect of all claims of tax, penalty and/or interest, loss,

01.02.2022

		damage, costs, expenses and liability that may arise due to such non-compliance. Further, in case of any differential tax liability on account of any wrong classification/valuation etc. by you, BPSCL will not be liable to reimburse any part of such differential tax, interest, penalty etc. It will be your sole responsibility to discharge appropriate taxes, as applicable. c. You shall maintain high GST compliance rating track record at any given point of time.
6.	Delivery	a) Submission of drawing & Bill of Material (BOM) for approval: **on or before 02.03.2022.** b) Supply of materials: Within five (05) months from drawing approval. c) Commissioning: Within four (04) months of supply of materials.
7.	Payment	**A. Supply of Goods:** a. 80% payment against GRN **within 30 days.** b. 10% after successful commissioning of all the four systems. Payment will be done on Pro Rata basis after successful commissioning of each complete system. If commissioning of any system is delayed beyond **four (04) months** from date of supply, due to reasons not attributable to you, same may be released against submission of Bank Guarantee of equivalent amount valid for a period of 02 (two) years. However, BG may be released after successful commissioning of all four systems. c. Balance 10% will be released after completion of guarantee period. (However you will have the option of take this payment against submission of Bank Guarantee of equivalent amount having validity till guarantee period). **B. Supply of Service :** 100% on prorata basis after successful commissioning. **C. Post warranty comprehensive Annual Maintenance Contract (PWCAMC):** 100% of PWCAMC charges for each year shall be paid in equal quarterly installments at the end of each quarter against invoice raised by you & duly certified by BPSCL.
8.	Paying Authority	The bill shall be submitted to **In-charge (F&A)** in triplicate duly pre-receipted on the revenue stamp along with copy of Manufacturer's warrantee certificate.
9.	Consignee	**In-charge (Stores),** Power Plant, BPSCL, B.S. City 827 001. **Mob. No. 08986874187** **BPSCL GST No. – 20AABCB8976G1ZP, PAN - AABCB8976G** Please contact **In-charge (Stores)** for **Gate pass** to enter inside the plant and submit, Manufacturer's warrantee certificate along with the material.
10.	Warranty	1. You will have to give warranty for design and performance of individual equipment as well as complete system for 24 months from the date of commissioning of the equipment or 36 months from the date of last supply, whichever is earlier. The warranty shall cover spares, calibration, consumables, deployment of men for periodic maintenance and attending any defect/break-down of the system including all items/spares required for smooth and trouble-free operation of the system supplied at no extra cost to BPSCL. 2. The warranty shall be comprehensive in nature which means any defective part or card in the systems has to be replaced by the supplier at no extra cost to BPSCL, including all items/spares required for smooth and trouble-free operation of the system supplied.
11.	Inspection	Final inspection will be done at BPSCL stores after receipt of material.
12.	L.D. Clause	a. LD will be imposed @ 0.5% of the value of the delayed material for each week of delay or part thereof subject to maximum 5% of the total value of supply, if delivery of items is delayed beyond six (06) months from date of issuance of purchase order excluding the time taken by BPSCL in approval of drawing & documents. b. LD will be applicable @ 0.5% of the value of the delayed work for each week of delay or part thereof subject to maximum up to 5% of value of service part , if service part is delayed beyond **four (04) months** from the date of commencement of work due to reasons attributable to you.
13.	Security Deposit	You have to submit security deposit of 03% of P.O. value for satisfactory execution of the

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		order in the form of **Bank draft / Bankers Cheque / Bank Guarantee** (as per BPSCL format available at *bpscl.com*) having validity up to guarantee period of the item to be supplied plus three (03) months of claim period. **Bank Draft / Bankers Cheque** shall be in favor of Bokaro Power Supply Company (P) Ltd. payable at Bokaro Steel City. The expression "satisfactory execution of the order," shall mean fulfillment of all obligations arising out of and in connection with the purchase order. In case of default in satisfactory execution of the order the security deposit shall be forfeited. Amount of penalty and/or Liquidated Damages imposed (if any) will be recovered from Bill / Security Deposit. If the amount of Bill / Security Deposit is not sufficient, you shall be required to pay the balance amount to BPSCL. If you do not pay the balance amount, the same shall be deducted from any sum or sums which may be due or may become due to you from BPSCL on any account whatsoever. *In case of forfeiture of Security Deposit, you shall be required to reimburse the applicable GST to BPSCL.*
14.	Risk Purchase	If you fail to deliver the material either in full or in part, within the contractual delivery period, BPSCL shall be entitled at his option to take alternate procurement action, at your risk & cost for the unsupplied portion of the goods / items for which delivery has expired.
15.	Force Majeure	You shall not be considered in default if delay occurs due to reason beyond your control such as acts of God, natural calamities, civil wars, fire, strike, frost, floods, riot and acts of unsurpassed power. Only those causes which have duration of more than seven days shall be considered in force majeure clause. In the event of delay due to such cause the delivery period will be extended for a length of time equal to the period of force majeure at the option of BPSCL. Order may be cancelled without any liability what so ever on the part of BPSCL.
16.	Your Bank details	**Please raise your invoice along with your complete bank details for NEFT / RTGS (A/c. No., Bank Name, Branch Code, IFSC Code etc.).**
17.	Special Terms and Conditions	You have to complete the supply of materials and associated jobs as per the purchase order.
18.	Correspondence	For **Payment**: In-charge (F&A), Phone No.- 06542 220058/ finance.bpscl@gmail.com. For **other matters**: DGM (MM), Mob. No.- 08986874183 / purchase.bpscl@gmail.com.

Acceptance: Please acknowledge receipt and convey your acceptance of the purchase order. This purchase order will be deemed to have been accepted by you if nothing is heard in contrary within 10 days from the date of issuance of this order.

For BOKARO POWER SUPPLY COMPANY (P) LTD.

(A K Das)
Chief GM (MM)

e-Copy to: CEO – for kind information please.

e-Copy to: 1. CGM I/c. (PP) 2. In-charge (F&A) 3. In-charge (Stores) 4. VO / BPSCL.

Copy to: Office Copy

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SPECIFICATIONS:

Design, Engineering, Supply, Supervision of Erection, Testing, Commissioning & PWCAMC of SOx, NOx and CO Analyzers:

1.0 The job shall be done as per guidelines issued by Central Pollution Control Board (CPCB) to Power Plants for continuous monitoring of industrial emissions.

2.0 GENERAL

All instruments shall be supplied strictly in accordance to this purchase order along with Instrument Data sheets. In the event of any conflict between this specification, data sheets, related standards, codes etc., you shall have to refer the matter to the purchaser for clarifications and only after obtaining the same in writing, you should proceed with the manufacture of the items in question.

You shall submit QAP for approval based on the Typical Quality Plan (Inspection Test Plan) as mentioned herein. Any material or accessory which may not have been specifically mentioned but which is necessary for satisfactory and trouble-free operation of SOx NOx and CO Analyzer Systems shall be in your scope.

3.0 SUPPLIER'S SCOPE OF SUPPLY

3.1. The scope of supply shall broadly consist of the following: -

a. Analyzers to measure Sulphur Dioxide (SOX), Nitrogen Oxide (NO, NO2, NOX) and Carbon Monoxide (CO).
b. Analyzer Panels.
c. Sample Conditioning Systems / Local Panel with Control Unit.
d. Software (both pre-installed & in Compact Disc removable media) for Analyzer Configuration.
e. Auto calibrating equipment.
f. NO2 to NO Converter.
g. Calibration Gas (Zero and Span Gas) cylinders for Analyzers with Storage Rack.
h. All types of Special Cables (as applicable) required for the supplied Analyzer Systems.
i. PC workstation for collecting local analyzer data as per the following specifications:
   Make: Dell / HP
   Storage: 1 TB SATA
   RAM: 4 GB DDR4 with on board Graphics
   Optical Drive: DVD + RW
   Processor: Intel Core i7 11th Gen
   With Keyboard and Mouse
   Monitor: 24" TFT LED
   Operating System: Genuine Windows 10 Professional 64 Bit
j. Preparation of Engineering Drawings and Technical Documentation.
k. Commissioning Spares.

3.2 The detailed technical specifications for the items broadly outlined above have been provided elsewhere in this P.O. document along with statutory requirements, inspection clauses, other requirements, terms and conditions of supply.

3.3 The job includes system design, detail engineering, supply, packing & shipment, supervision of erection, configuration, programming, testing and commissioning of Stack Gas Monitoring System for BPSCL. Further, this also covers all bought out items and associated peripheral equipment of the offered system & whatever is necessary to make the system operational as per the specifications mentioned.

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3.4 Scope of Supply shall cover all materials, hardware and software found necessary for successful implementation and commissioning of the system in line with the Functional requirements mentioned herein.

3.5 Scope of supply includes total engineering and drawing development. You have to prepare and submit drawings / sketches / diagrams / documents for BPSCL approval / reference.

3.6 Any changes / modifications at site, if required based on site conditions, has to be marked in a mark-up copy of the engineering/installation drawings and 2 sets shall be handed over to BPSCL. After incorporation of changes, the drawings have to be submitted as As-built sets after successful commissioning.

4.0 FUNCTIONAL REQUIREMENT:

1. The Stack Monitoring System along with all its accessories shall be housed in the available Analyzer Room (non- hazardous area).
2. The analyzer system shall consist of SOX, NOX and CO analyzers whose detailed specifications are given in a separate section.
3. The SOX, NOX, CO analyzers shall receive sample from the stack via hot extraction type system.
4. The analyzers should be complete with built-in Auto & remote calibration system and same should be feasible from local panel. Additionally, provision should be given for manual calibration.
5. The calibration gas cylinders shall be properly tubed to the calibrating equipment.
6. The display of all-important status signals viz. concentration, manual/auto/calibration mode, system fault/purge should be on front panel.
7. PC Workstation is to be installed for local data display.
8. Required cables and accessories for establishing connectivity between analyzers to workstation and workstations to central data acquisition server at BPSCL will be in your scope.
   Mode of Communication:
   i. Analyzer to PC connection: 4 to 20 mA DC
   ii. Analyzer to CEMS Data Transfer: RS 485

   Tentative requirement of Cables;
   A. PC Connection:
   i. 5 Pair Shielded Cable - 200 mtrs.
   ii. 2 Pair Shielded Cable - 400 mtrs.
   B. Cable for CEMS Data Transfer:
   i. Pair Shielded Cable - 1000 mtrs.
9. All the necessary engineering for successful commissioning of the system shall be done by you.
10. All software to be supplied under this order shall have user licenses for lifetime use for this project. The license shall accompany the software at the time of supply of the same.

5.0 SCOPE OF WORK

The scope of work includes supervision of erection, testing, commissioning and performance guarantee test as per approvals and handing over the facilities to BPSCL complete in all respect as per requirement mentioned herein. All works involved in supervision of erection, testing and commissioning of the supplied equipments shall be in line with the technical specification, standards, and guidelines and laid down practices given in this technical specification and elsewhere in the order and as per approved drawings. The specifications, general guidelines and standards to be followed for this work are explained in brief and in detail in the attached technical specifications.

The scope of work shall include:

1. Supervision of the following:
   a) Impulse pipe hydraulic testing, air piping pneumatic testing, cleaning, and blowing.

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b) Installation of all the supplied equipments/instruments, panels, Junction boxes and accessories.

c) Erection of all impulse piping, tubing and isolation valves for the total system.

d) Erection of Instrument air pipeline from instrument air header to individual Analyzers Calibration systems.

e) Erection of Sample handling system with accessories, tubing, isolation valves and hook-up to analyzers.

f) Erection of calibrator system with accessories, tubing, isolation valves and hook-up to calibration gas (zero and span gas) cylinders.

2. Analyzer calibration & Loop Checking of all cables.
3. Establishing data communication between analyzers and local server of BPSCL. The distance between the analyzer and local server station of BPSCL is 500 to 800 m.
4. Testing, pre-commissioning and final Commissioning of the supplied system complete in all respects.
5. You will be fully responsible for supervision of complete Analyzer System installation, mounting and configuration of software, commissioning of the supplied Analyzer system in stipulated time mention in P.O. You have to ensure deputation of service engineer for minimum 16 days (in 4/5 visits). To & Fro charges, Boarding & Lodging and others have to be borne by you. No extra payment will be done for this.

6. DOCUMENTATION & SOFTWARE TO BE PROVIDED BY SUPPLIER

1. All Drawings and Documents are to be furnished by you both in hard and soft copies.
2. Drawings / documents shall be provided by you as per following breakup: -
   a) All drawings/documents requiring BPSCL approval in at least 1 no. hard copy and one soft copy.
   b) Approved drawings/documents in at least 3 sets hard copy and one soft copy.
   c) Final As built documents / instruction manuals in 6 sets hard copy and one soft copy in CD.

7. FACTORY ACCEPTANCE TEST (FAT)

1. After the system to be supplied is fully manufactured, wired and ready for inspection, you shall intimate BPSCL for witnessing the Factory Acceptance Test (FAT) as per BPSCL approved procedure at the your works.
2. You shall test and demonstrate the functional integrity of the Analyzer system hardware and software. No material or equipment shall be transported until all required tests are successfully completed and certified "Ready for Shipment" by the BPSCL.
3. It may be noted that acceptance of any system or the exemption of inspection or testing shall in no way absolve of the responsibility of delivering the system meeting all the requirements as specified in P.O.
4. Factory acceptance test procedure shall be submitted for approval at least 2 weeks before the FAT your works.

8. SITE ACCEPTANCE TEST (SAT)

1. The site acceptance test shall be carried out in the presence of BPSCL representative. You shall carry out the following functional tests, as a part of site acceptance test as a minimum: -
   a) Hardware verification as per approved Analyzer system drawings.
   b) Visual and mechanical check-up for proper workmanship, identification, ferruling, nameplates etc.
   c) Demonstration of all Analyzers system operation & diagnostics.
   d) Checking of calibration of supplied Analyzers.
   e) Checking of proper functioning of all other peripherals like sample handling system.

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2. Performance Test:

   BPSCL shall take over the Analyzer system after uninterrupted, satisfactory, trouble free, fully functional performance test for a period of four weeks after successful commissioning of Analyzer system in totality & completion of all SAT punch points at the site. Minutes of meeting shall be made for recording the date of handover of the Analyzer system. Warranty of the system shall start from this date of handover.

3. During above Performance test period, any malfunctioning of the Analyzers system components shall be replaced / repaired as required free of cost by you. Once the system failure is detected, the performance test shall start as a fresh from the beginning.

9. TRAINING

Training shall be conducted at BPSCL premises on the total system.
Training shall be as per the following details: -
1. Acquainting personnel on complete Analyzer System.
2. Procedures for identification and troubleshooting common maintenance problems.
3. Analyzer calibration, trouble shooting and diagnostics, Software installation, configuration.
4. Procedures for taking system backups and recovery procedure in case of partial or total system failure.

10.0 DETAILED TECHNICAL SPECIFICATION

1. **SOX, NOX & CO Analyzer System**
   Installation of new emission monitoring systems with related instruments for measurement of SOX, NOX & CO (as per CPCB latest guidelines) in Flue Gas duct of 260 TPH pulverized coal fired Boilers.

2. **STANDARD & CODES:**
   All equipment and their associated system, accessories covered under this specification shall comply with all currently applicable statutory regulations and safety codes. All equipment and its components shall be designed and tested in accordance with the latest Indian Standard Specification (IS 14001)/ other International Standards (ASTM/TUV/MCERT) established to be equivalent or superior to the Indian Standard codes unless stated otherwise. The offered system shall be suitable for measurement of SOX, NOX & CO by use of the procedures equivalent to international standards (EPA PS or EN QAL standards) recognized for use as CEMS.

3. **PROCESS & INSTRUMENTATION:**
   Field equipment should be operational and tolerant to extreme environmental conditions, in high or low temperatures & high humidity conditions. Maximum temperature and maximum humidity do not occur simultaneously.
   Ambient Temp.: 5 - 50 °C
   Humidity: 85 - 90 %

11.0 POST WARRANTY COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT PWCAMC)

1. You shall start the Post warranty CAMC for three years covering all equipments i.e. Analyzers and its accessories supplied by you. The validity of PWCAMC should be counted after completion of warranty period.
2. The PWCAMC shall cover supply of all necessary modules, all types of spares, consumables, supply & refilling of all type of gas cylinders along with all services necessary to maintain trouble free & reliable operation of the Analyzer system.
3. No additional cost shall be payable towards renewal of any type of software license fees, if any, for Analyzer system during the PWCAMC period.

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4. You shall depute well experienced Service Engineer as & when required having sufficient experience & expertise in maintaining reliable & trouble-free operation of the Analyzer system during Warranty & PWCAMC period.

5. The cost for hardware spares, consumable replacement, and all services required including travel, boarding & lodging charges of service engineer is included in the price mentioned in this purchaser order.

6. Minimum one no. spare of each type of module/power supply & any other hardware as has been installed in supplied Analyzer system including all parts of sample handling system should be stocked at site to take care of the reliable operation of the Analyzer system & emergency situation during Warranty & PWCAMC period at your risk and cost. If the items are to be used from this stock, the same have to be replaced within one-month period from the date of consumption.

7. The spares stock as mentioned above shall be maintained by you at BPSCL without any commercial implication to BPSCL. The faulty hardware from stocked at site shall be taken out from BPSCL by you as & when it is replaced with new hardware. The unused spares from those stocked at site shall be returned to you after successful completion of PWCAMC.

8. **The Post warranty CAMC shall cover following services:**
   a) Emergency Maintenance service - as and when required.
   b) Preventive Maintenance service - 06 visits per year.
   c) Hardware replacement - as and when required.
   d) Software support service

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SPECIFICATION:

SOx, NOx & CO Analyzer System		
1	Gases to be measured	i) SOX: Measuring Range: 0 – 1000 mg/Nm3 selectable
		ii) NOX: Measuring Range: 0 – 1000 mg/Nm3 selectable
		iii) CO: Measuring Range: 0 – 2000 mg/Nm3 selectable
2	Measurement Principle	Hot Extractive Type with Dual Probe in the ESP Inlet Duct.
3	Certification	QAL 1 Certification is required as per International Standards (USEPA TUV/MCERTS). Conformity compliance will not be acceptable.
4	**SOx, NOx & CO Gas Analyzer** The Analyzer should be housed in CRCA panel fully wired and tested complying with IP54 protection class.	
	Measurement Technology	Chopped single/ Dual Beam NDUV / FTIR / NDIR /IR-GFC / IR-CFM Type Sensor Technology shall be offered. The Analyzer should be advanced Microprocessor type and conform to the following. 1. The Wet Extractive systems shall monitor and report Moisture to correct the results in dry condition. 2. NDIR based NOx analyzer ideally converts all NOX to NO for measurement purpose. 5% of total converted NO represents NO2. NDIR based In-situ Analyzers without converters are measuring NO and considering upto 5% of NO values as NO2 resulting under reporting of NOx. Hence, in order to correct the data special calculation as given below will be applied. • The reported NO values will be multiplied by 1.05 and then 95% of the product will be considered as NO and 5% of the product will be considered as NO2. • Final reporting shall follow the equation NOx = NO + NO2 = NO X 1.53+ NO2= NOx as NO2. 3. In other cases, NOx values are required to be reported as NO2 mg/NM3, NOx = NO + NO2 = NO X 1.53+ NO2= NOx as NO2.
	ii. Analyzer Sample Cell configuration	In case of CEMS system for measurement of both SOx & NOx, the SOx shall be measured in separate sample cell than the NO sample cell to avoid conversion of SO2 to SO3 due to free O2 after passing through NOx converter. For NOx & SOx there shall be separate sample cells and separate detectors.
	iii. Auto/Remote Calibration	Remote, automatic and manual calibration, calibration check/verification facility shall be available. Automatic calibration shall be user programmable.
	iv. Ambient Temperature	5°C – 50°C
	v. Supply Voltage	100-240 VAC 50 Hz
	vi. Analog Output	3*4-20 mA (isolated o/p for SOx, NOx and CO)
	vii. Repeatability	± 1% of Full Scale
	viii. Linearity	± 1% of Full Scale
	ix. Zero Drift	± 2% of Full Scale
	x. Span Drift	± 2% of Full Scale
	xi. Digital Comm.	RS 485 Modbus Protocol for Sox, NOx output and remote Auto calibration input.

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	Sample Conditioning System	
5.	**Sample System Design**	a. The sample handling system shall have dual probes at the Duct with heated filter for probe. b. The sample shall be extracted through heated tubes to the sample conditioning System located near the Duct. c. The Sample Handling System shall be housed in a free-standing Cabinet / Panel of Rittal make with IP 65 protection. d. All Sample Handling System components shall be of reputed makes only. The critical components like the pumps, coolers, Solenoids valves, probes & the filters shall be of makes as per following details: • Sample Probe: Buhler/M&C. • Cooler: Buhler/M&C /Axis. • Sample Pump: Buhler/M&C. • Solenoid Valves: Festo / ASCO/ Rotex. • The system logic shall be PLC controlled.
	ii. Dust Filters	There should be minimum 3 stages filtering of the sample gas for filtering of High Dust Concentration and High Temperature Flue Gas.
	iii. Probe	Probe MOC shall be SS316 with heated filter Assembly.
	iv. Probe Cleaning	Automatic Probe Cleaning (Blowback) System shall be provided.
6	**Calibration Gas Cylinder**	1. Two nos. Calibration Gas Cylinders (one each for zero and span calibration) for each analyzer system of 10 ltrs. minimum capacity along with gas composition and gas pressure certificate (from manufacturer) to be supplied.
		2. Two nos. suitable cylinder pressure regulator to be supplied for each analyzer system.
		3. Two nos. 03 mtr flexible tube of suitable size fitted with proper fittings for interconnection of gas cylinder regulator and calibration gas inlet to analyzer to be supplied for each analyzer system.
		4. Solenoid valve shall be provided for remote calibration.
7	**Field Sample Tube**	All field sample tube shall be pre-fabricated HEAT TRACED type of PTFE (25 mtrs. for each analyzer system).
8	**MMI**	The system shall have Color touch screen MMI to show graphic active display of all the system components as well as with error logbook
9	**Temperature/Pressure Compensation**	The raw SOx/NOx measured value shall be compensated with Pressure & Temperature inputs to have data available in mg/Nm3. The bidder has to supply temperature and pressure measuring instruments along with all its accessories. The details of the stack is given below: Stack Dia ID: 3590 mm Stack Dia OD: 3608 mm MOC: Mild Steel Stack gas temperature: (140 - 220)° C Gas Pressure: (-) 60 to (-) 100 mm WC Stack flow rate: 1.4 Lakh NM3/ Hr. Oxygen: 2-5 % v/v Moisture: 8-10 % v/v

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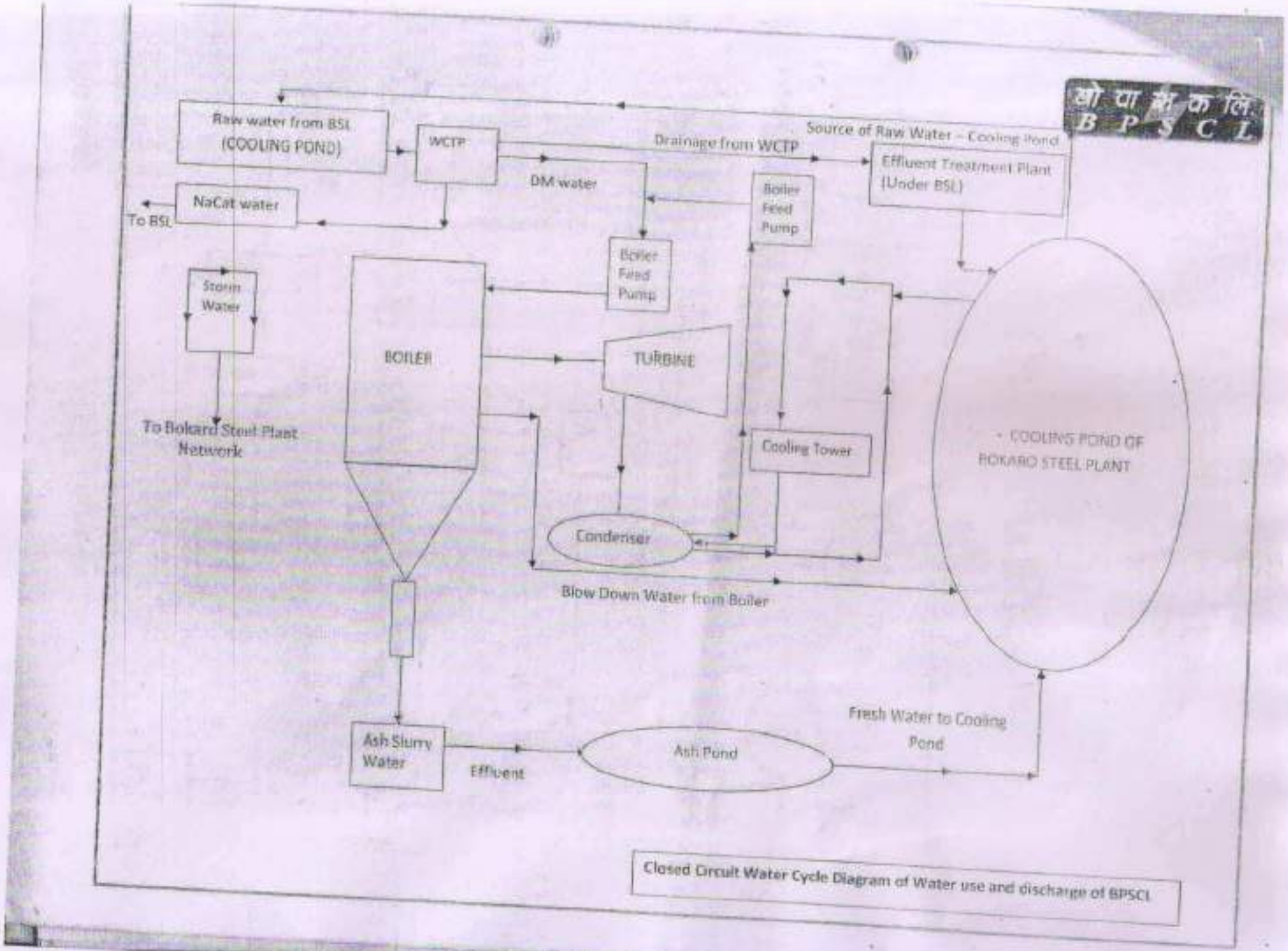

Closed Circuit Water Cycle Diagram of Water use and discharge of BPSCL

बोकारो पावर सप्लाई कम्पनी (प्रा.) लिमिटेड
(सेल एवं डी.वी.सी. का एक संयुक्त उपक्रम)
हॉल सं.–एम–01, पुराना प्रशासनिक भवन,
इस्पात भवन, बोकारो स्टील सिटी–827001
दूरभाष : 06542-223747 (वा. एवं प्र.) 240380 (इ. एवं सं.)
फैक्स : 06542-247062, 246101 (पावर प्लान्ट)

CIN : U40300DL2001PTC113074

Bokaro Power Supply Company (P) Ltd.
(A Joint Venture of SAIL & DVC)
Hall No. M-01, Old ADM Building,
Ispat Bhawan, Bokaro Steel City - 827001
Tel : 06542-223747 (P&A), 240380 (P&C)
Fax : 06542-247062, 246101 (Power Plant)

WORK ORDER

W.O No.: BPSCL/MM/20-21/C-007/NIT-887/50249/916 Date: 25/03/2021

Surya Bhushan
JA-13, City Centre
Sector – 4, Bokaro Steel City
Pin – 827 004
Mobile: 9939883123
Email: sb_suryahursha@yahoo.co.in

Name of Work: Construction of Rain Water Harvesting Settling Pit & Recharge Borewell in BPSCL.

Ref: i) Our NIT No. : BPSCL/MM/20-21/C-007/NIT-887/1312 dated 01/06/2020
ii) Your Offer No. : Nil dated 03/07/2020
iii) Your letter No. : SB/20-21/119 dated 01/02/2021 along with BG No. : 0014IGP000348221 dated 02/02/2021 for **Rs. 6,98,500.00** against PGB valid upto 02/02/2022.

Dear Sir,

We are pleased to place an order on you to carry out the above mentioned work on terms & conditions as given below.

SCOPE OF WORK:-

a) Recharge pits and borewells have to be constructed in 6 buildings of BPSCL as per the drawings provided and item description of "Quantum & Value of work"
   i. Any type of rough vegetation like bushes, etc. has to be removed from the earmarked area.
   ii. Necessary excavation as per drawing has to be carried out upto the required depth after dismantling of existing floor concrete and brickwork, wherever required.
   iii. Recharge pit has to be constructed as per drawing complete with all concrete of grade M-25, shuttering , brickwork and reinforcement including supply of materials.
   iv. Cement of makes Lafarge / ACC / Dalmia / Birla Gold / Ultra Tech has to be used.
   v. Reinforcements of make SAIL / RINL / TATA Steel has to be used.
   vi. Borewell pit has to be constructed upto the required depth complete with disinfection of the tube well and supply & fitting of pipes as per drawing, supply of all materials.
b) All the rain water pipes of the building are to be replaced with new ones with proper connection to the recharge pits.

QUANTUM AND VALUE OF WORK:-

Sl. No.	Description of Item	Qty.	Rate/Unit (Rs.)	Amount (Rs.)
A.	**For Construction of Recharge Pit :**			
1	Clearing jungle including uprooting of rank vegetation, grass, brush wood,trees and saplings of girth upto 30 cm measured at a height of 1m above ground level and removal of rubbish upto a distance of 50 m outside the periphery of the area cleared.	300.00 Sqm	6.8774	2,063.22
2	E Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in-charge. All kinds of soil	504.00 Cum	99.6538	50,225.52
3	Disposal of excavated earth upto 2 km	504.00 Cum	81.8876	41,271.35

S. Choudhuri 25/3/2021

4	Demolishing R.C.C. work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 metres lead as per direction of Engineer - in- charge.	18.00 Cum	1,389.0134	25,002.28
5	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge in cement mortar	12.00 Cum	805.0119	9,660.14
6	Centering and shuttering including strutting, propping etc. and removal of form work for : Foundations, footings, walls & Columns	643.14 sqm	156.0978	1,00,392.74
7	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:1½:3 (1 Cement: 1½ coarse sand (zone-III) : 3 graded stoneaggregate 20 mm nominal size)	8.70 Cum	3,951.3808	34,377.01
8	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level : 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)	90.30 cum	4,229.6004	3,81,932.92
9	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level. Mild steel and Medium Tensile steel bars	7225.44 Kg	45.7580	3,30,621.68
10	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in: Cement mortar 1:6 (1 cement : 6 coarse sand)	10.02 Cum	4,248.5886	42,570.86
11	15 mm cement plaster on rough side of single or half brick wall of mix : 1:4 (1 cement: 4 coarse sand)	349.92 Sqm	168.7292	59,041.72
12	Supplying, filling, spreading & leveling stone boulders of size range 5 cm to 20 cm, in recharge pit, in the required thickness, for all leads &lifts, all complete as per direction of Engineer-in-charge.	22.50 Cum	726.9493	16,356.36
13	Providing M.S. foot rests including fixing in manholes with 20x20x10 cm cement concrete blocks 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) as per standard design :With 20 mm diameter round bar.	120.00 Each	210.2676	25,232.11
14	Constructing masonry Chamber 90x90x100 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) , i/c necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard design : With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	12.00 each	8,841.5403	1,06,098.48
15	Making connection of drain or sewer line with existing manhole including breaking into and making good the walls,floors with cement concrete(1:2:4) cement plastered on both sides with cement mortar(1:3),finished with a floating coat of neat cement and making necessary channels for the drains etc. complete for pipes 350 to 450 mm dia.	12.00 each	567.4265	6,809.12
A.	**Construction of Borewell :**			
1	Boring/drilling bore well of required dia for casing/ strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer -in-charge, upto 90 metre depth below ground level.			
	300 mm dia.	240.00 metre	280.7404	67,377.70
2	Supplying, assembling, lowering and fixing in vertical position in bore well,ERW FE 410 mild steel screwed and socketed/plain ended casing pipes of required dia, conforming to IS: 4270 of reputed and approved make including painting with outside surface with two coats of anticorrosive paint, including required hire and labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer -in-charge.			

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	200 mm nominal size dia. having minimum wall thickness 5.40 mm	210.00 metre	1,130.0032	2,37,300.67
3	Supplying, assembling, lowering and fixing in vertical position in bore well,ERW FE 410 FE 410 plain slotted (having slot of size 1.6/3.2 mm) mild steel threaded and socketed/ plain bevel ended pipe (type A) of 200 mm dia, conforming to IS: 8110, of reputed and approved make, having wall thickness not less than 5.40 mm,painting with outside surface with two coats of anticorrosive paint, including required hire and labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer-in-charge.	30.00 metre	1,189.7352	35,692.06
4	Development of tube well in accordance with IS : 2800 (part I) and IS: 11189, to establish maximum rate of usable water yield without sand content (beyond permissible limit), with required capacity air compressor, running the compressor for required time till well is fully developed, measuring yield of well by "V" notch method or any other approved method, measuring static level & draw down etc. by step draw down method, collecting water samples & getting tested in approved laboratory, i/c disinfection of tube well, all complete, including hire & labour charges of air compressor, tools & accessories etc., all as per requirement and direction of Engineer-in-charge.	288.00 Hour	469.9647	1,35,349.83
5	Providing & fixing suitable size threaded mild steel cap or spot welded plate to the top of borewell housing/casing pipe, removable as per requirement, all complete, for borewell of 200 mm dia.	6.00 each	153.9606	923.76
6	Providing and fixing Ball plug/ Bottom plug of required dia. to the bottom of pipe assembly of tube well as per IS:2800 (part I).			
	200 mm dia	6.00	168.6470	1,011.88
C.	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes.	1110.00 Rm	167.1674	1,85,555.81
				18,94,867.22 ≈ 18,94,867.00
Rupees Eighteen Lakh Ninety Four Thousand Eight Hundred Sixty Seven only				

PAYMENT TERMS : -

a) 97% of contract value will be paid on pro - rata basis duly certified by Engineer In - Charge [Mr. M S Mondal / Sr. Manager (Civil)]

➔Engineer In-charge of this job must ensure that the firm has proper labour licence and has signed Agreement before start of the work.

b) Balance 03% will be retained as security deposit which will be released after satisfactory execution of order.

The expression satisfactory execution of the order shall mean fulfillment of all obligation arising out of and in connection with the contract. In case of default in satisfactory execution of the order the security deposit shall be forfeited.

Amount of penalty and/or Liquidated Damages imposed (if any) will be recovered from Bill / Security Deposit. If the amount of Bill / Security Deposit is not sufficient, you will be required to pay the balance amount to BPSCL. If you do not pay the balance amount, the same shall be deducted from any sum or sums which may be due or may become due to you from the BPSCL on any account whatsoever.

c) **Goods & Services Tax:**

1	**GSTIN No.**	**20ABQPV5223R1Z0**
2	CGST	Extra as applicable (Present rate: 09%)
	SGST	Extra as applicable (Present rate: 09%)

(For re-imbursement of GST, you have to submit your bills / invoice / challan as per GST Acts / rules.)

d) **GST related clauses:**

- You shall have to pass on the tax benefit/savings, if any, on account of output taxes to BPSCL.
- You have to do all things not limited to providing GST invoices or other documentation as per GST Law relating to the above Services, payment of taxes, timely filing of valid statutory returns for the tax period on the Goods and Service

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Tax Portal etc. that may be necessary to match the invoice on GSTN common portal and enable BPSCL to claim input tax credit in relation to any GST payable under this agreement or in respect of any part under this agreement.

- ⇨ In case the Input Tax Credit of GST is denied or demand is recovered from BPSCL on account of any non-compliance by you, including non-payment of GST charged and recovered, you shall indemnify BPSCL in respect of all claims of tax, penalty and/or interest, loss, damage, costs, expenses and liability that may arise due to such non-compliance. Further, in case of any differential tax liability on account of any wrong classification/valuation etc. by you, BPSCL will not be liable to reimburse any part of such differential tax, interest, penalty etc. It will be your sole responsibility to discharge appropriate taxes, as applicable.
- ⇨ You shall have to maintain high GST compliance rating track record at any given point of time.

DURATION OF CONTRACT: **One (01)** year from the date of commencement of the work.

TERMS AND CONDITIONS:-

1. You will have to follow and observe the safety & statutory requirements.
2. You will have to be fully responsible for any sort of unsafe activity of your workmen. All working personnel should have proper safety certificates issued by BPSCL before start of work.
3. You will produce medical fitness certificate for your workers. Height passes are to be obtained from safety department, if required.
4. Supervision of the work has to be carried out by you.
5. Work is to be carried out as per work order.
6. In case any of the documents/information submitted by you is/are found to be false or containing any misrepresentation or having any fraudulent declaration in it, then, in such eventuality EMD will be forfeited and legal action (including cancellation of contract, banning of business dealing, criminal proceedings etc.) as deemed fit, may be initiated by BPSCL against you.
7. You will have to strictly adhere to the provision of various labour laws including Payment of Bonus Act 1965.
8. You will have to pay an additional amount of Rs.4/- per day to every worker engaged by you for the subject work over and above their daily minimum wages, as per BPSCL rules.
9. The manpower (labour and Supervisor) deployed for completion of the job and for compliance of work & safety of the workmen should be adequate. However the compliance and completion of the job cannot be restricted to labour supply but on the actual execution of the job to be certified by the Engineer – In – charge.
10. Paying authority –In - charge (F&A), BPSCL.
11. No idle charge or escalation charges will be considered during the contract period.
12. Time is the essence of contract and hence, you must complete the work as per the specification and to the satisfaction of Engineer-in-charge within the stipulated completion time of work otherwise LD may be imposed.
13. You will have to furnish the purchase documents, gate entry papers of specified material being used by you to ensure its quality.
14. All the materials required for the work will be supplied by you as per specified quality/grade mentioned in work order. Before purchasing these materials, prior approval must be obtained from Engineer-in-charge.
15. Poor quality of executed work or material supplied will be summarily rejected.
16. **Liquidated Damages:** In case of delay in completion of job for reasons attributable to you, a sum equivalent to 0.5% of the value of the delayed portion of work for each week of delay or part thereof subject to maximum of 5% of the total value of the contract will be recovered from you as Liquidated Damage (LD)
17. **Work accident** :
    a. You shall be responsible for the safety of the workers employed by you. In the event of any work-accident, major or minor, your representative must take care of the injured person immediately and provide him the required treatment as suggested by the doctor. If you or your representative is not available for arranging medical care, the injured worker will be treated at Bokaro General Hospital and the cost of treatment will be recovered from you.
    b. You shall be fully responsible for making payment of compensation to your own workmen in respect of any accident or injury occurring to them. BPSCL will in no way be responsible for it and will remain indemnified against all such claims of compensation in such cases
18. **AWA CLAUSE:** You shall have to pay an amount of Rs 96.15 per day on actual attendance per month (not exceeding Rs 2500/month) to the worker engaged by you in this job as additional welfare amenity (AWA) as per relevant circular/notification of BPSCL and you are requested to include the amount against AWA in your quoted rate, submit the offer accordingly.
19. **FORCE MAJEURE:** Bidder shall not be considered in default if delay occurs due to cause beyond their control such as acts of God, natural calamities, civil wars, fire, strike, frost, floods, riot and acts of unsurpassed power. Only those causes which have duration of more than seven days shall be considered in force majeure clause. In the event of delay due to such clause the delivery / completion period will be extended for a length of time equal to the period of force majeure without imposition of Liquidated Damages at the option of owner.
20. **Banning of Business Dealings:** On arising of any situation or occurrence of any event as mentioned in Clause 6 of the Guidelines on Banning of Business Dealings, the tenderer/bidder or supplier under the tendering process or contract with BPSCL, as the case may be, shall be liable for action under and in accordance with the aforementioned Guidelines. The

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"Guidelines on Banning of Business Dealings" shall form part of the Tender/Contract and the same can be viewed on our website www.bpscl.com

21. **RISK AND COST:** Failure on Contractor's part to start the work within reasonable time/ the progress of the job is poor/ for any breach of contract will entail termination of the Contract. In such an event, the job will be executed at the risk and cost of the Contractor by alternative arrangements.

22. **You shall maintain all records/register/returns/cards such as:**
    i) Register of workmen employed by contractor
    ii) Employment card
    iii) Muster Roll
    iv) Register of wages-cum-muster roll
    v) Submission of Return & Order book

23. General Environment, Health & Safety responsibilities of Contractor is ***attached at Annexure*** for compliance during execution of contract.

24. **Penalty Clause:**
    a. If the job is not started within one month of issuance of work order, a penalty of 0.5% of contract value will be levied per week subject to a maximum of 5% of the contract value.
    b. Poor Quality of work or material will be summarily rejected and if it is not replaced/re-worked a penalty of Rs. 5000 may be levied per time / occurance of the same.

25. **SAFETY CLAUSE :** You shall be liable for penalties mentioned below for violation of safety norms :
    i. Upto Rs. 5000/-by Head of safety Engg. Department /Head of the Department where work is being done for 1st violation of safety norm, non use of PPEs(Personal Protective Equipments) like safety shoes, hand gloves, safety helmets, goggles etc as per work requirements by you or your workers. This condition is applicable in case of violations of Road Safety norms also.
    ii. Fine upto Rs. 20,000/- on 2nd Violation as mentioned in clause (i) above.
    iii. You shall be debarred for one year / deregistered from taking up further contractual work in BPSCL from the date of issue of debarring / deregistering order on 3rd violation as mentioned in clause no (i) above.
    iv. Fine upto Rs. 10,000/- for violation in use of Full Body Harness by you or your worker for working at height (above 1.8 meter from immediate floor).
    v. Fine Rs. 25,000/- (minimum) to Rs. 50,000/- (Maximum) for serious injuries and disabilities caused by violations as mentioned in Clause No. (i) and (iv) above.
    vi. Independent of the above, you shall be fined Rs. 1,00,000/- (1 Lakh) or more and debarred / deregistered from taking up further contractual work in BPSCL from the date of issue of debarring / deregistering the order in case any fatal accident occurs due to violations as mentioned in Clause (i) and (iv) above.
    Note: In case penalty is imposed, you will have to reimburse the applicable GST to BPSCL.

Note:

1. **Please inform the undersigned immediately about discrepancy, if any. If nothing is heard from you within 10 days from the date of issuance of this order, it will be considered that the order is accepted by you.**
2. **The payment of wages to all categories of contract workers engaged is to be done through Bank Transfer (RTGS/NEFT/IMPS) or any other mode of electronic transfer.**
3. You have to raise your Invoices alongwith your Bank A/c No., Bank Name, Branch Name & IFSC Code.
4. <u>You are requested to submit following papers for preparation of Agreement paper by us:</u>
    1. Non-Judicial Stamp Paper of Rs. 20.00 or above alongwith 2 - 3 dummy papers.
    2. Authenticated copy of work order.
    3. Acknowledgement letter.
    4. Authorization letter of signing authority.

Yours faithfully
For & on behalf of BPSCL,

S. Choudhuri 25/3/2021

(S Choudhuri)
DGM (MM)
Email : purchase.bpscl@gmail.com

Copy to: Office copy
e.copy to:
1. CGM I/c (PP) 2. CGM (P&A) 3. GM (Civil) 4. I/c (F&A) 5. Mgr (P&A) 6. S/Officer 7. VO (BPSCL)

e.copy to: CEO – for kind information please.