COMPLIANCE REPORT

OF

ENVIRONMENTAL

CLEARANCE

(FROM: OCTOBER 2023-MARCH 2024)

(Environment Clearance No. J-13011/24/2008-IA. II (T) dated 30/09/2013, MoEF notification G.S.R.02 (E) dated 2/1/2014. MoEF&CC Office Memorandum F.No.22-13/2019-IA.III dated 28/08/2019)

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For:

Talwandi Sabo Power Limited

Village-Banawala Distt- Mansa (Punjab)

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TSPL/ ENV/ MoEF&CC/ May-2024/02 **Date: 28.05.2024**

To,
The Additional Director(s),
Ministry of Environment, Forests & Climate Change,
Govt. of India, Northern Regional Office,
Bays No.24-25, Sector 31-A,
Dakshin Marg,
Chandigarh-160030.

Subject: Submission of Half Yearly Environmental Clearance Compliance Report of 1980 MW (3X660 MW) Talwandi Sabo Power Limited, Village Banwala, Mansa-Talwandi Sabo Road, Distrct-Mansa, Punjab.

Ref:-

1. Environmental Clearance No. J-13011/24/2008-IA.II (T) dt.11/07/2008 and amended on 25/03/2010 & 17/06/2010.
2. MoEF Office Memorandum No. J-11013/41/2006-IA. II (I) dt. 06/04/2011.
3. Extension of validity period of Environment Clearance No. J-13011/24/2008-IA. II (T) dated 30/09/2013.
4. MoEF notification G.S.R.02 (E) dated 2/1/2014.
5. MoEF&CC Office Memorandum F.No.22-13/2019-IA.III dated 28/08/2019

Dear Sir,

This has reference to the above cited subject. Please find enclosed herewith Half Yearly Environmental Clearance Compliance Report of 1980 MW (3X660 MW) Talwandi Sabo Power Limited, Village Banwala, Mansa-Talwandi Sabo Road, District-Mansa, Punjab for the period of October, 2023 to March, 2024.

Thanking you and assuring you our best attention always.

Yours faithfully,

For, Talwandi Sabo Power Limited

TALWANDI SABO POWER LIMITED MANSA

Vikas Sharma Vashisht
Head-Environment

Encl: As above

Cc:-

1. **The Director, MoEF&CC, New Delhi.**
2. **The Member Secretary, CPCB, New Delhi.**
3. **The Environmental Engineer, PPCB, Bathinda.**

TALWANDI SABO POWER LIMITED, BANAWALA

Compliance status of the conditions stipulated in Environmental Clearance of 1980 MW (3x660 MW) Talwandi Sabo Power Limited and additional conditions stipulated in Office Memorandums No. J-11013/41/2006-IA. II (I) & F.No.22-13/2019-IA.III dated 06/04/2011 & 28/08/2019 for the period of October, 2023 to March, 2024.

3	Conditions	Compliance Status
(i)	The total land requirement for the project shall be restricted to 2105 acres	Noted.
(ii)	Requisite quantity of coal for the ultimate capacity shall be obtained before commissioning the project	Noted.
(iii)	Sulphur and ash contents in the coal to be used in the project shall not exceed 0.5% and 34% respectively	Complied as Sulphur contents in the coal does not exceed 0.5% and as per MOEF&CC notification dated 21.05.2020, exemption has been provided for the requirement of 34% ash content in coal to be used in the Project. **Annexure-1**
(iv)	**(As amended vide MoEF letter No. J-13011/24/2008-IA. II (T) dt. 17/06/2010)** A Tri-flu stack of 275 m height shall be provided with continuous online monitoring equipments for SOx, NOx and particulate. Exit velocity of the flue gases shall not be less than 25m/sec	Complied. Exit velocity of flue gases has taken care in design and condition noted.
(v)	High efficiency Electrostatic Precipitator (ESP) shall be installed to ensure that particulate emission does not exceed 50 mg/Nm^3	Complied. Stack emission monitoring test reports of NABL accredited and MoEF&CC recognized laboratory for the period of October-23 to March-2024 are enclosed as **Annexure-2 (a) to Annexure-2 (f).**
(vi)	Space provision shall be kept for retrofitting of FGD, If required at a later date	Complied.
(vii)	Adequate dust extraction system such as cyclone/bag filters and water spray system in dusty areas such as coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided	Complied.
(viii)	Fly ash shall be collected in dry form and storage facility (silos) shall be provided. Fly ash shall be used in a phased manner as per provision of the notification on Fly Ash Utilization issued by Ministry in September 1999 and its amendment. By the end of 9th year full fly ash utilization should be ensured. Unutilized fly ash shall be disposed off in the ash pond in the form of High Concentration slurry and the bottom ash in	Fly ash is being used as per the provisions of the prevalent notifications issued by MOEF&CC. Fly ash generation and utilization report is being submitted to PPCB (monthly) and CPCB & MoEF&CC Regional Office, Chandigarh (annually) regularly. Copy of report attached at **Annexure-3 (a) to 3(g).**

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	conventional slurry mode.	
(ix)	Ash pond shall be lined with HDPE lining. Adequate safety measures shall also be implemented to protect the ash dyke from getting breached	Complied.
(x)	Closed cycle cooling system with cooling towers shall be provided. COC of at least 5 shall be adopted and the effluents shall be treated as per the prescribed norms	Complied. Cooling tower blow down is being treated in Zero Discharge Unit and the treated water is being recycled for cooling tower make-up.
(xi)	The treated effluent confirming to the prescribed standards shall be re-circulated and reused within the plant. There shall be no discharge outside the plant boundary except during monsoon. Arrangement shall be made that effluents and storm water do not get mixed.	Complied.
(xii)	A sewage treatment plant shall be provided and the treated sewage shall be used for raising greenbelt/plantation	Complied.
(xiii)	Rain water harvesting should be adopted. Central Ground Water Authority/Board shall be consulted for finalization of appropriate rain water harvesting technology within a period of three months from the date of clearance and details shall be furnished.	Complied.
(xiv)	Adequate safety measures shall be provided in the plant area to check/minimize spontaneous fire in coal yard especially during summer season. Copy of these measures with full details along with location plant lay out shall be submitted to the ministry as well to the regional office of the ministry at Chandigarh.	Complied. Details already submitted vide letter no._TSPL/MoEF/139 dated 18/7/2013 to MoEF&CC and its Regional office, Chandigarh.
(xv)	Storage facilities for liquid fuel such as LDO and HFO/LSHS shall be made in the plant area where risk in minimum to the storage facilities. Disaster Management Plan shall be prepared to meet any eventuality in case of an accident taking place. Mock drills shall be conducted regularly and based on the same, modifications required, if any shall be incorporated in DMP.	Complied. Mock drills are being conducted regularly at Fuel Oil Storage area. Latest Mock drill had conducted on 07.11.2023 during October - 2023 to March-2024 period are enclosed as **Annexure- 4**.
(xvi)	Regular monitoring of ground water in and around ash pond area shall be carried out, records maintained and six-monthly reports shall be furnished to the Regional office of this Ministry	Complied. Ground water monitoring is being carried out in and around ash pond area. Test reports from NABL accredited and MoEF&CC recognized laboratory are enclosed as **Annexure-5 (a) to Annexure-5 (f)**.

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(xvii)	A green belt of adequate width and density shall be developed around the plant periphery covering about 1/3 of the project area preferably with local species	Complied.
(xviii)	Activities under CSR shall be enhanced with proper financial allocation. Details of these activities shall be submitted to the Regional office of the Ministry, SPCB and the Ministry	Complied. CSR activities with financial allocation implemented during the period of October - 2023 to March-2024 is enclosed as **Annexure-6**.
(xix)	First aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase	Complied.
(xx)	Leq of Noise levels emanating from turbines shall be limited to 75 dBA. For people working in the high noise area, requisite personal protective equipment like earplug/ ear muff etc shall be provided. Workers engaged in noisy areas such as turbine area, air compressors etc shall be periodically examined to maintain audiometric record and for treatment for any hearing loss including shifting to non-noisy/less noisy areas.	Turbines have been provided with acoustic enclosure and installed inside enclosed building. Complied. Complied. Audiometric test is being conducted to workers engaged in noisy areas on six monthly basis and record is being maintained. There was no report of any hearing loss.
(xxi)	Regular monitoring of ground level concentration of SO_2, NOx, SPM, RSPM shall be carried out in the impact zone and record maintained. If at any stage these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring station and frequency of monitoring shall be decided in consultation with SPCB. Periodic reports shall be submitted to the regional office of this ministry.	Complied. Complied. Ambient Air Quality monitoring reports from MoEF&CC recognized and NABL accredited laboratory for the period of October - 2023 to March-2024 are enclosed as **Annexure-7 (a) to Annexure-7 (f).**
(xxii)	The project proponent shall advertise in at least two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locally concerned within seven days from the date of this clearance letter, informing that the project has been accorded environment clearance and copies of clearance letter are available with State Pollution Control Board/Committee and may also be seen at Website of the Ministry of	Complied.

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	Environment and Forests at http://envfor.nic.in	
(xxiii)	A separate environment management cell with qualified staff shall be set up for implementation of the stipulated environmental safeguards.	Complied. Copy of Constitution of Environment Management Cell is attached as **Annexure- '8'.**
(xxiv)	Half yearly report on the status of implementation of the stipulated condition and environmental safeguards shall be submitted to this Ministry/Regional Office/CPCB/SPCB	Periodically submitting to MoEF & CC/ PPCB/ CPCB (copy of Previous letter is attached at **Annexure – '9'** and continue to comply the same in future also.
(xxv)	Regional office of the Ministry of Environment & Forest located at Chandigarh will monitor the implementation of the stipulated conditions. A complete set of documents including Environment Impact Assessment report and Environment Management Plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring	Noted. Complied. Copies of EIA and DPR submitted vide letter no. TSPL/ MOEF/ 111 dated 16/6/2009 to Regional Office, Chandigarh.
(xxvi)	Separate funds shall be allocated for implementation of environment protection measures along with item-wise break up. These costs shall be included as part of the project cost. The fund earmarked for the environment protection measures shall not be diverted for other purposes and year-wise expenditure should be reported to the Ministry.	Complied. Details of actual project expenditure with item-wise break up has already submitted vide letter no. TSPL/ ENV/ 02/ MoEF&CC/ 155 dated 24/5/2018. Complied. Year-wise expenditure incurred on Environmental protection measures during operational phase is submitting regularly. Expenditure incurred on Environmental protection measures during operational phase for the FY 2023-24 is enclosed as **Annexure- '10'.**
(xxvii)	The project authorities shall inform the Regional Office as well as the Ministry regarding the date of financial closure and final approval of the project by the concerned authorities and date of land development work and commissioning of plant	1) Date of site approval from Govt. of Punjab- 25.08.2009 2) Date of financial closure– 26.09.2009 3) Date of commencement of land development work (Leveling and site grading)- 27.02.2010. 4) Consent to operate under Water & Air Acts from PPCB – 31.03.2014. 5) Commissioning of First unit (Unit- 2)- 05.07.2014, Second unit (Unit-3)- 25.11.2015 and Third unit (Unit-1) – 25.08.16.

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(xxviii)	Full cooperation shall be extended to the Scientist / Officers from the Ministry/Regional Office of the Ministry at Chandigarh/ the CPCB/the SPCB who would be monitoring the compliance of environmental status.	Noted.
Additional Conditions vide Office Order No J-13011/24/2008-IA.II(T) dated 25/03/2010		**Compliance Status**
(xxix)	The project proponent shall upload the status of compliance of the conditions stipulated in environment clearance issued vide this Ministry's letter of even no dated 11.07.2008, in its website and updated periodically and also simultaneously send the same by e-mail to the Regional Office of the Ministry of Environment and Forests	Complied and continue to comply the same in future also.
(xxx)	Criteria pollutants levels including NOx, RSPM (PM_{10} & $PM_{2.5}$), Sox (from Stack & ambient air) shall be regularly monitored and results displayed in your website and also at the main gate of the power plant	Complied and continue to comply the same in future also
Additional Conditions vide letter No J-13011/ 24/ 2008-IA.II(T) dated 30/09/2013		**Compliance Status**
(xxxi)	Scheme for harnessing solar power within the premises of the plant (particularly at available roof tops) shall be critically examined and status of implementation shall be submitted.	Complied. Status of implementation has already submitted vide letter no. TSPL/ ENV/ 02/ MoEF&CC/ 151 dated 28/11/2017.
(xxxii)	Waste Water generated from the plant shall be treated before discharge to comply limits prescribed by the SPCB/CPCB and no effluent, under any circumstances whatsoever, should be discharged into low lying area or into estuary.	Complied.
(xxxiii)	A long-term study on radio activity and heavy metals contents on coal to be used shall be carried out through a reputed institute. Thereafter mechanism for an in-built continuous monitoring for radio activity and heavy metals in coal and fly ash (including bottom ash) shall be put in place.	Complied. Reputed institute i.e. Central Institute of Mining and Fuel Research (CIMFR) had been engaged for long term study of radioactivity and heavy metals in coal & fly ash. Copy of report attached at **Annexure- '11'**.

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(xxxiv)	It shall be ensured that in-built monitoring mechanism for the CSR schemes identified is in place and annual social audit shall be got done from the nearest government institute of repute in the region. The project proponent shall also submit the status of implementation of the scheme from time to time.	Complied. In built monitoring mechanism for CSR schemes already in place. Social audit for the FY-2023-24 got done from reputed government institute i.e. Central University of Punjab. Copy of report attached at **Annexure- '12'**.
(xxxv)	The project proponent shall formulate a well laid Corporate Environment Policy and identity and designate responsible officers at all levels of its hierarchy for ensuring adherence to the policy and compliance with conditions stipulated in this clearance letter and other applicable environmental laws and regulations.	Integrated HSE policy has been formulated & identified and designated responsible at all levels of its hierarchy for ensuring adherence to the policy and compliance with conditions stipulated in Environment clearance and other applicable environmental laws and regulations.
4	The Ministry of Environment and Forest reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of the Ministry, MOEF may impose additional environmental conditions or modify the existing ones, if necessary.	Noted
5	The environmental clearance accorded shall be valid for a period of 5 years to start of production operations by the power plant.	Complied. All units i.e. 3x660 MW are in operational.
6	In case any deviation or alteration in the project proposed from those submitted to this Ministry for clearance a fresh reference should be made to the Ministry to assess the adequacy of the condition(s) imposed and to add additional environmental protection measures required if any	Noted
7	The above stipulations would be enforced among others under the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act,1981, the Environment (protection) Act,1986 and rules there under, Hazardous Wastes (Management and Handling) Rules 1989 and its amendments, The Public Liability Insurance Act,1991 and its amendments	Noted
8	Any appeal against this environmental clearance shall lie with the National Environment Appellate Authority, if preferred, within 30 days as prescribed under Section 11 of the National Environment Appellate Act,1997	Noted

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Additional Conditions (as per MoEF Office Memorandum No.J.11013/41/2006-IA.II (I) dated 06/04/2011)		Compliance Status
(i)	Continuous monitoring of stack emissions as well as ambient air quality (as per notified standards) shall be carried out and continuous records maintained. Based on the monitored data, necessary corrective measures as may be required from time to time shall be taken to ensure that the levels are within permissible limits. The results of monitoring shall also be submitted to the respective Regional Office of MoEF regularly. Besides, the results of monitoring will also be put on the website of the company in the public domain.	Complied. TSPL has 4 CAAQMS station and OCEMS for 3 boiler stacks which have real time connectivity with PPCB and CPCB servers. Also, EC compliance report including reports for monitoring of stack emissions and that it is displayed on website. screenshot for TSPL website is attached at **Annexure – '13'**
(ii)	The six-monthly monitoring report as well as the monitored data on various parameters as stipulated in the environment clearance conditions shall be put on the website of the company and also regularly updated. The monitored data shall also be submitted to respective State Pollution Control Board/UTPCCs and the Regional Office of MoEF.	Periodically submitting to MoEF & CC/ PPCB/ CPCB (copy of Previous letter is attached at **Annexure – '9'** and screenshot for TSPL website is attached at **Annexure – '13'** and continue to comply the same in future also.
(iii)	The ambient air quality data as well as the stack emission data will also be displayed in public domain at some prominent place near the main gate of the company and updated in real time.	Complied and continue to comply the same in future also.
MoEF&CC Office Memorandum No. L-11011/ 17/ 2014-IA.I (T) dated 25/09/2014		**Compliance Status**
(i)	The Thermal Power Plants attracting the said Notification shall submit its compliance to the Ministry's Regional Office and SPCB concerned along with the compliance reports of the environmental safeguards stipulated in the ECs and Consents	Complied and continue to comply the same in future also.
MoEF&CC Office Memorandum F.No.22-13/2019-IA.III dated 28/08/2019		**Compliance Status**

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(i)	The guidelines prepared by CPCB for disposal of fly ash for reclamation of low-lying areas and in stowing/backfilling of abandoned mines / quarries shall be followed during Disposal of ash in abandoned or working mines, as annexed.	Not applicable
(ii)	There Should at least be clearance of 500 m of safe distance be maintained from River and water body in case of ash disposal in abandoned mines to prevent embankment failures and fly ash flowing into the nearby water body.	Not applicable
(iii)	The top layer of the fly ash disposal area in the abandoned mines shall be kept moist during disposal.	Not applicable
(iv)	Top layer of the disposal area should have 70 cm overburden or gravels / stones and then 30 cm sweet soil cover. Subsequently, the vegetation shall be raised on the soil cover.	Not applicable
(v)	Bioaccumulation and bio-magnification test shall be conducted on surrounding flora and fauna (tree leaves, vegetation, crop yields and cattle population) during pre-monsoon and post monsoon to find out any trace metals as caped through groundwater or runoff.	Noted.
(vi)	Surface runoff and supernatant water, in any case shall not be let into the surrounding areas. It shall be collected by providing adequate drains around the mine. The Supernatant water along with surface runoff shall be treated and re-used for mixing ash and plant operations.	Not applicable
(vii)	To the extent possible, only decanted water from mine, make up water from treated effluents such as cooling tower blow down and treated sewage water shall be used for making ash slurry.	Complied. In power plant, cooling tower blow down is being used for making ash slurry.
(viii)	Fly ash to be used as soil conditioner in agriculture need and to be applied in controlled manner to limit excessive application so as to prevent soil degradation. The optimize proportion of as to applied	Noted

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	which is to be certified by the state Agricultural Universities / Colleges based on the soil testing.	
(ix)	Approval from DGMS shall be obtained before disposing the ash in the mine voids.	Not applicable
(x)	Technology for conversion of fly ash into coarse granules for stowing in the underground mines to be explored.	Noted
(xi)	All the power plant should install different silos for dry collection of fly ash.	Complied. 3 Nos. separate Silos provided for dry fly ash collection.
(xii)	Records pertaining to details of month-wise Quantity of fly ash disposed and water consumption along with nature/source of water shall be maintained and submitted to ministry / regional office annually.	Complied. Details of quantity of fly ash disposed has already submitted to MoEF&CC, Regional Office, Chandigarh, CPCB and PPCB vide letter number TSPL/ENV/F&W/MoEF&CC/April-2024/01 dated 19.04.2024 **Annexure – '14'** Colling tower blowdown is the source of water for fly ash disposal.
(xiii)	Before starting the disposal of ash into mine voids, the NOC / Permission from the mine owner is to be obtained in case the mine closure activities are not completed or state government in case the mine has been the handed over to the state Govt. after its closure. A copy of such NOC/Permission is to be Submitted to the ministry and its Regional Offices	Not applicable

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Annexure - 1

रजिस्ट्री सं. डी.एल.- 33004/99 REGD. No. D. L.-33004/99

भारत का राजपत्र
The Gazette of India

सी.जी.-डी.एल.-अ.-21052020-219495
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असाधारण
EXTRAORDINARY
भाग II—खण्ड 3—उप-खण्ड (ii)
PART II—Section 3—Sub-section (ii)

प्राधिकार से प्रकाशित
PUBLISHED BY AUTHORITY

सं. 1400] नई दिल्ली, बृहस्पतिवार, मई 21, 2020/वैशाख 31, 1942
No. 1400] NEW DELHI, THURSDAY, MAY 21, 2020/VAISAKHA 31, 1942

पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय

अधिसूचना

नई दिल्ली, 21 मई, 2020

का.आ. 1561(अ) **जबकि** केन्द्रीय सरकार ने पर्यावरण (संरक्षण) नियमावली, 1986 के नियम 5 के साथ पठित पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 3, धारा 6 और धारा 25 के तहत अपनी शक्तियों का प्रयोग करते हुए, ऐश सामग्री (ऐश कंटेंट) को 34% तक की सीमा सहित कोयले का उपयोग करने के लिए ताप विद्युत संयंत्रों की कतिपय श्रेणियों को अधिदेशित करते हुए भारत के राजपत्र, असाधारण में सा.का.नि. 02 (अ), तारीख 2 जनवरी, 2014 द्वारा पर्यावरण (संरक्षण) नियमावली, 1986 के नियम 3 के उपनियम 8 का संशोधन प्रकाशित किया।

और जबकि सा.का.नि. 02 (अ), तारीख 2 जनवरी, 2014 द्वारा उक्त अधिसूचना द्वारा निम्नलिखित समय-सीमा तक कच्चे अथवा मिश्रित अथवा लाभकारी कोयले (बेनिफिसिएटिड कोल), जिसमें ऐश सामग्री चौंतीस प्रतिशत (34%) से अधिक ना हो, का उपयोग करने के लिए त्रैमासिक आधार पर कोयला आधारित ताप विद्युत संयंत्रों को अधिदेशित किया गया है :

क्रम सं.	विद्युत संयंत्र की श्रेणी	गर्तमुख(पिट-हैड)/कोयला खान से ताप विद्युत संयंत्र के अवस्थान की दूरी	समय-सीमा
(क)	एकल ताप विद्युत संयंत्र (किसी भी क्षमता के) और कैप्टिव ताप विद्युत संयंत्र (100 मेगावाट और अधिक क्षमता सहित)	गर्तमुख विद्युत संयंत्रों को छोड़कर गर्तमुख से दूरी पर ध्यान दिए बिना शहरी क्षेत्रों,या पारिस्थितिकीय रूप से संवेदनशील क्षेत्रों या अत्यधिक प्रदूषित क्षेत्रों में अवस्थित	2 जून, 2014 से प्रभावी।
(ख)		1000 किमी से अधिक दूर	2 जून, 2011 से प्रभावी।
(ग)		750-1000 किमी के बीच	1 जनवरी, 2015 से प्रभावी।
(घ)		500-749 किमी के बीच	6 जून, 2016 से प्रभावी।

और जबकि, केंद्रीय सरकार ने पर्यावरण (संरक्षण) नियमावली के नियम 5 के उप-नियम (3) के साथ पठित पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 6 और धारा 25 के अधीन अपनी शक्तियों का प्रयोग करते हुए भारत के राजपत्र, असाधारण में स.का.आ. 3305 (अ), तारीख 7 दिसंबर, 2015 और सा.का.नि.593 (अ), तारीख 28 जून, 2018 द्वारा विद्युत उत्पादन की क्षमता और विद्युत संयंत्र की संस्थापना की तारीख और समय-बद्ध रीति से प्राप्त किए जाने के आधार पर ताप विद्युत संयंत्रों की विभिन्न श्रेणियों के लिए उत्सर्जन मानकों और विनिर्दिष्ट जल उपभोग को प्रकाशित किया था।

और जबकि, पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय ने विद्युत मंत्रालय द्वारा दिनांक 13 अक्तूबर, 2017 को प्रस्तुत की गई यथा संशोधित योजना के अनुसार विभिन्न ताप विद्युत संयंत्रों को वर्ष 2022 तक प्रदूषण नियंत्रण उपकरण संस्थापित करने के लिए पर्यावरण (संरक्षण) अधिनियम, 1986 की धारा 5 के तहत निर्देश जारी करने के लिए केंद्रीय प्रदूषण नियंत्रण बोर्ड को दिनांक 7 दिसंबर, 2017 के फा.सं. ब्यू-15017/40/2007-सीपीडब्ल्यू द्वारा निदेश दिए।

और जबकि, विद्युत मंत्रालय ने अन्य बातों के साथ-साथ यह अभ्यावेदन किया है कि प्रदूषण नियंत्रण प्रौद्योगिकियों के उन्नत होने के साथ ही ताप विद्युत संयंत्र दहन प्रक्रिया से उत्पन्न फ्लाई-ऐश का पता लगाने में बेहतर उपकरणों से सुसज्जित हुए हैं और बिना धुला कोयला अधिक कुशलता और मितव्ययता से प्रयोग किया जा सकता है; ताप विद्युत संयंत्रों को राख अवयवों की विभिन्न किस्मों के साथ कोयले के लिए डिजाइन किया गया है और इनमें सूखी राख (ड्राई ऐश) निकालने, उसका रखरखाव करने और राख के उपयोग के लिए आपूर्ति प्रणालियों को उपलब्ध कराया गया है; धुले कोयले के उपयोग से बिजली उत्पादन महंगा हो जाता है; ताप विद्युत संयंत्रों से उत्पन्न फ्लाई-ऐश सीमेंट निर्माण, ईंटें बनाने, सड़क बिछाने, खनन के उपरांत रिक्त हुए स्थलों और निचले क्षेत्रों को भरने के लिए बैक-फिल सामग्री जैसे कई लाभकारी उपयोगों के लिए प्रयोग की जा रही है; औसतन ऐश की मात्रा 34% तक बनाए रखने की आवश्यकता उद्योगों को कोयले का आयात करने के लिए प्रेरित करती है जिससे विदेशी मुद्रा इत्यादि का बहिर्वाह (आउटफ्लो) होता है।

और जबकि, कोयला मंत्रालय ने अन्य बातों के साथ-साथ अभ्यावेदन किया है कि कोयला खानें वर्षों से कच्चे कोयले की गुणवत्ता, आकार और बाहरी सामग्री में सुधार के लिए निरंतर कड़े प्रयास कर रही हैं जिससे सभी संबंधित उपकरणों की टूट-फूट में उल्लेखनीय कमी आई है, कोयला धुलाई प्रक्रिया में कई प्रकार का रखरखाव होता है और कोयला खानों से धुलाई-स्थलों (वाशरीज़) तक कोयले की बड़ी मात्रा को सड़क द्वारा ले जाने और फिर आगे

विद्युत संयंत्रों तक ले जाने के लिए रेल साइडिंग्ज़ तक ले जाने से बचना; धुलाई की प्रक्रिया केवल कोयले को धुले हुए कोयले और वाशरी अवशिष्ट में बाँटती है जबकि खनित कोयले की राख की मात्रा वही रहती है; निम्न श्रेणी कोयला वाशरी अवशिष्ट कई छोटे उपयोगकर्ता उद्योगों में, अधिक प्रदूषण आदि सृजित करते हैं।

और जबकि, कोयला मंत्रालय और विद्युत मंत्रालय ने इसलिए अनुरोध किया है कि दिनांक 2 जनवरी, 2014 की अधिसूचना पर पुन: विचार द्वारा, विद्युत संयंत्रों को धुले हुए कोयले के प्रयोग के लिए अधिदेशित करने पर गौर किया जाना अपेक्षित है जिससे पर्यावरण पर प्रतिकूल प्रभाव डाले बिना कोयले की लंबी दूरी की ढुलाई के लिए बिजली के उत्पादन में आसानी होगी।

और जबकि, नीति आयोग ने अपनी रिपोर्ट में वाशरीज़, कोयला खनन, परिवहन और विद्युत संयंत्रों में कोयले की खपत की दृष्टि से इस विषय का विश्लेषण करने के बाद अन्य बातों के साथ-साथ संक्षिप्त में यह अभ्यावेदन किया है कि समीपवर्ती उद्योगों में वाशरी अवशिष्ट का इस्तेमाल अधिक प्रदूषण पैदा करता है; चूंकि वाशरी अवशिष्ट अनेक छोटे उद्योगों में वितरित होते हैं, इसलिए विद्युत संयंत्र पर उत्पन्न प्रदूषण की तुलना में अनेक स्थलों पर उत्पन्न प्रदूषण को नियंत्रित करना अधिक कठिन होता है; धुलाई प्रक्रिया में उत्पन्न राख (ऐश) कोयला कणों के साथ-साथ पानी को भी प्रदूषित करती है और इसका लाभकारी उपयोग नहीं किया जा सकता, कोयला धुलाई प्रक्रिया में पानी का अधिक प्रयोग होता है, अपशिष्ट सृजन होता है; वाशरी अवशिष्ट के निपटान का पर्यावरण पर प्रतिकूल प्रभाव होता है क्योंकि इसमें बड़ी मात्रा में निम्न श्रेणी कोयला अवशिष्ट, तरल अपशिष्ट प्रवाह, कोयला भण्डारण, कोयला मिट्टी का रखरखाव, अपवाह और उड़ने वाली धूल का रखरखाव और निपटान करना होता है, कोयला धुलाई का स्थलाकृति, जल निकास स्वरूप और गुणवत्ता, जल निकायों, बड़े पैमाने पर प्रतिवेशी वायु गुणवत्ता पर भी प्रतिकूल प्रभाव पड़ता है; धुलाई प्रक्रिया से विद्युत उत्पादन की लागत में भी वृद्धि होती है जिसका कोई पर्यावरणीय लाभ इत्यादि भी नहीं होता।

और जबकि, नीति आयोग ने इसलिए सिफारिश की है कि पर्यावरणीय और प्रदूषण मानकों का निर्धारण करना और उन्हें लागू करना विवेकपूर्ण होगा, जिन्हें कोयले में ऐश की मात्रा प्रतिबंधित किए जाने के बजाए, परिवहन दूरी के आधार पर विद्युत उत्पादकों के साथ जोड़ा जाना चाहिए।

और जबकि, पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय ऊर्जा मंत्रालय, कोयला मंत्रालय के अभ्यावेदनों, नीति आयोग और कई हितधारकों की रिपोर्ट पर विवेचन करने तथा सावधानीपूर्वक विचार करने के बाद एवं जनहित में निम्नलिखित निष्कर्ष पर पहुंचा है—

i) खनित कोयले में ऐश सामग्री की मात्रा समान रहती है। वाशरी से ऐश सामग्री दो स्थानों (वाशरी और विद्युत संयंत्र) में विभाजित हो जाती है जबकि बिना धुला कोयला विद्युत संयंत्र में प्रयोग किया जाता है, ऐश सामग्री का निपटान केवल एक स्थान अर्थात विद्युत संयंत्र में किया जाता है;

ii) ताप विद्युत संयंत्र प्रदूषण नियंत्रण, ऐश प्रबंधन के लिए तकनीकी रूप से सुसज्जित होते हैं क्योंकि उनमें फ्लाई-ऐश का निराकरण करने के लिए उच्च क्षमता वाले उपकरण होते हैं, ड्राई ऐश निष्क्रमण और हैंडलिंग सिस्टम, ऐश उपयोग के लिए सप्लाई सिस्टम और फ्लू गैसों को तितर-बितर करने के लिए बड़े टाल (स्टैक) होते हैं;

iii) पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय ने उत्सर्जन मानक अधिसूचित किए हैं जिनमें क्रमश: ताप विद्युत संयंत्रों को समयबद्ध रीति से इन मानकों का पालन करने के लिए अधिदेशित किया गया है;

और जबकि, फ्लाई ऐश प्रबंधन और विभिन्न स्तरों पर बिना धुले कोयले के संसाधन के दौरान उत्पन्न अन्य संबंधित पर्यावरणीय पहलुओं सहित बिना धुले कोयले की हैंडलिंग के लिए यथासंभव उत्कृष्ट कार्यढांचे को अपनाना समयोचित है।

और जबकि, कोयला मंत्रालय ने अभ्यावेदन किया है कि मौजूदा अप्रत्याशित कोविड-19 महामारी और इसके फलस्वरूप देश में ऊर्जा उत्पादन के लिए कोयला क्षेत्र की मांग को प्रोत्साहित कर घरेलू कोयले के उपयोग की तत्काल आवश्यकता को देखते हुए यह वांछनीय है कि तत्काल अधिसूचना जारी की जाए।

अब, इसलिए, केंद्रीय सरकार पर्यावरण (संरक्षण) नियमावली, 1986 के नियम 5 के उपनियम (4) के साथ पठित पर्यावरण संरक्षण अधिनियम, 1986 (1986 का 29) की धारा 3, धारा 6 और धारा 25 के तहत अपनी शक्तियों का प्रयोग करते हुए, उक्त नियमावली के नियम 5 के उपनियम (3) के भाग (अ) के तहत सूचना देने की अनिवार्यता को हटा देने के उपरांत जनहित में पर्यावरण (संरक्षण) नियमावली, 1986 को आगे संशोधित करते हुए एतद्वारा निम्नलिखित नियम बनाती है, अर्थात्:

1. (1) इन नियमों को पर्यावरण (संरक्षण) संशोधन नियमावली, 2020 कहा जाएगा।

(2) ये सरकारी गजट में प्रकाशित होने की तारीख से लागू होंगे।

2. पर्यावरण (संरक्षण) नियमावली, 1986 में, नियम 3 में, उपनियम (8) के लिए निम्नलिखित उपनियम प्रतिस्थापित होगा, अर्थात् :-

"(8) ताप विद्युत संयंत्रों को, ऐश सामग्री अथवा दूरी संबंधी अनुबंधों के बिना, निम्नलिखित शर्तों के अध्याधीन कोयले के प्रयोग की अनुमति होगी:

(1) उत्सर्जन मानदण्डों के लिए प्रौद्योगिकीय समाधान निर्धारित करना:

i. वर्तमान अधिसूचनाओं और केंद्रीय प्रदूषण नियंत्रण बोर्ड द्वारा समय-समय पर जारी अनुदेशों के अनुसार विविक्त सामग्री के लिए विनिर्दिष्ट मानदंडों का अनुपालन करना।

ii. वाशरी के मामले में मिडलिंग और अवशिष्टों का एफबीसी(तरलीकृत तल दहन) प्रौद्योगिकी आधारित विद्युत संयंत्रों में उपयोग किया जाए। एफबीसी संयंत्रों में मिडलिंग और अवशिष्टों के लिए वाशरी में संयोजन (लिंकेज) होना चाहिए।

2. ऐश पॉन्ड का प्रबंधन:

i. ताप विद्युत संयंत्र धुले हुए कोयले से बिना धुले हुए कोयले पर स्विच करने के कारण फ्लाई-ऐश पॉन्ड(मौजूदा विद्युत उत्पादन क्षमता) की अतिरिक्त क्षमता की पात्रता प्राप्त किए बिना, समय-समय पर जारी की गई अधिसूचनाओं में यथा-अधिसूचित शर्तों का पालन करें।

ii. ऐश प्रबंधन के लिए जल की खपत को अनुकूल करने हेतु समुचित प्रौद्योगिकी समाधान लागू हों;

iii. यदि आवश्यक हो तो फ्लाई-ऐश का अधिकतम उपयोग सुनिश्चित करने के लिए स्थल विशिष्ट स्थितियों के आधार पर ऐश का पृथक्करण इलैक्ट्रो-स्टेटिक अवक्षेपक (प्रेसीपिटेटर) स्तर पर किया जाए।

iv. ताप विद्युत संयंत्र उपर्युक्त 2(i) के अध्याधीन, छोड़ी हुई अथवा चालू खानों (वर्किंग माइन्स) में (खान मालिकों द्वारा सुविधाजनक बनाया जाए) पर्यावरणीय सुरक्षा उपायों के साथ फ्लाई-ऐश का निपटान करें।

3. परिवहन:

i. ढके हुए रेलवे वैगन (तिरपाल अथवा किसी अन्य माध्यम से ढके हुए रेलवे वैगन) और/अथवा खान-क्षेत्र से परे ढके हुए वाहक (कन्वेयर) द्वारा ही कोयले का परिवहन किया जाए। तथापि, जब तक रेल परिवहन/वाहक इन्फ्रास्ट्रक्चर उपलब्ध नहीं हो जाता, सड़क परिवहन ट्रकों द्वारा किया जाए जो तिरपाल अथवा किसी अन्य माध्यम से ढके हुए हों।

ii. ताप विद्युत संयंत्र द्वारा सुनिश्चित किया जाए कि

(क) रेल अथवा कन्वेयर द्वारा परिवहन के लिए विद्युत संयंत्र में अथवा इसके समीप रेल साइडिंग सुविधा अथवा कन्वेयर सुविधा स्थापित हो; और

(ख) यदि रेल अथवा कन्वेयर सुविधा की अनुपलब्धता के कारण परिवहन न हो पाए, तो यह सुनिश्चित किया जाए कि संबंधित खान के डिलीवरी स्थान से कोयले का परिवहन ढके हुए ट्रकों (तिरपाल अथवा किसी अन्य माध्यम द्वारा), अथवा किसी अन्य यंत्रीकृत बंद ट्रक से सड़क द्वारा हो।

(4) इसे वित्तीय वर्ष 2020-21 और उसके बाद के लिए संबंधित परियोजनाओं हेतु संगत पर्यावरणीय स्वीकृति की अतिरिक्त शर्तें भी समझा जाएगा। मौजूदा पर्यावरणीय स्वीकृतियों को संशोधित किया जाएगा ताकि संगत क्षेत्रों के लिए उपरोक्त शर्तों को प्रवर्तनशील बनाया जा सके। तदनुसार संबंधित राज्य प्रदूषण नियंत्रण बोर्ड द्वारा प्रचालन की अनुमति जारी की जाएगी।

[फा.सं. 13014/01/2020–आईए-I(टी)]

गीता मेनन, संयुक्त सचिव

टिप्पण—मूल नियम भारत के राजपत्र में सं.का.आ. 844(अ), तारीख 19 नवंबर 1986 द्वारा प्रकाशित किए गए थे और पश्चातवर्ती संशोधन सं.का.आ. 82(अ), तारीख 16 फरवरी, 1987; का.आ. 64(अ), तारीख 18 जनवरी, 1988; सा.का.नि. 931(अ), तारीख 27 अक्तूबर,1989; का.आ. 23(अ), तारीख 16 जनवरी, 1991; सा.का.नि. 95(अ), तारीख 12 फरवरी, 1992; सा.का.नि. 329(अ), तारीख 13 मार्च, 1992; सा.का.नि. 562(अ), तारीख 27 मई, 1992; सा.का.नि. 884(अ), तारीख 20 नवंबर, 1992; सा.का.नि. 386 (अ), तारीख 22 अप्रैल, 1993; सा.का.नि. 422 (अ), तारीख 19 मई, 1993; सा.का.नि. 801 (अ), तारीख 31 दिसंबर, 1993; सा.का.नि. 320 (अ), तारीख 16 मार्च, 1994; सा.का.नि. 560 (अ), तारीख 19 सितंबर, 1997; सा.का.नि. 378 (अ), तारीख 30 जून, 1998; सा.का.नि. 07 (अ), तारीख 22 दिसंबर, 1998; सा.का.नि. 407 (अ), तारीख 31 मई, 2001; सा.का.नि. 826 (अ), तारीख 16 नवंबर, 2009; सा.का.नि. 513 (अ), तारीख 28 जून, 2012; सा.का.नि. 02 (अ), तारीख 02 जनवरी, 2014; का.आ. 3305 (अ), तारीख 07 दिसंबर, 2015; सा.का.नि. 593 (अ), तारीख 28 जून, 2018; और का.आ. 236 (अ), तारीख 16 जनवरी, 2020 द्वारा किए गए।

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

NOTIFICATION

New Delhi, the 21st May, 2020

S.O. 1561(E).—Whereas the Central Government had, in exercise of its powers under Section 3, Section 6 and Section 25 of Environment (Protection) Act, 1986 (29 of 1986) read with rule 5 of Environment (Protection) Rules, 1986, published draft rules further to amend sub-rule (8) of rule 3 of Environment (Protection) Rules, 1986, in the Gazette of India, Extraordinary, *vide* number G.S.R. 02(E), dated the

2nd January, 2014 mandating certain categories of thermal power plants to use coal with ash content restricted to 34%.

And whereas, the said Notification *vide* number G.S.R. 02(E) dated the 2nd January, 2014, mandated coal based thermal power plants to use raw or blended or beneficiated coal with ash content not exceeding thirty-four percent (34%), on quarterly basis, by the time lines given below:

Sl. No.	Category of Power Plant	Distance of location of Thermal Power Plant from pit-head/coal mine	Time lines
(a)	Stand-alone Thermal Power Plants (any capacity), and Captive Thermal Power Plants (with capacity of 100 MW and above)	Located in urban areas, or ecologically sensitive areas or critically polluted areas, irrespective of distance from pit-head, except pit-head power plants.	With effect from 2nd June, 2014.
(b)		beyond 1000 km	With effect from 2nd June, 2014.
(c)		between 750-1000 km	With effect from 1st January, 2015.
(d)		between 500-749 km	With effect from 5th June, 2016.

And whereas, the Central Government had, in exercise of its powers under sections 6 and 25 of the Environment (Protection) Act, 1986 (29 of 1986) read with sub-rule (3) of rule 5 of the Environment (Protection) Rules, in the Gazette of India, Extraordinary, *vide* number S.O. 3305 (E), dated the 7th December, 2015 and G.S.R. 593 (E), dated the 28th June, 2018 published the emission standards and specific water consumption for various category of thermal power plants, based on capacity of power generation and date of installation of power plant and to be achieved in time bound manner.

And whereas, the Ministry of Environment, Forest and Climate Change directed the Central Pollution Control Board vide F.No.Q-15017/40/2007-CPW dated the 7th December, 2017 to issue Directions under Section 5 of Environment (Protection) Act, 1986, to various Thermal Power Plants to install pollution control equipment as per the revised plan submitted by the Ministry of Power dated the 13th October, 2017 by 2022.

And whereas, the Ministry of Power has, *inter alia*, represented that with advancement in pollution control technologies, thermal power plants are better equipped to capture fly-ash generated in combustion process and unwashed coal can be used more efficiently and economically; thermal power plants are designed for coal with wide variety of ash content and are equipped with dry ash evacuation, handling and supply systems for ash utilisation; using washed coal makes power generation costlier; fly ash generated in thermal power plants is being used in several beneficial uses like cement manufacturing, brick making, road laying, back-fill material for reclamation of mine voids and low lying areas; requirement of maintaining average ash content to 34% prompts industries to undertake import of coal, resulting in outflow of foreign exchange etc.

And Whereas, the Ministry of Coal has, *inter alia*, represented that the coal mines are constantly striving to improve raw coal in terms of quality, size and extraneous material over the years which has considerably reduced wear and tear of all related equipment, coal washing process involves multiple handling and avoidable road transportation of huge quantities of coal from coal mines to washeries and then to rail sidings for onward transport to power plants; the washing process only divides the coal into washed coal and washery rejects while the ash content of mined coal remains the same; use of low grade coal washery rejects, in the multiple small user industries, generates more pollution etc.

And Whereas, the Ministry of Coal and Ministry of Power have, therefore, represented that the mandating power plants to use washed coal requires to be revisited by reconsidering the notification dated the 2nd January, 2014 which will help ease power generation for long distance haulage of coal without adverse impact on the environment.

And Whereas, the **NITI Aayog**, in its report after analysing the issue from the perspective of washeries, Coal mining, transportation and consumption of coal at power plants has, *inter alia*, summed up that use of washery rejects in nearby industries generates more pollution; since washery rejects are distributed in number of smaller industries, the pollution control at numerous points is more difficult than controlling the

pollution at power plant end; Ash generated in the washing process pollutes water along with coal particles and cannot be gainfully utilised; Coal washing process involves increased water use, effluent generation; Disposal of washery rejects has negative environmental impact as it has to handle and dispose huge quantity of low grade coal washery rejects, liquid effluent streams, coal storage, handling coal dust, runoff and fugitive dust; Coal washing also adversely impacts topography, water drainage pattern and quality, water bodies, surrounding air quality at large scale; Washing process increases the cost of power generation with no commensurate environmental advantages etc.

And Whereas, NITI Aayog has, therefore, recommended that it may be prudent to determine and enforce the environmental and pollution norms, to be complied with by the power generators, rather than restricting the ash content in coal, based on distance of transportation.

And Whereas, the Ministry of Environment, Forest and Climate Change, after deliberating the representations from Ministry of Power, Ministry of Coal, report of NITI Aayog and various stakeholders and after careful considerations & in larger public interest, arrived at the following:

(i) The extent of ash content in mined coal remains the same. With washeries, the ash content gets divided at two places (washeries and the power plant), whereas if unwashed coal is used in power plant, the ash content is handled at only one place viz. the power plant;

(ii) Thermal power plants are technologically equipped to address pollution control, ash management as they have high efficiency equipment to capture fly ash, dry ash evacuation and handling systems, ash supply systems for ash utilisation and tall stacks for wider dispersal of flue gases;

(iii) The Ministry of Environment, Forest and Climate Change has notified emission norms, mandating respective thermal power plants to adhere to such norms in a time bound manner;

And Whereas, it is expedient to adopt best possible framework towards handling of unwashed coal including management of fly ash and other associated environmental aspects arising out of processing of unwashed coal at different stages.

And Whereas, the Ministry of Coal has represented that in view of the existing unprecedented COVID-19 pandemic and the resultant immediate requirement of utilization of domestic coal by stimulating coal sector demand for power generation in the country, it is desirable to issue the notification at the earliest.

Now, therefore, in exercise of the powers conferred by Section 3, Section 6 and Section 25 of the Environment Protection Act, 1986 (29 of 1986) read with sub-rule (4) of rule 5 of the Environment (Protection) Rules, 1986, the Central Government, after having dispensed with the requirement of notice under clause (a) of sub-rule (3) of rule 5 of the said rules, in public interest, hereby makes the following rules to further amend the Environment (Protection) Rules, 1986, namely :-

1. (1) These rules may be called the Environment (Protection) Amendment Rules, 2020

(2) They shall come into force on the date of their publication in the Official Gazette.

2. In the Environment (Protection) Rules, 1986, in rule 3, for sub-rule (8), the following sub-rule shall be substituted, namely :-

"(8) Use of coal by Thermal Power Plants, without stipulations as regards ash content or distance, shall be permitted subject to following conditions:

(1) **Setting Up Technology Solution for emission norms:**

(i) Compliance of specified emission norms for Particulate Matter, as per extant notifications and instructions of Central Pollution Control Board, issued from time to time.

(ii) In case of washeries, Middling and rejects to be utilized in FBC (Fluidised Bed Combustion) technology based thermal power plants. Washery to have linkage for middling and rejects in Fluidised Bed Combustion plants.

(2) **Management of Ash Ponds:**

(i) The thermal powers plants shall comply with conditions, as notified in the Fly Ash notification issued from time to time, without being entitled to additional capacity of fly ash pond (for existing power generation capacity) on ground of switching from washed coal to unwashed coal.

(ii) Appropriate Technology solutions shall be applied to optimise water consumption for Ash management;

(iii) The segregation of ash may be done at the Electro-Static Precipitator stage, if required, based on site specific conditions, to ensure maximum utilization of fly ash;

(iv) Subject to 2(i) above, the thermal power plants to dispose flyash in abandoned or working mines (to be facilitated by mine owner) with environmental safeguards.

(3) **Transportation:**

(i) Coal transportation may be undertaken by covered Railway wagon (railway wagons covered by tarpaulin or other means) and/or covered conveyer beyond the mine area. However, till such time enabling Rail transport/conveyer infrastructure is not available, road transportation may be undertaken in trucks, covered by tarpaulin or other means.

(ii) It shall be ensured by the thermal power plant that

a. Rail siding facility or conveyor facility is set up at or near the power plant, for transportation by rail or conveyor; and

b. If transportation by rail or conveyor facility is not available, ensure that the coal is transported out from the Delivery Point of the respective mine in covered trucks (by tarpaulin or other means), or any mechanized closed trucks by road.

(4) This shall also be deemed to be additional conditions of the relevant Environmental Clearances for respective projects for financial year 2020-21 and onwards. The existing Environmental Clearances shall stand modified so as to make the above conditions operative for relevant sectors. The Consent to Operate shall be issued by respective State Pollution Control Boards accordingly."

[F.No.13014/01/2020-IA.I(T)]

GEETA MENON, Jt. Secy.

Note:-The principal rules were published in the Gazette of India *vide* number S.O. 844(E), dated the 19th November,1986 and subsequently amended *vide* numbers S.O. 82(E), dated 16th February, 1987; S.O. 64(E), dated18th January, 1988; G.S.R. 931(E), dated 27th October, 1989; S.O. 23(E), dated 16th January, 1991; G.S.R. 95(E), dated 12th February, 1992; G.S.R.329(E), dated 13th March, 1992; G.S.R. 562(E), dated 27th May, 1992; G.S.R. 884(E), dated 20th November, 1992; G.S.R. 386(E), dated 22nd April, 1993; G.S.R. 422(E), dated 19th May, 1993; G.S.R. 801(E), dated 31st December, 1993; G.S.R. 320(E), dated 16th March, 1994; G.S.R. 560(E), dated 19th September, 1997; G.S.R. 378(E), dated 30th June, 1998;G.S.R. 7(E), dated 22nd December, 1998, G.S.R. 407(E), dated 31st May, 2001, G.S.R. 826(E), dated 16th November, 2009; G.S.R. 513(E), dated 28th June, 2012; G.S.R. 02(E) dated 2nd January, 2014; S.O. 3305 (E), dated 7th December, 2015; G.S.R. 593(E), dated 28th June, 2018 and S.O. 236 (E), dated 16th January, 2020.

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Annexure-2(a)

TEST REPORT

TC-11818

ULR No. : NA		**Test Report No. :**	NSTL131023NA001
Type of Sample : Stack Emission (Boiler)		**Date of Reporting :**	20/10/2023
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road, Village Banawala, Distt. Mansa, Punjab, India	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
		Mode of Collection of Sample	Sampling by laboratory
Sampling Protocol	IS:11255&CPCB Guidelines(LATS/80/2013-14).	**Date of Receipt of Sample**	13/10/2023
Date of Sampling	11/10/2023	**Fuel Used**	Coal
Source of Emission	Boiler No.1 (Third Unit; Unit-1) 660MW	**APCD Details (If provided)**	ESP Followed by Fabric Filter
Stack Description	Single,Circular & Metal		
Point of Sample Collection	From Port Hole after APCD	**Period of Analysis**	13/10/2023 To 20/10/2023
Testing Protocol	IS:11255&CPCB Guidelines(LATS/80/2013-14).		
Testing Location	On Site & Permanent Facility		

RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Test Method
1	Particulate Matter (at 6% O2 Corr.)	mg/Nm³	35	S: 11255 (Part-1)
2	Sulphur Dioxide (as SO2) at 6% dry O2	mg/Nm³	1044	Lab SOP: EL/SOP/FGA/01, (Flue Gas Analyzer) Issue No.-04, Nov 10
3	Oxides of Nitrogen (as NOx) at 6% dry O2	mg/Nm³	173	Lab SOP: EL/SOP/FGA/01, (Flue Gas Analyzer) Issue No.-04, Nov 10
4	Mercury (Hg)	mg/Nm³	BDL (DL 0.01)	USEPA Method 29
5	Moisture	%	14.6	IS: 11255 (Part-3)
6	Carbon Monoxide as CO	ppm	4.3	Lab SOP: EL/SOP/FGA/01, (Flue Gas Analyzer) Issue No.-04, Nov 10
7	Carbon Dioxide as CO2	%	10.5	Lab SOP: EL/SOP/FGA/01, (Flue Gas Analyzer) Issue No.-04, Nov 10
8	Oxygen as O2	%	6.0	Lab SOP: EL/SOP/FGA/01, (Flue Gas Analyzer) Issue No.-04, Nov 10
9	Temperature	C	124	IS: 11255 (Part-3)
10	Velocity	m/sec	25.6	IS: 11255 (Part-3)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Eco Laboratories & Consultants Pvt. Ltd. E-207 Phase VIII-B (Sector-74) Mohali (Pb.) 160071

Umesh Kumar
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TEST REPORT

TC-11818

ULR No. : NA		**Test Report No. :**	NSTL131023NA002
Type of Sample : Stack Emission (Boiler)		**Date of Reporting :**	20/10/2023
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road, Village Banawala, Distt. Mansa, Punjab, India	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
		Mode of Collection of Sample	Sampling by laboratory
Sampling Protocol	IS:11255&CPCB Guidelines(LATS/80/2013-14).	**Date of Receipt of Sample**	13/10/2023
Date of Sampling	11/10/2023	**Fuel Used**	Coal
Source of Emission	Boiler No.2 (First Unit; Unit-2) 660MW	**APCD Details (If provided)**	ESP Followed by Fabric Filter
Stack Description	Single,Circular & Metal		
Point of Sample Collection	From Port Hole after APCD	**Period of Analysis**	13/10/2023 To 20/10/2023
Testing Protocol	IS:11255&CPCB Guidelines(LATS/80/2013-14).		
Testing Location	On Site & Permanent Facility		

RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Test Method
1	Particulate Matter (at 6% O2 Corr.)	mg/Nm³	38	IS: 11255 (Part-1)
2	Sulphur Dioxide (as SO2) at 6% dry O2	mg/Nm³	1093	Lab SOP: EL/SOP/FGA/01, (Flue Gas Analyzer) Issue No.-04, Nov 10
3	Oxides of Nitrogen (as NOx) at 6% dry O2	mg/Nm³	180	Lab SOP: EL/SOP/FGA/01, (Flue Gas Analyzer) Issue No.-04, Nov 10
4	Mercury (Hg)	mg/Nm³	BDL (DL 0.01)	USEPA Method 29
5	Moisture	%	14.0	IS: 11255 (Part-3)
6	Carbon Monoxide as CO	ppm	4.1	Lab SOP: EL/SOP/FGA/01, (Flue Gas Analyzer) Issue No.-04, Nov 10
7	Carbon Dioxide as CO2	%	10.2	Lab SOP: EL/SOP/FGA/01, (Flue Gas Analyzer) Issue No.-04, Nov 10
8	Oxygen as O2	%	6.3	Lab SOP: EL/SOP/FGA/01, (Flue Gas Analyzer) Issue No.-04, Nov 10
9	Temperature	C	135	IS: 11255 (Part-3)
10	Velocity	m/sec	26.3	IS: 11255 (Part-3)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

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TEST REPORT

TC-11818

ULR No. : NA		**Test Report No. :**	NSTL131023NA003
Type of Sample : Stack Emission (Boiler)		**Date of Reporting :**	20/10/2023
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road, Village Banawala, Distt. Mansa, Punjab, India	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
		Mode of Collection of Sample	Sampling by laboratory
Sampling Protocol	IS:11255&CPCB Guidelines(LATS/80/2013-14).	**Date of Receipt of Sample**	13/10/2023
Date of Sampling	09/10/2023	**Fuel Used**	Coal
Source of Emission	Boiler No.3 (Second Unit; Unit-3) 660MW	**APCD Details (If provided)**	ESP Followed by Fabric Filter
Stack Description	Single,Circular & Metal		
Point of Sample Collection	From Port Hole after APCD	**Period of Analysis**	13/10/2023 To 20/10/2023
Testing Protocol	IS:11255&CPCB Guidelines(LATS/80/2013-14).		
Testing Location	On Site & Permanent Facility		

RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Test Method
1	Particulate Matter (at 6% O2 Corr.)	mg/Nm³	36	IS: 11255 (Part-1)
2	Sulphur Dioxide (as SO2) at 6% dry O2	mg/Nm³	1051	Lab SOP: EL/SOP/FGA/01, (Flue Gas Analyzer) Issue No.-04, Nov 10
3	Oxides of Nitrogen (as NOx) at 6% dry O2	mg/Nm³	166	Lab SOP: EL/SOP/FGA/01, (Flue Gas Analyzer) Issue No.-04, Nov 10
4	Mercury (Hg)	mg/Nm³	BDL (DL 0.01)	USEPA Method 29
5	Moisture	%	14.2	IS: 11255 (Part-3)
6	Carbon Monoxide as CO	ppm	4.0	Lab SOP: EL/SOP/FGA/01, (Flue Gas Analyzer) Issue No.-04, Nov 10
7	Carbon Dioxide as CO2	%	10.7	Lab SOP: EL/SOP/FGA/01, (Flue Gas Analyzer) Issue No.-04, Nov 10
8	Oxygen as O2	%	6.1	Lab SOP: EL/SOP/FGA/01, (Flue Gas Analyzer) Issue No.-04, Nov 10
9	Temperature	C	128	IS: 11255 (Part-3)
10	Velocity	m/sec	25.5	IS: 11255 (Part-3)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

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TEST REPORT

ULR No. : NA		Test Report No. :	NSTL301023NA014
Type of Sample : Stack Emission (Boiler)		Date of Reporting :	03/11/2023
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW. Thermal Power Plant, Mansa Talwandi Sabo Road, Village Banawala, Distt. Mansa, Punjab, India	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
		Mode of Collection of Sample	Sampling by laboratory
Sampling Protocol	IS:11255&CPCB Guidelines(LATS/80/2013-14).	Date of Receipt of Sample	30/10/2023
Date of Sampling	26/10/2023	Fuel Used	Coal
Source of Emission	Boiler No.1 (Third Unit; Unit-1) 660MW	APCD Details (If provided)	ESP followed by fabric filter
Stack Description	Single, Circular & Metal		
Point of Sample Collection	From Port Hole after APCD	Period of Analysis	30/10/2023 To 03/11/2023
Testing Protocol	IS:11255&CPCB Guidelines(LATS/80/2013-14).		
Testing Location	On Site & Permanent Facility		

RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Test Method
1	Particulate Matter (at 6% O2 Corr.)	mg/Nm³	37	IS: 11255 (Part-1)
2	Sulphur Dioxide (as SO2) at 6% dry O2	mg/Nm³	1096	Lab SOP: EL/SOP/FGA/01, (Flue Gas Analyzer) Issue No.-04, Nov 10
3	Oxides of Nitrogen (as NOx) at 6% dry O2	mg/Nm³	182	Lab SOP: EL/SOP/FGA/01, (Flue Gas Analyzer) Issue No.-04, Nov 10
4	Mercury (Hg)	mg/Nm³	BDL(DL0.01)	USEPA Method 29
5	Moisture	%	14.3	By Calculation
6	Carbon Monoxide as CO	ppm	4.1	Lab SOP: EL/SOP/FGA/01, (Flue Gas Analyzer) Issue No.-04, Nov 10
7	Carbon Dioxide as CO2	%	10.8	Lab SOP: EL/SOP/FGA/01, (Flue Gas Analyzer) Issue No.-04, Nov 10
8	Oxygen as O2	%	5.9	Lab SOP: EL/SOP/FGA/01, (Flue Gas Analyzer) Issue No.-04, Nov 10
9	Temperature	C	122	IS: 11255 (Part-3)
10	Velocity	m/sec	25.5	IS: 11255 (Part-3)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
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TEST REPORT

TC-11818

ULR No. : NA		**Test Report No. :**	NSTL301023NA015
Type of Sample : Stack Emission (Boiler)		**Date of Reporting :**	03/11/2023
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road, Village Banawala, Distt. Mansa, Punjab, India	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
		Mode of Collection of Sample	Sampling by laboratory
Sampling Protocol	IS:11255&CPCB Guidelines(LATS/80/2013-14).	**Date of Receipt of Sample**	30/10/2023
Date of Sampling	26/10/2023	**Fuel Used**	Coal
Source of Emission	Boiler No.2 (First Unit; Unit-2) 660MW	**APCD Details (If provided)**	ESP followed by fabric filter
Stack Description	Single, Circular & Metal		
Point of Sample Collection	From Port Hole after APCD	**Period of Analysis**	30/10/2023 To 03/11/2023
Testing Protocol	IS:11255&CPCB Guidelines(LATS/80/2013-14).		
Testing Location	On Site & Permanent Facility		

RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Test Method
1	Particulate Matter (at 6% O2 Corr.)	mg/Nm³	40	IS: 11255 (Part-1)
2	Sulphur Dioxide (as SO2) at 6% dry O2	mg/Nm³	1148	Lab SOP: EL/SOP/FGA/01, (Flue Gas Analyzer) Issue No.-04, Nov 10
3	Oxides of Nitrogen (as NOx) at 6% dry O2	mg/Nm³	189	Lab SOP: EL/SOP/FGA/01, (Flue Gas Analyzer) Issue No.-04, Nov 10
4	Mercury (Hg)	mg/Nm³	BDL(DL0.01)	USEPA Method 29
5	Moisture	%	14.5	By Calculation
6	Carbon Monoxide as CO	ppm	4.0	Lab SOP: EL/SOP/FGA/01, (Flue Gas Analyzer) Issue No.-04, Nov 10
7	Carbon Dioxide as CO2	%	10.5	Lab SOP: EL/SOP/FGA/01, (Flue Gas Analyzer) Issue No.-04, Nov 10
8	Oxygen as O2	%	6.1	Lab SOP: EL/SOP/FGA/01, (Flue Gas Analyzer) Issue No.-04, Nov 10
9	Temperature	C	125	IS: 11255 (Part-3)
10	Velocity	m/sec	26.0	IS: 11255 (Part-3)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

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TEST REPORT

TC-11818

ULR No. : NA		**Test Report No. :**	NSTL301023NA016
Type of Sample : Stack Emission (Boiler)		**Date of Reporting :**	03/11/2023
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road, Village Banawala, Distt. Mansa, Punjab, India	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
		Mode of Collection of Sample	Sampling by laboratory
Sampling Protocol	IS:11255&CPCB Guidelines(LATS/80/2013-14).	**Date of Receipt of Sample**	30/10/2023
Date of Sampling	26/10/2023	**Fuel Used**	Coal
Source of Emission	Boiler No.3 (Second Unit; Unit-3) 660MW	**APCD Details (If provided)**	ESP foloowed by fabric filter
Stack Description	Single, Circular & Metal		
Point of Sample Collection	From Port Hole after APCD	**Period of Analysis**	30/10/2023 To 03/11/2023
Testing Protocol	IS:11255&CPCB Guidelines(LATS/80/2013-14).		
Testing Location	On Site & Permanent Facility		

RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Test Method
1	Particulate Matter (at 6% O2 Corr.)	mg/Nm³	38	IS: 11255 (Part-1)
2	Sulphur Dioxide (as SO2) at 6% dry O2	mg/Nm³	1104	Lab SOP: EL/SOP/FGA/01, (Flue Gas Analyzer) Issue No.-04, Nov 10
3	Oxides of Nitrogen (as NOx) at 6% dry O2	mg/Nm³	174	Lab SOP: EL/SOP/FGA/01, (Flue Gas Analyzer) Issue No.-04, Nov 10
4	Mercury (Hg)	mg/Nm³	BDL(DL0.01)	USEPA Method 29
5	Moisture	%	14.8	By Calculation
6	Carbon Monoxide as CO	ppm	4.0	Lab SOP: EL/SOP/FGA/01, (Flue Gas Analyzer) Issue No.-04, Nov 10
7	Carbon Dioxide as CO2	%	10.3	Lab SOP: EL/SOP/FGA/01, (Flue Gas Analyzer) Issue No.-04, Nov 10
8	Oxygen as O2	%	6.2	Lab SOP: EL/SOP/FGA/01, (Flue Gas Analyzer) Issue No.-04, Nov 10
9	Temperature	C	126	IS: 11255 (Part-3)
10	Velocity	m/sec	25.2	IS: 11255 (Part-3)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

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Annexure-2(B)

TEST REPORT

TC-11818

ULR No. : TC118180000000338F		Test Report No. : NSTL101123NA014	
Type of Sample : Emission Stack- Boiler			
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
		Date of Sampling	07/11/2023
Sampling Protocol	IS 11255, CPCB: LATS/80/2013-14	Date of Sample Receipt	10/11/2023
Mode of Collection of Sample	Sampling by laboratory	Period of Analysis	10/11/2023 To 18/11/2023
Source of Emission	Boiler No.1 (Third Unit; Unit-1) 660MW	Date of Reporting	18/11/2023
Stack Description	Single, Circular & Metal	Fuel Used	Coal
Point of Sample Collection	From Port Hole after APCD	APCD Details (If provided)	ESP followed by fabric filter
Standard/Specification	Emission Stack- Boiler: EPA 1986		
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Detection Limit	Test Method
1	Particulate Matter at 12% CO2 Corr.	mg/Nm3	39	5	IS 11255 (Part 1)
2	Sulphur Dioxide at 6% O2 Corr.	mg/Nm3	1154	5	EL/SOP/FGA/01
3	Mercury as Hg	mg/Nm3	BDL	0.01	USEPA Method 29
4	Carbon Monoxide as CO	mg/Nm3	4.2	5	EL/SOP/FGA/01
5	Carbon Dioxide as CO2	%	10.5	1	EL/SOP/FGA/01
6	Oxides of Nitrogen as NOX at 6% O2 Corr.	mg/Nm3	178	5	EL/SOP/FGA/01
7	Oxygen as O2	%	6.1	1	EL/SOP/FGA/01
8	Temperature	°C	115	5	IS 11255 (Part 3)
9	Flue Gas Velocity	m/s	25.4	3	IS 11255 (Part 3)
10	Moisture	%	14.1	1	IS 11255 (Part 3)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

S-207 Phase VIII-B (Sector-74) Mohali (Pb.) 160071

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TEST REPORT

TC-11818

ULR No. : TC1181800000000333F		Test Report No. : NSTL101123NA015	
Type of Sample : Emission Stack- Boiler			
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
		Date of Sampling	07/11/2023
Sampling Protocol	IS 11255, CPCB: LATS/80/2013-14	Date of Sample Receipt	10/11/2023
Mode of Collection of Sample	Sampling by laboratory	Period of Analysis	10/11/2023 To 18/11/2023
Source of Emission	Boiler No.2 (First Unit; Unit-2) 660MW	Date of Reporting	18/11/2023
Stack Description	Single, Circular & Metal	Fuel Used	Coal
Point of Sample Collection	From Port Hole after APCD	APCD Details (If provided)	ESP followed by fabric filter
Standard/Specification	Emission Stack- Boiler: EPA 1986		
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Detection Limit	Test Method
1	Particulate Matter at 6% O2 Corr.	mg/Nm3	42	5	IS 11255 (Part 1)
2	Sulphur Dioxide at 6% O2 Corr.	mg/Nm3	1208	5	EL/SOP/FGA/01
3	Mercury as Hg	mg/Nm3	BDL	0.01	USEPA Method 29
4	Carbon Monoxide as CO	mg/Nm3	4.1	5	EL/SOP/FGA/01
5	Carbon Dioxide as CO2	%	10.8	1	EL/SOP/FGA/01
6	Oxides of Nitrogen as NOX at 6% O2 Corr.	mg/Nm3	180	5	EL/SOP/FGA/01
7	Oxygen as O2	%	6.3	1	EL/SOP/FGA/01
8	Temperature	°C	125	5	IS 11255 (Part 3)
9	Flue Gas Velocity	m/s	25.6	3	IS 11255 (Part 3)
10	Moisture	%	14.7	1	IS 11255 (Part 3)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

E-207 Phase VIII-B (Sector-74) Mohali (Pb.) 160071

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TEST REPORT

TC-11818

ULR No. : TC118180000000340F		Test Report No. : NSTL101123NA016	
Type of Sample : Emission Stack- Boiler			
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
		Date of Sampling	07/11/2023
Sampling Protocol	IS 11255, CPCB: LATS/80/2013-14	Date of Sample Receipt	10/11/2023
Mode of Collection of Sample	Sampling by laboratory	Period of Analysis	10/11/2023 To 18/11/2023
Source of Emission	Boiler No.3 (Second Unit; Unit-3) 660MW	Date of Reporting	18/11/2023
Stack Description	Single, Circular & Metal	Fuel Used	Coal
Point of Sample Collection	From Port Hole after APCD	APCD Details (If provided)	ESP followed by fabric filter
Standard/Specification	Emission Stack- Boiler: EPA 1986		
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Detection Limit	Test Method
1	Particulate Matter at 6% O2 Corr.	mg/Nm3	40	5	IS 11255 (Part 1)
2	Sulphur Dioxide at 6% O2 Corr.	mg/Nm3	1162	5	EL/SOP/FGA/01
3	Mercury as Hg	mg/Nm3	BDL	0.01	USEPA Method 29
4	Carbon Monoxide as CO	mg/Nm3	4.5	5	EL/SOP/FGA/01
5	Carbon Dioxide as CO2	%	10.2	1	EL/SOP/FGA/01
6	Oxides of Nitrogen as NOX at 6% O2 Corr.	mg/Nm3	184	5	EL/SOP/FGA/01
7	Oxygen as O2	%	6.5	1	EL/SOP/FGA/01
8	Temperature	°C	121	5	IS 11255 (Part 3)
9	Flue Gas Velocity	m/s	25.8	3	IS 11255 (Part 3)
10	Moisture	%	14.5	1	IS 11255 (Part 3)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

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TEST REPORT

TC-11818

ULR No. : TC118180000000742F		**Test Report No. :**	NSTL241123NA008
Type of Sample : Emission Stack- Boiler			
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
		Date of Sampling	22/11/2023
Sampling Protocol	IS 11255, CPCB: LATS/80/2013-14	**Date of Sample Receipt**	24/11/2023
Mode of Collection of Sample	Sampling by laboratory	**Period of Analysis**	24/11/2023 To 28/11/2023
Source of Emission	Boiler No.3 (Second Unit; Unit-3) 660MW	**Date of Reporting**	28/11/2023
Stack Description	Single, Circular & Metal	**Fuel Used**	Coal
Point of Sample Collection	From Port Hole after APCD	**APCD Details (If provided)**	ESP followed by fabric filter
Standard/Specification	Emission Stack- Boiler: EPA 1986		
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Detection Limit	Test Method
1	Particulate Matter at 6% O2 Corr.	mg/Nm3	37	5	IS 11255 (Part 1)
2	Sulphur Dioxide at 6% O2 Corr.	mg/Nm3	1089	5	EL/SOP/FGA/01
3	Mercury as Hg	mg/Nm3	BDL	0.01	USEPA Method 29
4	Carbon Monoxide as CO	mg/Nm3	4.1	5	EL/SOP/FGA/01
5	Carbon Dioxide as CO2	%	10.5	1	EL/SOP/FGA/01
6	Oxides of Nitrogen as NOX at 6% O2 Corr.	mg/Nm3	181	5	EL/SOP/FGA/01
7	Oxygen as O2	%	6.3	1	EL/SOP/FGA/01
8	Temperature	°C	121	5	IS 11255 (Part 3)
9	Flue Gas Velocity	m/s	25.9	3	IS 11255 (Part 3)
10	Moisture	%	14.4	1	IS 11255 (Part 3)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
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TEST REPORT

TC-11818

ULR No. : TC1181800000000743F		Test Report No. :	NSTL241123NA009
Type of Sample : Emission Stack- Boiler			
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
		Date of Sampling	22/11/2023
Sampling Protocol	IS 11255, CPCB: LATS/80/2013-14	Date of Sample Receipt	24/11/2023
Mode of Collection of Sample	Sampling by laboratory	Period of Analysis	24/11/2023 To 28/11/2023
Source of Emission	Boiler No.2 (First Unit; Unit-2) 660MW	Date of Reporting	28/11/2023
Stack Description	Single, Circular & Metal	Fuel Used	Coal
Point of Sample Collection	From Port Hole after APCD	APCD Details (If provided)	ESP followed by fabric filter
Standard/Specification	Emission Stack- Boiler: EPA 1986		
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Detection Limit	Test Method
1	Particulate Matter at 6% O2 Corr.	mg/Nm3	38	5	IS 11255 (Part 1)
2	Sulphur Dioxide at 6% O2 Corr.	mg/Nm3	1196	5	EL/SOP/FGA/01
3	Mercury as Hg	mg/Nm3	BDL	0.01	USEPA Method 29
4	Carbon Monoxide as CO	mg/Nm3	4.3	5	EL/SOP/FGA/01
5	Carbon Dioxide as CO2	%	10.9	1	EL/SOP/FGA/01
6	Oxides of Nitrogen as NOX at 6% O2 Corr.	mg/Nm3	176	5	EL/SOP/FGA/01
7	Oxygen as O2	%	6.1	1	EL/SOP/FGA/01
8	Temperature	°C	130	5	IS 11255 (Part 3)
9	Flue Gas Velocity	m/s	25.9	3	IS 11255 (Part 3)
10	Moisture	%	14.2	1	IS 11255 (Part 3)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
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TEST REPORT

TC-11818

ULR No. : TC1181800000000744F		Test Report No. :	NSTL241123NA010
Type of Sample : Emission Stack- Boiler			
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
		Date of Sampling	22/11/2023
Sampling Protocol	IS 11255, CPCB: LATS/80/2013-14	Date of Sample Receipt	24/11/2023
Mode of Collection of Sample	Sampling by laboratory	Period of Analysis	24/11/2023 To 28/11/2023
Source of Emission	Boiler No.1 (Third Unit; Unit-1) 660MW	Date of Reporting	28/11/2023
Stack Description	Single, Circular & Metal	Fuel Used	Coal
Point of Sample Collection	From Port Hole after APCD	APCD Details (If provided)	ESP foloowed by fabric filter
Standard/Specification	Emission Stack- Boiler: EPA 1986		
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Detection Limit	Test Method
1	Particulate Matter at 6% O2 Corr.	mg/Nm3	35	5	IS 11255 (Part 1)
2	Sulphur Dioxide at 6% O2 Corr.	mg/Nm3	1138	5	EL/SOP/FGA/01
3	Mercury as Hg	mg/Nm3	BDL	0.01	USEPA Method 29
4	Carbon Monoxide as CO	mg/Nm3	4.0	5	EL/SOP/FGA/01
5	Carbon Dioxide as CO2	%	10.8	1	EL/SOP/FGA/01
6	Oxides of Nitrogen as NOX at 6% O2 Corr.	mg/Nm3	173	5	EL/SOP/FGA/01
7	Oxygen as O2	%	6.0	1	EL/SOP/FGA/01
8	Temperature	°C	125	5	IS 11255 (Part 3)
9	Flue Gas Velocity	m/s	25.6	3	IS 11255 (Part 3)
10	Moisture	%	14.5	1	IS 11255 (Part 3)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Eco Paryavaran Laboratories & Consultants Pvt. Ltd. E-207 Phase VIII-B (Sector-74) Mohali (Pb.) 160071

Umesh Kumar
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Annexure-2(c)

Eco Paryavaran Laboratories & Consultants Pvt. Ltd.
(Formerly known as Eco Laboratories & Consultants Pvt. Ltd.)

TEST REPORT

TC-11818

ULR No. : TC118180000000120OF		Test Report No. :	NSTL111223NA042
Type of Sample : Emission Stack- Boiler			
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
		Date of Sampling	08/12/2023
Sampling Protocol	IS 11255, CPCB: LATS/80/2013-14	Date of Sample Receipt	11/12/2023
Mode of Collection of Sample	Sampling by laboratory	Period of Analysis	11/12/2023 To 16/12/2023
Source of Emission	Boiler No.3 (Second Unit; Unit-3) 660MW	Date of Reporting	16/12/2023
Stack Description	Single, Circular & Metal	Fuel Used	Coal
Point of Sample Collection	From Port Hole after APCD	APCD Details (If provided)	ESP followed by fabric filter
Standard/Specification	Emission Stack- Boiler: EPA 1986		
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Detection Limit	Test Method
1	Particulate Matter at 12% CO2 Corr.	mg/Nm3	39	5	IS 11255 (Part 1)
2	Sulphur Dioxide at 6% O2 Corr.	mg/Nm3	1073	5	EL/SOP/FGA/01
3	Mercury as Hg	mg/Nm3	BDL	0.01	USEPA Method 29
4	Carbon Monoxide as CO	mg/Nm3	4.3	5	EL/SOP/FGA/01
5	Carbon Dioxide as CO2	%	10.8	1	EL/SOP/FGA/01
6	Oxides of Nitrogen as NOX at 6% O2 Corr.	mg/Nm3	178	5	EL/SOP/FGA/01
7	Oxygen as O2	%	6.5	1	EL/SOP/FGA/01
8	Temperature	°C	116	5	IS 11255 (Part 3)
9	Flue Gas Velocity	m/s	25.7	3	IS 11255 (Part 3)
10	Moisture	%	14.8	1	IS 11255 (Part 3)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Eco Paryavaran Laboratories & Consultants Pvt. Ltd. E-207 Phase VIII-B (Sector-74) Mohali (Pb.) 160071

Umesh Kumar
Authorized Signatory-Chemical

Stack- EL-FMT-7.8.2-SW

ECO BHAWAN E-207, Industrial Area, Phase VIII-B (Sector-74), Mohali (Punjab) 160071
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TEST REPORT

TC-11818

ULR No. : TC118180000000120 1F		Test Report No. :	NSTL111223NA043
Type of Sample : Emission Stack- Boiler			
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
		Date of Sampling	08/12/2023
Sampling Protocol	IS 11255, CPCB: LATS/80/2013-14	Date of Sample Receipt	11/12/2023
Mode of Collection of Sample	Sampling by laboratory	Period of Analysis	11/12/2023 To 16/12/2023
Source of Emission	Boiler No.2 (First Unit; Unit-2) 660MW	Date of Reporting	16/12/2023
Stack Description	Single, Circular & Metal	Fuel Used	Coal
Point of Sample Collection	From Port Hole after APCD	APCD Details (If provided)	ESP followed by fabric filter
Standard/Specification	Emission Stack- Boiler: EPA 1986		
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Detection Limit	Test Method
1	Particulate Matter at 12% CO2 Corr.	mg/Nm3	41	5	IS 11255 (Part 1)
2	Sulphur Dioxide at 6% O2 Corr.	mg/Nm3	1148	5	EL/SOP/FGA/01
3	Mercury as Hg	mg/Nm3	BDL	0.01	USEPA Method 29
4	Carbon Monoxide as CO	mg/Nm3	4.4	5	EL/SOP/FGA/01
5	Carbon Dioxide as CO2	%	10.5	1	EL/SOP/FGA/01
6	Oxides of Nitrogen as NOX at 6% O2 Corr.	mg/Nm3	179	5	EL/SOP/FGA/01
7	Oxygen as O2	%	6.0	1	EL/SOP/FGA/01
8	Temperature	°C	121	5	IS 11255 (Part 3)
9	Flue Gas Velocity	m/s	25.6	3	IS 11255 (Part 3)
10	Moisture	%	14.5	1	IS 11255 (Part 3)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
Authorized Signatory-Chemical

Stack- EL-FMT-7.8.2-SW

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TEST REPORT

TC-11818

ULR No. : TC118180000000120 2F		Test Report No. :	NSTL111223NA044
Type of Sample : Emission Stack- Boiler			
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
		Date of Sampling	08/12/2023
Sampling Protocol	IS 11255, CPCB: LATS/80/2013-14	Date of Sample Receipt	11/12/2023
Mode of Collection of Sample	Sampling by laboratory	Period of Analysis	11/12/2023 To 16/12/2023
Source of Emission	Boiler No.1 (Third Unit; Unit-1) 660MW	Date of Reporting	16/12/2023
Stack Description	Single, Circular & Metal	Fuel Used	Coal
Point of Sample Collection	From Port Hole after APCD	APCD Details (If provided)	ESP followed by fabric filter
Standard/Specification	Emission Stack- Boiler: EPA 1986		
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Detection Limit	Test Method
1	Particulate Matter at 12% CO2 Corr.	mg/Nm3	38	5	IS 11255 (Part 1)
2	Sulphur Dioxide at 6% O2 Corr.	mg/Nm3	1108	5	EL/SOP/FGA/01
3	Mercury as Hg	mg/Nm3	BDL	0.01	USEPA Method 29
4	Carbon Monoxide as CO	mg/Nm3	4.1	5	EL/SOP/FGA/01
5	Carbon Dioxide as CO2	%	10.9	1	EL/SOP/FGA/01
6	Oxides of Nitrogen as NOX at 6% O2 Corr.	mg/Nm3	180	5	EL/SOP/FGA/01
7	Oxygen as O2	%	6.1	1	EL/SOP/FGA/01
8	Temperature	°C	112	5	IS 11255 (Part 3)
9	Flue Gas Velocity	m/s	25.4	3	IS 11255 (Part 3)
10	Moisture	%	14.2	1	IS 11255 (Part 3)

Remarks : NA

OTHER INFORMATION

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Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

E-207, Phase VIII-B (Sector-74), Mohali (Pb.) 160071

Umesh Kumar
Authorized Signatory-Chemical

Stack- EL-FMT-7.8.2-SW

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TEST REPORT

TC-11816

ULR No. : TC1181800000001760F		Test Report No. :	NSTL221223NA014
Type of Sample : Emission Stack- Boiler			
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
		Date of Sampling	20/12/2023
Sampling Protocol	IS 11255, CPCB: LATS/80/2013-14	Date of Sample Receipt	22/12/2023
Mode of Collection of Sample	Sampling by laboratory	Period of Analysis	22/12/2023 To 28/12/2023
Source of Emission	Boiler No.2 (First Unit; Unit-2) 660MW	Date of Reporting	28/12/2023
Stack Description	Single, Circular & Metal	Fuel Used	Coal
Point of Sample Collection	From Port Hole after APCD	APCD Details (If provided)	ESP followed by fabric filter
Standard/Specification	Emission Stack- Boiler: EPA 1986		
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Detection Limit	Test Method
1	Particulate Matter at 12% CO2 Corr.	mg/Nm3	40	5	IS 11255 (Part 1)
2	Sulphur Dioxide at 6% O2 Corr.	mg/Nm3	1114	5	EL/SOP/FGA/01
3	Mercury as Hg	mg/Nm3	BDL	0.01	USEPA Method 29
4	Carbon Monoxide as CO	mg/Nm3	4.2	5	EL/SOP/FGA/01
5	Carbon Dioxide as CO2	%	10.8	1	EL/SOP/FGA/01
6	Oxides of Nitrogen as NOX at 6% O2 Corr.	mg/Nm3	170	5	EL/SOP/FGA/01
7	Oxygen as O2	%	6.1	1	EL/SOP/FGA/01
8	Temperature	°C	127	5	IS 11255 (Part 3)
9	Flue Gas Velocity	m/s	26.3	3	IS 11255 (Part 3)
10	Moisture	%	14.7	1	IS 11255 (Part 3)

Remarks : NA

OTHER INFORMATION

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End of Report

Dr. Rai Singh (EL-0055)
Authorized Signatory-Chemical

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TEST REPORT

TC-11818

ULR No. : TC1181800000001761F		Test Report No. :	NSTL221223NA015
Type of Sample : Emission Stack- Boiler			
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
		Date of Sampling	20/12/2023
Sampling Protocol	IS 11255, CPCB: LATS/80/2013-14	Date of Sample Receipt	22/12/2023
Mode of Collection of Sample	Sampling by laboratory	Period of Analysis	22/12/2023 To 28/12/2023
Source of Emission	Boiler No.3 (Second Unit; Unit-3) 660MW	Date of Reporting	28/12/2023
Stack Description	Single, Circular & Metal	Fuel Used	Coal
Point of Sample Collection	From Port Hole after APCD	APCD Details (If provided)	ESP followed by fabric filter
Standard/Specification	Emission Stack- Boiler: EPA 1986		
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Detection Limit	Test Method
1	Particulate Matter at 12% CO2 Corr.	mg/Nm3	38	5	IS 11255 (Part 1)
2	Sulphur Dioxide at 6% O2 Corr.	mg/Nm3	1041	5	EL/SOP/FGA/01
3	Mercury as Hg	mg/Nm3	BDL	0.01	USEPA Method 29
4	Carbon Monoxide as CO	mg/Nm3	4.1	5	EL/SOP/FGA/01
5	Carbon Dioxide as CO2	%	10.3	1	EL/SOP/FGA/01
6	Oxides of Nitrogen as NOX at 6% O2 Corr.	mg/Nm3	182	5	EL/SOP/FGA/01
7	Oxygen as O2	%	6.4	1	EL/SOP/FGA/01
8	Temperature	°C	131	5	IS 11255 (Part 3)
9	Flue Gas Velocity	m/s	26.5	3	IS 11255 (Part 3)
10	Moisture	%	14.2	1	IS 11255 (Part 3)

Remarks : NA

OTHER INFORMATION

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End of Report

Dr. Rai Singh (EL-0055)
Authorized Signatory-Chemical

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Annexure-2(d)

TEST REPORT

TC-11818

ULR No. : TC118182400000365F		**Test Report No. :**	NSTL150124NA030
Type of Sample : Emission Stack- Boiler			
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
		Date of Sampling	11/01/2024
Sampling Protocol	IS 11255, CPCB: LATS/80/2013-14	**Date of Sample Receipt**	15/01/2024
Mode of Collection of Sample	Sampling by laboratory	**Period of Analysis**	15/01/2024 To 22/01/2024
Source of Emission	Boiler No.2 (First Unit; Unit-2) 660MW	**Date of Reporting**	22/01/2024
Stack Description	Single, Circular & Metal	**Fuel Used**	Coal
Point of Sample Collection	From Port Hole after APCD	**APCD Details (If provided)**	ESP followed by fabric filter
Standard/Specification	Emission Stack- Boiler: EPA 1986		
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Detection Limit	Test Method
1	Particulate Matter at 6% O2 Corr.	mg/Nm3	38	5	IS 11255 (Part 1)
2	Sulphur Dioxide at 6% O2 Corr.	mg/Nm3	1105	5	EL/SOP/FGA/01
3	Mercury as Hg	mg/Nm3	BDL	0.01	USEPA Method 29
4	Carbon Monoxide as CO	mg/Nm3	4.1	5	EL/SOP/FGA/01
5	Carbon Dioxide as CO2	%	10.6	1	EL/SOP/FGA/01
6	Oxides of Nitrogen as NOX at 6% O2 Corr.	mg/Nm3	168	5	EL/SOP/FGA/01
7	Oxygen as O2	%	6.3	1	EL/SOP/FGA/01
8	Temperature	°C	126	5	IS 11255 (Part 3)
9	Flue Gas Velocity	m/s	26.1	3	IS 11255 (Part 3)
10	Moisture	%	14.1	1	IS 11255 (Part 3)

Remarks : NA

OTHER INFORMATION

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End of Report

Umesh Kumar
Authorized Signatory-Chemical

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TEST REPORT

TC-11818

ULR No. : TC118182400000366F		Test Report No. : NSTL150124NA031	
Type of Sample : Emission Stack- Boiler			
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
		Date of Sampling	11/01/2024
Sampling Protocol	IS 11255, CPCB: LATS/80/2013-14	Date of Sample Receipt	15/01/2024
Mode of Collection of Sample	Sampling by laboratory	Period of Analysis	15/01/2024 To 22/01/2024
Source of Emission	Boiler No.3 (Second Unit; Unit-3) 660MW	Date of Reporting	22/01/2024
Stack Description	Single, Circular & Metal	Fuel Used	Coal
Point of Sample Collection	From Port Hole after APCD	APCD Details (If provided)	ESP followed by fabric filter
Standard/Specification	Emission Stack- Boiler: EPA 1986		
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Detection Limit	Test Method
1	Particulate Matter at 6% O2 Corr.	mg/Nm3	36	5	IS 11255 (Part 1)
2	Sulphur Dioxide at 6% O2 Corr.	mg/Nm3	1037	5	EL/SOP/FGA/01
3	Mercury as Hg	mg/Nm3	BDL	0.01	USEPA Method 29
4	Carbon Monoxide as CO	mg/Nm3	4.0	5	EL/SOP/FGA/01
5	Carbon Dioxide as CO2	%	10.7	1	EL/SOP/FGA/01
6	Oxides of Nitrogen as NOX at 6% O2 Corr.	mg/Nm3	177	5	EL/SOP/FGA/01
7	Oxygen as O2	%	6.1	1	EL/SOP/FGA/01
8	Temperature	°C	124	5	IS 11255 (Part 3)
9	Flue Gas Velocity	m/s	25.1	3	IS 11255 (Part 3)
10	Moisture	%	14.5	1	IS 11255 (Part 3)

Remarks : NA

OTHER INFORMATION

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End of Report

Umesh Kumar
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TEST REPORT

TC-11818

ULR No. : TC1181824000000808F		Test Report No. : NSTL270124NA028	
Type of Sample : Emission Stack- Boiler			
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
		Date of Sampling	24/01/2024
Sampling Protocol	IS 11255, CPCB: LATS/80/2013-14	Date of Sample Receipt	27/01/2024
Mode of Collection of Sample	Sampling by laboratory	Period of Analysis	27/01/2024 To 31/01/2024
Source of Emission	Boiler No.1 (Third Unit;Unit-1) 660MW	Date of Reporting	31/01/2024
Stack Description	Single, Circular & Metal	Fuel Used	Coal
Point of Sample Collection	From Port Hole after APCD	APCD Details (If provided)	ESP followed by fabric filter
Standard/Specification	Emission Stack- Boiler: EPA 1986		
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Detection Limit	Test Method
1	Particulate Matter at 6% O2 Corr.	mg/Nm3	36	5	IS 11255 (Part 1)
2	Sulphur Dioxide at 6% O2 Corr.	mg/Nm3	1172	5	EL/SOP/FGA/01
3	Mercury as Hg	mg/Nm3	BDL	0.01	USEPA Method 29
4	Carbon Monoxide as CO	mg/Nm3	4.1	5	EL/SOP/FGA/01
5	Carbon Dioxide as CO2	%	10.9	1	EL/SOP/FGA/01
6	Oxides of Nitrogen as NOX at 6% O2 Corr.	mg/Nm3	178	5	EL/SOP/FGA/01
7	Oxygen as O2	%	6.2	1	EL/SOP/FGA/01
8	Temperature	°C	127	5	IS 11255 (Part 3)
9	Flue Gas Velocity	m/s	26.0	3	IS 11255 (Part 3)
10	Moisture	%	13.4	1	IS 11255 (Part 3)

Remarks : NA

OTHER INFORMATION

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End of Report

Umesh Kumar
Authorized Signatory-Chemical

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TEST REPORT

TC-11818

ULR No. : TC118182400000809F		Test Report No. :	NSTL270124NA029
Type of Sample : Emission Stack- Boiler			
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
		Date of Sampling	23/01/2024
Sampling Protocol	IS 11255, CPCB: LATS/80/2013-14	Date of Sample Receipt	27/01/2024
Mode of Collection of Sample	Sampling by laboratory	Period of Analysis	27/01/2024 To 31/01/2024
Source of Emission	Boiler No.2 (First Unit;Unit-2) 660MW	Date of Reporting	31/01/2024
Stack Description	Single, Circular & Metal	Fuel Used	Coal
Point of Sample Collection	From Port Hole after APCD	APCD Details (If provided)	ESP followed by fabric filter
Standard/Specification	Emission Stack- Boiler: EPA 1986		
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Detection Limit	Test Method
1	Particulate Matter at 6% O2 Corr.	mg/Nm3	39	5	IS 11255 (Part 1)
2	Sulphur Dioxide at 6% O2 Corr.	mg/Nm3	1232	5	EL/SOP/FGA/01
3	Mercury as Hg	mg/Nm3	BDL	0.01	USEPA Method 29
4	Carbon Monoxide as CO	mg/Nm3	4.4	5	EL/SOP/FGA/01
5	Carbon Dioxide as CO2	%	11.1	1	EL/SOP/FGA/01
6	Oxides of Nitrogen as NOX at 6% O2 Corr.	mg/Nm3	181	5	EL/SOP/FGA/01
7	Oxygen as O2	%	6.0	1	EL/SOP/FGA/01
8	Temperature	°C	129	5	IS 11255 (Part 3)
9	Flue Gas Velocity	m/s	25.5	3	IS 11255 (Part 3)
10	Moisture	%	13.8	1	IS 11255 (Part 3)

Remarks : NA

OTHER INFORMATION

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End of Report

Umesh Kumar
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TEST REPORT

TC-11818

ULR No. : TC1181824000000810F		**Test Report No. :** NSTL270124NA030	
Type of Sample : Emission Stack- Boiler			
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
		Date of Sampling	24/01/2024
Sampling Protocol	IS 11255, CPCB: LATS/80/2013-14	**Date of Sample Receipt**	27/01/2024
Mode of Collection of Sample	Sampling by laboratory	**Period of Analysis**	27/01/2024 To 31/01/2024
Source of Emission	Boiler No.3 (Second Unit;Unit-3) 660MW	**Date of Reporting**	31/01/2024
Stack Description	Single,Circular & Metal	**Fuel Used**	Coal
Point of Sample Collection	From Port Hole after APCD	**APCD Details (If provided)**	ESP followed by fabric filter
Standard/Specification	Emission Stack- Boiler: EPA 1986		
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Detection Limit	Test Method
1	Particulate Matter at 6% O2 Corr.	mg/Nm3	38	5	IS 11255 (Part 1)
2	Sulphur Dioxide at 6% O2 Corr.	mg/Nm3	1122	5	EL/SOP/FGA/01
3	Mercury as Hg	mg/Nm3	BDL	0.01	USEPA Method 29
4	Carbon Monoxide as CO	mg/Nm3	4.0	5	EL/SOP/FGA/01
5	Carbon Dioxide as CO2	%	10.7	1	EL/SOP/FGA/01
6	Oxides of Nitrogen as NOX at 6% O2 Corr.	mg/Nm3	186	5	EL/SOP/FGA/01
7	Oxygen as O2	%	6.5	1	EL/SOP/FGA/01
8	Temperature	°C	124	5	IS 11255 (Part 3)
9	Flue Gas Velocity	m/s	26.4	3	IS 11255 (Part 3)
10	Moisture	%	14.1	1	IS 11255 (Part 3)

Remarks : NA

OTHER INFORMATION

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End of Report

Umesh Kumar
Authorized Signatory-Chemical

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Annexure-2(e)

TEST REPORT

TC-11818

ULR No. : TC118182400001273F		Test Report No. : NSTL120224NA017	
Type of Sample : Emission Stack- Boiler			
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 11255, CPCB: LATS/80/2013-14	Date of Sampling	08/02/2024
Mode of Collection of Sample	Sampling by laboratory	Date of Sample Receipt	12/02/2024
Source of Emission	Boiler No.1 (Third Unit; Unit-1) 660MW	Period of Analysis	12/02/2024 To 15/02/2024
Stack Description	Single, Circular & Metal	Date of Reporting	15/02/2024
Point of Sample Collection	From Port Hole after APCD	Fuel Used	Coal
Standard/Specification	Emission Stack- Boiler: EPA 1986	APCD Details (If provided)	ESP followed by fabric filter
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Detection Limit	Test Method
1	Particulate Matter at 6% O2 Corr.	mg/Nm3	37	5	IS 11255 (Part 1)
2	Sulphur Dioxide at 6% O2 Corr.	mg/Nm3	1165	5	EL/SOP/FGA/01
3	Mercury as Hg	mg/Nm3	BDL	0.01	USEPA Method 29
4	Carbon Monoxide as CO	mg/Nm3	4.2	5	EL/SOP/FGA/01
5	Carbon Dioxide as CO2	%	10.7	1	EL/SOP/FGA/01
6	Oxides of Nitrogen as NOX at 6% O2 Corr.	mg/Nm3	176	5	EL/SOP/FGA/01
7	Oxygen as O2	%	6.3	1	EL/SOP/FGA/01
8	Temperature	°C	122	5	IS 11255 (Part 3)
9	Flue Gas Velocity	m/s	25.8	3	IS 11255 (Part 3)
10	Moisture	%	13.9	1	IS 11255 (Part 3)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Dr. Rai Singh
Authorized Signatory-Chemical

Stack- EL-FMT-7.8.2-SW

ECO BHAWAN E-207, Industrial Area, Phase VIII-B (Sector-74), Mohali (Punjab) 160071
0172-4616225 9781303109 contact@ecoparyavaran.org | md@ecoparyavaran.org www.ecoparyavaran.org

TEST REPORT

TC-11818

ULR No. : TC118182400000127 4F		Test Report No. :	NSTL120224NA018
Type of Sample : Emission Stack- Boiler			
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
		Date of Sampling	08/02/2024
Sampling Protocol	IS 11255, CPCB: LATS/80/2013-14	Date of Sample Receipt	12/02/2024
Mode of Collection of Sample	Sampling by laboratory	Period of Analysis	12/02/2024 To 15/02/2024
Source of Emission	Boiler No.2 (First Unit; Unit-2) 660MW	Date of Reporting	15/02/2024
Stack Description	Single, Circular & Metal	Fuel Used	Coal
Point of Sample Collection	From Port Hole after APCD	APCD Details (If provided)	ESP followed by fabric filter
Standard/Specification	Emission Stack- Boiler: EPA 1986		
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Detection Limit	Test Method
1	Particulate Matter at 6% O2 Corr.	mg/Nm3	39	5	IS 11255 (Part 1)
2	Sulphur Dioxide at 6% O2 Corr.	mg/Nm3	1261	5	EL/SOP/FGA/01
3	Mercury as Hg	mg/Nm3	BDL	0.01	USEPA Method 29
4	Carbon Monoxide as CO	mg/Nm3	4.3	5	EL/SOP/FGA/01
5	Carbon Dioxide as CO2	%	10.8	1	EL/SOP/FGA/01
6	Oxides of Nitrogen as NOX at 6% O2 Corr.	mg/Nm3	172	5	EL/SOP/FGA/01
7	Oxygen as O2	%	6.5	1	EL/SOP/FGA/01
8	Temperature	°C	125	5	IS 11255 (Part 3)
9	Flue Gas Velocity	m/s	25.2	3	IS 11255 (Part 3)
10	Moisture	%	14.1	1	IS 11255 (Part 3)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Dr. Rai Singh
Authorized Signatory-Chemical

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0172-4616225 9781303109 contact@ecoparyavaran.org I md@ecoparyavaran.org www.ecoparyavaran.org

TEST REPORT

TC-11818

ULR No. : TC118182400000166SF		Test Report No. : NSTL240224NA001	
Type of Sample : Emission Stack- Boiler			
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
		Date of Sampling	20/02/2024
Sampling Protocol	IS 11255, CPCB: LATS/80/2013-14	Date of Sample Receipt	24/02/2024
Mode of Collection of Sample	Sampling by laboratory	Period of Analysis	24/02/2024 To 27/02/2024
Source of Emission	Boiler No.1 (Third Unit; Unit-1) 660MW	Date of Reporting	27/02/2024
Stack Description	Single, Circular & Metal	Fuel Used	Coal
Point of Sample Collection	From Port Hole after APCD	APCD Details (If provided)	ESP followed by fabric filter
Standard/Specification	Emission Stack- Boiler: EPA 1986		
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Detection Limit	Test Method
1	Particulate Matter at 6% O2 Corr.	mg/Nm3	38	5	IS 11255 (Part 1)
2	Sulphur Dioxide at 6% O2 Corr.	mg/Nm3	1196	5	EL/SOP/FGA/01
3	Mercury as Hg	mg/Nm3	BDL	0.01	USEPA Method 29
4	Carbon Monoxide as CO	mg/Nm3	4.0	5	EL/SOP/FGA/01
5	Carbon Dioxide as CO2	%	11.2	1	EL/SOP/FGA/01
6	Oxides of Nitrogen as NOX at 6% O2 Corr.	mg/Nm3	182	5	EL/SOP/FGA/01
7	Oxygen as O2	%	6.0	1	EL/SOP/FGA/01
8	Temperature	°C	121	5	IS 11255 (Part 3)
9	Flue Gas Velocity	m/s	26.1	3	IS 11255 (Part 3)
10	Moisture	%	13.0	1	IS 11255 (Part 3)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
Authorized Signatory-Chemical

Stack- EL-FMT-7.8.2-SW

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0172-4616225 9781303109 contact@ecoparyavaran.org | md@ecoparyavaran.org www.ecoparyavaran.org

TEST REPORT

TC-11818

ULR No. : TC1181824000001666F		Test Report No. : NSTL240224NA002	
Type of Sample : Emission Stack- Boiler			
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
		Date of Sampling	20/02/2024
Sampling Protocol	IS 11255, CPCB: LATS/80/2013-14	Date of Sample Receipt	24/02/2024
Mode of Collection of Sample	Sampling by laboratory	Period of Analysis	24/02/2024 To 27/02/2024
Source of Emission	Boiler No.2 (First Unit; Unit-2) 660MW	Date of Reporting	27/02/2024
Stack Description	Single, Circular & Metal	Fuel Used	Coal
Point of Sample Collection	From Port Hole after APCD	APCD Details (If provided)	ESP followed by fabric filter
Standard/Specification	Emission Stack- Boiler: EPA 1986		
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Detection Limit	Test Method
1	Particulate Matter at 6% O2 Corr.	mg/Nm3	41	5	IS 11255 (Part 1)
2	Sulphur Dioxide at 6% O2 Corr.	mg/Nm3	1257	5	EL/SOP/FGA/01
3	Mercury as Hg	mg/Nm3	BDL	0.01	USEPA Method 29
4	Carbon Monoxide as CO	mg/Nm3	4.3	5	EL/SOP/FGA/01
5	Carbon Dioxide as CO2	%	10.8	1	EL/SOP/FGA/01
6	Oxides of Nitrogen as NOX at 6% O2 Corr.	mg/Nm3	185	5	EL/SOP/FGA/01
7	Oxygen as O2	%	6.3	1	EL/SOP/FGA/01
8	Temperature	°C	124	5	IS 11255 (Part 3)
9	Flue Gas Velocity	m/s	25.7	3	IS 11255 (Part 3)
10	Moisture	%	13.4	1	IS 11255 (Part 3)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

E-207 Phase VIII-B (Sector-74) Mohali (Pb.) 160071

Umesh Kumar
Authorized Signatory-Chemical

Stack- EL-FMT-7.8.2-SW

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0172-4616225 9781303109 contact@ecoparyavaran.org | md@ecoparyavaran.org www.ecoparyavaran.org

TEST REPORT

TC-11818

ULR No. : TC1181824000001667F		Test Report No. : NSTL240224NA003	
Type of Sample : Emission Stack- Boiler			
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
		Date of Sampling	20/02/2024
Sampling Protocol	IS 11255, CPCB: LATS/80/2013-14	Date of Sample Receipt	24/02/2024
Mode of Collection of Sample	Sampling by laboratory	Period of Analysis	24/02/2024 To 27/02/2024
Source of Emission	Boiler No.3 (Second Unit; Unit-3) 660MW	Date of Reporting	27/02/2024
Stack Description	Single, Circular & Metal	Fuel Used	Coal
Point of Sample Collection	From Port Hole after APCD	APCD Details (If provided)	ESP followed by fabric filter
Standard/Specification	Emission Stack- Boiler: EPA 1986		
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Detection Limit	Test Method
1	Particulate Matter at 6% O2 Corr.	mg/Nm3	40	5	IS 11255 (Part 1)
2	Sulphur Dioxide at 6% O2 Corr.	mg/Nm3	1144	5	EL/SOP/FGA/01
3	Mercury as Hg	mg/Nm3	BDL	0.01	USEPA Method 29
4	Carbon Monoxide as CO	mg/Nm3	4.1	5	EL/SOP/FGA/01
5	Carbon Dioxide as CO2	%	11.1	1	EL/SOP/FGA/01
6	Oxides of Nitrogen as NOX at 6% O2 Corr.	mg/Nm3	190	5	EL/SOP/FGA/01
7	Oxygen as O2	%	6.1	1	EL/SOP/FGA/01
8	Temperature	°C	119	5	IS 11255 (Part 3)
9	Flue Gas Velocity	m/s	25.9	3	IS 11255 (Part 3)
10	Moisture	%	13.7	1	IS 11255 (Part 3)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
Authorized Signatory-Chemical

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0172-4616225 9781303109 contact@ecoparyavaran.org | md@ecoparyavaran.org www.ecoparyavaran.org

Annexure-2(f)

TEST REPORT

TC-11818

ULR No. : TC118182400000215 9F		Test Report No. : NSTL110324NA055	
Type of Sample : Emission Stack- Boiler			
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Work Order No. & Date	WA23Y-00006 Dt:05.05.2023
		Customer reference No. (If any)	NA
		Date of Sampling	06/03/2024
Sampling Protocol	IS 11255, CPCB: LATS/80/2013-14	Date of Sample Receipt	11/03/2024
Mode of Collection of Sample	Mr. Prabhjot (Eco Rep.)	Period of Analysis	11/03/2024 To 15/03/2024
Source of Emission	Boiler No.2 (First Unit; Unit-2)660MW	Date of Reporting	15/03/2024
Stack Description	Single, Circular & Metal	Fuel Used	Coal
Point of Sample Collection	From Port Hole after APCD	APCD Details (If provided)	ESP followed by fabric filter
Standard/Specification	Emission Stack- Boiler: EPA 1986		
Testing Location	On Site & Permanenet Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Detection Limit	Test Method
1	Particulate Matter at 6% O2 Corr.	mg/Nm3	37	5	IS 11255 (Part 1)
2	Sulphur Dioxide at 6% O2 Corr.	mg/Nm3	1205	5	EL/SOP/FGA/01
3	Mercury as Hg	mg/Nm3	BDL	0.01	USEPA Method 29
4	Carbon Monoxide as CO	mg/Nm3	4.1	5	EL/SOP/FGA/01
5	Carbon Dioxide as CO2	%	10.5	1	EL/SOP/FGA/01
6	Oxides of Nitrogen as NOX at 6% O2 Corr.	mg/Nm3	180	5	EL/SOP/FGA/01
7	Oxygen as O2	%	6.6	1	EL/SOP/FGA/01
8	Temperature	°C	125	5	IS 11255 (Part 3)
9	Flue Gas Velocity	m/s	25.9	3	IS 11255 (Part 3)
10	Moisture	%	13.1	1	IS 11255 (Part 3)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
Authorized Signatory-Chemical

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0172-4616225 9781303109 contact@ecoparyavaran.org | md@ecoparyavaran.org www.ecoparyavaran.org

TEST REPORT

TC-11818

ULR No. : TC118182400000216OF		Test Report No. : NSTL110324NA056	
Type of Sample : Emission Stack- Boiler			
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Work Order No. & Date	WA23Y-00006 Dt:05.05.2023
		Customer reference No. (If any)	NA
		Date of Sampling	06/03/2024
Sampling Protocol	IS 11255, CPCB: LATS/80/2013-14	Date of Sample Receipt	11/03/2024
Mode of Collection of Sample	Mr. Prabhjot (Eco Rep.)	Period of Analysis	11/03/2024 To 15/03/2024
Source of Emission	Boiler No.3 (Second Unit; Unit-3)660MW	Date of Reporting	15/03/2024
Stack Description	Single, Circular & Metal	Fuel Used	Coal
Point of Sample Collection	From Port Hole after APCD	APCD Details (If provided)	ESP followed by fabric filter
Standard/Specification	Emission Stack- Boiler: EPA 1986		
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Detection Limit	Test Method
1	Particulate Matter at 6% O2 Corr.	mg/Nm3	43	5	IS 11255 (Part 1)
2	Sulphur Dioxide at 6% O2 Corr.	mg/Nm3	1226	5	EL/SOP/FGA/01
3	Mercury as Hg	mg/Nm3	BDL	0.01	USEPA Method 29
4	Carbon Monoxide as CO	mg/Nm3	4.3	5	EL/SOP/FGA/01
5	Carbon Dioxide as CO2	%	10.9	1	EL/SOP/FGA/01
6	Oxides of Nitrogen as NOX at 6% O2 Corr.	mg/Nm3	186	5	EL/SOP/FGA/01
7	Oxygen as O2	%	6.3	1	EL/SOP/FGA/01
8	Temperature	℃	120	5	IS 11255 (Part 3)
9	Flue Gas Velocity	m/s	26.0	3	IS 11255 (Part 3)
10	Moisture	%	13.3	1	IS 11255 (Part 3)

Remarks : NA

OTHER INFORMATION

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Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

E-207 Phase VIII-B (Sector-74) Mohali (PB) 160071

Umesh Kumar
Authorized Signatory-Chemical

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TEST REPORT

TC-11818

ULR No. : TC118182400000216IF		Test Report No. :	NSTL110324NA057
Type of Sample : Emission Stack- Boiler			
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Work Order No. & Date	WA23Y-00006 Dt:05.05.2023
		Customer reference No. (If any)	NA
		Date of Sampling	06/03/2024
Sampling Protocol	IS 11255, CPCB: LATS/80/2013-14	Date of Sample Receipt	11/03/2024
Mode of Collection of Sample	Mr. Prabhjot (Eco Rep.)	Period of Analysis	11/03/2024 To 15/03/2024
Source of Emission	Boiler No.1 (Third Unit; Unit-1)660MW	Date of Reporting	15/03/2024
Stack Description	Single, Circular & Metal	Fuel Used	Coal
Point of Sample Collection	From Port Hole after APCD	APCD Details (If provided)	ESP followed by fabric filter
Standard/Specification	Emission Stack- Boiler: EPA 1986		
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Detection Limit	Test Method
1	Particulate Matter at 6% O2 Corr.	mg/Nm3	40	5	IS 11255 (Part 1)
2	Sulphur Dioxide at 6% O2 Corr.	mg/Nm3	1168	5	EL/SOP/FGA/01
3	Mercury as Hg	mg/Nm3	BDL	0.01	USEPA Method 29
4	Carbon Monoxide as CO	mg/Nm3	4.2	5	EL/SOP/FGA/01
5	Carbon Dioxide as CO2	%	10.6	1	EL/SOP/FGA/01
6	Oxides of Nitrogen as NOX at 6% O2 Corr.	mg/Nm3	177	5	EL/SOP/FGA/01
7	Oxygen as O2	%	6.5	1	EL/SOP/FGA/01
8	Temperature	°C	124	5	IS 11255 (Part 3)
9	Flue Gas Velocity	m/s	25.8	3	IS 11255 (Part 3)
10	Moisture	%	13.2	1	IS 11255 (Part 3)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
Authorized Signatory-Chemical

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TEST REPORT

TC-1818

ULR No. : TC118182400000273OF		Test Report No. : NSTL260324NA020	
Type of Sample : Emission Stack- Boiler			
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
		Date of Sampling	21/03/2024
Sampling Protocol	IS 11255, CPCB: LATS/80/2013-14	Date of Sample Receipt	26/03/2024
Mode of Collection of Sample	Mr. Prabhjot (Eco Rep.)	Period of Analysis	26/03/2024 To 29/03/2024
Source of Emission	Boiler No.1 (Third Unit;Unit-1) 660MW	Date of Reporting	29/03/2024
Stack Description	Single, Circular & Metal	Fuel Used	Coal
Point of Sample Collection	From Port Hole after APCD	APCD Details (If provided)	ESP followed by fabric filter
Standard/Specification	Emission Stack- Boiler: EPA 1986		
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Detection Limit	Test Method
1	Particulate Matter at 6% O2 Corr.	mg/Nm3	41	5	IS 11255 (Part 1)
2	Sulphur Dioxide at 6% O2 Corr.	mg/Nm3	1135	5	EL/SOP/FGA/01
3	Mercury as Hg	mg/Nm3	BDL	0.01	USEPA Method 29
4	Carbon Monoxide as CO	mg/Nm3	4.5	5	EL/SOP/FGA/01
5	Carbon Dioxide as CO2	%	10.8	1	EL/SOP/FGA/01
6	Oxides of Nitrogen as NOX at 6% O2 Corr.	mg/Nm3	177	5	EL/SOP/FGA/01
7	Oxygen as O2	%	6.6	1	EL/SOP/FGA/01
8	Temperature	°C	128	5	IS 11255 (Part 3)
9	Flue Gas Velocity	m/s	25.6	3	IS 11255 (Part 3)
10	Moisture	%	11.8	1	IS 11255 (Part 3)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
Authorized Signatory-Chemical

Stack- EL-FMT-7.8.2-SW

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0172-4616225 9781303109 contact@ecoparyavaran.org | md@ecoparyavaran.org www.ecoparyavaran.org

TEST REPORT

TC-11818

ULR No. : TC1181824000002731F		Test Report No. : NSTL260324NA021	
Type of Sample : Emission Stack- Boiler			
Name & Address of Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
		Date of Sampling	21/03/2024
Sampling Protocol	IS 11255, CPCB: LATS/80/2013-14	Date of Sample Receipt	26/03/2024
Mode of Collection of Sample	Mr. Prabhjot (Eco Rep.)	Period of Analysis	26/03/2024 To 29/03/2024
Source of Emission	Boiler No.3 (Second Unit;Unit-3) 660MW	Date of Reporting	29/03/2024
Stack Description	Single, Circular & Metal	Fuel Used	Coal
Point of Sample Collection	From Port Hole after APCD	APCD Details (If provided)	ESP followed by fabric filter
Standard/Specification	Emission Stack- Boiler: EPA 1986		
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Stack Emission)

S.No.	Test Parameters	Unit	Result	Detection Limit	Test Method
1	Particulate Matter at 6% O2 Corr.	mg/Nm3	43	5	IS 11255 (Part 1)
2	Sulphur Dioxide at 6% O2 Corr.	mg/Nm3	1067	5	EL/SOP/FGA/01
3	Mercury as Hg	mg/Nm3	BDL	0.01	USEPA Method 29
4	Carbon Monoxide as CO	mg/Nm3	4.1	5	EL/SOP/FGA/01
5	Carbon Dioxide as CO2	%	11.1	1	EL/SOP/FGA/01
6	Oxides of Nitrogen as NOX at 6% O2 Corr.	mg/Nm3	181	5	EL/SOP/FGA/01
7	Oxygen as O2	%	6.1	1	EL/SOP/FGA/01
8	Temperature	°C	117	5	IS 11255 (Part 3)
9	Flue Gas Velocity	m/s	25.5	3	IS 11255 (Part 3)
10	Moisture	%	12.1	1	IS 11255 (Part 3)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
Authorized Signatory-Chemical

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0172-4616225 9781303109 contact@ecoparyavaran.org | md@ecoparyavaran.org www.ecoparyavaran.org

Annexure-3(a)

TSPL Environment

From:	TSPL Environment
Sent:	04 November 2023 17:37
To:	'eerobti@yahoo.co.in'
Cc:	Pankaj Sharma; Ravinder Thakur; Vikas Sharma Vashisht; Deepak Garg; 'minwook.kang'; 'daljeet singh'; chahat.bansal
Subject:	Submission of month-wise progress report regarding generation and utilization of fly ash for the month of October- 2023 of TSPL Plant.
Attachments:	Ash generation and utilization October-2023.pdf

To,

The Environmental Engineer ,
Punjab Pollution Control Board,
Regional Office,
Room No. 406 E, 3rd Floor,
District Administrative Building,
Bathinda, Punjab.

Dear Sir ,

Greeting of the day.

In compliance to Consent to Operate issued under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981 for 1980 MW (3*660 MW)of Talwandi Sabo Power Limited (TSPL), Village Banawala, Mansa- Talwandi Sabo Road, District Mansa, Punjab vide No. CTOA/Varied/MNS/2023/20598849 dated 31/01/2023 and No. CTOW/Varied/MNS/2023/20598933 dated 31/01/2023 .

Please find attached month-wise progress report regarding Ash generation and utilization for the month of October 2023.

For Talwandi Sabo Power Limited,

Banawala, Distt. Mansa, PB.

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TSPL

TALWANDI SABO POWER LTD.
Site cum Regd. Office :
Village Banawala, Mansa - Talwandi Sabo Road,
Distt. Mansa, Punjab - 151302 INDIA
Tel. 91-1659-248000 Telefax : 01659-248083
Website : www.tsplindia.co
CIN No. : U40101PB2007PLC031035

TSPL/ENV/PPCB/ASH/NOVEMBER-2023/08 Date: **04 November 2023**

To,

The Environmental Engineer,
Punjab Pollution Control Board,
Regional Office,
Room No. 406 E, 3rd floor,
District Administrative Building,
Bathinda.

Subject: Submission of month-wise progress report regarding generation and utilization of fly ash for the month of October, 2023.

Ref: - Renewal of Consent to operate issued for 1980 MW (3X660 MW) under section 21 of Air (Prevention & Control of Pollution) Act, 1981 vide Letter No. CTOA/Varied/MNS/2023/20598849 dated 31/01/2023.

Dear Sir,

This has reference to the above letter regarding the subject matter, please find enclosed herewith month-wise progress report regarding generation and utilization of fly ash for the month of October, 2023 as **Annexure-1**.

Hope that the above information will suffice the requirement.

Yours faithfully,

For **Talwandi Sabo Power Limited,**

For Vikas Sharma 04/11/23
Vikas Sharma Vashisht

Head-Environment

TALWANDI SABO POWER LIMITED MANSA

Encl: As above

Annexure-1

Fly ash Generation and Utilization Date- FY 2023-24

Month	Ash Generation			Ash Utilization and its breakup under various utilization heads																		Total Utilization
				Dry Fly Ash Utilisation						Bottom ash utilisation					Pond ash utilization							
	Dry Fly Ash	Bottom Ash	Total Ash	Cement Manufacturing	RMC Plant	Fly Ash Bricks Manufacturing (Outside)	Land reclamation	Cement Manufacturing via Rail	Total	Cement Manufacturing	Brick kiln manufacturers	Land Reclmatalon	Road construction	Total	Cement Manufacturing via	Cement	Road Construction	Land Reclamation	In Brick kiln units	Total	
	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT
Apr-23	234616	45346	279962	130224	2349	1830	0	31251	165633	0	7839	0	0	7839	0	12724	3761	0	8014	24499	197971	
May-23	254105	32774	286880	150373	2619	6486	0	23529	183007	0	8231	0	0	8231	0	331	113965	0	7974	122271	313509	
Jun-23	244607	26677	271284	121166	1062.7	5273.4	0	42384	169886	0	6869	8960	0	15829	0	0	104122	0	6578	110700	296415	
Q1	733327	104798	838125	401763	6030	13590	0	97164	518526	0	22940	8960	0	31900	0	13055	221848	0	22566	257470	807896	
Jul-23	204164	35242	239406	62036	2050	4818	0	8073	76975.9	0	4854	9244	0	14097	0	0	76785	0	5151	81936	173009	
Aug-23	269261	78406	347667	64042	2959	2799	0	16095	85365.3		7890	46203	0	54093	0	0	76751	0	5852	82604	222562	
Sep-23	241148	31547	272695	107434	1165	2254	0	43557	154410.4		4328	37122	0	41450	0		97070		5877	47955	728816	
Q2	714573	145194.8	859767	233511	6174	9871	0	67695	317252	0	17071	92569	0	99641	0	0	190614	0	16881	207495	624387	
H1	1447900	249993	1697892.54	635274	12204	23460	0	67695	835778	0	40011	91529	0	131541	0	13055	412462	0	39447	464964	1432282	
Oct-23	244736	48907	293643	120098	1522	1434	0	23273	146327	0	6431	0	0	6431	0	0	76207.6	42408.0	5955	124571	277329	
Nov-23									0.00					0	0					0	0	
Dec-23									0.000					0	0					0	0	
Q3	244736	48907	293643	120098	1522	1434	0	23273	146327	0	6431	0	0	6431	0	0	76207.58	42408.00	5955.08	124570.66	277328.9	
Jan-24									0.00					0.00	0						0	
Feb-24									0.00					0	0						0	
Mar-24														0	0							
Q4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	
H2	244736	48907	293643.21108	120098	1522	1434	0	23273	146327	0	6431	0	0	6431	0	0	76208	42408	5955	124571	277329	
Annual	16,92,636.37	2,98,899.38	19,91,535.75	7,55,372.40	13,726.10	24,874.76	-	1,86,131.79	9,82,105.05	-	65,442.22	91,529.16	-	1,37,971.38	-	13,055.46	4,88,669.42	42,408.00	45,401.82	5,89,534.70	17,09,611.13	

Note:-

*15 lacs MT is the dead stock out of total stored quantity. *Dead Stock shall be maintained in the bottom of the Ash Dyke as well as on upstream sides of the bund walls of Ash Dyke (as per the recommendations of Experts Designers) as a safety measure to Protect from any sort of unwanted damages to the bund or to bottom of the Ash Dyke during process of ash excavation/ash evacuation.

Noted.

(Deepak Chaurasia)
TSPL

TSPL Environment

Annexure-3(B)

From: TSPL Environment
Sent: 05 December 2023 16:31
To: 'eerobti@yahoo.co.in'
Cc: Pankaj Sharma; Ravinder Thakur; Vikas Sharma Vashisht; 'Deepak Garg'; 'minwook.kang'; 'daljeet singh'; chahat.bansal
Subject: Submission of month-wise progress report regarding generation and utilization of fly ash for the month of November- 2023 of TSPL Plant.
Attachments: Ash Generation and Utilization Nov-2023.pdf

To,

The Environmental Engineer ,
Punjab Pollution Control Board,
Regional Office,
Room No. 406 E, 3rd Floor,
District Administrative Building,
Bathinda, Punjab

Dear Sir ,

Greeting of the day.

In compliance to Consent to Operate issued under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981 for 1980 MW (3*660 MW)of Talwandi Sabo Power Limited (TSPL), Village Banawala, Mansa- Talwandi Sabo Road, District Mansa, Punjab vide No. CTOA/Varied/MNS/2023/20598849 dated 31/01/2023 and No. CTOW/Varied/MNS/2023/20598933 dated 31/01/2023 .

Please find attached month-wise progress report regarding Ash generation and utilization for the month of November 2023.

For Talwandi Sabo Power Limited,

Banawala, Distt. Mansa, PB.

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TSPL/ENV/PPCB/ASH/DECEMBER-2023/09

Date: **05 December 2023**

To,

The Environmental Engineer,
Punjab Pollution Control Board,
Regional Office,
Room No. 406 E, 3rd floor,
District Administrative Building,
Bathinda.

Subject: Submission of month-wise progress report regarding generation and utilization of fly ash for the month of November, 2023.

Ref: - Renewal of Consent to operate issued for 1980 MW (3X660 MW) under section 21 of Air (Prevention & Control of Pollution) Act, 1981 vide Letter No. CTOA/Varied/MNS/2023/20598849 dated 31/01/2023.

Dear Sir,

This has reference to the above letter regarding the subject matter, please find enclosed herewith month-wise progress report regarding generation and utilization of fly ash for the month of November, 2023 as **Annexure-1.**

Hope that the above information will suffice the requirement.

Yours faithfully,

For **Talwandi Sabo Power Limited,**

Vikas Sharma Vashisht

Head-Environment

Encl: As above

Annexure-1

Fly ash Generation and Utilization Data- FY 2023-24

Month	Ash Generation			Ash Utilization and its breakup under various utilization heads																
				Dry Fly Ash Utilization						Bottom ash utilization					Pond ash utilization						Total Utilization
	Dry fly Ash	Bottom Ash	Total Ash	Cement Manufacturing	RMC Plant	Fly Ash Bricks Manufacturing (Outside)	Land reclamation	Cement Manufacturing via Rail	Total	Cement Manufacturing	Brick kiln manufacturers	Land Reclmatation	Road construction	Total	Cement Manufacturing via Rail	Cement	Road Construction	Land Reclamation	In Brick kiln units	Total	
	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT
Apr-23	234616	45346	279962	130224	2349	1810	0	31251	165633	0	7835	0	0	7839	0	12724	3761	0	8014	24499	197971
May-23	254105	32774	286880	150378	2619	6486	0	23529	183007	0	8231	0	0	8231	0	331	113965	0	7974	122271	313509
Jun-23	244607	26677	271284	121166	1062.7	5275.4	0	42384	169886	0	6868	8960	0	15829	0	0	104122	0	6578	110700	296415
Q1	733327	104798	838125	401768	6030	13569	0	97164	518526	0	22946	8960	0	31900	0	13055	221848	0	22566	257470	807896
Jul-23	204164	35242	239406	62036	2050	4818	0	8073	76975.9	0	4854	9244	0	14097	0	0	76785	0	5151	81936	173009
Aug-23	269261	78406	347667	64048	2959	2799	0	16065	85865.3	0	7890	46203	0	54093	0	0	76751	0	5852	82604	222562
Sep-23	241148	31547	272695	107434	1165	3254	0	43557	154410.4	0	4328	27122	0	33450	0	0	37078	0	5877	42955	228816
Q2	714573	145194.8	859767	233511	6174	9871	0	67695	317252	0	17072	82569	0	99641	0	0	190614	0	16881	207495	624387
H1	1447900	249993	1697892.54	635274	12204	23440	0	67695	835778	0	40013	91529	0	131541	0	13055	412462	0	39447	464964	1432282
Oct-23	244736	48907	293643	120098	1522	1484	0	23273	146327	0	6431	0	0	6431	0	0	76207.6	42408.0	5955	124571	277329
Nov-23	139512	49682	249193	105105	1825	1487	0	11783	120201	0	3010	0	0	3010	0	0	82249.9	32867	6351	121468	244678
Dec-23									0.000					0	0					0	0
Q3	844248	98588	542837	225203	3347	2971	0	35056	266528	0	9441	0	0	9441	0	0	158457.48	75275.10	12305.80	246038.38	522007.1
Jan-24									0.00					0.00	0						0
Feb-24									0.00					0	0						0
Mar-24														0	0						0
Q4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00
H2	844248	98588	542836.63429	225203	3347	2971	0	35056	266528	0	9441	0	0	9441	0	0	158457	75275	12306	246038	522007
Annual	3,92,148.25	3,48,580.93	22,40,729.18	8,60,477.44	15,551.36	26,362.12	-	1,99,914.61	11,02,305.55	-	49,452.28	91,529.16	-	1,40,981.44	-	13,055.46	5,70,919.32	75,275.10	51,752.54	7,11,002.42	19,54,289.41

Note:-

*15 lacs MT is the dead stock out of total stored quantity. *Dead Stock shall be maintained in the bottom of the Ash Dyke as well as on upstream sides of the bund walls of Ash Dyke (as per the recommendations of Experts Designers) as a safety measure to Proctect from any sort of unwarted damages to the bund or to bottom of the Ash Dyke during process of ash excavation/ash evacuation.

TSPL Environment Annexure-3(c)

From:	TSPL Environment
Sent:	05 January 2024 12:25
To:	eerobti@yahoo.co.in
Cc:	Pankaj Sharma; Ravinder Thakur; Vikas Sharma Vashisht; Deepak Garg; 'minwook.kang'; 'daljeet.singh'; chahat.bansal
Subject:	Submission of month-wise progress report regarding generation and utilization of fly ash for the month of December- 2023 of TSPL Plant.
Attachments:	Ash Generation and Utilization December-2023.pdf

To,

The Environmental Engineer ,
Punjab Pollution Control Board,
Regional Office,
Room No. 406 E, 3rd Floor,
District Administrative Building,
Bathinda, Punjab.

Dear Sir ,

Greeting of the day.

In compliance to Consent to Operate issued under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981 for 1980 MW (3*660 MW)of Talwandi Sabo Power Limited (TSPL), Village Banawala, Mansa- Talwandi Sabo Road, District Mansa, Punjab vide No. CTOA/Varied/MNS/2023/20598849 dated 31/01/2023 and No. CTOW/Varied/MNS/2023/20598933 dated 31/01/2023 .

Please find attached month-wise progress report regarding Ash generation and utilization for the month of December 2023.

For Talwandi Sabo Power Limited,

Banawala, Distt. Mansa, PB.

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transforming for good | power

TSPL/ENV/PPCB/ASH/JANUARY-2024/10 Date: **04 January 2024**

To,

The Environmental Engineer,
Punjab Pollution Control Board,
Regional Office,
Room No. 406 E, 3rd floor,
District Administrative Building,
Bathinda.

Subject: -Submission of month-wise progress report regarding generation and utilization of fly ash for the month of December, 2023.

Ref: - Renewal of Consent to operate issued for 1980 MW (3X660 MW) under section 21 of Air (Prevention & Control of Pollution) Act, 1981 vide Letter No. CTOA/Varied/MNS/2023/20598849 dated 31/01/2023.

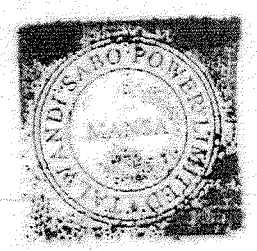
Dear Sir,

This has reference to the above letter regarding the subject matter, please find enclosed herewith month-wise progress report regarding generation and utilization of fly ash for the month of December, 2023 as **Annexure-1.**

Hope that the above information will suffice the requirement.

Yours faithfully,

For **Talwandi Sabo Power Limited,**



Vikas Sharma Vashisht
Head-Environment

Encl: As above

Annexure-1

Fly ash Generation and Utilization Data- FY 2023-24

Month	Ash Generation			Ash Utilization and its breakup under various utilization heads																			Total Utilization
	Dry Fly Ash	Bottom Ash	Total Ash	Dry Fly Ash Utilization						Bottom ash utilization					Pond ash utilization							
				Cement Manufacturing	RMC Plant	Fly Ash Bricks Manufacturing (Outside)	Land reclamation	Cement Manufacturing via Rail	Total	Cement Manufacturing	Brick kiln manufacturers	Land Reclamation	Road construction	Total	Cement Manufacturing via Rail	Cement	Road Construction	Land Reclamation	In Brick kiln units	Total	
	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT
Apr-23	234616	45346	279962	134224	2349	1810	0	31251	169633	0	7839	0	0	7839	0	12728	3761	0	8014	24503	197361	205200
May-23	254105	32774	286880	154373	2619	6486	0	23529	187007	0	8231	0	0	8231	0	391	119965	0	7974	12 271	315569	323800
Jun-23	244607	26677	271284	122166	1062.7	5278.4	0	42584	168686	0	6869	8960	0	15829	0	0	104122	0	6578	11 700	296429	312258
Q1	733327	104798	838125	410763	6030	13569	0	97364	525326	0	22940	8960	0	31900	0	13055	227845	0	22566	25 470	807598	841258
Jul-23	204164	35242	239406	60035	2090	4818	0	8073	76575.9	0	4854	9144	0	14097	0	0	76785	0	5151	83936	173049	187146
Aug-23	269261	78406	347667	64042	2359	2799	0	16065	85265.3	0	7890	66203	0	54093	0	0	76751	0	5852	82604	222542	276607
Sep-23	241148	31547	272695	107458	1165	2254	0	43557	154434.4	0	4328	27122	0	31450	0	0	37078	0	5877	42955	228816	260271
H1	1447900	249993	1697892.54	635278	12204	23440	0	67695	837778	0	40031	91529	0	131541	0	13055	512462	0	89447	468964	1432282	1584324
Oct-23	244730	48907	293643	122094	1522	1434	0	23273	148327	0	6431	0	0	6431	0	0	76207.6	42344.0	5955	129571	277892	284323
Nov-23	199512	40682	240193	105106	1825	1487	0	11783	120201	0	3010	0	0	3010	0	0	82249.0	33867	6351	128466	244683	247693
Dec-23	206338	28007	234540	149277	1712	2337	0	35233	188509	0	4247	0	0	4247	0	0	93167.3	33750	4054.98	130612	313998	318245
Q3	650781	126595	777876	376436	5060	5258	0	70281	456837	0	13688	0	0	13688	0	0	251624.66	99925.10	17000.78	387650.54	835573.4	849936.4
Jan-24															0							
Feb-24															0							
Mar-24															0							
Q4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
H2	650781	126595	777876.97581	376436	5060	5258	0	70281	454037	0	13688	0	0	13688	0	0	251625	99925	17001	387651	835575	849936
Annual	20,98,681.06	3,76,587.85	24,75,268.92	10,08,700.24	17,253.72	25,698.76	-	2,25,148.33	12,39,814.75	-	53,699.16	91,529.16	-	1,45,228.32	-	13,055.00	8,64,086.0	99,925.10	56,447.52	832,614.58	22,61,657.63	

Note:-

*15 lacs MT is the dead stock out of total stored quantity. *Dead Stock shall be maintained in the bottom of the Ash Dyke as well as on upstream sides of the bund walls of Ash Dyke as per the recommendations of Experts Designers) as a safety measure to Protect from any sort of unwanted damages to the bund or to bottom of the Ash Dyke during process of ash excavation/ash evacuation.

TSPL Environment

Annexure – 3(d)

From: TSPL Environment
Sent: 05 February 2024 17:24
To: eerobti@yahoo.co.in
Cc: Pankaj Sharma; Ravinder Thakur; Vikas Sharma Vashisht; Deepak Garg; minwook.kang@kcpcokps.in; 'Daljeet Singh'; chahat.bansal
Subject: Submission of month-wise progress report regarding generation and utilization of fly ash for the month of January- 2024 of TSPL Plant.
Attachments: Ash generation and utilization January-24.pdf

To,

The Environmental Engineer ,
Punjab Pollution Control Board,
Regional Office,
Room No. 406 E, 3rd Floor,
District Administrative Building,
Bathinda, Punjab.

Dear Sir ,

Greeting of the day.

In compliance to Consent to Operate issued under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981 for 1980 MW (3*660 MW)of Talwandi Sabo Power Limited (TSPL), Village Banawala, Mansa- Talwandi Sabo Road, District Mansa, Punjab vide No. CTOA/Varied/MNS/2023/20598849 dated 31/01/2023 and No. CTOW/Varied/MNS/2023/20598933 dated 31/01/2023 .

Please find attached month-wise progress report regarding Ash generation and utilization for the month of January 2024.

For Talwandi Sabo Power Limited,

Banawala, Distt. Mansa, PB.

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TSPL/ENV/PPCB/ASH/FEBRUARY-2024/11 Date: **05 February 2024**

To,

The Environmental Engineer,
Punjab Pollution Control Board,
Regional Office,
Room No. 406 E, 3rd floor,
District Administrative Building,
Bathinda

Subject: -Submission of month-wise progress report regarding generation and utilization of fly ash for the month of January, 2024.

Ref: - Renewal of Consent to operate issued for 1980 MW (3X660 MW) under section 21 of Air (Prevention & Control of Pollution) Act, 1981 vide Letter No. CTOA/Varied/MNS/2023/20598849 dated 31/01/2023.

Dear Sir,

This has reference to the above letter regarding the subject matter, please find enclosed herewith month-wise progress report regarding generation and utilization of fly ash for the month of January, 2024 as **Annexure-1**.

Hope that the above information will suffice the requirement.

Yours faithfully,

For **Talwandi Sabo Power Limited,**

TALWANDI SABO POWER LIMITED MANSA

Vikas Sharma Vashisht

Head-Environment

Encl: As above

Annexure-1

Fly ash Generation and Utilization Data- FY 2023-24

Month	Ash Generation			Dry Fly Ash Utilization						Ash Utilization and its breakup under various utilization heads (Bottom ash utilization)					Pond ash utilization						Total Utilization
	Dry Fly Ash	Bottom Ash	Total Ash	Cement Manufacturing	RMC Plant	Fly Ash Bricks / Manufacturing (Outside)	Land reclamation	Cement Manufacturing via Rail	Total	Cement Manufacturing	Brick kin manufacturers	Land Reclmatain	Road construction	Total	Cement Manufacturing via Rail	Cement	Road Construction	Land Reclamation	In Brick kiln units	Others (Construction)	Total	
	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT
Apr-23	234616	45349	279962	130224	2349	1810	0	91251	225633	0	7330	0	0	7330	0	13704	3761	0	8014	0	24499	197971
May-23	234105	32774	266880	150373	2619	6486	0	23529	183007	0	9231	0	0	9231	0	931	113955	0	7974	0	122271	313509
Jun-23	244807	26677	271284	121166	1062.7	5273.4	0	42384	169886	0	5859	9963	0	15822	0	0	104132	0	6578	0	110709	299415
Q1	733327	104798	838125	401763	6030	13569	0	97164	518526	0	22940	8763	0	31902	0	13055	221848	0	22565	0	257470	807899
Jul-23	204164	35242	239406	62036	2050	4818	0	8073	76975.3	0	7454	9.44	0	16097	0	0	78745	0	5151	0	83936	173009
Aug-23	269261	78406	347667	64042	2959	2799	0	16065	85865.3	0	7490	46201	0	54094	0	0	76751	0	5852	0	82604	222562
Sep-23	241148	31547	272695	107434	1165	2254	0	43557	154410.4	0	4928	27122	0	32453	0	0	37378	0	5877	0	93955	234816
Q2	714573	145194.6	859767	233511	6174	9871	0	67695	317252	0	17871	83366	0	99643	0	0	190614	0	16881	0	207495	624387
H1	1447900	249993	1697892.94	635274	12204	23440	0	67695	835778	0	40801	91938	0	131742	0	13055	412462	0	39447	0	464964	1432282
Oct-23	244736	48007	292743	120098	1577	1438	0	23273	146327	0	6431	0	0	6431	0	0	76597.6	42408.0	5955	0	124571	277329
Nov-23	199512	49682	249193	105105	1825	1487	0	11783	120201	0	3010	0	0	3010	0	0	82249.9	32867	6351	0	121468	244678
Dec-23	206533	39907	246440	148227	1712	2337	0	35233	187509	0	4147	0	0	4147	0	0	93167.2	23750	4604.08	0.00	121512	313368
Q3	650781	125595	777376	373430	5060	5254	0	70349	454037	0	13588	0	0	13588	0	0	251014.85	99025.10	17000.78	0.00	367850.54	835375.4
Jan-24	176799	56559	233358	67533.16	1851	1402.32	0.00	35328	106114	0	4673	0	0	4672.80	0	0	95469.0	38885	5189	34	143377	254364
Feb-24																						
Mar-24														0	0							
Q4	176798.71	56559.14	233357.85	67533.16	1850.52	1402.32	0.00	35327.60	106113.60	0.00	4672.80	0.00	0.00	4672.80	0.00	0.00	95,469.00	38885.00	5189.34	34.06	143377.22	254363.62
H2	827580	181154	1010734.65801	440963	6910	6661	0	105677	560151	0	18261	0	0	18261	0	0	351084	137710	22190	34	511028	1089739
Annual	22,75,479.77	4,33,147.00	27,08,626.77	10,76,237.38	19,114.21	36,101.08		2,70,475.63	13,95,928.31	-	54,571.96	9,529.16	-	1,59,101.12	-	13,055.46	7,63,555.46	1,37,709.88	61,636.66	34.06	9,75,991.50	25,33,021.15

Note :

*15 lacs MT is the dead stock out of total stored quantity. "Dead Stock shall be maintained in the bottom of the Ash Dyke as well as on upstream sides of the bund walls of Ash Dyke (as per the recommendations of Experts Designers) as a safety measure to Protect from any sort of unwanted damages to the bund or to bottom of the Ash Dyke during process of ash excavation/ash evacuation.

TSPL Environment

Annexure-3(c)

From:	TSPL Environment
Sent:	05 March 2024 16:11
To:	'eerobti@yahoo.co.in'
Cc:	Pankaj Sharma; Ravinder Thakur; Vikas Sharma Vashisht; Deepak Garg; 'minwook.kang@kepcokps.in'; chahat.bansal
Subject:	Submission of month-wise progress report regarding generation and utilization of fly ash for the month of February- 2024 of TSPL Plant.
Attachments:	Ash Generation and Utilization February-24.pdf

To,

The Environmental Engineer ,
Punjab Pollution Control Board,
Regional Office,
Room No. 406 E, 3rd Floor,
District Administrative Building,
Bathinda, Punjab.

Dear Sir ,

Greeting of the day.

In compliance to Consent to Operate issued under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981 for 1980 MW (3*660 MW)of Talwandi Sabo Power Limited (TSPL), Village Banawala, Mansa- Talwandi Sabo Road, District Mansa, Punjab vide No. CTOA/Varied/MNS/2023/20598849 dated 31/01/2023 and No. CTOW/Varied/MNS/2023/20598933 dated 31/01/2023 .

Please find attached month-wise progress report regarding Ash generation and utilization for the month of February 2024.

For Talwandi Sabo Power Limited,

Banawala, Distt. Mansa, PB.

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TSPL/ENV/PPCB/ASH/MARCH-2024/12 Date: **05 March 2024**

To,

The Environmental Engineer,
Punjab Pollution Control Board,
Regional Office,
Room No. 406 E, 3rd floor,
District Administrative Building,
Bathinda.

Subject: -Submission of month-wise progress report regarding generation and utilization of fly ash for the month of February, 2024.

Ref: - Renewal of Consent to operate issued for 1980 MW (3X660 MW) under section 21 of Air (Prevention & Control of Pollution) Act, 1981 vide Letter No. CTOA/Varied/MNS/2023/20598849 dated 31/01/2023.

Dear Sir,

This has reference to the above letter regarding the subject matter, please find enclosed herewith month-wise progress report regarding generation and utilization of fly ash for the month of February, 2024 as **Annexure-1**.

Hope that the above information will suffice the requirement.

Yours faithfully,

For **Talwandi Sabo Power Limited,**

TALWANDI SABO POWER LIMITED MANSA

Vikas Sharma Vashisht
Head-Environment

Encl: As above

Fly ash Generation and Utilization Data- FY 2023-24

Annexure-1

Month	Ash Generation			Dry Fly Ash Utilization						Ash Utilization and its breakup under various utilization heads													Total Utilization
										Bottom ash utilization					Pond ash utilization								
	Dry Fly Ash	Bottom Ash	Total Ash	Cement Manufacturing	RMC Plant	Fly Ash Bricks Manufacturing (Outside)	Land reclamation	Cement Manufacturing via Rail	Total	Cement Manufacturing	Brick kiln manufecturers	Land Reclmatation	Road construction	Total	Cement Manufacturing via Rail	Cement	Road Construction	Land Reclamation	Ir Brick kiln units	Others (Construction)		
	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT
Apr-23	234616	45346	279962	130224	2349	1810	0	31251	165633	0	7839	0	0	7839	0	1272	3761	0	8014	0	24499	197971.4
May-23	254105	32774	286880	150373	2619	6486	0	23529	183007	0	8231	0	0	8231	0	331	113965	0	7974	0	122271	313508.8
Jun-23	244607	26677	271284	121166	1062.7	5273.4	0	42384	169886	0	6859	8980	0	15829	0	0	104122	0	6578	0	110700	296415.5
Q1	733327	104798	838125	401763	6030	13569	0	97164	518526	0	22940	8980	0	31900	0	1603	221848	0	22566	0	257470	807895.6
Jul-23	204164	35242	239406	62036	2050	4818	0	8073	76975.9	0	4854	9246	0	14097	0	0	76785	0	5151	0	81936	173008.8
Aug-23	269261	78406	347667	64042	2959	2799	0	16065	85865.3	0	7890	46208	0	54093	0	0	76751	0	5852	0	82604	222562.3
Sep-23	241148	31547	272695	107434	1165	2254	0	43557	154410.4	0	4378	27173	0	31450	0	0	37078	0	5877	0	42955	228815.6
Q2	714573	145194.4	859767	233511	6174	9871	0	67695	317252	0	17071	82561	0	99641	0	0	190614	0	16881	0	207495	624386.7
Oct-23	244736	48907	293643	120098	1522	1434	0	23273	46327	0	6031	0	0	6031	0	0	76207.6	42408.0	5955	0	124571	277328.9
Nov-23	199512	49682	249193	105105	1825	1487	0	11783	120701	0	3019	0	0	3019	0	0	82249.9	32867	6351	0	121468	244878.3
Dec-23	206533	28007	234540	148227	1712	2337	0	35233	87509	0	4247	0	0	4247	0	0	93167.2	23750	4094.98	0	121612	313368.2
Q3	650781	126595	777376	373430	5060	5258	0	70289	254037	0	13688	0	0	13688	0	0	251624.66	99025.10	17000.78	0.00	367650.5	835375.4
Jan-24	176799	56559	233358	67533.16	1851	1402.32	0.00	35328	106114	0	4873	0	0	4873.69	0	0	99469.0	38685	5169.34	34	143377	254363.6
Feb-24	183587	23792	207479	106893.52	1887	1234.80	0.00	43691	153706.45	0	2231	0	0	2231	0	0	67053.28	31960	7103	105.98	93822	251759.5
Mar-24														0	0							
Q4	360386.72	80351.16	440836.88	174426.68	3737.24	2637.12	0.00	79019.01	259820.05	0.00	7103.48	0.00	0.00	7103.48	0.00	0.00	1,66,522.24	70644.86	12272.44	140.04	239199.58	505123.1
H2	1011267	206946	1218213.25939	547857	8797	7895	0	149308	413857	0	20791	0	0	20791	0	0	418147	169670	29293	140	606850	1341498.5
Annual	24,59,169.78	4,56,939.02	29,16,105.80	11,83,130.90	21,000.96	31,335.88	-	3,14,167.04	15,49,634.78	-	60,802.04	91,523.16	-	1,52,325.20	-	13,059.66	8,30,668.74	1,99,269.86	68,739.96	140.04	10,71,814.16	2773749.7

Note:-

15 tons MT is the dead stock out of total stored quantity."Dead Stock shall be maintained in the bottom of the Ash Dyke as well as on Upstream sides of the bund walls of Ash Dyke (as per the recommendations of Experts Designers) as a safety measure to Protect from any sort of unwanted damages to the bund or to bottom of the Ash Dyke during process of ash excavation/ash evacuation.

TSPL Environment

Annexure – 3(b)

From: TSPL Environment
Sent: 05 April 2024 13:21
To: eerobti@yahoo.co.in
Cc: Pankaj Sharma; Ravinder Thakur; Vikas Sharma Vashisht; Deepak Garg; minwook.kang@kepcokps.in; tarun.jindal@kepcokps.in; chahat.bansal; satpal.singh@kepcokps.in
Subject: Submission of month-wise progress report regarding generation and utilization of fly ash for the month of March- 2024 of TSPL Plant.
Attachments: Ash Generation and Utilization March 2024.pdf

To,

The Environmental Engineer ,
Punjab Pollution Control Board,
Regional Office,
Room No. 406 E, 3rd Floor,
District Administrative Building,
Bathinda, Punjab.

Dear Sir ,

Greeting of the day.

In compliance to Consent to Operate issued under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981 for 1980 MW (3*660 MW)of Talwandi Sabo Power Limited (TSPL), Village Banawala, Mansa- Talwandi Sabo Road, District Mansa, Punjab vide No. CTOA/Varied/MNS/2023/20598849 dated 31/01/2023 and No. CTOW/Varied/MNS/2023/20598933 dated 31/01/2023 .

Please find attached month-wise progress report regarding Ash generation and utilization for the month of March 2024.

For Talwandi Sabo Power Limited,

Banawala, Distt. Mansa, PB.

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TSPL/ENV/PPCB/ASH/APRIL-2024/01

Date: **05 April 2024**

To,

The Environmental Engineer,
Punjab Pollution Control Board,
Regional Office,
Room No. 406 E, 3rd floor,
District Administrative Building,
Bathinda.

Subject: -Submission of month-wise progress report regarding generation and utilization of fly ash for the month of March, 2024.

Ref: - Renewal of Consent to operate issued for 1980 MW (3X660 MW) under section 21 of Air (Prevention & Control of Pollution) Act, 1981 vide Letter No. CTOA/Varied/MNS/2023/20598849 dated 31/01/2023.

Dear Sir,

This has reference to the above letter regarding the subject matter, please find enclosed herewith month-wise progress report regarding generation and utilization of fly ash for the month of March, 2024 as **Annexure-1.**

Hope that the above information will suffice the requirement.

Yours faithfully,

For **Talwandi Sabo Power Limited,**

TALWANDI SABO POWER LIMITED MANSA

Vikas Sharma Vashisht

Head-Environment

Encl: As above

TALWANDI SABO POWER LIMITED
Site Cum Regd. Office: Village Banawala, Mansa - Talwandi Sabo Road, Distt. Mansa, Punjab - 151302 INDIA
Tel. 91-1659-2480000 | Telefax: 01659-248083 | website: www.tsplindia.co

CIN No. U40101PB2007PLC031035

Annexure-1

Fly ash Generation and Utilization Data- FY 2023-24

Month	Ash Generation			Ash Utilization and its breakup under various utilization heads																			Total Utilization
				Dry Fly Ash Utilization						Bottom ash utilization					Pond ash utilization								
	Dry Fly Ash	Bottom Ash	Total Ash	Cement Manufacturing	RMC Plant	Fly Ash Bricks Manufacturing (Outside)	Land reclamation	Cement Manufacturing via Rail	Total	Cement Manufacturing	Brick kiln manufacturers	Land Reclmataion	Road construction	Total	Cement Manufacturing via	Cement	Road Construction	Land Reclamation	In Brick kiln units	Others	Total	
	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT
Apr-23	234616	45346	279962	130224	2349	1810	0	31251	165633	0	7839	0	0	7839	0	12724	8761	0	8014	0	24499	197971	
May-23	254105	32774	286880	150373	2619	6486	0	23529	183007	0	8231	0	0	8231	0	331	113965	0	7974	0	122271	313509	
Jun-23	244607	26677	271284	121166	1062.7	5273.4	0	42384	169886	0	6869	8960	0	15829	0	0	104122	0	6578	0	110700	296415	
Q1	733327	104798	838125	401763	6030	13569	0	97164	518526	0	22940	8960	0	31900	0	13055	221848	0	22566	0	257470	807896	
Jul-23	204164	35242	239406	62036	2050	4818	0	8073	76975.9	0	4854	9244	0	14097	0	0	76785	0	5151	0	81936	173009	
Aug-23	269261	78406	347667	64042	2959	2799	0	16065	85865.3	0	7890	46203	0	54092	0	0	76751	0	5852	0	82604	222562	
Sep-23	241148	31547	272695	107434	1165	2254	0	43557	154410.4	0	4328	27122	0	31450	0	0	37078	0	5877	0	42955	228816	
Q2	714573	145194.8	859767	233511	6174	9871	0	67695	317252	0	17071	82569	0	99641	0	0	190614	0	16881	0	207495	624387	
H1	1447900	249993	1697892.54	635274	12204	23440	0	67695	835778	0	40011	91529	0	131540	0	13055	412462	0	39447	0	464964	1432282	
Oct-23	244736	48907	293643	120098	1522	1454	0	23273	146327	0	6431	0	0	6431	0	0	76207.6	42408.0	5955	0	124571	277329	
Nov-23	199512	49682	249193	105105	1825	1487	0	11783	120201	0	3010	0	0	3010	0	0	82349.9	32857	6351	0	121468	244678	
Dec-23	206533	28007	234540	148227	1712	2337	0	35233	187509	0	4247	0	0	4247	0	0	93167.2	23750	4694.98	0.00	121612	313368	
Q3	650781	126595	777376	373430	5060	5258	0	70289	454037	0	13688	0	0	13688	0	0	251624.66	99025.10	17000.78	0.00	367650.54	835375.4	
Jan-24	176799	56559	233358	67533.16	1851	1402.32	0.00	35328	106114	0	4873	0	0	4873.8	0	0	99469.0	38655	5189	34.06	143377	254364	
Feb-24	183687	23792	207479	106894	1887	1235	0	43691	153706	0	2231	0	0	2231	0	0	67053.28	21960	7103	106	95822	251759	
Mar-24	175025	33182	208206	172338	1424	363	0	0	174125	0	3899	28810	0	32709	67707	8194	76857.38	0	5894	0	158652	365486	
Q4	535511	113533	649043	346765	5161	3000	0	79019	433945	0	11002	28810	0	39812	67707	8194	243380	60245	18186	140	397852	871609	
H2	1186292	240128	1426420	720195	10220	8259	0	149303	887982	0	24690	28810	0	53500	67707	8194	495004	159270	35187	140	765502	1706985	
Annual	2634192	490121	3124312	1355469	22425	31699	0	314167	1723760	0	64701	120339	0	185041	67707	21250	907466	159270	74034	140	1230466	3139267	

Note:-

**15 lacs MT is the dead stock out of total stored quantity."Dead Stock shall be maintained in the bottom of the Ash Dyke as well as on upstream sides of the bund walls of Ash Dyke (as per the recommendations of Expert Designers) as a safety measure to Protect from any sort of unwanted damages to the bund or to bottom of the Ash Dyke during process of ash excavation/ash evacuation.*

TSPL Environment Annexure-3(g)

From: TSPL Environment
Sent: 20 April 2024 11:41
To: ronz.chd-mef@nic.in; eerobti@yahoo.co.in; mscb.cpcb@nic.in
Cc: Vikas Sharma Vashisht; tarun.jindal@kepcokps.in; chahat.bansal
Subject: Submission of Fly Ash Annual implementation report for 1980 MW (3x660 MW) coal based supercritical thermal power plant of M/s Talwandi Sabo Power Limited, Banwala Village, Mansa-Talwandi Sabo Road, District-Mansa, Punjab
Attachments: Annual Ash Implementation report FY 2023-2024.pdf

Dear Sir,

Greeting of the day..,

Please find herewith enclosed fly ash annual implementation report of M/s Talwandi Sabo Power Ltd., Vill. Banawala Distt. Mansa Punjab for the FY 2023-24. As per issued notification of Fly ash utilization issued on 14/09/1999 and its further amendments from period 01.04.2023 to 31.03.2024 attached as Annexure-1.

Submitted for your information and record please.

Thanks and Regards,

For,

Talwandi Sabo Power Limited

Banawala Distt. Mansa

Punjab.151 302

Thanks and Regards,

Chahat Bansal

Environment Section

+91-9463530325

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TSPL/ENV/MoEF&CC/APRIL-2024/01

Date: 19/04/2024

To
Additional Director (S),
MoEF &CC,
Govt. of India, Northern Regional office,
Bays No. 24-25, Sector 31-A, Dakshin Marg,
Chandigarh –160030.

Sub: **Submission of Fly Ash Annual implementation report for 1980 MW (3x660 MW) coal based supercritical thermal power plant of M/s Talwandi Sabo Power Limited, Banwala Village, Mansa-Talwandi Sabo Road, District-Mansa, Punjab.**

Ref: **Fly ash utilization notification issued on 14/09/1999 and amendment**

Dear Sir,

This has reference to the above cited subject. As per compliance issued under Fly ash utilization notification on 14/09/1999 and its further amendments. Please find enclosed herewith fly ash annual FY 2023-2024 Fly ash utilization report from 01.04.2023 to 31.03.2024 as Annexure-1.

This is for your information and record please.

Yours Sincerely

For **Talwandi Sabo Power Limited,**

Vikas Sharma Vashisht
Head – Environment

TALWANDI SABO POWER LIMITED MANSA

Encl: As above

Cc:

The Member Secretary, Central Pollution Control Board, Parivesh Bhavan, CBD-Cum-Office Complex, East Arjun Nagar, Delhi-110 032.	The Environmental Engineer, Punjab Pollution Control Board, Regional Office, Room No. 406 E, 3rd floor, District Administrative Building, Bathinda.

Annexure – 1

TALWANDI SABO POWER LIMITED

FLY ASH ANNUAL IMPLEMENTATION REPORT FOR THE PERIOD OF 01-04-2023 TO 31-03-2024

Name & Address of the Plant	Plant Capacity (MW)	Quantity of fly ash generated (MT)	Fly ash Utilization in MT				Total Ash Utilized (MT)	Remarks
			Cement Manufacturing	Brick Manufacturing	Roads, Construction & Others	Land Reclamation		
M/s Talwandi Sabo Power Ltd., Mansa – Talwandi Sabo Road, Vill. Banawala, Distt. Mansa, Punjab 151 302	1980 MW (3 X 660 MW)	3124312.25	17,81,017.12	1,71,034.38	9,07,606.16	279609.12	31,39,266.8	Unutilized fly ash is being disposed in ash though High Concentration Slurry Disposal System (HCSD)

TALWANDI SABO POWER LIMITED MANSA

Annexure-4

TALWANDI SABO POWER LIMITED

Doc. No-IMS\TSPL\SAFETY\FORM\01

Page 1of _6_

Mock Drill Report

1 Drill Information

Drill Number:

Location of Drill	FOPH		
Date of Drill	07-11-2023	Drill Imitating Time	20:40 Hrs.
Weather Temperature	◉ Cold ○ Warm ○ Hot	Weather Wind	◉ Calm ○ Breezy ○ Windy
Emergency Scenario/Type of Emergency Simulated	Fire in LDO tank-A		
Participants of Drill	• O&M team • Fire & Rescue team • Medical team • Security team		
Purpose of Drill	• To check the alertness of shift O&M team, Security team, Fire & Medical team • To check the preparedness & response of people in case of emergency. • To check the healthiness of emergency handling equipment's. • To increase the awareness of workmen about the response & their duties in case of emergency		

2 Team members & Coordinators

Mock Drill Observers /Evaluators	Mr. K. Jay Patra- Drill Co-ordinator Mr. Anoop Dandotiya- Work Incident Controller Mr. Achal Sharma– Fire & Rescue team activity
Key Contact Personals	Mr. Narender Kumar- Manager- HSE- KEPCO KPS Mr. Vijay Amin– Head Operations, KEPCO KPS Mr. Sourabh Rawat- Manager- HSE- KEPCO KPS
Salutatory Personnel's (if any)	NA
Fire Fighting / Rescue Team Members	AFO Jatindervir Singh, DCPO Amandeep Singh, FM Hardeep Singh, FM Sukhjinder Singh, FM Sukhwinder Singh, FM Kulwinder Singh & FM Gurdeep Singh
Search & Support Team	Rescue & Security Team
Medical Team	Kulwinder Singh (Paramedical Staff) Balwinder Singh (Ambulance Driver)

Role Callers (Head Count Team)	Mr. Ravinder Singh (Security Officer)

3 Activities & Response time

Emergency Drill Scenario & Response (Explain briefly the emergency simulation, response of workers & head count procedures)	Fire in LDO Tank-A FOPH Engineer Mr. Anoop Dandotiya informed to Fire Control Room about the fire in LDO Tank A at 20:40 Hrs. Fire & Rescue team immediately turn out with the Fire Tender (FT-02) to reach the incident location. Meanwhile OHC, security and other responsible departments were informed about the emergency by the Fire Control Room. Mr. Anoop Dandotiya operated both DV of LDO tank A & B immediately after informing to the Fire control room. Fire team reached the location, searched for casualties and started firefighting using Foam from the Fire Tender. Meanwhile, the OHC and security team reached at the incident location. Security team started barricading the area after removing the unwanted persons from the area, while the OHC team waited at the incident location as No casualty was found. Overall performance of all the responsible departments was found to be satisfactory. Total Head Count: 3

Brief of Drill Proceedings by Emergency Team(s) and Observation Noticed

S. No.	Actual Clock Time	Response Time (Start from 00:00:00)	Split up of Emergency Activity
1.	20:40 Hrs.	00:00:00	FOPH Control Room operator Mr. Anoop informed to Fire Control Room about Incident
2.	20:40 Hrs.	00:00:16	Emergency declared through siren.
3.	20:40 Hrs.	00:00:21	Fire Control Room Operator informed to CCR.
4.	20:40 Hrs.	00:00:32	Fire Tender-2 turnout with Fire & Rescue team from Fire Station.
5.	20:40 Hrs.	00:00:34	Mr. Anoop operated the Deluge Valve of LDO tanks.
6.	20:40 Hrs.	00:00:58	Fire Control Room Operator informed to OHC.
7.	20:41 Hrs.	00:01:25	Fire Control Room Operator informed to Security Control Room.
8.	20:41 Hrs.	00:01:47	Fire Control Room Operator informed to KEPCO HSE Manager Mr. Narendra Kumar

Mock Drill Report

9.	20:42 Hrs.	00:02:04	Fire Control Room Operator informed to KEPCO BMD Manager Mr. Chitta Sahoo.
10.	20:42 Hrs.	00:02:33	Fire Control Room Operator informed to Mr. Sourabh Rawat.
11.	20:42 Hrs.	00:02:56	Fire Control Room Operator informed to Fire Officer Mr. Achal Sharma.
12.	20:42 Hrs.	00:02:57	Fire Tender-02 reached at the incident location along with Fire & Rescue team.
13.	20:43 Hrs.	00:03:04	Ambulance reached at the incident location.
14.	20:43 Hrs.	00:03:05	Search operation started by rescue team.
15.	20:43 Hrs.	00:03:10	Security team reached at the incident location.
16.	20:43 Hrs.	00:03:12	Fire Control Room Operator informed to KEPCO Operation Head Mr. Vijay Amin.
17.	20:43 Hrs.	00:03:12	Firefighting started by fire team using foam from Fire Tender.
18.	20:43 Hrs.	00:03:30	Area cordoned-off by the security team.
19.	20:43 Hrs.	00:03:38	Search Operation completed.
20.	20:45 Hrs.	00:05:08	BMD team reached at the incident location.
21.	20:46 Hrs.	00:06:04	CCR Shift In-charge reached at the incident location.
22.	20:47 Hrs.	00:07:25	Firefighting completed.
23.	20:48 Hrs.	00:08:50	Deluge Valves normalised.
24.	20:49 Hrs.	00:09:02	Clearance given to the fire control room.
25.	20:49 Hrs.	00:09:10	Emergency clearance signal given by fire station using All clear Siren.
26.	20:49 Hrs.	00:09:30	Meeting started for gaps and observations.
27.	20:56 Hrs.	00:16:20	Meeting completed.

4 Analysis & Salient Observation

Response time for Vital Activities During Emergencies

S.no	Activities	Response Time
1	Emergency Identification	00:00:00
2	Declaration of Emergency through Siren	00:00:16
3	Time taken by Fire tender turnout after receiving call	00:00:32
4	Time taken by the Fire Team to reach the Location	00:02:57
5	Time taken by the Ambulance to Reach Location after information	00:02:02
6	Time taken by Ambulance to return OHC Centre	No Casualty found
7	Time taken for Ambulance to Reach Hospital	Not required
8	Time Taken by Search & Rescue team to Start operation after reaching Location	00:00:08
9	Time Taken by Fire team to Start Fire Fighting operation after reaching Location	00:00:15
10	Time taken to evacuate all personnel	00:00:20

Positive Highlights	
1	Quick response by all the Emergency response teams.
2	FOPH operator was aware about his role during emergency.
3	Fire team used Mayura Curtain nozzle during firefighting to prevent the heat.
4	Fire team used Fire proximity suit and Heat resistance suit during Firefighting.

Areas of Improvements	
1	Tree trimming near FOPH emergency exit gate shall be done to ensure easy movement.

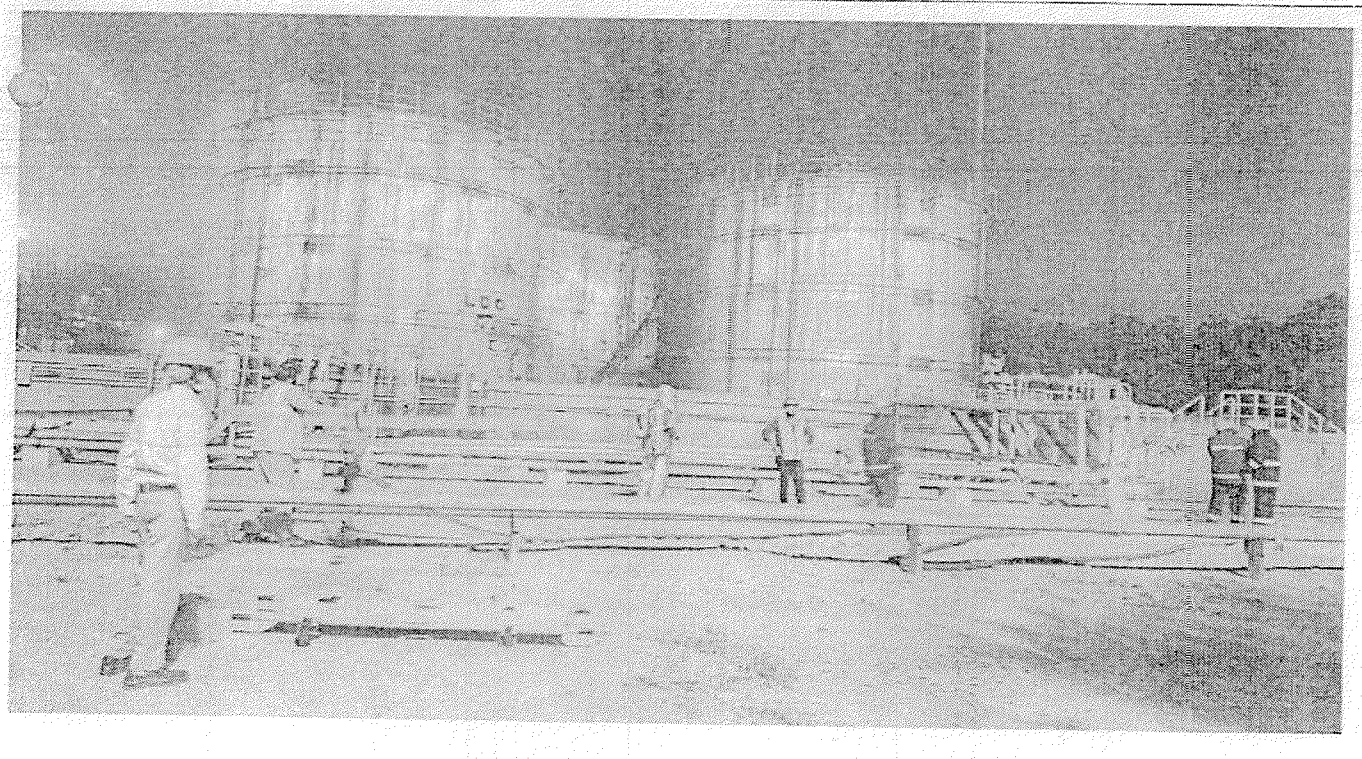
5 Mock Drill Review Meeting & Report Generation

Mock Drill Review Meeting shall be conducted on the same day after declaration of Emergency will be chaired by Chief Incident Controller. The Member of Response team and other shall be participants. Main agenda of this meeting shall be the deviation observed in the Emergency Mock drill & action plan/ recommendation for its correction.

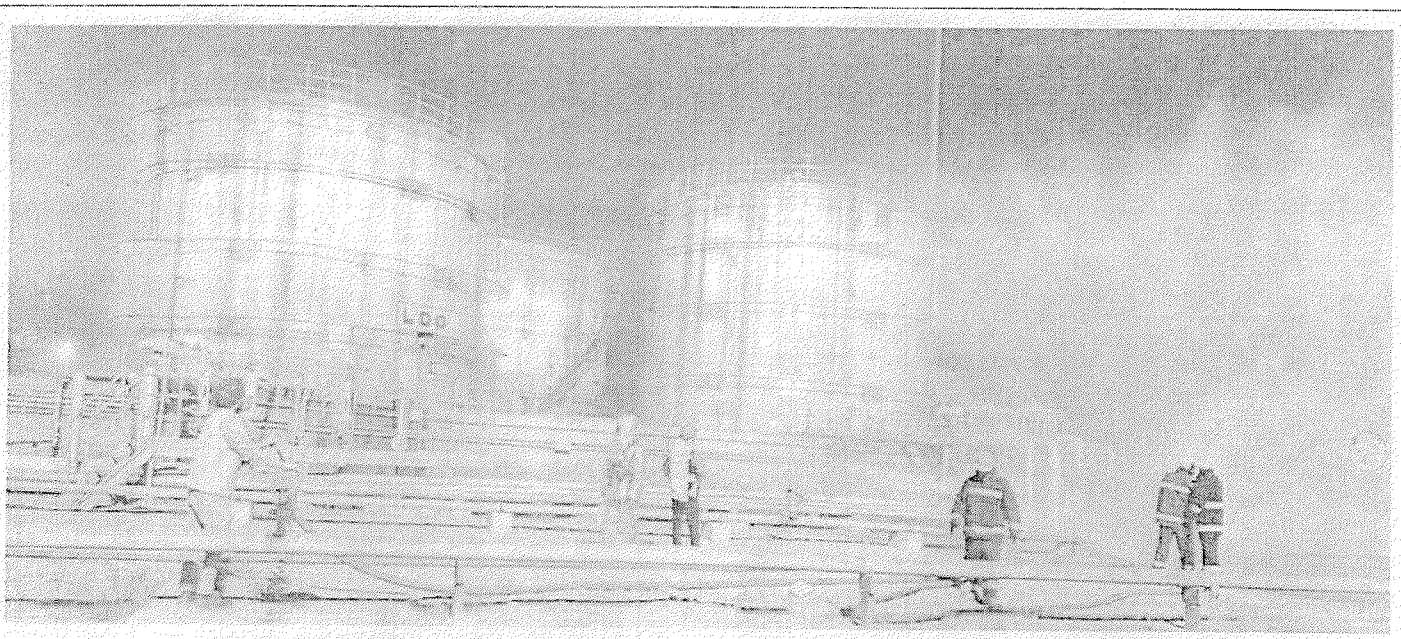
Venue of Meet	FOPH		
Date of Meet	07.11.2023	Time of meet	20:49 Hrs
Meeting Chaired by	Mr. Vijay Amin		
Number of participants in meet	18		

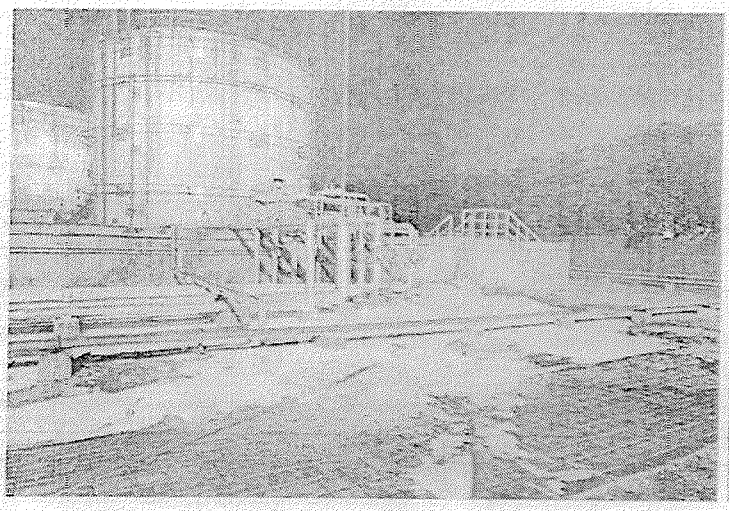
S.no	Topic Discussion w.r.t Deviation Observed	Root Cause	Action Plan /recommendation	Responsibility	Target date
1.	Tree branches protruding towards the emergency exit road restricting the movement of emergency vehicles.	Improper trimming of tree.	Tree shall be trimmed to provide clear pathway for emergency vehicles.	Mr. Naveen Rana	08.11.2023

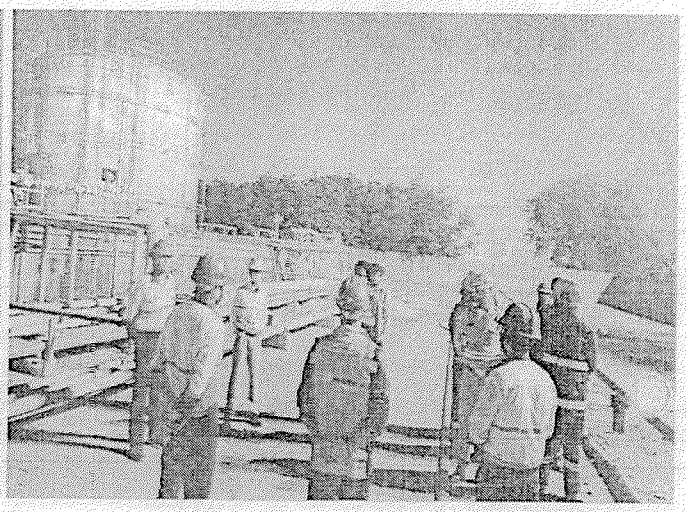
Enclosures:
Photographs & Evidences to be enclosed



Mock Drill Report







Name & Signature of Area In-charge

Name & Signature of EHS I/C

Signature of Drill Coordinator

Annexure – 5(a)

TEST REPORT

TC-11818

ULR No. : NA		**Test Report No. :**	NWAL131023NA029
Type of Sample : Water (Ground Water)		**Date of Reporting :**	20/10/2023
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road, Village Banawala, Distt. Mansa, Punjab, India	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS:17614 (P-1) 2021	**Mode of Collection of Sample**	Sampling by laboratory
Date of Sampling	12/10/2023	**Date of Receipt of Sample**	13/10/2023
Sampling Location	Piezometer No.4	**Testing Location**	Permanent Facility
Testing Protocol	IS:10500-2012 (IInd Revision)	**Period of Analysis**	13/10/2023 To 20/10/2023
Sample Description	Colourless liquid.		
Packing, Markings, Seal & Qty.	2 litre Plastic Bottle Marked P/12/07		

RESULTS

I -Chemical Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Acceptable limit	Permissible limit in absence of alternate source	Test Method
1	Colour	Colour Units	BDL	5	15	IS: 3025 (Part-4)Cl 2.0 [DL- 5 Colour Units]
2	Odour	-	Agreeable	Agreeable	Agreeable	IS:3025 (Part-5)
3	pH @ 25°C	-	7.12	6.5-8.5	No relaxation	IS:3025 (Part-11) [DL- 2]
4	Taste	-	Agreeable	Agreeable	Agreeable	IS: 3025 (Part-8)
5	Turbidity	NTU	BDL	1	5	IS 3025 (Part-10) (DL- 1 NTU]
6	Total Dissolved Solids	mg/l	1098	500	2000	IS :3025 (Part-16) [DL- 5 mg/l]
7	Aluminum as Al.	mg/l	BDL	0.03	0.2	USEPA 3015A [DL- 0.001 mg/l]
8	Anionic Detergents as MBAS.	mg/l	BDL	0.2	1.0	APHA-23rd Ed 2017-5540 B&C [DL- 0.05 mg/l]
9	Boron as B	mg/l	BDL	0.5	2.4	APHA-23rd Ed -4500-B [DL- 0.05 mg/l]
10	Calcium as Ca	mg/l	65	75	200	IS:3025 (Part-40) [DL- 5 mg/l]
11	Chloride as Cl	mg/l	240	250	1000	IS: 3025 (Part-32) [DL- 1 mg/l]
12	Copper as Cu.	mg/l	BDL	0.05	1.5	USEPA 3015A [DL- 0.001 mg/l]
13	Fluoride as F	mg/l	0.56	1.0	1.5	IS: 3025 (Part-60) [DL- 0.2 mg/l]
14	Free residual chlorine.	mg/l	BDL	0.2	1.0	APHA-23rd Ed - 4500G DPD Colorimetric Method [DL- 0.1 mg/l]
15	Iron as Fe.	mg/l	0.19	1.0	No relaxation	USEPA 3015A [DL- 0.001 mg/l]
16	Magnesium as Mg	mg/l	47	30	100	IS :3025 (Part-46) [DL- 1 mg/l]
17	Manganese as Mn.	mg/l	BDL	0.1	0.3	USEPA 3015A [DL- 0.001 mg/l]
18	Nitrate as NO3	mg/l	27	45	No relaxation	IS :3025 (Part-34) -Cl 3.3,Chromotropic Acid

E-207 Phase VIII-B (Sector-74) Mohali (Pb.) 160071

Umesh Kumar
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TC-11818

ULR No. : NA

Test Report No. : NWAL131023NA029

Type of Sample : Water (Ground Water)

Date of Reporting : 20/10/2023

18						Method [DL- 1 mg/l]
19	Phenolic compounds (as C6H5OH)	mg/l	BDL	0.001	0.002	IS:3025 (Part-43) [DL- 0.001 mg/l]
20	Selenium as Se.	mg/l	BDL	0.01	No relaxation	USEPA 3015A [DL- 0.001 mg/l]
21	Sulphate as SO4	mg/l	142	200	400	IS :3025 (Part-24) Cl 4.0 [DL- 1 mg/l]
22	Total alkalinity as CaCO3	mg/l	394	200	600	IS :3025 (Part-23) [DL- 1 mg/l]
23	Total hardness as CaCO3	mg/l	354	200	600	IS :3025 (Part-21) [DL- 1 mg/l]
24	Zinc as Zn.	mg/l	BDL	5	15	USEPA 3015A [DL- 0.001 mg/l]
25	Cadmium as Cd.	mg/l	BDL	0.003	No relaxation	USEPA 3015A [DL- 0.001 mg/l]
26	Cyanide as CN	mg/l	BDL	0.05	No relaxation	IS:3025 (Part-27) [DL- 0.01 mg/l]
27	Lead as Pb.	mg/l	BDL	0.01	No relaxation	USEPA 3015A [DL- 0.001 mg/l]
28	Mercury as Hg.	mg/l	BDL	0.001	No relaxation	USEPA 3015A [DL- 0.0001 mg/l]
29	Total arsenic as As.	mg/l	BDL	0.01	No relaxation	USEPA 3015A [DL- 0.001 mg/l]
30	Total chromium as Cr.	mg/l	BDL	0.05	No relaxation	USEPA 3015A [DL- 0.001 mg/l]
31	Total Suspended Solids	mg/l	BDL	-	-	IS :3025 (Part-17) [DL- 5 mg/l]

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

E-207 Phase VIII-B (Sector-74) Mohali (Pb.) 160071

Umesh Kumar

Authorized Signatory-Chemical

TEST REPORT

ULR No. : NA		**Test Report No. :**	NWAL131023NA029/A
Type of Sample : Water (Ground Water)		**Date of Reporting :**	20/10/2023
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road, Village Banawala, Distt. Mansa, Punjab, India	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS:17614 (P-1) 2021	**Mode of Collection of Sample**	Sampling by laboratory
Date of Sampling	12/10/2023	**Date of Receipt of Sample**	13/10/2023
Sampling Location	Piezometer No.4	**Testing Location**	Permanent Facility
Testing Protocol	IS:10500-2012 (IInd Revision)	**Period of Analysis**	13/10/2023 To 20/10/2023
Sample Description	Colourless liquid.		
Packing, Markings, Seal & Qty.	2 litre Plastic Bottle Marked P/12/07		

RESULTS

I -Chemical Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Acceptable limit	Permissible limit in absence of alternate source	Test Method
1	Mineral oil	mg/l	BDL	1.0	No relaxation	IS:3025(P-39) [DL- 0.1 mg/l]
2	Polynuclear aromatic hydrocarbons (PAH's)	mg/l	BDL	0.0001	No relaxation	EL/SOP/RCW/01 [DL- 0.00005 mg/l]

Remarks : This test report is the part of Test Report No.NWAL131023NA029

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

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Annexure-5(B)

TEST REPORT

TC-11818

ULR No. : TC118180000000345F		Test Report No. : NWAL101123NA029	
Type of Sample : Water- Ground Water			
Customer Name	Talwandi Sabo Power Limited	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
Address	3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Customer reference No. (If any)	NA
		Date of Sampling	09/11/2023
Sampling Protocol	IS 17614 (Part 1), EL-MSP-7.3	Date of Sample Receipt	10/11/2023
Sample Collection Mode	Sampling by laboratory	Period of Analysis	10/11/2023 To 18/11/2023
Testing Location	Permanent Facility	Date of Reporting	18/11/2023
Sampling Location	Piezomter No.4		
Sample Description	Clear, colourless liquid.		
Standard/Specification	NA		
Packing, Markings, Seal & Qty.	2 litre Plastic Bottle Marked P/09/14		

RESULTS

I. Chemical Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Detection Limit	Test Method
1	Colour	CU	BDL	1	IS 3025 (Part 4) Cl 2.0
2	Odour	-	Agreeable	-	IS 3025 (Part 5)
3	pH @ 25 °C	-	7.24	0.5	IS 3025 (Part 11)
4	Taste	-	Agreeable	-	IS 3025 (Part 8)
5	Turbidity	NTU	BDL	0.1	IS 3025 (Part 10)
6	Total Dissolved Solids	mg/l	1112	5	IS 3025 (Part 16)
7	Total Suspended Solids	mg/l	BDL	5	IS 3025 (Part 17)
8	Aluminium as Al	mg/l	BDL	0.001	USEPA 3015A
9	Anionic Detergents as MBAS	mg/l	BDL	0.05	APHA 23rd Ed 5540-B & C
10	Boron as B	mg/l	BDL	0.05	APHA 23rd Ed 4500B Curcumin Method
11	Calcium as Ca	mg/l	74	1	IS 3025 (Part 40)
12	Chloride as Cl	mg/l	239	1	IS 3025 (Part 32)
13	Copper as Cu	mg/l	BDL	0.001	USEPA 3015A
14	Fluoride as F	mg/l	0.52	0.1	IS 3025 (Part 60)
15	Free Residual Chlorine	mg/l	BDL	0.1	APHA 23rd Ed 4500G DPD Colorimetric Method
16	Iron as Fe	mg/l	0.20	0.001	USEPA 3015A
17	Magnesium as Mg	mg/l	43	1	IS 3025 (Part 46)
18	Manganese as Mn	mg/l	BDL	0.001	USEPA 3015A
19	Nitrate as NO3	mg/l	25	1	IS 3025 (Part 34) Cl 3.3 Chromotropic Acid Method

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TC-11818

ULR No. : TC1181800000000345F					Test Report No. : NWAL101123NA029
Type of Sample : Water- Ground Water					
20	Phenolic Compounds as C6H5OH	mg/l	BDL	0.0005	IS 3025 (Part 43)
21	Selenium as Se	mg/l	BDL	0.001	USEPA 3015A
22	Sulphate as SO4	mg/	134	1	IS 3025 (Part 24) Cl 4.0 Turbidity Method
23	Total Alkalinity as CaCO3	mg/	396	1	IS 3025 (Part 23)
24	Total Hardness as CaCO3	mg/	362	1	IS 3025 (Part 21)
25	Zinc as Zn	mg/l	BDL	0.001	USEPA 3015A
26	Cadmium as Cd	mg/l	BDL	0.001	USEPA 3015A
27	Cyanide as CN	mg/l	BDL	0.02	IS 3025 (Part 27)
28	Lead as Pb	mg/l	BDL	0.001	USEPA 3015A
29	Mercury as Hg	mg/l	BDL	0.0001	USEPA 3015A
30	Arsenic as As	mg/l	BDL	0.001	USEPA 3015A
31	Chromium as Cr	mg/l	BDL	0.001	USEPA 3015A

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
Authorized Signatory-Chemical

Annexure-5(c)

Eco Paryavaran Laboratories & Consultants Pvt. Ltd.
(Formerly known as Eco Laboratories & Consultants Pvt. Ltd.)

TEST REPORT

TC-11818

ULR No. : TC118180000001213F		Test Report No. :	NWAL111223NA051
Type of Sample : Water- Ground Water			
Customer Name	Talwandi Sabo Power Limited	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
Address	3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Customer reference No. (If any)	NA
		Date of Sampling	09/12/2023
Sampling Protocol	IS 17614 (Part 1), EL-MSP-7.3	Date of Sample Receipt	11/12/2023
Sample Collection Mode	Sampling by laboratory	Period of Analysis	11/12/2023 To 16/12/2023
Testing Location	Permanent Facility	Date of Reporting	16/12/2023
Sampling Location	Piezometer No.4		
Sample Description	Clear, colourless liquid.		
Standard/Specification	NA		
Packing, Markings, Seal & Qty.	2 litre Plastic Bottle Marked P/09/07		

RESULTS

I. Chemical Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Detection Limit	Test Method
1	Colour	CU	BDL	1	IS 3025 (Part 4) Cl 2.0
2	Odour	-	Agreeable	-	IS 3025 (Part 5)
3	pH @ 25 °C	-	7.22	0.5	IS 3025 (Part 11)
4	Temperature	°C	23.4	5	APHA 23rd ED-2550 B
5	Taste	-	Agreeable	-	IS 3025 (Part 8)
6	Total Dissolved Solids	mg/l	1108	5	IS 3025 (Part 16)
7	Total Suspended Solids	mg/l	BDL	5	IS 3025 (Part 17)
8	Aluminium as Al	mg/l	BDL	0.001	USEPA 3015A
9	Anionic Detergents as MBAS	mg/l	BDL	0.05	APHA 23rd Ed 5540-B & C
10	Boron as B	mg/l	BDL	0.05	APHA 23rd Ed 4500B Curcumin Method
11	Calcium as Ca	mg/l	72	1	IS 3025 (Part 40)
12	Chloride as Cl	mg/l	242	1	IS 3025 (Part 32)
13	Copper as Cu	mg/l	BDL	0.001	USEPA 3015A
14	Fluoride as F	mg/l	0.55	0.1	IS 3025 (Part 60)
15	Free Residual Chlorine	mg/l	BDL	0.1	APHA 23rd Ed 4500G DPD Colorimetric Method
16	Iron as Fe	mg/l	0.23	0.001	USEPA 3015A
17	Magnesium as Mg	mg/l	45	1	IS 3025 (Part 46)
18	Manganese as Mn	mg/l	BDL	0.001	USEPA 3015A
19	Nitrate as NO3	mg/l	31	1	IS 3025 (Part 34) Cl 3.3 Chromotropic Acid Method

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TC-11818

ULR No. : TC118180000000121 3F					Test Report No. : NWAL111223NA051
Type of Sample : Water- Ground Water					
20	Selenium as Se	mg/l	BDL	0.001	USEPA 3015A
21	Sulphate as SO4	mg/l	139	1	IS 3025 (Part 24) Cl 4.0 Turbidity Method
22	Total Alkalinity as CaCO3	mg/l	410	1	IS 3025 (Part 23)
23	Total Hardness as CaCO3	mg/l	366	1	IS 3025 (Part 21)
24	Zinc as Zn	mg/l	BDL	0.001	USEPA 3015A
25	Cadmium as Cd	mg/l	BDL	0.001	USEPA 3015A
26	Cyanide as CN	mg/l	BDL	0.02	IS 3025 (Part 27)
27	Lead as Pb	mg/l	BDL	0.001	USEPA 3015A
28	Mercury as Hg	mg/l	BDL	0.0001	USEPA 3015A
29	Arsenic as As	mg/l	BDL	0.001	USEPA 3015A
30	Chromium as Cr	mg/l	BDL	0.001	USEPA 3015A

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

E-207, Phase VIII-B (sector-74) Mohali (Pb.) 160071

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TEST REPORT

ULR No. : NA		Test Report No. :	NWAL111223NA051/A
Type of Sample : Water- Ground Water			
Customer Name	Talwandi Sabo Power Limited	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
Address	3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Customer reference No. (If any)	NA
		Date of Sampling	09/12/2023
Sampling Protocol	IS 17614 (Part 1), EL-MSP-7.3	Date of Sample Receipt	11/12/2023
Sample Collection Mode	Sampling by laboratory	Period of Analysis	11/12/2023 To 16/12/2023
Testing Location	Permanent Facility	Date of Reporting	16/12/2023
Sampling Location	Piezometer No.4		
Sample Description	Clear, colourless liquid.		
Standard/Specification	NA		
Packing, Markings, Seal & Qty.	2 litre Plastic Bottle Marked P/09/07		

RESULTS

I. Chemical Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Detection Limit	Test Method
1	Mineral Oil	mg/l	BDL	0.1	IS 3025 (Part 39)
2	Phenolic Compounds as C6H5OH	mg/l	BDL	0.0005	IS 3025 (Part 43)
3	Polynuclear aromatic hydrocarbons	mg/l	BDL	0.00005	EL/SOP/RCW/01

Remarks : This test report is the part of Test Report No.NWAL111223NA051

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

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Annexure-5(d)

TEST REPORT

TC-11B18

ULR No. : TC1181824000000318F		Test Report No. :	NWAL130124NA012
Type of Sample : Water- Ground Water			
Customer Name	Talwandi Sabo Power Limited	Work Order No. & Date	WA23Y-00006 Dt.: 05/05/2023
Address	3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Customer reference No. (If any)	NA
		Date of Sampling	13/01/2024
Sampling Protocol	IS 17614 (Part 1), EL-MSP-7.3	Date of Sample Receipt	13/01/2024
Sample Collection Mode	Sampling by laboratory	Period of Analysis	15/01/2024 To 22/01/2024
Testing Location	Permanent Facility	Date of Reporting	22/01/2024
Sampling Location	Piezometer No.4		
Sample Description	Clear, colourless liquid.		
Standard/Specification	NA		
Packing, Markings, Seal & Qty.	2 litre Plastic Bottle Marked P/13/12		

RESULTS

I. Chemical Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Detection Limit	Test Method
1	Colour	CU	BDL	1	IS 3025 (Part 4) Cl 2.0
2	Odour	-	Agreeable	-	IS 3025 (Part 5)
3	pH @ 25 °C	-	7.31	0.5	IS 3025 (Part 11)
4	Taste	-	Agreeable	-	IS 3025 (Part 8)
5	Turbidity	NTU	BDL	0.1	IS 3025 (Part 10)
6	Total Dissolved Solids	mg/l	1032	5	IS 3025 (Part 16)
7	Total Suspended Solids	mg/l	BDL	5	IS 3025 (Part 17)
8	Aluminium as Al	mg/l	BDL	0.001	USEPA 3015A
9	Anionic Detergents as MBAS	mg/l	BDL	0.05	APHA 23rd Ed 5540-B & C
10	Boron as B	mg/l	BDL	0.05	APHA 23rd Ed 4500B Curcumin Method
11	Calcium as Ca	mg/l	72	1	IS 3025 (Part 40)
12	Chloride as Cl	mg/l	182	1	IS 3025 (Part 32)
13	Copper as Cu	mg/l	BDL	0.001	USEPA 3015A
14	Fluoride as F	mg/l	0.58	0.1	IS 3025 (Part 60)
15	Free Residual Chlorine	mg/l	BDL	0.1	APHA 23rd Ed 4500G DPD Colorimetric Method
16	Iron as Fe	mg/l	0.32	0.001	USEPA 3015A
17	Magnesium as Mg	mg/l	63	1	IS 3025 (Part 46)
18	Manganese as Mn	mg/l	BDL	0.001	USEPA 3015A
19	Nitrate as NO3	mg/l	30	1	IS 3025 (Part 34) -Cl 3.3 Chromotropic Acid Method

Umesh Kumar
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TC-11818

ULR No. : TC1181824000000318F					Test Report No. : NWAL130124NA012
Type of Sample : Water- Ground Water					
20	Selenium as Se	mg/l	BDL	0.001	USEPA 3015A
21	Sulphate as SO4	mg/l	127	1	IS 3025 (Part 24) Cl 4.0 Turbidity Method
22	Total Alkalinity as CaCO3	mg/l	465	1	IS 3025 (Part 23)
23	Total Hardness as CaCO3	mg/l	440	1	IS 3025 (Part 21)
24	Zinc as Zn	mg/l	BDL	0.001	USEPA 3015A
25	Cadmium as Cd	mg/l	BDL	0.001	USEPA 3015A
26	Cyanide as CN	mg/l	BDL	0.02	IS 3025 (Part 27)
27	Lead as Pb	mg/l	BDL	0.001	USEPA 3015A
28	Mercury as Hg	mg/l	BDL	0.0001	USEPA 3015A
29	Arsenic as As	mg/l	BDL	0.001	USEPA 3015A
30	Chromium as Cr	mg/l	BDL	0.001	USEPA 3015A

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
Authorized Signatory-Chemical

TEST REPORT

ULR No. : NA		Test Report No. :	NWAL130124NA012/A
Type of Sample : Water- Ground Water			
Customer Name	Talwandi Sabo Power Limited	Work Order No. & Date	WA23Y-00006 Dt.: 05/05/2023
Address	3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Customer reference No. (If any)	NA
		Date of Sampling	13/01/2024
Sampling Protocol	IS 17614 (Part 1), EL-MSP-7.3	Date of Sample Receipt	13/01/2024
Sample Collection Mode	Sampling by laboratory	Period of Analysis	15/01/2024 To 22/01/2024
Testing Location	Permanent Facility	Date of Reporting	22/01/2024
Sampling Location	Piezometer No.4		
Sample Description	Clear, colourless liquid.		
Standard/Specification	NA		
Packing, Markings, Seal & Qty.	2 litre Plastic Bottle Marked P/13/12		

RESULTS

I. Chemical Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Detection Limit	Test Method
1	Mineral Oil	mg/l	BDL	0.1	IS 3025 (Part 39)
2	Phenolic Compounds as C6H5OH	mg/l	BDL	0.0005	IS 3025 (Part 43)
3	Polynuclear aromatic hydrocarbons	mg/l	BDL	0.00005	EL/SOP/RCW/01

Remarks : This test report is the part of Test Report No.NWAL130124NA012

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
Authorized Signatory-Chemical

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Annexure-5(e)

Eco Paryavaran Laboratories & Consultants Pvt. Ltd.
(Formerly known as Eco Laboratories & Consultants Pvt. Ltd.)
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TEST REPORT

TC-11818

ULR No. : TC118182400001283F		Test Report No. :	NWAL120224NA013
Type of Sample : Water- Ground Water			
Customer Name	Talwandi Sabo Power Limited	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
Address	3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Customer reference No. (If any)	NA
		Date of Sampling	10/02/2024
Sampling Protocol	IS 17614 (Part 1), EL-MSP-7.3	Date of Sample Receipt	12/02/2024
Sample Collection Mode	Sampling by laboratory	Period of Analysis	12/02/2024 To 15/02/2024
Testing Location	Permanent Facility	Date of Reporting	15/02/2024
Sampling Location	Piezometer No.4		
Sample Description	Clear, colourless liquid.		
Standard/Specification	NA		
Packing, Markings, Seal & Qty.	2 litre Plastic Bottle Marked P/10/11		

RESULTS

I. Chemical Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Detection Limit	Test Method
1	Colour	CU	BDL	1	IS 3025 (Part 4) Cl 2.0
2	Odour	-	Agreeable	-	IS 3025 (Part 5)
3	pH @ 25 °C	-	7.89	0.5	IS 3025 (Part 11)
4	Taste	-	Agreeable	-	IS 3025 (Part 8)
5	Turbidity	NTU	BDL	0.1	IS 3025 (Part 10)
6	Total Dissolved Solids	mg/l	1179	5	IS 3025 (Part 16)
7	Total Suspended Solids	mg/l	BDL	5	IS 3025 (Part 17)
8	Aluminium as Al	mg/l	BDL	0.001	USEPA 3015A
9	Anionic Detergents as MBAS	mg/l	BDL	0.05	APHA 23rd Ed 5540-B & C
10	Boron as B	mg/l	BDL	0.05	APHA 23rd Ed 4500B Curcumin Method
11	Calcium as Ca	mg/l	74	1	IS 3025 (Part 40)
12	Chloride as Cl	mg/l	178	1	IS 3025 (Part 32)
13	Copper as Cu	mg/l	BDL	0.001	USEPA 3015A
14	Fluoride as F	mg/l	0.55	0.1	IS 3025 (Part 60)
15	Free Residual Chlorine	mg/l	BDL	0.1	APHA 23rd Ed 4500G DPD Colorimetric Method
16	Iron as Fe	mg/l	0.25	0.001	USEPA 3015A
17	Magnesium as Mg	mg/l	45	1	IS 3025 (Part 46)
18	Manganese as Mn	mg/l	BDL	0.001	USEPA 3015A
19	Nitrate as NO3	mg/l	34	1	IS 3025 (Part 34) -Cl 3.3 Chromotropic Acid Method

Dr. Raj Singh
Authorized Signatory-Chemical

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0172-4616225 9781303109 contact@ecoparyavaran.org | md@ecoparyavaran.org www.ecoparyavaran.org

TC-11818

ULR No. : TC118182400001283F					Test Report No. : NWAL120224NA013
Type of Sample : Water- Ground Water					
20	Selenium as Se	mg/l	BDL	0.001	USEPA 3015A
21	Sulphate as SO4	mg/l	129	1	IS 3025 (Part 24) Cl 4.0 Turbidity Method
22	Total Alkalinity as CaCO3	mg/l	445	1	IS 3025 (Part 23)
23	Total Hardness as CaCO3	mg/l	370	1	IS 3025 (Part 21)
24	Zinc as Zn	mg/l	BDL	0.001	USEPA 3015A
25	Cadmium as Cd	mg/l	BDL	0.001	USEPA 3015A
26	Cyanide as CN	mg/l	BDL	0.02	IS 3025 (Part 27)
27	Lead as Pb	mg/l	BDL	0.001	USEPA 3015A
28	Mercury as Hg	mg/l	BDL	0.0001	USEPA 3015A
29	Arsenic as As	mg/l	BDL	0.001	USEPA 3015A
30	Chromium as Cr	mg/l	BDL	0.001	USEPA 3015A

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Dr. Rai Singh
Authorized Signatory-Chemical

TEST REPORT

ULR No. : NA		Test Report No. :	NWAL120224NA013/A
Type of Sample : Water- Ground Water			
Customer Name	Talwandi Sabo Power Limited	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
Address	3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Customer reference No. (If any)	NA
		Date of Sampling	10/02/2024
Sampling Protocol	IS 17614 (Part 1), EL-MSP-7.3	Date of Sample Receipt	12/02/2024
Sample Collection Mode	Sampling by laboratory	Period of Analysis	12/02/2024 To 15/02/2024
Testing Location	Permanent Facility	Date of Reporting	15/02/2024
Sampling Location	Piezometer No.4		
Sample Description	Clear, colourless liquid.		
Standard/Specification	NA		
Packing, Markings, Seal & Qty.	2 litre Plastic Bottle Marked P/10/11		

RESULTS

I. Chemical Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Detection Limit	Test Method
1	Mineral Oil	mg/l	BDL	0.1	IS 3025 (Part 39)
2	Phenolic Compounds as C6H5OH	mg/l	BDL	0.0005	IS 3025 (Part 43)
3	Polynuclear aromatic hydrocarbons	mg/l	BDL	0.00005	EL/SOP/RCW/01

Remarks : This test report is the part of Test Report No.NWAL120224NA013

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Dr. Rai Singh
Authorized Signatory-Chemical

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Annexure-5(f)

Eco Paryavaran Laboratories & Consultants Pvt. Ltd.
(Formerly known as Eco Laboratories & Consultants Pvt. Ltd.)
restoring eco balance...

TEST REPORT

TC-11818

ULR No. : TC118182400000218 3F		Test Report No. :	NWAL110324NA006
Type of Sample : Water- Ground Water			
Customer Name	Talwandi Sabo Power Limited	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
Address	3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Customer reference No. (If any)	NA
		Date of Sampling	08/03/2024
Sampling Protocol	IS 17614 (Part 1), EL-MSP-7.3	Date of Sample Receipt	11/03/2024
Sample Collection Mode	Mr. Prabhjot (Eco Rep.)	Period of Analysis	11/03/2024 To 15/03/2024
Testing Location	Permanent Facility	Date of Reporting	15/03/2024
Sampling Location	Piezometer No.4		
Sample Description	Clear, colourless liquid.		
Standard/Specification	NA		
Packing, Markings, Seal & Qty.	2 litre Plastic Bottle Marked P/8/01		

RESULTS

I. Chemical Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Detection Limit	Test Method
1	Colour	CU	BDL	1	IS 3025 (Part 4) Cl 2.0
2	Odour	-	Agreeable	-	IS 3025 (Part 5)
3	pH @ 25 °C	-	7.41	0.5	IS 3025 (Part 11)
4	Taste	-	Agreeable	-	IS 3025 (Part 8)
5	Turbidity	NTU	BDL	0.1	IS 3025 (Part 10)
6	Total Dissolved Solids	mg/l	1141	5	IS 3025 (Part 16)
7	Total Suspended Solids	mg/l	BDL	5	IS 3025 (Part 17)
8	Aluminium as Al	mg/l	BDL	0.001	USEPA 3015A
9	Anionic Detergents as MBAS	mg/l	BDL	0.05	APHA 23rd Ed 5540-B & C
10	Boron as B	mg/l	BDL	0.05	APHA 23rd Ed 4500B Curcumin Method
11	Calcium as Ca	mg/l	74	1	IS 3025 (Part 40)
12	Chloride as Cl	mg/l	247	1	IS 3025 (Part 32)
13	Copper as Cu	mg/l	BDL	0.001	USEPA 3015A
14	Fluoride as F	mg/l	0.55	0.1	IS 3025 (Part 60)
15	Free Residual Chlorine	mg/l	BDL	0.1	APHA 23rd Ed 4500G DPD Colorimetric Method
16	Iron as Fe	mg/l	0.25	0.001	USEPA 3015A
17	Magnesium as Mg	mg/l	46	1	IS 3025 (Part 46)
18	Manganese as Mn	mg/l	BDL	0.001	USEPA 3015A
19	Nitrate as NO3	mg/l	32	1	IS 3025 (Part 34) -Cl 3.3 Chromotropic Acid Method

Umesh Kumar
Authorized Signatory-Chemical

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TC-11818

ULR No. : TC1181824000002183F					Test Report No. : NWAL110324NA006
Type of Sample : Water- Ground Water					
20	Selenium as Se	mg/l	BDL	0.001	USEPA 3015A
21	Sulphate as SO4	mg/l	143	1	IS 3025 (Part 24) Cl 4.0 Turbidity Method
22	Total Alkalinity as CaCO3	mg/l	425	1	IS 3025 (Part 23)
23	Total Hardness as CaCO3	mg/l	375	1	IS 3025 (Part 21)
24	Zinc as Zn	mg/l	BDL	0.001	USEPA 3015A
25	Cadmium as Cd	mg/l	BDL	0.001	USEPA 3015A
26	Cyanide as CN	mg/l	BDL	0.02	IS 3025 (Part 27)
27	Lead as Pb	mg/l	BDL	0.001	USEPA 3015A
28	Mercury as Hg	mg/l	BDL	0.0001	USEPA 3015A
29	Arsenic as As	mg/l	BDL	0.001	USEPA 3015A
30	Chromium as Cr	mg/l	BDL	0.001	USEPA 3015A

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
Authorized Signatory-Chemical

TEST REPORT

ULR No. : NA		**Test Report No. :**	NWAL110324NA006/A
Type of Sample : Water- Ground Water			
Customer Name	Talwandi Sabo Power Limited	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
Address	3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Customer reference No. (If any)**	NA
		Date of Sampling	08/03/2024
Sampling Protocol	IS 17614 (Part 1), EL-MSP-7.3	**Date of Sample Receipt**	11/03/2024
Sample Collection Mode	Mr. Prabhjot (Eco Rep.)	**Period of Analysis**	11/03/2024 To 15/03/2024
Testing Location	Permanent Facility	**Date of Reporting**	15/03/2024
Sampling Location	Piezometer No.4		
Sample Description	Clear, colourless liquid.		
Standard/Specification	NA		
Packing, Markings, Seal & Qty.	2 litre Plastic Bottle Marked P/8/01		

RESULTS

I. Chemical Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Detection Limit	Test Method
1	Mineral Oil	mg/l	BDL	0.1	IS 3025 (Part 39)
2	Phenolic Compounds as C6H5OH	mg/l	BDL	0.0005	IS 3025 (Part 43)
3	Polynuclear aromatic hydrocarbons	mg/l	BDL	0.00005	EL/SOP/RCW/01

Remarks : This test report is the part of Test Report No. NWAL110324NA006

OTHER INFORMATION

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Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
Authorized Signatory-Chemical

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Annexure 6

vedanta transforming for good | power

CSR REPORT

(October '23 to March'24)

Talwandi Sabo Power Limited

Brief Highlights of CSR Intervention

Navi Disha – Promotion of Sustainable Agriculture

Fostering sustainable agricu ture, edifying over 2400 farmers from 26 villages under Project Navi Disha

The Navi Disha program aims at promoting methods and practices that are economically viable, environmentally sound, and in the farmer's interest in the long run by adopting strategies such as intensive awareness camps on chemical reduction & IPM techniques, trainings for organic and sustainable farming, soil and water test, water conservation, residual crop straw management , crop diversification , provision of modern agriculture machinery , promotion of allied income generation activities etc.

Following are the key highlights of Navi Disha Project –

- TSPL has taken strides in uplifting farmers by introducing an agriculture enterprise aimed at enhancing their income streams through diversified activities. Following our past achievements, like the jaggery processing unit, **TSPL establishes an Oil Expeller Unit for the farmers**. This initiative promises additional earning for farmers and encouraged the crop diversification.

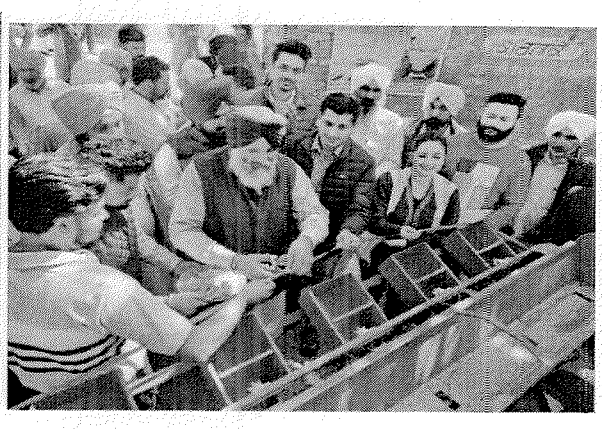
- TSPL Navi Disha project initiative effectively **prevented paddy straw burning in over 11,000 acres of land . Acknowledgment received from MLA , Shardulgarh Constituency**

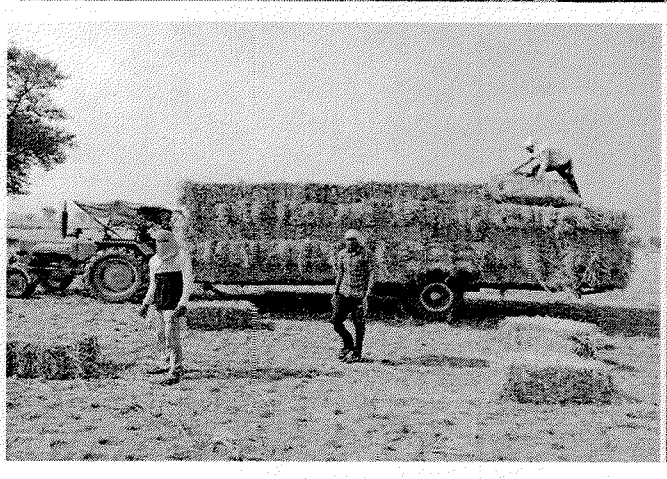
- Over **500 livestock** were diagnosed and provided free medicines through animal health check-up camps.

- Established a new **Farmer Resource centre** equipped with agriculture machineries, books pertaining to advance agriculture practices, and other essential agriculture kits. Over 500 farmers will be benefitted through this initiative.

- Over 1000 Farmers were supported with various agri inputs such as Trichoderma, kits for organic farming, bio culture kits, bio waste decomposer , vegetable seed kits, Vermicompost bags, mushroom seed kits etc.

- Conducted over 50 impactful awareness sessions and hands-on training programs for farmers, covering pivotal subjects such as improve agriculture practices, model farm, integrated pest management, organic farming, crop management, allied income generation activity etc.





SEHAT- Safe and Effective Health Action by TSPL

Bolstering health eco system , aiding Government PHC and doorstep health care services through health camp –

Project SEHAT-(Safe and Effective Health Action by TSPL) ensures access to quality healthcare services to the community in alignment with SDG 3, Strengthening the healthcare ecosystem, supporting Government Primary Health Centers with dental healthcare facilities, and providing doorstep healthcare services through specialized health camps.

Followings are the key highlight of SEHAT Project –

- Over 4000 community members benefited from doorstep healthcare services provided through series of independent health camps organized periodically across 10 villages. These camps served as crucial platforms for addressing various health concerns, offering medical consultations, check-ups, and basic treatments directly within the communities' vicinity.

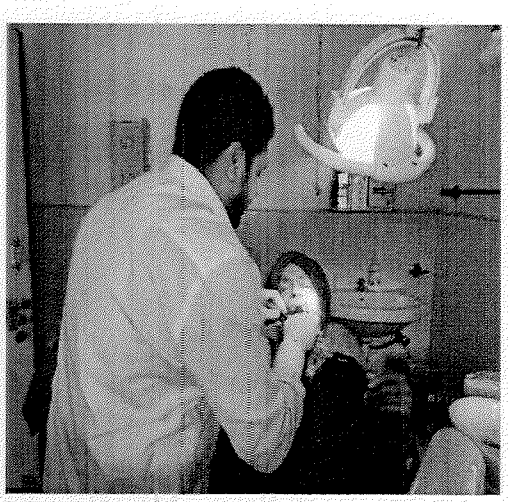
- ~1200 beneficiaries availed services from expert ophthalmologists at specialized eye screening camps. These camps facilitated early detection and intervention for eye-related ailments, with free provision of medicines and spectacles based on diagnosis, thereby enhancing access to vision care services within rural areas..

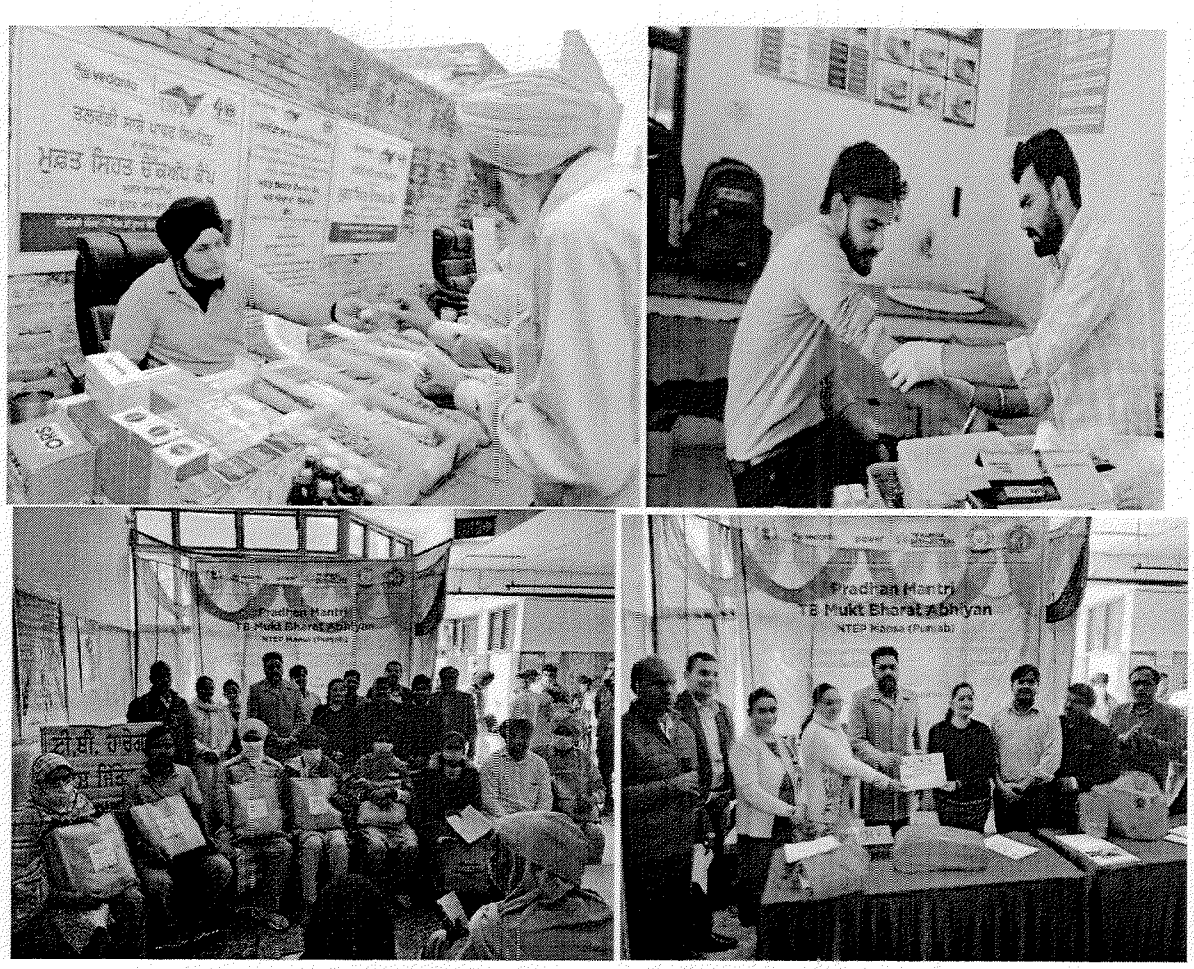
- Over 1000 people were enlightened on various crucial health topics like dengue, malaria, chikungunya, hand washing, anaemia, menstrual hygiene, first aid for snake bite, drowning etc. through awareness camps organized in Govt school and community throughout the year.

- TSPL-supported lab technician at Civil Hospital, Mansa, conducted more than 2500 lab tests for ~1100 patients.

- TSPL's support enabled approximately 500 individuals to access essential dental care services at the Primary Health Center (PHC) in Behniwal.

- Collaborating with District Health department in Mansa, TSPL provided 150 nutrition kits to needy TB patients aligned with Pradhan Mantri TB Mukt Bharat Abhiyan. **Received Award of Honour from District Health Department for this initiative.**





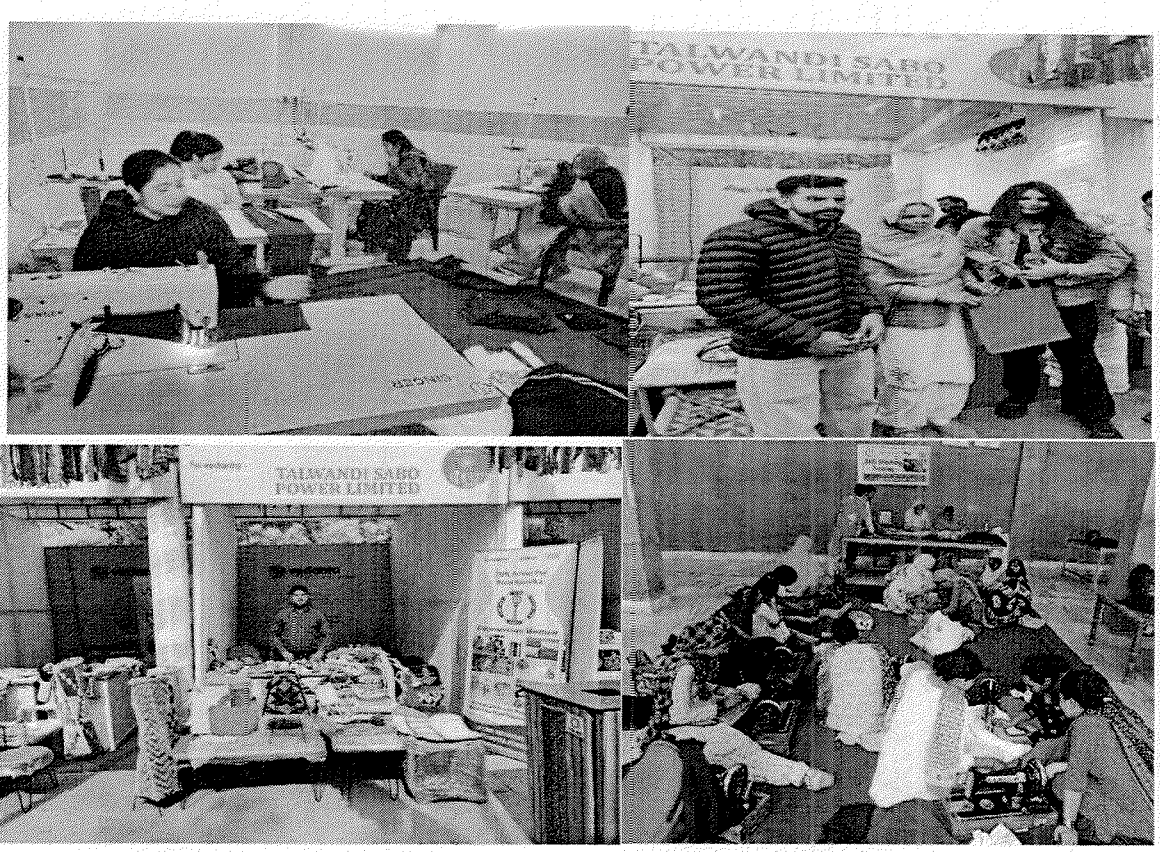
Project TARA- TSPL Action for Rural Ajeevika -Women Empowerment

Transforming the lives of over **2100 rural women from 20 villages** by providing them with entrepreneurial opportunities and making them Atma -Nirbhar in association with **Punjab State Rural Livelihood Mission** under project TARA (TSPL Action for Rural Ajeevika)

Followings are the key highlights of the project –

- Project TARA stall took center stage at Vedanta Cultural Festival in Dilli Haat offering an enchanting array of handcrafted treasures . Ms. Priya Agarwal Hebbar, Non -Executive Director of Vedanta Limited visited the TARA stall and appreciated.

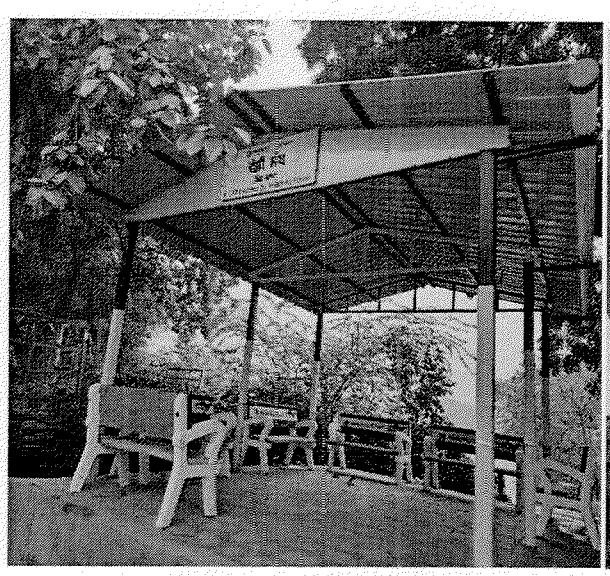
- Established **2 micro enterprise** center in peripheral villages and linked over **100 rural women with income generation opportunities.**

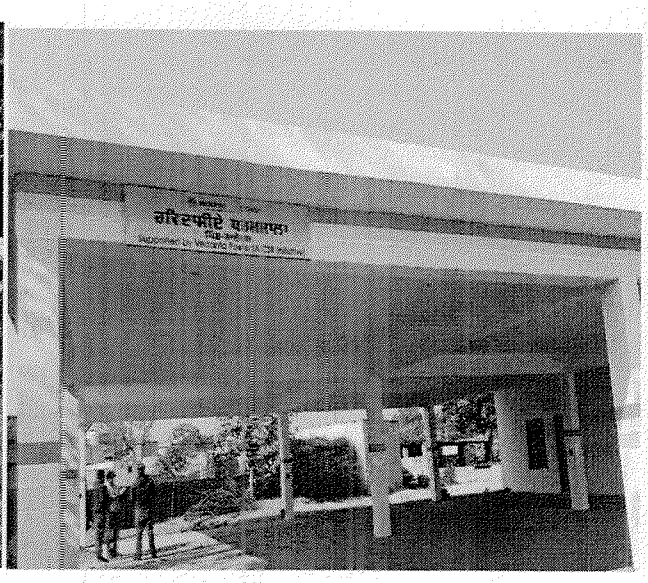


TSPL Gram Nirman Project (Community Infrastructure Development)

Changing Contours of Rural Mansa through providing urban amenities in Rural Areas

TSPL is proactively bridging the urban rural divide by significantly creating essential community assets ranging from construction of public washroom to renovation of community centre, installation of concrete benches, construction of community rest shed etc.



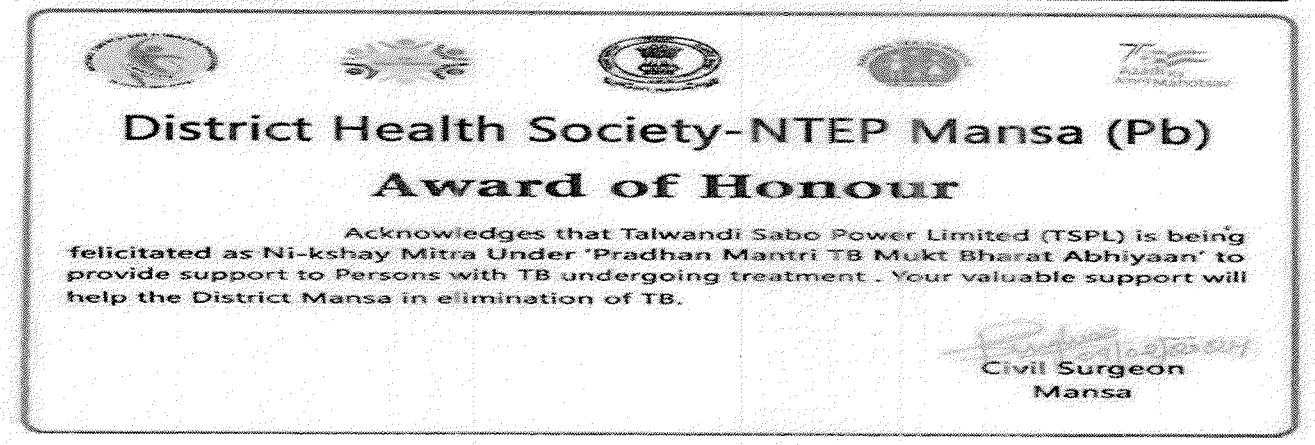


TSPL Computer Literacy Program

~100 students enrolled in **TSPL Computer Literacy Program'** a pioneering initiative in the vicinity. This centre serves as a crucial hub for promoting computer education among rural youth and children, empowering them with essential digital skill.

Awards & Accolades for CSR initiatives

*TSPL TARA project awarded as **'Best Social Welfare Initiative of the Year'** by UBS Forum*



District Health Society-NTEP Mansa (Pb)

Award of Honour

Acknowledges that Talwandi Sabo Power Limited (TSPL) is being felicitated as Ni-kshay Mitra Under 'Pradhan Mantri TB Mukt Bharat Abhiyaan' to provide support to Persons with TB undergoing treatment . Your valuable support will help the District Mansa in elimination of TB.

Civil Surgeon
Mansa

Total CSR Spent Oct '23 to March '24 was INR ~72 Lakh

Annexure-7(a)

Eco Paryavaran Laboratories & Consultants Pvt. Ltd.

(Formerly known as Eco Laboratories & Consultants Pvt. Ltd.)

restoring eco balance...

TEST REPORT

TC-11818

ULR No. : NA		**Test Report No. :**	NAIL131023NA004
Type of Sample : Ambient Air Quality		**Date of Reporting :**	20/10/2023
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road, Village Banawala, Distt. Mansa, Punjab, India	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	**Mode of Collection of Sample**	Sampling by laboratory
Date of Sampling	12/10/2023 To 13/10/2023	**Date of Receipt of Sample**	13/10/2023
Sampling Location	Station No.1	**Period of Analysis**	13/10/2023 To 20/10/2023
Testing Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	**Environmental Conditions**	Clear sky
Testing Location	On Site & Permanent Facility		

RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Method
1	Respirable Suspended Particulate Matter (as PM10)	µg/m³	83	100	IS: 5182 (Part-23)
2	Particulate Matter (as PM2.5)	µg/m³	51	60	Lab SOP: EL/SOP/AAQ/01, Issue No. 03, Jan 01
3	Sulphur Dioxide (as SO2)	µg/m³	9	80	IS: 5182 (Part-2)
4	Nitrogen Dioxide (as NO2)	µg/m³	25	80	IS: 5182 (Part-6)
5	Carbon Monoxide (as CO) ,	mg/m³	0.62	04	IS: 5182 (Part-10), NDIR Method
6	Lead (as Pb)	µg/m³	BDL (DL 0.04)	01	IS 5182 (Part-22)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
Authorized Signatory-Chemical

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TC-11818

TEST REPORT

ULR No. : NA		**Test Report No. :**	NAIL131023NA005
Type of Sample : Ambient Air Quality		**Date of Reporting :**	20/10/2023
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road, Village Banawala, Distt. Mansa, Punjab, India	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	**Mode of Collection of Sample**	Sampling by laboratory
Date of Sampling	12/10/2023 To 13/10/2023	**Date of Receipt of Sample**	13/10/2023
Sampling Location	Station No.2	**Period of Analysis**	13/10/2023 To 20/10/2023
Testing Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	**Environmental Conditions**	Clear sky
Testing Location	On Site & Permanent Facility		

RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Method
1	Respirable Suspended Particulate Matter (as PM10)	µg/m³	80	100	IS: 5182 (Part-23)
2	Particulate Matter (as PM2.5)	µg/m³	46	60	Lab SOP: EL/SOP/AAQ/01, Issue No. 03, Jan 01
3	Sulphur Dioxide (as SO2)	µg/m³	11	80	IS: 5182 (Part-2)
4	Nitrogen Dioxide (as NO2)	µg/m³	23	80	IS: 5182 (Part-6)
5	Carbon Monoxide (as CO)	mg/m³	0.66	04	IS: 5182 (Part-10), NDIR Method
6	Lead (as Pb)	µg/m³	BDL (DL 0.04)	01	IS 5182 (Part-22)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
Authorized Signatory-Chemical

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TC-11818

TEST REPORT

ULR No. : NA		**Test Report No. :**	NAIL131023NA006
Type of Sample : Ambient Air Quality		**Date of Reporting :**	20/10/2023
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road, Village Banawala, Distt. Mansa, Punjab, India	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	**Mode of Collection of Sample**	Sampling by laboratory
Date of Sampling	12/10/2023 To 13/10/2023	**Date of Receipt of Sample**	13/10/2023
Sampling Location	Staton No 3	**Period of Analysis**	13/10/2023 To 20/10/2023
Testing Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	**Environmental Conditions**	Clear sky
Testing Location	On Site & Permanent Facility		

RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Method
1	Respirable Suspended Particulate Matter (as PM10)	µg/m³	86	100	IS: 5182 (Part-23)
2	Particulate Matter (as PM2.5)	µg/m³	51	60	Lab SOP: EL/SOP/AAQ/01, Issue No. 03, Jan 01
3	Sulphur Dioxide (as SO2)	µg/m³	13	80	IS: 5182 (Part-2)
4	Nitrogen Dioxide (as NO2)	µg/m³	27	80	IS: 5182 (Part-6)
5	Carbon Monoxide (as CO) ,	mg/m³	0.72	04	IS: 5182 (Part-10), NDIR Method
6	Lead (as Pb)	µg/m³	BDL (DL 0.04)	01	IS 5182 (Part-22)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
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TC-11818

TEST REPORT

ULR No. : NA		**Test Report No. :**	NAIL131023NA007
Type of Sample : Ambient Air Quality		**Date of Reporting :**	20/10/2023
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road, Village Banawala, Distt. Mansa, Punjab, India	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	**Mode of Collection of Sample**	Sampling by laboratory
Date of Sampling	12/10/2023 To 13/10/2023	**Date of Receipt of Sample**	13/10/2023
Sampling Location	Station No.4	**Period of Analysis**	13/10/2023 To 20/10/2023
Testing Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	**Environmental Conditions**	Clear sky
Testing Location	On Site & Permanent Facility		

RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Method
1	Respirable Suspended Particulate Matter (as PM10)	µg/m³	84	100	IS: 5182 (Part-23)
2	Particulate Matter (as PM2.5)	µg/m³	49	60	Lab SOP: EL/SOP/AAQ/01, Issue No. 03, Jan 01
3	Sulphur Dioxide (as SO2)	µg/m³	11	80	IS: 5182 (Part-2)
4	Nitrogen Dioxide (as NO2)	µg/m³	25	80	IS: 5182 (Part-6)
5	Carbon Monoxide (as CO)	mg/m³	0.61	04	IS: 5182 (Part-10), NDIR Method
6	Lead (as Pb)	µg/m³	BDL (DL 0.04)	01	IS 5182 (Part-22)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
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TC-11818

TEST REPORT

ULR No. : NA		**Test Report No. :**	NAIL131023NA008
Type of Sample : Ambient Air Quality		**Date of Reporting :**	20/10/2023
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road, Village Banawala, Distt. Mansa, Punjab, India	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	**Mode of Collection of Sample**	Sampling by laboratory
Date of Sampling	12/10/2023 To 13/10/2023	**Date of Receipt of Sample**	13/10/2023
Sampling Location	Village Chehlanwali	**Period of Analysis**	13/10/2023 To 20/10/2023
Testing Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	**Environmental Conditions**	Clear sky
Testing Location	On Site & Permanent Facility		

RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Method
1	Respirable Suspended Particulate Matter (as PM10)	µg/m³	88	100	IS: 5182 (Part-23)
2	Particulate Matter (as PM2.5)	µg/m³	55	60	Lab SOP: EL/SOP/AAQ/01, Issue No. 03, Jan 01
3	Sulphur Dioxide (as SO2)	µg/m³	14	80	IS: 5182 (Part-2)
4	Nitrogen Dioxide (as NO2)	µg/m³	29	80	IS: 5182 (Part-6)
5	Carbon Monoxide (as CO) ,	mg/m³	0.71	04	IS: 5182 (Part-10), NDIR Method
6	Lead (as Pb)	µg/m³	BDL (DL 0.04)	01	IS 5182 (Part-22)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

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Annexure-7(B)

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TC-11818

TEST REPORT

ULR No. :	TC118180000000310F	**Test Report No. :**	NAIL101123NA040
Type of Sample :	Ambient Air	**Date of Reporting :**	18/11/2023
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	**Mode of Collection of Sample**	Sampling by laboratory
Date of Sampling	08/11/2023 To 09/11/2023	**Date of Receipt of Sample**	10/11/2023
Sampling Location	Station No.1	**Period of Analysis**	10/11/2023 To 18/11/2023
Standard/ Specification	National Ambient Air Quality: G.S.R.No.B-29016/20/19/PCI-L dated 18 Nov, 2009	**Environmental Conditions**	Dusty weather
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Respirable Suspended Particulate Matter as PM10	µg/m3	141	100	5	IS 5182 (Part 23)
2	Particulate Matter as PM2.5	µg/m3	85	60	5	IS 5182 (Part 24)
3	Sulphur Dioxide as SO2	µg/m3	15	80	5	IS 5182 (Part 2)
4	Oxides of Nitrogen	µg/m3	32	80	7	IS 5182 (Part 6)
5	Carbon Monoxide as CO	µg/m3	0.74	4	0.1	IS 5182 (Part 10) NDIR method
6	Lead as Pb	µg/m3	BDL	1.0	0.04	USEPA Method IO-3.4

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
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TC-11818

TEST REPORT

ULR No. : TC1181800000000311F		**Test Report No. :**	NAIL101123NA041
Type of Sample : Ambient Air		**Date of Reporting :**	18/11/2023
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	**Mode of Collection of Sample**	Sampling by laboratory
Date of Sampling	08/11/2023 To 09/11/2023	**Date of Receipt of Sample**	10/11/2023
Sampling Location	Station No.2	**Period of Analysis**	10/11/2023 To 18/11/2023
Standard/ Specification	National Ambient Air Quality: G.S.R.No.B-29016/20/19/PCI-L dated 18 Nov, 2009	**Environmental Conditions**	Dusty weather
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Respirable Suspended Particulate Matter as PM10	µg/m3	158	100	5	IS 5182 (Part 23)
2	Particulate Matter as PM2.5	µg/m3	95	60	5	IS 5182 (Part 24)
3	Sulphur Dioxide as SO2	µg/m3	11	80	5	IS 5182 (Part 2)
4	Oxides of Nitrogen	µg/m3	31	80	7	IS 5182 (Part 6)
5	Carbon Monoxide as CO	µg/m3	0.73	4	0.1	IS 5182 (Part 10) NDIR method
6	Lead as Pb	µg/m3	BDL	1.0	0.04	USEPA Method IO-3.4

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

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TC-11818

TEST REPORT

ULR No. : TC1181800000000312F		**Test Report No. :**	NAIL101123NA042
Type of Sample : Ambient Air		**Date of Reporting :**	18/11/2023
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	**Mode of Collection of Sample**	Sampling by laboratory
Date of Sampling	08/11/2023 To 09/11/2023	**Date of Receipt of Sample**	10/11/2023
Sampling Location	Station No.3	**Period of Analysis**	10/11/2023 To 18/11/2023
Standard/ Specification	National Ambient Air Quality: G.S.R.No.B-29016/20/19/PCI-L dated 18 Nov, 2009	**Environmental Conditions**	Dusty weather
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Respirable Suspended Particulate Matter as PM10	µg/m3	156	100	5	IS 5182 (Part 23)
2	Particulate Matter as PM2.5	µg/m3	93	60	5	IS 5182 (Part 24)
3	Sulphur Dioxide as SO2	µg/m3	14	80	5	IS 5182 (Part 2)
4	Oxides of Nitrogen	µg/m3	30	80	7	IS 5182 (Part 6)
5	Carbon Monoxide as CO	µg/m3	0.76	4	0.1	IS 5182 (Part 10) NDIR method
6	Lead as Pb	µg/m3	BDL	1.0	0.04	USEPA Method IO-3.4

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
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TC-11818

TEST REPORT

ULR No. : TC1181800000000313F		**Test Report No. :**	NAIL101123NA043
Type of Sample : Ambient Air		**Date of Reporting :**	18/11/2023
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	**Mode of Collection of Sample**	Sampling by laboratory
Date of Sampling	08/11/2023 To 09/11/2023	**Date of Receipt of Sample**	10/11/2023
Sampling Location	Station No.4	**Period of Analysis**	10/11/2023 To 18/11/2023
Standard/ Specification	National Ambient Air Quality: G.S.R.No.B-29016/20/19/PCI-L dated 18 Nov, 2009	**Environmental Conditions**	Dusty weather
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Respirable Suspended Particulate Matter as PM10	µg/m3	151	100	5	IS 5182 (Part 23)
2	Particulate Matter as PM2.5	µg/m3	90	60	5	IS 5182 (Part 24)
3	Sulphur Dioxide as SO2	µg/m3	10	80	5	IS 5182 (Part 2)
4	Oxides of Nitrogen	µg/m3	32	80	7	IS 5182 (Part 6)
5	Carbon Monoxide as CO	µg/m3	0.68	4	0.1	IS 5182 (Part 10) NDIR method
6	Lead as Pb	µg/m3	BDL	1.0	0.04	USEPA Method IO-3.4

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
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TEST REPORT

TC-11818

ULR No. : TC1181800000000314F		**Test Report No. :**	NAIL101123NA044
Type of Sample : Ambient Air		**Date of Reporting :**	18/11/2023
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	**Mode of Collection of Sample**	Sampling by laboratory
Date of Sampling	08/11/2023 To 09/11/2023	**Date of Receipt of Sample**	10/11/2023
Sampling Location	Village Chehlanwali	**Period of Analysis**	10/11/2023 To 18/11/2023
Standard/ Specification	National Ambient Air Quality: G.S.R.No.B-29016/20/19/PCI-L dated 18 Nov, 2009	**Environmental Conditions**	Dusty weather
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Respirable Suspended Particulate Matter as PM10	µg/m3	163	100	5	IS 5182 (Part 23)
2	Particulate Matter as PM2.5	µg/m3	97	60	5	IS 5182 (Part 24)
3	Sulphur Dioxide as SO2	µg/m3	18	80	5	IS 5182 (Part 2)
4	Oxides of Nitrogen	µg/m3	38	80	7	IS 5182 (Part 6)
5	Carbon Monoxide as CO	µg/m3	0.87	4	0.1	IS 5182 (Part 10) NDIR method
6	Lead as Pb	µg/m3	BDL	1.0	0.04	USEPA Method IO-3.4

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
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Annexure-7(L)

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TEST REPORT

TC-11818

ULR No. : TC1181800000001330F		**Test Report No. :**	NAIL141223NA063
Type of Sample : Ambient Air		**Date of Reporting :**	18/12/2023
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	**Mode of Collection of Sample**	Sampling by laboratory
Date of Sampling	13/12/2023 To 14/12/2023	**Date of Receipt of Sample**	14/12/2023
Sampling Location	Station No.1	**Period of Analysis**	14/12/2023 To 18/12/2023
Standard/ Specification	National Ambient Air Quality: G.S.R.No.B-29016/20/19/PCI-L dated 18 Nov, 2009	**Environmental Conditions**	Partially cloudy weather:fogg during night & early morning
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Respirable Suspended Particulate Matter as PM10	µg/m3	153	100	5	IS 5182 (Part 23)
2	Particulate Matter as PM2.5	µg/m3	91	60	5	IS 5182 (Part 24)
3	Sulphur Dioxide as SO2	µg/m3	14	80	5	IS 5182 (Part 2)
4	Oxides of Nitrogen	µg/m3	38	80	7	IS 5182 (Part 6)
5	Ammonia as NH3	µg/m3	33	400	5	IS 5182 (Part 25)
6	Ozone as O3	µg/m3	15	180	5	IS 5182 (Part 9)
7	Carbon Monoxide as CO	µg/m3	0.87	4	0.1	IS 5182 (Part 10) NDIR method
8	Lead as Pb	µg/m3	BDL	1.0	0.04	USEPA Method IO-3.4
9	Arsenic as As	ng/m3	BDL	6	4	USEPA Method IO-3.4
10	Nickel as Ni	ng/m3	BDL	20	4	USEPA Method IO-3.4
11	Benzo Pyrene (BaP), Particulate Phase Only	ng/m3	BDL	1	0.3	IS 5182 (Part 12)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
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TEST REPORT

ULR No. : NA		**Test Report No. :**	NAIL141223NA063/A
Type of Sample : Ambient Air		**Date of Reporting :**	18/12/2023
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	**Mode of Collection of Sample**	Sampling by laboratory
Date of Sampling	13/12/2023 To 14/12/2023	**Date of Receipt of Sample**	14/12/2023
Sampling Location	Station No.1	**Period of Analysis**	14/12/2023 To 18/12/2023
Standard/ Specification	National Ambient Air Quality: G.S.R.No.B-29016/20/19/PCI-L dated 18 Nov, 2009	**Environmental Conditions**	Partially cloudy weather:fogg during night & early morning
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Benzene	µg/m3	BDL	5	5	IS 5182 (Part 11)

Remarks : This test report is the part of Test Report No.NAIL141223NA063

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

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TEST REPORT

TC-11818

ULR No. : TC1181800000001329F		Test Report No. :	NAIL141223NA062
Type of Sample : Ambient Air		Date of Reporting :	18/12/2023
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	13/12/2023 To 14/12/2023	Date of Receipt of Sample	14/12/2023
Sampling Location	Station No.2	Period of Analysis	14/12/2023 To 18/12/2023
Standard/ Specification	National Ambient Air Quality: G.S.R.No.B-29016/20/19/PCI-L dated 18 Nov, 2009	Environmental Conditions	Partially cloudy weather:fogg during night & early morning
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Respirable Suspended Particulate Matter as PM10	µg/m3	144	100	5	IS 5182 (Part 23)
2	Particulate Matter as PM2.5	µg/m3	85	60	5	IS 5182 (Part 24)
3	Sulphur Dioxide as SO2	µg/m3	15	80	5	IS 5182 (Part 2)
4	Oxides of Nitrogen	µg/m3	36	80	7	IS 5182 (Part 6)
5	Ammonia as NH3	µg/m3	31	400	5	IS 5182 (Part 25)
6	Ozone as O3	µg/m3	16	180	5	IS 5182 (Part 9)
7	Carbon Monoxide as CO	µg/m3	0.83	4	0.1	IS 5182 (Part 10) NDIR method
8	Lead as Pb	µg/m3	BDL	1.0	0.04	USEPA Method IO-3.4
9	Arsenic as As	ng/m3	BDL	6	4	USEPA Method IO-3.4
10	Nickel as Ni	ng/m3	BDL	20	4	USEPA Method IO-3.4
11	Benzo Pyrene (BaP), Particulate Phase Only	ng/m3	BDL	1	0.3	IS 5182 (Part 12)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
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TEST REPORT

ULR No. : NA		**Test Report No. :**	NAIL141223NA052/A
Type of Sample : Ambient Air		**Date of Reporting :**	18/12/2023
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	**Mode of Collection of Sample**	Sampling by laboratory
Date of Sampling	13/12/2023 To 14/12/2023	**Date of Receipt of Sample**	14/12/2023
Sampling Location	Station No.2	**Period of Analysis**	14/12/2023 To 18/12/2023
Standard/ Specification	National Ambient Air Quality: G.S.R.No.B-29016/20/19/PCI-L dated 18 Nov, 2009	**Environmental Conditions**	Partially cloudy weather:fogg during night & early morning
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Benzene	µg/m3	BDL	5	5	IS 5182 (Part 11)

Remarks : This test report is the part of Test Report No.NAIL141223NA062

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

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TC-11818

TEST REPORT

ULR No. : TC1181800000001327F		**Test Report No. :**	NAIL141223NA060
Type of Sample : Ambient Air		**Date of Reporting :**	18/12/2023
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	**Mode of Collection of Sample**	Sampling by laboratory
Date of Sampling	13/12/2023 To 14/12/2023	**Date of Receipt of Sample**	14/12/2023
Sampling Location	Station No.3	**Period of Analysis**	14/12/2023 To 18/12/2023
Standard/ Specification	National Ambient Air Quality: G.S.R.No.B-29016/20/19/PCI-L dated 18 Nov, 2009	**Environmental Conditions**	Partially cloudy weather:fogg during night & early morning
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Respirable Suspended Particulate Matter as PM10	µg/m3	168	100	5	IS 5182 (Part 23)
2	Particulate Matter as PM2.5	µg/m3	102	60	5	IS 5182 (Part 24)
3	Sulphur Dioxide as SO2	µg/m3	17	80	5	IS 5182 (Part 2)
4	Oxides of Nitrogen	µg/m3	37	80	7	IS 5182 (Part 6)
5	Ammonia as NH3	µg/m3	30	400	5	IS 5182 (Part 25)
6	Ozone as O3	µg/m3	17	180	5	IS 5182 (Part 9)
7	Carbon Monoxide as CO	µg/m3	0.93	4	0.1	IS 5182 (Part 10) NDIR method
8	Lead as Pb	µg/m3	BDL	1.0	0.04	USEPA Method IO-3.4
9	Arsenic as As	ng/m3	BDL	6	4	USEPA Method IO-3.4
10	Nickel as Ni	ng/m3	BDL	20	4	USEPA Method IO-3.4
11	Benzo Pyrene (BaP), Particulate Phase Only	ng/m3	BDL	1	0.3	IS 5182 (Part 12)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
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TEST REPORT

ULR No. : NA		Test Report No. :	NAIL141223NA060/A
Type of Sample : Ambient Air		Date of Reporting :	18/12/2023
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	13/12/2023 To 14/12/2023	Date of Receipt of Sample	14/12/2023
Sampling Location	Station No.3	Period of Analysis	14/12/2023 To 18/12/2023
Standard/ Specification	National Ambient Air Quality: G.S.R.No.B-29016/20/19/PCI-L dated 18 Nov, 2009	Environmental Conditions	Partially cloudy weather:fogg during night & early morning
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Benzene	µg/m3	BDL	5	5	IS 5182 (Part 11)

Remarks : This test report is the part of Test Report No.NAIL141223NA060

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

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TEST REPORT

TC-11818

ULR No. : TC1181800000001328F		Test Report No. : NAIL141223NA061	
Type of Sample : Ambient Air		Date of Reporting : 18/12/2023	
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	13/12/2023 To 14/12/2023	Date of Receipt of Sample	14/12/2023
Sampling Location	Station No.4	Period of Analysis	14/12/2023 To 18/12/2023
Standard/ Specification	National Ambient Air Quality: G.S.R.No.B-29016/20/19/PCI-L dated 18 Nov, 2009	Environmental Conditions	Partially cloudy weather:fogg during night & early morning
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Respirable Suspended Particulate Matter as PM10	µg/m3	147	100	5	IS 5182 (Part 23)
2	Particulate Matter as PM2.5	µg/m3	87	60	5	IS 5182 (Part 24)
3	Sulphur Dioxide as SO2	µg/m3	16	80	5	IS 5182 (Part 2)
4	Oxides of Nitrogen	µg/m3	34	80	7	IS 5182 (Part 6)
5	Ammonia as NH3	µg/m3	32	400	5	IS 5182 (Part 25)
6	Ozone as O3	µg/m3	18	180	5	IS 5182 (Part 9)
7	Carbon Monoxide as CO	µg/m3	0.81	4	0.1	IS 5182 (Part 10) NDIR method
8	Lead as Pb	µg/m3	BDL	1.0	0.04	USEPA Method IO-3.4
9	Arsenic as As	ng/m3	BDL	6	4	USEPA Method IO-3.4
10	Nickel as Ni	ng/m3	BDL	20	4	USEPA Method IO-3.4
11	Benzo Pyrene (BaP), Particulate Phase Only	ng/m3	BDL	1	0.3	IS 5182 (Part 12)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

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TEST REPORT

ULR No. : NA		**Test Report No. :**	NAIL141223NA061/A
Type of Sample : Ambient Air		**Date of Reporting :**	18/12/2023
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	**Mode of Collection of Sample**	Sampling by laboratory
Date of Sampling	13/12/2023 To 14/12/2023	**Date of Receipt of Sample**	14/12/2023
Sampling Location	Station No.4	**Period of Analysis**	14/12/2023 To 18/12/2023
Standard/ Specification	National Ambient Air Quality: G.S.R.No.B-29016/20/19/PCI-L dated 18 Nov, 2009	**Environmental Conditions**	Partially cloudy weather:fogg during night & early morning
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Benzene	µg/m3	BDL	5	5	IS 5182 (Part 11)

Remarks : This test report is the part of Test Report No.NAIL141223NA061

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

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TC-11818

TEST REPORT

ULR No. : TC1181800000001331F		Test Report No. :	NAIL141223NA064
Type of Sample : Ambient Air		Date of Reporting :	18/12/2023
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	13/12/2023 To 14/12/2023	Date of Receipt of Sample	14/12/2023
Sampling Location	Village Chehlanwali	Period of Analysis	14/12/2023 To 18/12/2023
Standard/ Specification	National Ambient Air Quality: G.S.R.No.B-29016/20/13/PCI-L dated 18 Nov, 2009	Environmental Conditions	Partially cloudy weather:fogg during night & early morning
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Respirable Suspended Particulate Matter as PM10	µg/m3	138	100	5	IS 5182 (Part 23)
2	Particulate Matter as PM2.5	µg/m3	83	60	5	IS 5182 (Part 24)
3	Sulphur Dioxide as SO2	µg/m3	15	80	5	IS 5182 (Part 2)
4	Oxides of Nitrogen	µg/m3	31	80	7	IS 5182 (Part 6)
5	Ammonia as NH3	µg/m3	29	400	5	IS 5182 (Part 25)
6	Ozone as O3	µg/m3	17	180	5	IS 5182 (Part 9)
7	Carbon Monoxide as CO	µg/m3	0.82	4	0.1	IS 5182 (Part 10) NDIR method
8	Lead as Pb	µg/m3	BDL	1.0	0.04	USEPA Method IO-3.4
9	Arsenic as As	ng/m3	BDL	6	4	USEPA Method IO-3.4
10	Nickel as Ni	ng/m3	BDL	20	4	USEPA Method IO-3.4
11	Benzo Pyrene (BaP), Particulate Phase Only	ng/m3	BDL	1	0.3	IS 5182 (Part 12)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

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TEST REPORT

ULR No. : NA		Test Report No. :	NAIL141223NA064/A
Type of Sample : Ambient Air		Date of Reporting :	18/12/2023
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Work Order No. & Date	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	13/12/2023 To 14/12/2023	Date of Receipt of Sample	14/12/2023
Sampling Location	Village Chehlanwali	Period of Analysis	14/12/2023 To 18/12/2023
Standard/ Specification	National Ambient Air Quality: G.S.R.No.B-29016/20/19/PCI-L dated 18 Nov, 2009	Environmental Conditions	Partially cloudy weather:fogg during night & early morning
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Benzene	µg/m3	BDL	5	5	IS 5182 (Part 11)

Remarks : This test report is the part of Test Report No.NAIL141223NA064

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

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Annexure-7(d)

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TC-11818

TEST REPORT

ULR No. : TC1181824000000336F		**Test Report No. :** NAIL150124NA033	
Type of Sample : Ambient Air		**Date of Reporting :** 22/01/2024	
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	**Mode of Collection of Sample**	Sampling by laboratory
Date of Sampling	12/01/2024 To 13/01/2024	**Date of Receipt of Sample**	15/01/2024
Sampling Location	Station No.1	**Period of Analysis**	15/01/2024 To 22/01/2024
Standard/ Specification	National Ambient Air Quality: G.S.R.No.B-29016/20/19/PCI-L dated 18 Nov, 2009	**Environmental Conditions**	Partially cloudy weather:fogg during night & early morning
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Respirable Suspended Particulate Matter as PM10	µg/m3	133	100	5	IS 5182 (Part 23)
2	Particulate Matter as PM2.5	µg/m3	80	60	5	IS 5182 (Part 24)
3	Sulphur Dioxide as SO2	µg/m3	14	80	5	IS 5182 (Part 2)
4	Oxides of Nitrogen	µg/m3	30	80	7	IS 5182 (Part 6)
5	Carbon Monoxide as CO	µg/m3	0.79	4	0.1	IS 5182 (Part 10) NDIR method
6	Lead as Pb	µg/m3	BDL	1.0	0.04	USEPA Method IO-3.4

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
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TC-11818

TEST REPORT

ULR No. : TC1181824000000337F		**Test Report No. :**	NAIL150124NA034
Type of Sample : Ambient Air		**Date of Reporting :**	22/01/2024
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	**Mode of Collection of Sample**	Sampling by laboratory
Date of Sampling	12/01/2024 To 13/01/2024	**Date of Receipt of Sample**	15/01/2024
Sampling Location	Station No.2	**Period of Analysis**	15/01/2024 To 22/01/2024
Standard/ Specification	National Ambient Air Quality: G.S.R.No.B-29016/20/19/PCI-L dated 18 Nov, 2009	**Environmental Conditions**	Partially cloudy weather:fogg during night & early morning
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Respirable Suspended Particulate Matter as PM10	µg/m3	153	100	5	IS 5182 (Part 23)
2	Particulate Matter as PM2.5	µg/m3	91	60	5	IS 5182 (Part 24)
3	Sulphur Dioxide as SO2	µg/m3	15	80	5	IS 5182 (Part 2)
4	Oxides of Nitrogen	µg/m3	33	80	7	IS 5182 (Part 6)
5	Carbon Monoxide as CO	µg/m3	0.88	4	0.1	IS 5182 (Part 10) NDIR method
6	Lead as Pb	µg/m3	BDL	1.0	0.04	USEPA Method IO-3.4

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
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TC-11818

TEST REPORT

ULR No. : TC1181824000000338F		**Test Report No. :**	NAIL150124NA035
Type of Sample : Ambient Air		**Date of Reporting :**	22/01/2024
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	**Mode of Collection of Sample**	Sampling by laboratory
Date of Sampling	12/01/2024 To 13/01/2024	**Date of Receipt of Sample**	15/01/2024
Sampling Location	Station No.3	**Period of Analysis**	15/01/2024 To 22/01/2024
Standard/ Specification	National Ambient Air Quality: G.S.R.No.B-29016/20/19/PCI-L dated 18 Nov, 2009	**Environmental Conditions**	Partially cloudy weather:fogg during night & early morning
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Respirable Suspended Particulate Matter as PM10	µg/m3	146	100	5	IS 5182 (Part 23)
2	Particulate Matter as PM2.5	µg/m3	87	60	5	IS 5182 (Part 24)
3	Sulphur Dioxide as SO2	µg/m3	13	80	5	IS 5182 (Part 2)
4	Oxides of Nitrogen	µg/m3	28	80	7	IS 5182 (Part 6)
5	Carbon Monoxide as CO	µg/m3	0.84	4	0.1	IS 5182 (Part 10) NDIR method
6	Lead as Pb	µg/m3	BDL	1.0	0.04	USEPA Method IO-3.4

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
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TC-11818

TEST REPORT

ULR No. : TC1181824000000339F		**Test Report No. :**	NAIL150124NA036
Type of Sample : Ambient Air		**Date of Reporting :**	22/01/2024
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	**Mode of Collection of Sample**	Sampling by laboratory
Date of Sampling	12/01/2024 To 13/01/2024	**Date of Receipt of Sample**	15/01/2024
Sampling Location	Station No.4	**Period of Analysis**	15/01/2024 To 22/01/2024
Standard/ Specification	National Ambient Air Quality: G.S.R.No.B-29016/20/19/PCI-L cated 18 Nov, 2009	**Environmental Conditions**	Partially cloudy weather:fogg during night & early morning
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospherlc Pollutlon (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Respirable Suspended Particulate Matter as PM10	µg/m3	139	100	5	IS 5182 (Part 23)
2	Particulate Matter as PM2.5	µg/m3	84	60	5	IS 5182 (Part 24)
3	Sulphur Dioxide as SO2	µg/m3	15	80	5	IS 5182 (Part 2)
4	Oxides of Nitrogen	µg/m3	32	80	7	IS 5182 (Part 6)
5	Carbon Monoxide as CO	µg/m3	0.83	4	0.1	IS 5182 (Part 10) NDIR method
6	Lead as Pb	µg/m3	BDL	1.0	0.04	USEPA Method IO-3.4

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
Authorized Signatory-Chemical

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TC-11818

TEST REPORT

ULR No. : TC1181824000000340F		**Test Report No. :**	NAIL150124NA037
Type of Sample : Ambient Air		**Date of Reporting :**	22/01/2024
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	**Mode of Collection of Sample**	Sampling by laboratory
Date of Sampling	12/01/2024 To 13/01/2024	**Date of Receipt of Sample**	15/01/2024
Sampling Location	Village Chehlanwali	**Period of Analysis**	15/01/2024 To 22/01/2024
Standard/ Specification	National Ambient Air Quality: G.S.R.No.B-29016/20/19/PCI-L dated 18 Nov, 2009	**Environmental Conditions**	Partially cloudy weather:fogg during night & early morning
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Respirable Suspended Particulate Matter as PM10	µg/m3	160	100	5	IS 5182 (Part 23)
2	Particulate Matter as PM2.5	µg/m3	98	60	5	IS 5182 (Part 24)
3	Sulphur Dioxide as SO2	µg/m3	17	80	5	IS 5182 (Part 2)
4	Oxides of Nitrogen	µg/m3	36	80	7	IS 5182 (Part 6)
5	Carbon Monoxide as CO	µg/m3	0.95	4	0.1	IS 5182 (Part 10) NDIR method
6	Lead as Pb	µg/m3	BDL	1.0	0.04	USEPA Method IO-3.4

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
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Annexure-7(e)

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TC-11818

TEST REPORT

ULR No. : TC1181824000001304F		**Test Report No. :** NAIL130224NA017	
Type of Sample : Ambient Air		**Date of Reporting :** 16/02/2024	
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 Dt.: 05/05/2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	**Mode of Collection of Sample**	Sampling by laboratory
Date of Sampling	12/02/2024 To 13/02/2024	**Date of Receipt of Sample**	13/02/2024
Sampling Location	Station No. 1	**Period of Analysis**	13/02/2024 To 16/02/2024
Standard/ Specification	National Ambient Air Quality: G.S.R.No.B-29016/20/19/PCI-L dated 18 Nov, 2009	**Environmental Conditions**	Partially cloudy weather
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Respirable Suspended Particulate Matter as PM10	µg/m3	90	100	5	IS 5182 (Part 23)
2	Particulate Matter as PM2.5	µg/m3	54	60	5	IS 5182 (Part 24)
3	Sulphur Dioxide as SO2	µg/m3	14	80	5	IS 5182 (Part 2)
4	Oxides of Nitrogen	µg/m3	32	80	7	IS 5182 (Part 6)
5	Carbon Monoxide as CO	mg/m3	0.80	4	0.1	IS 5182 (Part 10) NDIR method
6	Lead as Pb	µg/m3	BDL	1.0	0.04	USEPA Method IO-3.4

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Dr. Rai Singh
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TC-11818

TEST REPORT

ULR No. : TC1181824000001305F		Test Report No. :	NAIL130224NA018
Type of Sample : Ambient Air		Date of Reporting :	16/02/2024
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	Work Order No. & Date	WA23Y-00006 Dt.: 05/05/2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	12/02/2024 To 13/02/2024	Date of Receipt of Sample	13/02/2024
Sampling Location	Station No. 2	Period of Analysis	13/02/2024 To 16/02/2024
Standard/ Specification	National Ambient Air Quality: G.S.R.No.B-29016/20/19/PCI-L dated 18 Nov, 2009	Environmental Conditions	Partially cloudy weather
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Respirable Suspended Particulate Matter as PM10	µg/m3	93	100	5	IS 5182 (Part 23)
2	Particulate Matter as PM2.5	µg/m3	56	60	5	IS 5182 (Part 24)
3	Sulphur Dioxide as SO2	µg/m3	15	80	5	IS 5182 (Part 2)
4	Oxides of Nitrogen	µg/m3	34	80	7	IS 5182 (Part 6)
5	Carbon Monoxide as CO	mg/m3	0.90	4	0.1	IS 5182 (Part 10) NDIR method
6	Lead as Pb	µg/m3	BDL	1.0	0.04	USEPA Method IO-3.4

Remarks : NA

OTHER INFORMATION

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Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Dr. Rai Singh
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TC-11818

TEST REPORT

ULR No. : TC1181824000001306F		**Test Report No. :**	NAIL130224NA019
Type of Sample : Ambient Air		**Date of Reporting :**	16/02/2024
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 Dt.: 05/05/2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	**Mode of Collection of Sample**	Sampling by laboratory
Date of Sampling	12/02/2024 To 13/02/2024	**Date of Receipt of Sample**	13/02/2024
Sampling Location	Station No.3	**Period of Analysis**	13/02/2024 To 16/02/2024
Standard/ Specification	National Ambient Air Quality: G.S.R.No.B-29016/20/19/PCI-L dated 18 Nov, 2009	**Environmental Conditions**	Partially cloudy weather
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Respirable Suspended Particulate Matter as PM10	µg/m3	92	100	5	IS 5182 (Part 23)
2	Particulate Matter as PM2.5	µg/m3	54	60	5	IS 5182 (Part 24)
3	Sulphur Dioxide as SO2	µg/m3	15	80	5	IS 5182 (Part 2)
4	Oxides of Nitrogen	µg/m3	28	80	7	IS 5182 (Part 6)
5	Carbon Monoxide as CO	mg/m3	0.84	4	0.1	IS 5182 (Part 10) NDIR method
6	Lead as Pb	µg/m3	BDL	1.0	0.04	USEPA Method IO-3.4

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Dr. Rai Singh
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TC-11818

TEST REPORT

ULR No. : TC1181824000001307F		**Test Report No. :**	NAIL130224NA020
Type of Sample : Ambient Air		**Date of Reporting :**	16/02/2024
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 Dt.: 05/05/2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	**Mode of Collection of Sample**	Sampling by laboratory
Date of Sampling	12/02/2024 To 13/02/2024	**Date of Receipt of Sample**	13/02/2024
Sampling Location	Station No. 4	**Period of Analysis**	13/02/2024 To 16/02/2024
Standard/ Specification	National Ambient Air Quality: G.S.R.No.B-29016/20/19/PCI-L dated 18 Nov, 2009	**Environmental Conditions**	Partially cloudy weather
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Respirable Suspended Particulate Matter as PM10	µg/m3	91	100	5	IS 5182 (Part 23)
2	Particulate Matter as PM2.5	µg/m3	52	60	5	IS 5182 (Part 24)
3	Sulphur Dioxide as SO2	µg/m3	16	80	5	IS 5182 (Part 2)
4	Oxides of Nitrogen	µg/m3	32	80	7	IS 5182 (Part 6)
5	Carbon Monoxide as CO	mg/m3	0.84	4	0.1	IS 5182 (Part 10) NDIR method
6	Lead as Pb	µg/m3	BDL	1.0	0.04	USEPA Method IO-3.4

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Dr. Rai Singh
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TC-11818

TEST REPORT

ULR No. : TC1181824000001308F		**Test Report No. :**	NAIL130224NA021
Type of Sample : Ambient Air		**Date of Reporting :**	16/02/2024
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 Dt.: 05/05/2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	**Mode of Collection of Sample**	Sampling by laboratory
Date of Sampling	12/02/2024 To 13/02/2024	**Date of Receipt of Sample**	13/02/2024
Sampling Location	Village Chehlanwali	**Period of Analysis**	13/02/2024 To 16/02/2024
Standard/ Specification	National Ambient Air Quality: G.S.R.No.B-29016/20/19/PCI-L dated 18 Nov, 2009	**Environmental Conditions**	Partially cloudy weather
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Respirable Suspended Particulate Matter as PM10	µg/m3	94	100	5	IS 5182 (Part 23)
2	Particulate Matter as PM2.5	µg/m3	59	60	5	IS 5182 (Part 24)
3	Sulphur Dioxide as SO2	µg/m3	17	80	5	IS 5182 (Part 2)
4	Oxides of Nitrogen	µg/m3	37	80	7	IS 5182 (Part 6)
5	Carbon Monoxide as CO	mg/m3	0.97	4	0.1	IS 5182 (Part 10) NDIR method
6	Lead as Pb	µg/m3	BDL	1.0	0.04	USEPA Method IO-3.4

Remarks : NA

OTHER INFORMATION

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Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Dr. Rai Singh
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Annexure-7(f)

Eco Paryavaran Laboratories & Consultants Pvt. Ltd.

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TC-11818

TEST REPORT

ULR No. : TC1181824000002291F		**Test Report No. :**	NAIL140324NA002
Type of Sample : Ambient Air		**Date of Reporting :**	16/03/2024
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	**Mode of Collection of Sample**	Mr. Prabhjot (Eco Rep.)
Date of Sampling	12/03/2024 To 13/03/2024	**Date of Receipt of Sample**	14/03/2024
Sampling Location	Station No.1	**Period of Analysis**	14/03/2024 To 16/03/2024
Standard/ Specification	National Ambient Air Quality: G.S.R No B-29016/20/19/PCI-L dated 18 Nov, 2009	**Environmental Conditions**	Partially cloudy weather
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Respirable Suspended Particulate Matter as PM10	µg/m3	82	100	5	IS 5182 (Part 23)
2	Particulate Matter as PM2.5	µg/m3	50	60	5	IS 5182 (Part 24)
3	Sulphur Dioxide as SO2	µg/m3	12	80	5	IS 5182 (Part 2)
4	Oxides of Nitrogen	µg/m3	28	80	7	IS 5182 (Part 6)
5	Ammonia as NH3	µg/m3	19	400	5	IS 5182 (Part 25)
6	Ozone as O3	µg/m3	27	180	5	IS 5182 (Part 9)
7	Carbon Monoxide as CO	mg/m3	0.72	4	0.1	IS 5182 (Part 10) NDIR method
8	Lead as Pb	µg/m3	BDL	1.0	0.04	USEPA Method IO-3.4
9	Arsenic as As	ng/m3	BDL	6	4	USEPA Method IO-3.4
10	Nickel as Ni	ng/m3	BDL	20	4	USEPA Method IO-3.4
11	Benzo Pyrene (BaP), Particulate Phase Only	ng/m3	BDL	1	0.3	IS 5182 (Part 12)

Remarks : NA

OTHER INFORMATION

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Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
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TEST REPORT

ULR No. : NA		**Test Report No. :**	NAIL140324NA002/A
Type of Sample : Ambient Air		**Date of Reporting :**	16/03/2024
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	**Mode of Collection of Sample**	Mr. Prabhjot (Eco Rep.)
Date of Sampling	12/03/2024 To 13/03/2024	**Date of Receipt of Sample**	14/03/2024
Sampling Location	Station No 1	**Period of Analysis**	14/03/2024 To 16/03/2024
Standard/ Specification	National Ambient Air Quality G.S.R.No.B-29016/20/19/PCI-L dated 18 Nov, 2009	**Environmental Conditions**	Partially cloudy weather
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Benzene	µg/m3	BDL	5	5	IS 5182 (Part 11)

Remarks : This report is the part of Test Report No. NAIL140324NA002.

OTHER INFORMATION

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Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
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TC-11818

TEST REPORT

ULR No. : TC1181824000002292F		**Test Report No. :**	NAIL140324NA003
Type of Sample : Ambient Air		**Date of Reporting :**	16/03/2024
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	**Mode of Collection of Sample**	Mr. Prabhjot (Eco Rep.)
Date of Sampling	12/03/2024 To 13/03/2024	**Date of Receipt of Sample**	14/03/2024
Sampling Location	Station No.2	**Period of Analysis**	14/03/2024 To 16/03/2024
Standard/ Specification	National Ambient Air Quality: G.S.R No.B-29016/20/19/PCI-L dated 18 Nov, 2009	**Environmental Conditions**	Partially cloudy weather
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Respirable Suspended Particulate Matter as PM10	µg/m3	79	100	5	IS 5182 (Part 23)
2	Particulate Matter as PM2.5	µg/m3	48	60	5	IS 5182 (Part 24)
3	Sulphur Dioxide as SO2	µg/m3	13	80	5	IS 5182 (Part 2)
4	Oxides of Nitrogen	µg/m3	27	80	7	IS 5182 (Part 6)
5	Ammonia as NH3	µg/m3	18	400	5	IS 5182 (Part 25)
6	Ozone as O3	µg/m3	26	180	5	IS 5182 (Part 9)
7	Carbon Monoxide as CO	mg/m3	0.60	4	0.1	IS 5182 (Part 10) NDIR method
8	Lead as Pb	µg/m3	BDL	1.0	0.04	USEPA Method IO-3.4
9	Arsenic as As	ng/m3	BDL	6	4	USEPA Method IO-3.4
10	Nickel as Ni	ng/m3	BDL	20	4	USEPA Method IO-3.4
11	Benzo Pyrene (BaP), Particulate Phase Only	ng/m3	BDL	1	0.3	IS 5182 (Part 12)

Remarks : NA

OTHER INFORMATION

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Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
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TEST REPORT

ULR No. : NA		**Test Report No. :**	NAIL140324NA003/A
Type of Sample : Ambient Air		**Date of Reporting :**	16/03/2024
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawa la, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	**Mode of Collection of Sample**	Mr. Prabhjot (Eco Rep.)
Date of Sampling	12/03/2024 To 13/03/2024	**Date of Receipt of Sample**	14/03/2024
Sampling Location	Station No.2	**Period of Analysis**	14/03/2024 To 16/03/2024
Standard/ Specification	National Ambient Air Quality: G.S.R No.B-29016/20/19/PCI-L dated 18 Nov, 2009	**Environmental Conditions**	Partially cloudy weather
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Benzene	µg/m3	BDL	5	5	IS 5182 (Part 11)

Remarks : This report is the part of Test Report No. NAIL140324NA003.

OTHER INFORMATION

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Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
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TC-11818

TEST REPORT

ULR No. : TC1181824000002293F		**Test Report No. :**	NAIL140324NA004
Type of Sample : Ambient Air		**Date of Reporting :**	16/03/2024
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	**Mode of Collection of Sample**	Mr. Prabhjot (Eco Rep.)
Date of Sampling	12/03/2024 To 13/03/2024	**Date of Receipt of Sample**	14/03/2024
Sampling Location	Station No.3	**Period of Analysis**	14/03/2024 To 16/03/2024
Standard/ Specification	National Ambient Air Quality G.S.R No.B-29016/20/19/PCI-L dated 18 Nov, 2009	**Environmental Conditions**	Partially cloudy weather
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Respirable Suspended Particulate Matter as PM10	µg/m3	77	100	5	IS 5182 (Part 23)
2	Particulate Matter as PM2.5	µg/m3	47	60	5	IS 5182 (Part 24)
3	Sulphur Dioxide as SO2	µg/m3	11	80	5	IS 5182 (Part 2)
4	Oxides of Nitrogen	µg/m3	25	80	7	IS 5182 (Part 6)
5	Ammonia as NH3	µg/m3	16	400	5	IS 5182 (Part 25)
6	Ozone as O3	µg/m3	25	180	5	IS 5182 (Part 9)
7	Carbon Monoxide as CO	mg/m3	0.64	4	0.1	IS 5182 (Part 10) NDIR method
8	Lead as Pb	µg/m3	BDL	1.0	0.04	USEPA Method IO-3.4
9	Arsenic as As	ng/m3	BDL	6	4	USEPA Method IO-3.4
10	Nickel as Ni	ng/m3	BDL	20	4	USEPA Method IO-3.4
11	Benzo Pyrene (BaP), Particulate Phase Only	ng/m3	BDL	1	0.3	IS 5182 (Part 12)

Remarks : NA

OTHER INFORMATION

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Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

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Authorized Signatory-Chemical

ECO BHAWAN E-207, Industrial Area, Phase VIII-B (Sector-74), Mohali (Punjab) 160071

0172-4616225 9781303109 contact@ecoparyavaran.org | md@ecoparyavaran.org www.ecoparyavaran.org

TEST REPORT

ULR No. : NA		**Test Report No. :**	NAIL140324NA004/A
Type of Sample : Ambient Air		**Date of Reporting :**	16/03/2024
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	**Mode of Collection of Sample**	Mr. Prabhjot (Eco Rep.)
Date of Sampling	12/03/2024 To 13/03/2024	**Date of Receipt of Sample**	14/03/2024
Sampling Location	Station No.3	**Period of Analysis**	14/03/2024 To 16/03/2024
Standard/ Specification	National Ambient Air Quality: G.S.R.No.B-29016/20/19/PCI-L dated 18 Nov, 2009	**Environmental Conditions**	Partially cloudy weather
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Benzene	µg/m3	BDL	5	5	IS 5182 (Part 11)

Remarks : This report is the part of Test Report No. NAIL140324NA004.

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
Authorized Signatory-Chemical

ECO BHAWAN E-207, Industrial Area, Phase VIII-B (Sector-74), Mohali (Punjab) 160071

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TC-11818

TEST REPORT

ULR No. : TC1181824000002294F		**Test Report No. :**	NAIL140324NA005
Type of Sample : Ambient Air		**Date of Reporting :**	16/03/2024
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	**Mode of Collection of Sample**	Mr. Prabhjot (Eco Rep.)
Date of Sampling	12/03/2024 To 13/03/2024	**Date of Receipt of Sample**	14/03/2024
Sampling Location	Station No 4	**Period of Analysis**	14/03/2024 To 16/03/2024
Standard/ Specification	National Ambient Air Quality: G.S.R.No.B-29016/20/19/PCI-L dated 18 Nov, 2009	**Environmental Conditions**	Partially cloudy weather
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Respirable Suspended Particulate Matter as PM10	µg/m3	85	100	5	IS 5182 (Part 23)
2	Particulate Matter as PM2.5	µg/m3	46	60	5	IS 5182 (Part 24)
3	Sulphur Dioxide as SO2	µg/m3	10	80	5	IS 5182 (Part 2)
4	Oxides of Nitrogen	µg/m3	30	80	7	IS 5182 (Part 6)
5	Ammonia as NH3	µg/m3	20	400	5	IS 5182 (Part 25)
6	Ozone as O3	µg/m3	27	180	5	IS 5182 (Part 9)
7	Carbon Monoxide as CO	mg/m3	0.80	4	0.1	IS 5182 (Part 10) NDIR method
8	Lead as Pb	µg/m3	BDL	1.0	0.04	USEPA Method IO-3.4
9	Arsenic as As	ng/m3	BDL	6	4	USEPA Method IO-3.4
10	Nickel as Ni	ng/m3	BDL	20	4	USEPA Method IO-3.4
11	Benzo Pyrene (BaP), Particulate Phase Only	ng/m3	BDL	1	0.3	IS 5182 (Part 12)

Remarks : NA

OTHER INFORMATION

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Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
Authorized Signatory-Chemical

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TEST REPORT

ULR No. : NA		**Test Report No. :**	NAIL140324NA005/A
Type of Sample : Ambient Air		**Date of Reporting :**	16/03/2024
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	**Mode of Collection of Sample**	Mr. Prabhjot (Eco Rep.)
Date of Sampling	12/03/2024 To 13/03/2024	**Date of Receipt of Sample**	14/03/2024
Sampling Location	Station No.4	**Period of Analysis**	14/03/2024 To 16/03/2024
Standard/ Specification	National Ambient Air Quality: G.S.R.No.B-29016/20/19/PCI-L dated 18 Nov, 2009	**Environmental Conditions**	Partially cloudy weather
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Benzene	µg/m3	BDL	5	5	IS 5182 (Part 11)

Remarks : This report is the part of Test Report No. NAIL140324NA005.

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
Authorized Signatory-Chemical

ECO BHAWAN E-207, Industrial Area, Phase VIII-B (Sector-74), Mohali (Punjab) 160071

0172-4616225 9781303109 contact@ecoparyavaran.org | md@ecoparyavaran.org www.ecoparyavaran.org

TC-11818

TEST REPORT

ULR No. : TC1181824000002290F		**Test Report No. :**	NAIL140324NA001
Type of Sample : Ambient Air		**Date of Reporting :**	16/03/2024
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	**Mode of Collection of Sample**	Mr. Prabhjot (Eco Rep.)
Date of Sampling	12/03/2024 To 13/03/2024	**Date of Receipt of Sample**	14/03/2024
Sampling Location	Vill Chehlanwali	**Period of Analysis**	14/03/2024 To 16/03/2024
Standard/ Specification	National Ambient Air Quality G.S.R.No.B-29016/20/19/PCI-L dated 18 Nov, 2009	**Environmental Conditions**	Partially cloudy weather
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Respirable Suspended Particulate Matter as PM10	µg/m3	89	100	5	IS 5182 (Part 23)
2	Particulate Matter as PM2.5	µg/m3	49	60	5	IS 5182 (Part 24)
3	Sulphur Dioxide as SO2	µg/m3	15	80	5	IS 5182 (Part 2)
4	Oxides of Nitrogen	µg/m3	33	80	7	IS 5182 (Part 6)
5	Ammonia as NH3	µg/m3	17	400	5	IS 5182 (Part 25)
6	Ozone as O3	µg/m3	28	180	5	IS 5182 (Part 9)
7	Carbon Monoxide as CO	mg/m3	0.76	4	0.1	IS 5182 (Part 10) NDIR method
8	Lead as Pb	µg/m3	BDL	1.0	0.04	USEPA Method IO-3.4
9	Arsenic as As	ng/m3	BDL	6	4	USEPA Method IO-3.4
10	Nickel as Ni	ng/m3	BDL	20	4	USEPA Method IO-3.4
11	Benzo Pyrene (BaP), Particulate Phase Only	ng/m3	BDL	1	0.3	IS 5182 (Part 12)

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
Authorized Signatory-Chemical

ECO BHAWAN E-207, Industrial Area, Phase VIII-B (Sector-74), Mohali (Punjab) 160071

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TEST REPORT

ULR No. : NA		**Test Report No. :**	NAIL140324NA001/A
Type of Sample : Ambient Air		**Date of Reporting :**	16/03/2024
Customer	Talwandi Sabo Power Limited 3X660 MW, Thermal Power Plant, Mansa Talwandi Sabo Road Village Banawala, Distt. Mansa Punjab	**Work Order No. & Date**	WA23Y-00006 DT:05.05.2023
		Customer reference No. (If any)	NA
Sampling Protocol	IS 5182, EL-MSP-7.3	**Mode of Collection of Sample**	Mr. Prabhjot (Eco Rep.)
Date of Sampling	12/03/2024 To 13/03/2024	**Date of Receipt of Sample**	14/03/2024
Sampling Location	Vill Chehlanwali	**Period of Analysis**	14/03/2024 To 16/03/2024
Standard/ Specification	National Ambient Air Quality: G.S.R No.B-29016/20/19/PCI-L dated 18 Nov, 2009	**Environmental Conditions**	Partially cloudy weather
Testing Location	On Site & Permanent Facility		

RESULTS

I. Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S.No.	Test Parameter	Unit	Result	Standard	Detection Limit	Test Method
1	Benzene	µg/m3	BDL	5	5	IS 5182 (Part 11)

Remarks : This report is the part of Test Report No. NAIL140324NA001.

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
Authorized Signatory-Chemical

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0172-4616225 9781303109 contact@ecoparyavaran.org | md@ecoparyavaran.org www.ecoparyavaran.org

Annexure-8

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TALWANDI SABO POWER LTD.
Site cum Regd. Office :
Village Banawala, Mansa - Talwandi Sabo Road,
Distt. Mansa, Punjab - 151302 INDIA
Tel. 91-1659-248000 Telefax : 01659-248083
Website : www.tsplindia.co
CIN No. : U40101PB2007PLC031035

Circular: Environment Cell

(In accordance with requirement of The Environmental Protection Act, 1986, The Air (Prevention and Control of Pollution) Act 1981 & The Water (Prevention and Control of Pollution) Act 1974.)

Date: 01st June 2023

The following members are nominated as members of Environment cell at TSPL, Punjab.

Sr. No.	Name of member	Designation-Department	Committee Designation	Mail id
1.	Mr. Pankaj Sharma	COO TSPL Plant	Chairman	Pankaj.sharma@vedanta.co.in
2.	Mr. Soo Geun Ahn	Station Head	Vice Chairman	hadong4556@kepcokps.in
3.	Mr. Daljit Singh	Manager Environment	Secretary	Daljeet.Singh@kepcokps.in
4.	Ms. Sneha Gupta	ESG	Deputy Secretary	Sneha.Gupta2@vedanta.co.in
5.	Mr. Ravinder Thakur	Head O&M	Member	Ravinder.Thakur@vedanta.co.in
6.	Mr. SY Lee	Head O&M	Member	Sy.Lee@kepcokps.in
7.	Mr. Ankoor Gupta	Head Maintenance	Member	Ankoor.Gupta@vedanta.co.in
8.	Mr. Vijay Amin	Operation Head	Member	Vijay.Amin@kepcokps.in
9.	Mr. Vikas Sharma Vashisht	Head Environment	Member	Vikas.S@vedanta.co.in
10.	Mrs. Krittika Bhatt	Head CDM & CSR	Member	Krittika.Bhatt@vedanta.co.in
11.	Mr. A Albert Arokiaraj	Head ESG & COE	Member	AAlbert.Arokiaraj@vedanta .co.in
12.	Mr. Pushpendra Sengar	Head Operation BTG & BOP	Member	Pushpendra.Sengar@vedanta.co.in
13.	Mr. Sourabh Rawat	Head Safety & Fire	Member	Sourabh.Rawat@vedanta.co.in
14	Mr. Nitin Jha	Head CHP	Member	Nitin.Jha@vedanta.co.in
15.	Ms. Sonali	Head AHP	Member	Sonali.Rajpurohit@vedanta.co.in
16.	Mr. Narender Kumar	Manager HSE	Member	Narender.Kumar@kepcokps.in
17.	Mr. Ankur Baliyan	Head AHP	Member	Ankurbaliyan@kepcokps.in
18.	Mr. Kailash Chahande	CHP	Member	Kailash.chahande@kepcokps.in

The tenure of the above "Environment Cell " Shall be of 02 years. The members of the cell are required to have periodic meetings over pre circulated Agenda. The gist of the meeting shall be captured & actionable shall be followed up by the above-mentioned members.

Talwandi Sabo **Power Limited**

Pankaj Sharma

COO
(M): +91 98931 22357
(Email): Pankaj.sharma@vedanta.co.in

Annexure-9

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TSPL/ ENV/ MoEF&CC/ NOV-2023/04 Date: 15.11.2023

To,
The Additional Director(s),
Ministry of Environment, Forests & Climate Change,
Govt. of India, Northern Regional Office,
Bays No.24-25, Sector 31-A,
Dakshin Marg,
Chandigarh-160030.

Sub: - Submission of Half Yearly Environmental Clearance Compliance Report of 1980 MW (3X660 MW) Talwandi Sabo Power Limited, Village Banwala, Mansa-Talwandi Sabo Road, District-Mansa, Punjab.

Ref:-

1. Environmental Clearance No. J-13011/24/2008-IA.II (T) dt.11/07/2008 and amended on 25/03/2010 & 17/06/2010.
2. MoEF Office Memorandum No. J-11013/41/2006-IA. II (I) dt. 06/04/2011.
3. Extension of validity period of Environment Clearance No. J-13011/24/2008-IA. II (T) dated 30/08/2013.
4. MoEF notification G.S.R.02 (E) dated 2/1/2014.
5. MoEF&CC Office Memorandum F.No.22-13/2019-IA.III dated 28/08/2019

Dear Sir,

This has reference to the above cited subject. Please find enclosed herewith Half Yearly Environmental Clearance Compliance Report of 1980 MW (3X660 MW) Talwandi Sabo Power Limited, Village Banwala, Mansa-Talwandi Sabo Road, District-Mansa, Punjab for the period of April, 2023 to September, 2023.

Thanking you and assuring you our best attention always.

Yours faithfully,

For Talwandi Sabo Power Limited,

Vikas Sharma Vashisht
Head-Environment

Encl: As above

Cc:-

1. The Director, MoEF&CC, New Delhi.
2. The Member Secretary, CPCB, New Delhi.
3. The Environmental Engineer, PPCB, Bathinda.

TALWANDI SABO POWER LIMITED
Site Cum Regd. Office: Village Banwala, Mansa - Talwandi Sabo Road, Distt. Mansa, Punjab - 151302 (India)
Tel: 91-1659-245000 / Telefax: 01659-245045 / website: www.talwandisabo.com
CIN No. U40101PB2007PLC031063

TALWANDI SABO POWER LIMITED, BANAWALA

Compliance status of the conditions stipulated in Environmental Clearance of 1980 MW (3x660 MW) Talwandi Sabo Power Limited and additional conditions stipulated in Office Memorandums No. J-11013/41/2006-IA. II (I) & F.No.22-13/2019-IA.III dated 06/04/2011 & 28/08/2019 for the period of April, 2023 to September, 2023.

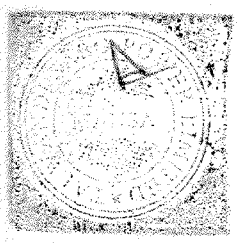
3	Conditions	Compliance Status
(i)	The total land requirement for the project shall be restricted to 2105 acres	Noted.
(ii)	Requisite quantity of coal for the ultimate capacity shall be obtained before commissioning the project	Noted.
(iii)	Sulphur and ash contents in the coal to be used in the project shall not exceed 0.5% and 34% respectively	Complied as Sulphur contents in the coal does not exceed 0.5% and as per MOEF&CC notification dated 21.05.2020 exemption has been provided for the requirement of 34% ash content in coal to be used in the Project. **Annexure-1**
(iv)	**(As amended vide MoEF letter No. J-13011/24/2008-IA. II (T) dt. 17/06/2010)** A Tri-flu stack of 275 m height shall be provided with continuous online monitoring equipments for SOx, NOx and particulate. Exit velocity of the flue gases shall not be less than 25m/sec	Complied. Exit velocity of flue gases has taken care in design and condition noted.
(v)	High efficiency Electrostatic Precipitator (ESP) shall be installed to ensure that particulate emission does not exceed 50 mg/Nm^3	Complied. Stack emission monitoring test reports of NABL accredited and MoEF&CC recognized laboratory for the period of April-23 to September-2023 are enclosed as **Annexure-2 (a) to Annexure-2 (f).**
(vi)	Space provision shall be kept for retrofitting of FGD, If required at a later date	Complied.
(vii)	Adequate dust extraction system such as cyclone/bag filters and water spray system in dusty areas such as coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided	Complied.
(viii)	Fly ash shall be collected in dry form and storage facility (silos) shall be provided. Fly ash shall be used in a phased manner as per provision of the notification on Fly Ash Utilization issued by Ministry in September 1999 and its amendment. By the end of 9th year full fly ash utilization should be ensured. Unutilized fly ash shall be disposed off in the ash pond in the form of High Concentration slurry and the bottom ash in	Fly ash is being used as per the provisions of the prevalent notifications issued by MOEF&CC. Fly ash generation and utilization report is being submitted to PPCB (monthly) and CEA (half-yearly), CPCB & MoEF&CC (annually) Regional Office, Chandigarh regularly. Copy of report attached at **Annexure- 3 (a) to 3(h).**

	conventional slurry mode.	
(ix)	Ash pond shall be lined with HDPE lining. Adequate safety measures shall also be implemented to protect the ash dyke from getting breached	Complied.
(x)	Closed cycle cooling system with cooling towers shall be provided. COC of at least 5 shall be adopted and the effluents shall be treated as per the prescribed norms	Complied. Cooling tower blow down is being treated in Zero Discharge Unit and the treated water is being recycled for cooling tower make-up.
(xi)	The treated effluent confirming to the prescribed standards shall be re-circulated and reused within the plant. There shall be no discharge outside the plant boundary except during monsoon. Arrangement shall be made that effluents and storm water do not get mixed.	Complied.
(xii)	A sewage treatment plant shall be provided and the treated sewage shall be used for raising greenbelt/plantation	Complied.
(xiii)	Rain water harvesting should be adopted. Central Ground Water Authority/Board shall be consulted for finalization of appropriate rain water harvesting technology within a period of three months from the date of clearance and details shall be furnished.	Complied.
(xiv)	Adequate safety measures shall be provided in the plant area to check/minimize spontaneous fire in coal yard especially during summer season. Copy of these measures with full details along with location plant lay out shall be submitted to the ministry as well to the regional office of the ministry at Chandigarh.	Complied. Details already submitted vide letter no. TSPL/MoEF/139 dated 18/7/2013 to MoEF&CC and its Regional office, Chandigarh.
(xv)	Storage facilities for liquid fuel such as LDO and HFO/LSHS shall be made in the plant area where risk in minimum to the storage facilities. Disaster Management Plan shall be prepared to meet any eventuality in case of an accident taking place. Mock drills shall be conducted regularly and based on the same, modifications required, if any shall be incorporated in DMP.	Complied. Mock drills are being conducted regularly at Fuel Oil Storage area. Latest Mock drill had conducted on 23-05-2023 during April - 2023 to September-2023 period are enclosed as **Annexure- 4**.
(xvi)	Regular monitoring of ground water in and around ash pond area shall be carried out, records maintained and six-monthly reports shall be furnished to the Regional office of this Ministry	Complied. Ground water monitoring is being carried out in and around ash pond area. Test reports from NABL accredited and MoEF&CC recognized laboratory are enclosed as **Annexure-5 (a) to Annexure-5 (f).**

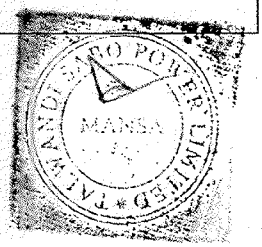
(xvii)	A green belt of adequate width and density shall be developed around the plant periphery covering about 1/3 of the project area preferably with local species	Complied.
(xviii)	Activities under CSR shall be enhanced with proper financial allocation. Details of these activities shall be submitted to the Regional office of the Ministry, SPCB and the Ministry	Complied. CSR activities with financial allocation implemented during the period of April 2023 to September 2023 is enclosed as **Annexure-6**.
(xix)	First aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase	Complied.
(xx)	Leq of Noise levels emanating from turbines shall be limited to 75 dBA. For people working in the high noise area, requisite personal protective equipment like earplug/ ear muff etc shall be provided. Workers engaged in noisy areas such as turbine area, air compressors etc shall be periodically examined to maintain audiometric record and for treatment for any hearing loss including shifting to non-noisy/less noisy areas.	Turbines have been provided with acoustic enclosure and installed inside enclosed building. Complied. Complied. Audiometric test is being conducted to workers engaged in noisy areas on six monthly basis and record is being maintained. There was no report of any hearing loss.
(xxi)	Regular monitoring of ground level concentration of SO_2, NOx, SPM, RSPM shall be carried out in the impact zone and record maintained. If at any stage these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring station and frequency of monitoring shall be decided in consultation with SPCB. Periodic reports shall be submitted to the regional office of this ministry.	Complied. Complied. Ambient Air Quality monitoring reports from MoEF&CC recognized and NABL accredited laboratory for the period of April 2023 to September 2023 are enclosed as **Annexure-7 (a) to Annexure-7 (f).**
(xxii)	The project proponent shall advertise in at least two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locally concerned within seven days from the date of this clearance letter, informing that the project has been accorded environment clearance and copies of clearance letter are available with State Pollution Control Board/Committee and may also be seen at Website of the Ministry of	Complied.

	Environment and Forests at http://envfor.nic.in	
(xxiii)	A separate environment management cell with qualified staff shall be set up for implementation of the stipulated environmental safeguards.	Complied. Copy of Constitution of Environment Management Cell is attached as **Annexure- '8'.**
(xxiv)	Half yearly report on the status of implementation of the stipulated condition and environmental safeguards shall be submitted to this Ministry/Regional Office/CPCB/SPCB	Periodically submitting to MoEF/ PPCB/ CPCB (copy of Previous letter is attached at **Annexure – '9'** and continue to comply the same in future also.
(xxv)	Regional office of the Ministry of Environment & Forest located at Chandigarh will monitor the implementation of the stipulated conditions. A complete set of documents including Environment Impact Assessment report and Environment Management Plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring	Noted. Complied. Copies of EIA and DPR submitted vide letter no. TSPL/ MOEF/ 111 dated 16/6/2009 to Regional Office, Chandigarh.
(xxvi)	Separate funds shall be allocated for implementation of environment protection measures along with item-wise break up. These costs shall be included as part of the project cost. The fund earmarked for the environment protection measures shall not be diverted for other purposes and year-wise expenditure should be reported to the Ministry.	Complied. Details of actual project expenditure with item-wise break up has already submitted vide letter no. TSPL/ ENV/ 02/ MoEF&CC/ 155 dated 24/5/2018. Complied. Year-wise expenditure incurred on Environmental protection measures during operational phase is submitting regularly. Expenditure incurred on Environmental protection measures during operational phase for the FY 2023-24 H1 (April 23 to Sept 23) is enclosed as **Annexure- '10'.**
(xxvii)	The project authorities shall inform the Regional Office as well as the Ministry regarding the date of financial closure and final approval of the project by the concerned authorities and date of land development work and commissioning of plant	1) Date of site approval from Govt. of Punjab- 25.08.2009 2) Date of financial closure– 26.09.2009 3) Date of commencement of land development work (Leveling and site grading)- 27.02.2010. 4) Consent to operate under Water & Air Acts from PPCB – 31.03.2014. 5) Commissioning of First unit (Unit- 2)- 05.07.2014, Second unit (Unit-3)- 25.11.2015 and Third unit (Unit-1) – 25.08.16.

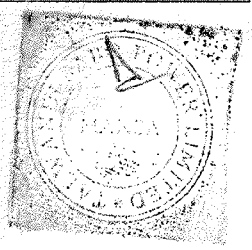
(xxviii)	Full cooperation shall be extended to the Scientist / Officers from the Ministry/Regional Office of the Ministry at Chandigarh/ the CPCB/the SPCB who would be monitoring the compliance of environmental status.	Noted.
Additional Conditions vide Office Order No J-13011/24/2008-IA.II(T) dated 25/03/2010		**Compliance Status**
(xxix)	The project proponent shall upload the status of compliance of the conditions stipulated in environment clearance issued vide this Ministry's letter of even no dated 11.07.2008, in its website and updated periodically and also simultaneously send the same by e-mail to the Regional Office of the Ministry of Environment and Forests	Complied and continue to comply the same in future also.
(xxx)	Criteria pollutants levels including NOx, RSPM (PM_{10} & $PM_{2.5}$), Sox (from Stack & ambient air) shall be regularly monitored and results displayed in your website and also at the main gate of the power plant	Complied and continue to comply the same in future also
Additional Conditions vide letter No J-13011/ 24/ 2008-IA.II(T) dated 30/09/2013		**Compliance Status**
(xxxi)	Scheme for harnessing solar power within the premises of the plant (particularly at available roof tops) shall be critically examined and status of implementation shall be submitted.	Complied. Status of implementation has already submitted vide letter no. TSPL/ ENV/ 02/ MoEF&CC/ 151 dated 28/11/2017.
(xxxii)	Waste Water generated from the plant shall be treated before discharge to comply limits prescribed by the SPCB/CPCB and no effluent, under any circumstances whatsoever, should be discharged into low lying area or into estuary.	Complied.
(xxxiii)	A long-term study on radio activity and heavy metals contents on coal to be used shall be carried out through a reputed institute. Thereafter mechanism for an in-built continuous monitoring for radio activity and heavy metals in coal and fly ash (including bottom ash) shall be put in place.	Complied. Reputed institute i.e. Central Institute of Mining and Fuel Research (CIMFR) had been engaged for long term study of radioactivity and heavy metals in coal & fly ash. Copy of report attached at **Annexure- '11'**.



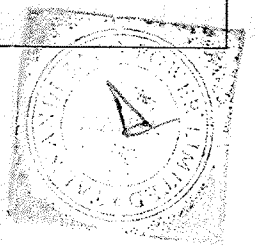
(xxxiv)	It shall be ensured that in-built monitoring mechanism for the CSR schemes identified is in place and annual social audit shall be got done from the nearest government institute of repute in the region. The project proponent shall also submit the status of implementation of the scheme from time to time.	Complied. In built monitoring mechanism for CSR schemes already in place. Social audit for the FY-2022-23 got done from reputed government institute i.e. Central University of Punjab. Copy of report attached at **Annexure- '12'.**
(xxxv)	The project proponent shall formulate a well laid Corporate Environment Policy and identity and designate responsible officers at all levels of its hierarchy for ensuring adherence to the policy and compliance with conditions stipulated in this clearance letter and other applicable environmental laws and regulations.	Integrated HSE policy has been formulated & identified and designated responsible at all levels of its hierarchy for ensuring adherence to the policy and compliance with conditions stipulated in Environment clearance and other applicable environmental laws and regulations.
4	The Ministry of Environment and Forest reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of the Ministry, MOEF may impose additional environmental conditions or modify the existing ones, if necessary.	Noted
5	The environmental clearance accorded shall be valid for a period of 5 years to start of production operations by the power plant.	Complied. All units i.e. 3x660 MW are in operational.
6	In case any deviation or alteration in the project proposed from those submitted to this Ministry for clearance a fresh reference should be made to the Ministry to assess the adequacy of the condition(s) imposed and to add additional environmental protection measures required if any	Noted
7	The above stipulations would be enforced among others under the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act,1981, the Environment (protection) Act,1986 and rules there under, Hazardous Wastes (Management and Handling) Rules 1989 and its amendments, The Public Liability Insurance Act,1991 and its amendments	Noted
8	Any appeal against this environmental clearance shall lie with the National Environment Appellate Authority, if preferred, within 30 days as prescribed under Section 11 of the National Environment Appellate Act,1997	Noted



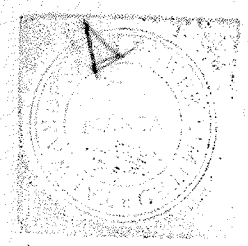
Additional Conditions (as per MoEF Office Memorandum No.J.11013/41/2006-IA.II (I) dated 06/04/2011)		Compliance Status
(i)	Continuous monitoring of stack emissions as well as ambient air quality (as per notified standards) shall be carried out and continuous records maintained. Based on the monitored data, necessary corrective measures as may be required from time to time shall be taken to ensure that the levels are within permissible limits. The results of monitoring shall also be submitted to the respective Regional Office of MoEF regularly. Besides, the results of monitoring will also be put on the website of the company in the public domain.	Complied. TSPL has 4 CAAQMS station and OCEMS for 3 boiler stacks which have real time connectivity with PPCB and CPCB servers. Also, EC compliance report including reports for monitoring of stack emissions and that it is displayed on website. screenshot for TSPL website is attached at **Annexure – '13'**
(ii)	The six-monthly monitoring report as well as the monitored data on various parameters as stipulated in the environment clearance conditions shall be put on the website of the company and also regularly updated. The monitored data shall also be submitted to respective State Pollution Control Board/UTPCCs and the Regional Office of MoEF.	Periodically submitting to MoEF/ PPCB/ CPCB (copy of Previous letter is attached at **Annexure – '9'** and screenshot for TSPL website is attached at **Annexure – '13'** and continue to comply the same in future also.
(iii)	The ambient air quality data as well as the stack emission data will also be displayed in public domain at some prominent place near the main gate of the company and updated in real time.	Complied and continue to comply the same in future also.
MoEF&CC Office Memorandum No. L-11011/ 17/ 2014-IA.I (T) dated 25/09/2014		**Compliance Status**
(i)	The Thermal Power Plants attracting the said Notification shall submit its compliance to the Ministry's Regional Office and SPCB concerned along with the compliance reports of the environmental safeguards stipulated in the ECs and Consents	Complied and continue to comply the same in future also.
MoEF&CC Office Memorandum F.No.22-13/2019-IA.III dated 28/08/2019		**Compliance Status**



(i)	The guidelines prepared by CPCB for disposal of fly ash for reclamation of low-lying areas and in stowing/backfilling of abandoned mines / quarries shall be followed during Disposal of ash in abandoned or working mines, as annexed.	Not applicable
(ii)	There Should at least be clearance of 500 m of safe distance be maintained from River and water body in case of ash disposal in abandoned mines to prevent embankment failures and fly ash flowing into the nearby water body.	Not applicable
(iii)	The top layer of the fly ash disposal area in the abandoned mines shall be kept moist during disposal.	Not applicable
(iv)	Top layer of the disposal area should have 70 cm overburden or gravels / stones and then 30 cm sweet soil cover. Subsequently, the vegetation shall be raised on the soil cover.	Not applicable
(v)	Bioaccumulation and bio-magnification test shall be conducted on surrounding flora and fauna (tree leaves, vegetation, crop yields and cattle population) during pre-monsoon and post monsoon to find out any trace metals as caped through groundwater or runoff.	Noted.
(vi)	Surface runoff and supernatant water, in any case shall not be let into the surrounding areas. It shall be collected by providing adequate drains around the mine. The Supernatant water along with surface runoff shall be treated and re-used for mixing ash and plant operations.	Not applicable
(vii)	To the extent possible, only decanted water from mine, make up water from treated effluents such as cooling tower blow down and treated sewage water shall be used for making ash slurry.	Complied. In power plant, cooling tower blow down is being used for making ash slurry.
(viii)	Fly ash to be used as soil concitioner in agriculture need and to be applied in controlled manner to limit excessive application so as to prevent soil degradation. The optimize proportion of as to applied	Noted



	which is to be certified by the state Agricultural Universities / Colleges based on the soil testing.	
(ix)	Approval from DGMS shall be obtained before disposing the ash in the mine voids.	Not applicable
(x)	Technology for conversion of fly ash into coarse granules for stowing in the underground mines to be explored.	Noted
(xi)	All the power plant should install different silos for dry collection of fly ash.	Complied. 3 Nos. separate Silos provided for dry fly ash collection.
(xii)	Records pertaining to details of month-wise Quantity of fly ash disposed and water consumption along with nature/source of water shall be maintained and submitted to ministry / regional office annually.	Complied. Details of quantity of fly ash disposed has already submitted to MoEF&CC, Regional Office, Chandigarh, CPCB and PPCB vide letter number TSPL/ENV/F&W/MoEF &CC/APRIL-2023/01 dated 27.04.2023 **Annexure – '14'** Colling tower blowdown is the source of water for fly ash disposal.
(xiii)	Before starting the disposal of ash into mine voids, the NOC / Permission from the mine owner is to be obtained in case the mine closure activities are not completed or state government in case the mine has been the handed over to the state Govt. after its closure. A copy of such NOC/Permission is to be Submitted to the ministry and its Regional Offices	Not applicable



TALWANDI SABO POWER LIMITED, BANWALA

Annexure- 10

INVESTMENT ON ENVIRONMENT PROTECTION MEASURES

Year	Expenditure in Rs.	Remarks
Capital Expenditure		
2014-2015	1,18,19,949	
2015-2016	2,20,48,141	
2016-2017	2,11,80,205	
2017-2018	14,19,97,557	
2018-2019	7,20,94,530	
2019-2020	3,24,79,492	
2020-2021	5,43,28,674	
2021-2022	6,54,92,472	
2022-2023	6,71,11,840	
2023-2024	6,92,14,574	
Recurring Expenditure		
2014-2015	3,05,79,910	First Unit (Unit-2-660 MW) was commissioned in July,2014
2015-2016	13,78,10,828	Second Unit (Unit-3-660 MW) was commissioned in November,2015
2016-2017	31,51,20,520	Third Unit (Unit-1-660 MW) was commissioned in August,2016
2017-2018	38,34,46,202	
2018-2019	45,33,27,803	
2019-2020	45,91,42,892	
2020-2021	46,19,24,983	
2021-2022	53,69,58,476	
2022-2023	50,55,56,819	
2023-2024	50,97,40,213	

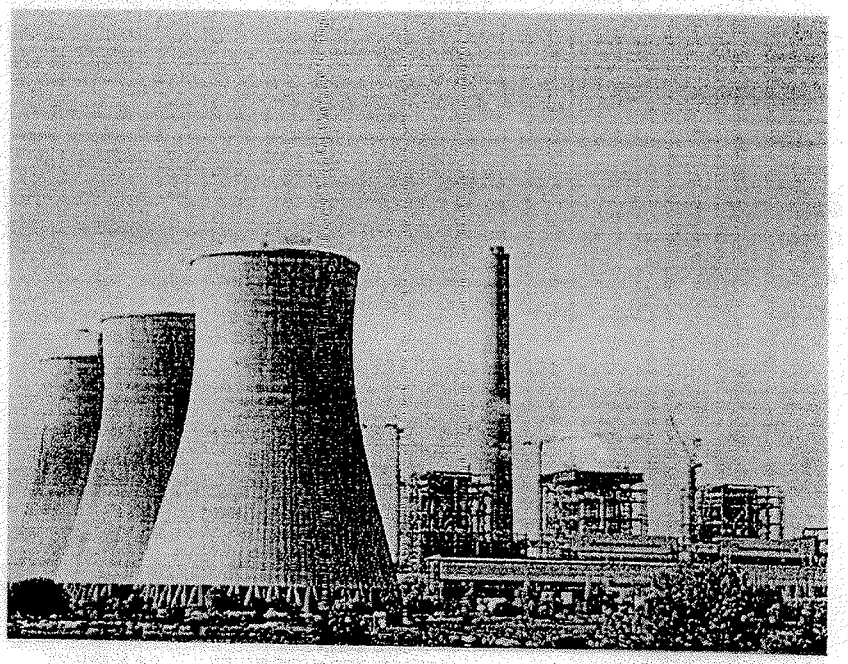
Annexure-II

Report

On

Long term study on radioactivity and heavy metals content in coal and fly ash of Talwandi Sabo Power Limited, Punjab

(Reporting Period: April 2020 – September 2020)



Talwandi Sabo Power Limited,
Banawala, Mansa, Punjab – 151302

Natural Resources and Environmental Management Group
CSIR-Central Institute of Mining and Fuel Research
Barwa Road, Dhanbad - 826001, Jharkhand

Long term study on radioactivity and heavy metals content in coal and fly ash of Talwandi Sabo Power Limited, Punjab

PROJECT REPORT
(SSP/345/2018-19)

1. This report is meant for the internal use of your organization only and it should not be published in full or part by your organization or staff. It should not be communicated/circulated to outside parties except the concerned government department.

2. CSIR-Central Institute of Mining and Fuel Research, Dhanbad reserves the right to publish the results of research for the benefit of the industry.

Sponsored by

vedanta

Talwandi Sabo Power Limited,
Banawala, Mansa, Punjab – 151302

Signature of Project Proponent

(Abhay Kumar Singh)/(D.B. Singh)
Sr. Principal Scientist & Project Leader
CSIR-CIMFR, Dhanbad

(K. K. K. Singh)
Chief Scientist & HORG
CSIR-CIMFR, Dhanbad

CSIR-CIMFR Authorized Signatories

(P. K. Mishra)
Sr. Principal Scientist & HOS
Project Planning & Monitoring

(R. V. K. Singh)
Chief Scientist & HORG
Project Planning & Industry Interface

PROJECT TEAM

S.N.	Name & Designation	Role/Contribution
1.	Dr. K. K. K. Singh, Chief Scientist	Project Coordinator
2.	Dr. R. K. Tiwary, Sr. Scientist	Team Member
3.	Dr. D. B. Singh, Scientist	Project Leader
4.	Dr. Abhay Kumar Singh, Sr. Principal Scientist	Project Leader
5.	Dr. Siddharth Singh, Sr. Principal Scientist	Team Member
6.	Dr. G. C. Mondal, Principal Scientist	Team Member

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1.0 INTRODUCTION

The ever growing challenge of population explosion, human civilization, rapid urbanization, and high level industrialization has led to increasing demand for energy and power generation all over the world. Whereas many nations are developing their nuclear energy base and others expanding their biomass and wind energy capacities. In India coal is still the most abundant, most versatile, readily available and easily assessable source of fossil fuel. Coal is accounting for nearly 61% of total power generation. Coal combustion results into generation of huge amount of fly ash. The ash content in Indian coals varies between 10-40%. An increase of 1% in the ash content can result in an increase in coal consumption of 3-4% affecting calorific value and in turn quality of coal. Presently, National Thermal Power Corporation (NTPC) alone generates around 59 million tons of coal ash annually from its coal based thermal power plants. The generation of huge quantities of coal ash poses serious disposal and environmental problems. The major composition of fly ash is qualitatively similar to that of natural earthy materials such as soils and shales. Fly ash is associated with various useful constituents such as Ca, Mg, Mn, Fe, Cu, Zn, B, S and P along with appreciable amounts of toxic elements such as Cr, Pb, Hg, Ni, V, As and Ba. The distribution of each element within the fly ash structure is different, however; the smaller the particle size, the higher is the trace elements content due to the increase in the surface/weight ratio. The alkaline content depends on the concentration of the basic oxides (CaO & MgO) and the amount of acidic substances such as SO_2, SO_3, and P_2O_5 which are also present in the coal fly ash. Oxides of Si, Al, Fe and Ca account for nearly 90% of the composition of fly ash. The disposal of fly ash is considered a potential source of contamination due to the enrichment and surface association of trace elements in the ash particles. Unscientific disposal of fly ash without considering any engineering and environmental control measures may cause environmental problems.

The elements Mn, Ba, V, Co, Cr, Ni, Ln, Ga, Nd, As, Sb, Sn, Br, Zn, Se, Pb, Hg, and S in coal are volatile to a significant extent in the combustion

process. However, the elements Mg, Na, K, Mo, Ce, Rb, Cs, and Nb appear to have smaller fractions volatilized during combustion, whereas Si, Fe, Ca, Sr, La, Sm, Eu, Tb, Py, Yb, Y, Se, Zr, Ta, Na, Ag, and Zn are either not volatilized or show only minor trends related to the geochemistry of mineral matter. In absence of engineering and environmental controls and unscientific handling during transportation, disposal, and storage phases, the residues from coal combustion are subjected to leaching effects of rain and part of the undesirable components in the ashes may pollute both ground and surface waters.

Coal is a sedimentary rock who's organic and inorganic mineral aggregates contain varied concentrations of naturally occurring radioactive materials (NORM) including uranium (^{238}U, ^{235}U) and thorium (^{232}Th) decay chains as well as radioactive potassium (^{40}K). Concentrations of these primordial radionuclides, though dependent on the geological formations of coal, are comparable to the average radioactivity of the earth crust. Mining, processing, and combustion of coal redistribute and concentrate the radionuclides in the environment, thereby enhancing environmental radiation levels above normal background. This results in higher dose delivery not only to coal workers but also to final users and the general environment. It is therefore necessary to evaluate the radioactivity and heavy metals levels of coal and its residue in order to assess the environmental and radiological impacts that may be associated with its exploitation and utilization and to develop functional plan and radiation dose control framework for coal workers and the general public. Extensive researches have been carried out to assess the radionuclide contents of coal deposits around the world.

2.0 STUDY OBJECTIVE

CSIR-Central Institute of Mining and Fuel Research, Dhanbad (CSIR-CIMFR) has undertaken a scientific study on radio activity and heavy metals content in coal and fly ash of Talwandi Sabo Power Limited on request of TSPL. Long term study on radio activity and heavy metals content in coal and fly ash of Talwandi Sabo Power Limited is one of the condition stipulated in

Environmental Clearance (EC) of Talwandi Sabo Power Plant. The major objectives of this study is to quantify the heavy metals content and natural radioactivity levels of raw coal and coal residue (dry fly ash, bottom ash and pond ash) generated at Talwandi Thermal Power Plant in pre-monsoon season. This study will help in evaluation of contamination possibilities of the natural resources and assessing associated human health risk and radiation hazard indices from the activity concentrations of ^{226}Ra, ^{238}U and ^{40}K and in predicting any radiological hazard to final users, and the general public from its exploitation and uses.

CSIR-Central Institute of Mining and Fuel Research, a constituent laboratory under the aegis of Council of Scientific and Industrial Research (CSIR), New Delhi aims to provide R&D inputs for the entire coal-energy chain encompassing exploration, mining and utilization. The laboratory also strives to develop mineral based industries to reach the targeted production for country's energy security and growth with high standards of safety, economy and cleaner environment. Natural Resources and Environmental Management Group (NREM) of CIMFR constitutes an interdisciplinary and versatile experts with diverse experiences in the areas of mining, environmental and earth sciences, hydrological studies, geophysical survey, remote sensing, environmental biology and ecology, This group has wide experience in quantifying the environmental problems and providing right solutions from underground to surface mining, associated industries, thermal powers, coal washeries etc. through R&D and consultancy services. It has capability for handling complex environmental problems in mining and a non-mining area with economy and time targeted completion and also assures cost competitive expert services support to its clients in India and abroad.

3.0 STUDY AREA

Talwandi Sabo Power Ltd. is a coal-based thermal power plant of 1980 MW (3x660 MW) capacity located near Banawala village, about 18 km from the District town of Mansa and 50 kilometers from nearest major city of Bathinda in the State of Punjab (**Fig.1**). It has been named after Talwandi Sabo, a holy

town at a distance of 20 kilometers from the project site. Talwandi Sabo has Historical Value & Religious Importance for the Sikhs. It is one of the 5 Takhats of Sikhism and the Sacred Guru Granth Sahib was hand scripted at this place. The latitude and longitude of the site are 29°53' N to 29°56' N and 75°12' E to 75°15' E respectively. Nearest railway station and airport are Sadda Singhwala and Bathinda, located at about 12 km and 30 km from the site, respectively.

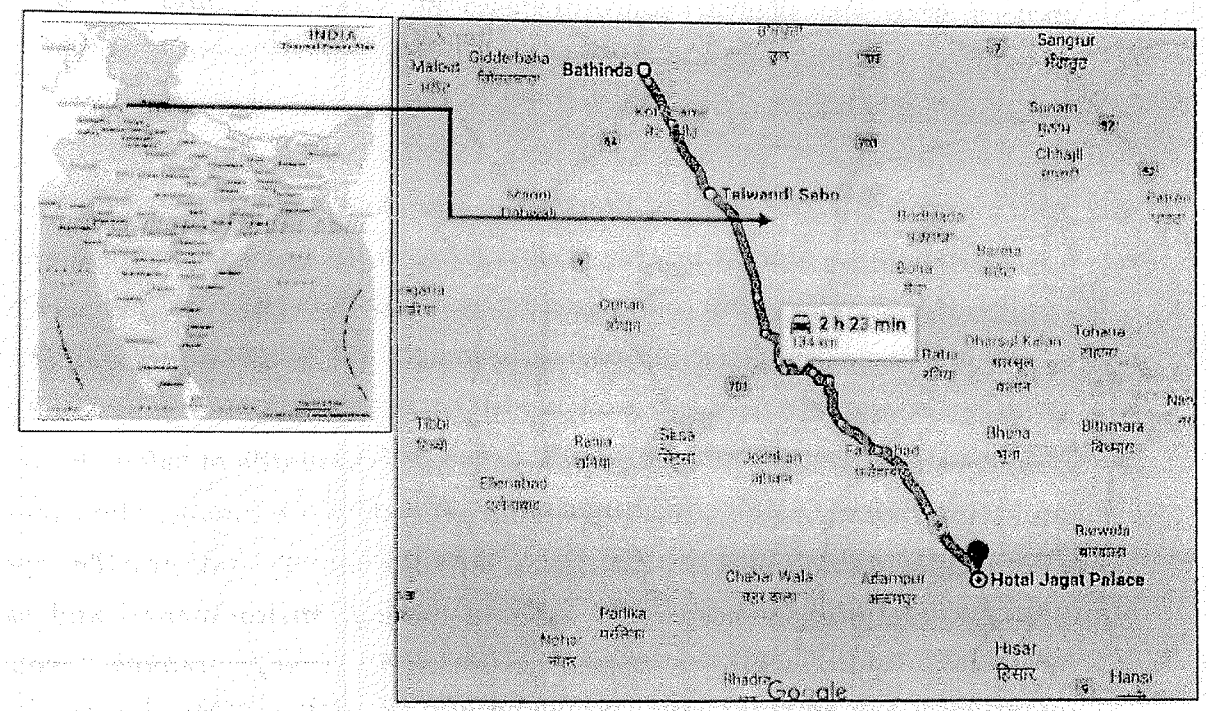


Fig. 1: Location map of Talwandi Sabo Thermal Power Plant

Presently, coal for TSPL power plant is mainly supplied from Mahanadi Coal Fields Ltd. (MCL) of Orissa, located at about 1500 km from the site. Imported coal and washed coal is blended to achieve the desired ash content. Required quantity of water are sourced from the Bheni sub branch of Kotla Canal Branch at a distance of about 20 km from the site. About 2105 acres of land has been earmarked for the plant including ash pond area. It is one of the first few supercritical plants being constructed in the country and is based on Pulverized Fuel (PF) firing technology. Fly Ash is the major by-product of the plant. The dry fly ash is periodically removed from the collection

hoppers below the precipitators and is pneumatically transported to storage silos. Here, dry fly ash is given to cement & brick manufacturers for reutilisation. Bottom ash is being utilized in reclamation of low lying areas within the plant, clay fly ash brick manufacturing etc. and pond ash for road construction. Balance remaining fly ash is mixed with optimum quantity of water to be transported to the ash pond through high concentration slurry disposal system.

4.0 METHODOLOGY

Coal and fly ash samples were collected from Talwandi Sabo Power Plant in the month of May 2020. Coal samples were collected from inside the power station, shortly before being fed into the boilers. Three types of coal samples i.e. (i) ROM coal, (ii) imported coal and (iii) washed coals were collected in 25 kg bags. Besides, one mixed coal samples (iv) was also prepared from three collected coal samples after mixing in 1:1 ratios for elemental analysis. This mixing was done to make it synergistic as in the boiler during combustion, these coals are not separate and the combustion residuals are of this mixed coal.

The coal residue (dry fly ash, bottom ash and pond ash) samples were collected from the ash handling areas of the Thermal Power Plant. Freshly generated dry fly ash samples have been collected from the electrostatic precipitators. Besides, three bottom ash samples (each approx. 25 kg) at different time intervals were collected from the site and mixed thoroughly and 25 kg of this mixed sample was taken for study. The main method of disposal of fly ash from the power plants throughout the world is mixing with water. The resultant slurry is transferred to an ash disposal pond. Fresh pond ash samples were collected from the ash disposal zone where the ash slurry was discharged. Six samples (each of 25 kg) were collected from different locations of the ash pond and were mixed thoroughly and 25 kg of this mixed sample was taken for study. These samples were brought to the laboratory at CSIR-CIMFR, Dhanbad for chemical study. All the samples were homogenized and coning and quartering method was followed for sample volume reduction. Dry

coal and ash samples were grinded and sieved through 200 mesh sieves for chemical analysis.

One gram of coal and ash samples of <200 mesh size were digested with 10 ml of HNO_3 in a Teflon beaker on hot plate for thirty minutes. After 30 minutes, another 5 ml of HNO_3 is added. HNO_3 is added after some time till the brown fumes subside. It is cooled and then 2 ml of hydrogen peroxide is added. It is again heated for 2 hours and cooled. Then few drops of HCl are added and heated for 15-20 minutes and cooled to room temperature. It is now filtered through 0.45 μm membrane filter paper to remove the ash particles. The filtrate is now diluted up to 100 ml with the help of deionized water. All the samples treated in triplicate manner to avoid errors. The digested sample is preserved and analyzed by ICP-MS for elemental composition.

For radioactivity analysis 1 kg of coal, dry fly ash, bottom ash and pond ash samples were collected separately in the field and properly sealed to prevent escape of radon. Radioactivity measurement in coal and coal residue were carried out at Health Physics Division, Bhabha Atomic Research Centre, Mumbai. Before analysis it was ensured that samples attained secular equilibrium where the decay rates of the daughter nuclides and their respective parents become equal.

5.0 RESULTS and DISCUSSION

5.1 Heavy metals distribution in coal and ash:

Fe, Mn, Cr and Zn were the dominant heavy metals in the coal and coal residue (**Table 1**). Concentration of Fe in coal ranged from 25565 mg/kg (imported coal) to 63618 mg/kg (fly ash). Fe content in mixed coal (feed coal) is found to be 32602 mg/kg, while in run of mine (ROM) coal it is 40572 mg/kg. Lowest concentration of Mn is found to be in imported coal (176 mg/kg) and highest in fly ash (638 mg/kg). In general concentrations of measured metals (Cu, Pb, Zn, Co, Ni and Cr) were found to be low in imported

coal as compared to Indian coal (ROM) or feed coal (mixed). Concentration of Fe in ROM coal is 1.6 times higher as compared to imported coal. Pb, Mn and Cu concentration in Indian coals are 4.9, 2.4 and 1.7 times higher respectively as compared to imported coal (**Fig. 2**). Geochemical analysis of coal and coal residue shows that heavy metals concentration in ash samples is higher than the feed coal. Concentration of heavy metals in dry fly ash is about 2 to 4 times higher as compared to feed coal i.e. mixed coal. (**Table 1, Fig. 3**).

Table 1: Heavy metal concentration in coal and ash samples of TSPL

Sample Description	Fe	Mn	Cu	Pb	Zn	As	Co	Ni	Cr
				mg/kg					
Coal	40572	414	44.2	73.7	103.9	21.6	13.9	46.8	136.4
Imported Coal	25565	176	26.6	15.1	68.6	16.4	4.8	23.8	63.9
Washed coal	37927	416	45.7	76.8	135.2	12.7	9.3	46.4	125.4
Mixed Coal	32602	312	32.7	46.6	78.3	16.2	13.5	59.7	143.8
Dry fly ash	63618	638	116.0	187.5	171.3	38.3	32.6	99.0	306.5
Bottom Ash	54325	596	98.4	128.9	96.6	30.6	23.8	76.6	281.9
Pond Ash	51374	602	107.7	157.6	112.2	32.7	25.8	81.0	267.7

Coal is carbon-rich combustible material containing organically bound mineral matter. This organic material is released during coal combustion and enriched inorganic elements in to ash residue. Trace elements associated the organic matter get released during volatilization and accumulate in the refractory phases like mullite and other aluminous phases as clays. Various factors that control the concentrations of trace elements in the coal and ashes include element sources, modes of occurrence, combustion conditions, volatilization–condensation mechanism, and particle size of the ash. Concentration of heavy metals in dry fly ash sample was found as Fe (63618 mg/kg), Mn (638 mg/kg), Cu (116 mg/kg), Pb (187.5 mg/kg), Zn (171.3 mg/kg), As (38.3 mg/kg), Co (32.6 mg/kg), Ni (99.0 mg/kg) and Cr (306.5 mg/kg).

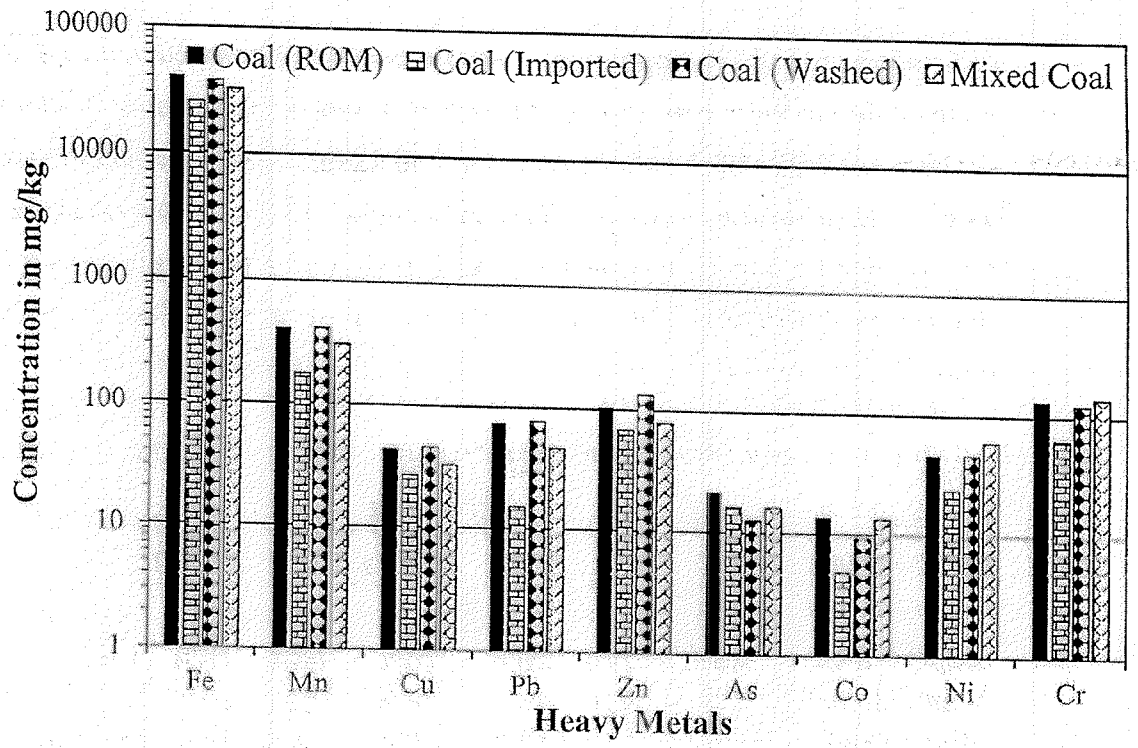


Fig. 2: Heavy metal distribution in coal samples of TSPL

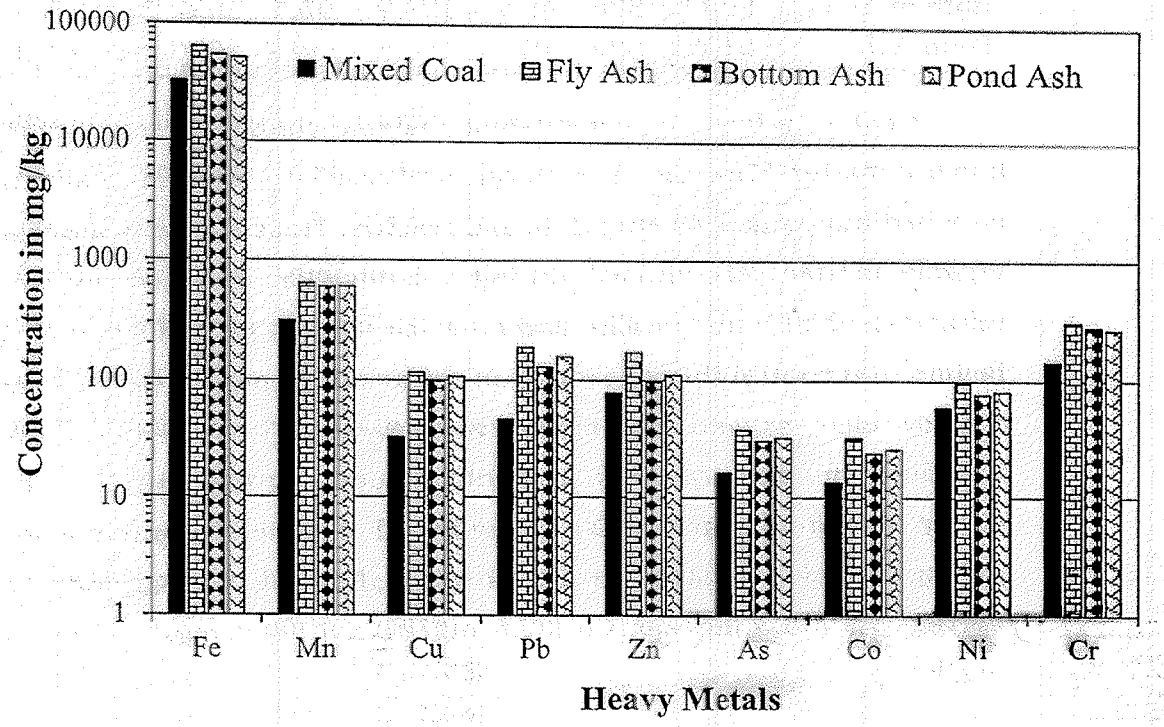


Fig. 3: Heavy metal concentration in feed coal and coal residue

5.2 Leaching behavior of coal ash

The long storage of ash in ponds under wet condition and humid climate can cause leaching of heavy metals from ash, if proper scientific measures not taken. The flow of water through ash may contaminate the underlying soil and ultimately the groundwater system. However most of the environmental problems due to fly ash generation can be minimized by incorporating engineering measures in the design of ash ponds and continuous monitoring of surface and groundwater water systems. TSPL has provided HDPE lining at ash dyke as engineering control to eliminate leaching and ground water contamination.

The leaching characteristics of fly ash mainly depend upon the factors like its chemical composition, mineralogy and morphology. The leaching of elements from fly ash is a time dependent phenomenon. The initial leaching of the fly ash can be characterized by the surface hydrolysis and dissolution of reactive phases formed under high temperature combustion. A close examination of the leaching studies show a rapid early dissolution followed by a later, slower release of the elements. The water-soluble fraction of a combustion residue may reflect the early dissolution process in the natural environment. In fact, the early dissolution mainly involves the soluble salts or the oxides on the particle surface of the fly ash. So, the dominant features of the initial dissolution stage are a high dissolution rate and the solution chemistry is controlled by buffering components of fly ash. At this stage of high dissolution rate, release of salts or heavy metals associated with surface phases occur.

To assess the possibility of groundwater contamination due to disposal of coal residue (dry fly ash, bottom ash and pond ash) a leaching study were carried out at CSIR-CIMFR. A leachate produced during the leaching study were analyzed for heavy metal contents. In the experiments, three glass columns, each of height 1 meter and 9.6 cm internal diameter were packed with 3.0 kg of each of dry fly ash, bottom ash and pond ash. Column 1 contains Pond Ash up to the height of 36.5 cm while column 2 and column 3

contain bottom ash and dry fly ash respectively up to the height of 43 cm and 32.5 cm (**Fig. 4**). This setup was used for column leaching study. 3.0 liters of distilled water was allowed to flow with the gravitational force in each column. The flow rate was different in these three columns i.e. flow rate of 3.0 ml/min for column 1, 7.0 ml/min for column 2 and 1.2 ml/min for column 3. The retention time for these three columns for passing the complete water (i.e. 3 liters) was 2 hr 27 minutes for column 1 i.e. Pond ash, 1 hr. 16 min. minutes for column 2 i.e. bottom ash and 5 hr. 11 minutes for column 3 i.e. dry fly ash. The total leachates of each column were collected separately for measuring the concentration of heavy metals in the leachates of these three types of ashes.

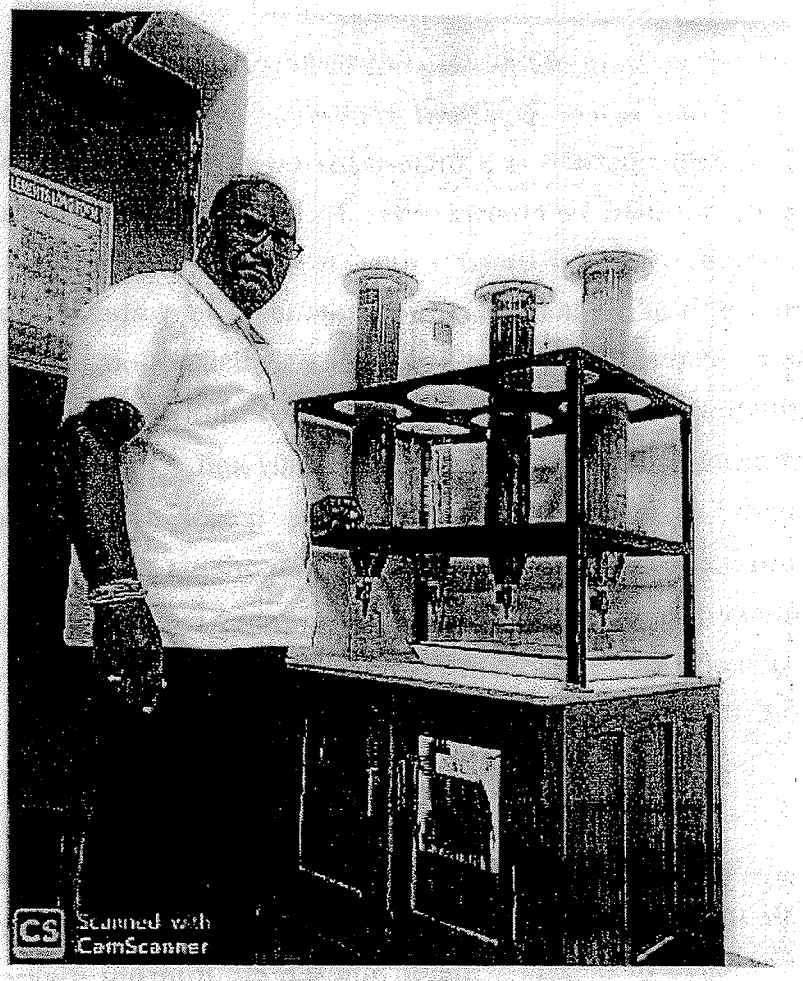


Fig. 4: Experimental set for leaching study

Concentration of heavy metals in leachates of dry fly ash, bottom ash and pond ash is tabulated in **Table 2**. Concentration of leachates were compared with the CPCB specified general standards of discharge of environmental pollutants Part A: Effluents (The Environmental (Protection Rules, 1986). In general concentration of measured heavy metals in leachates are less that the specified limits for inland surface water discharge. This shows that there is no serious issue of groundwater contamination due to fly ash disposal at the TSPL site at present scenario. However, the continuous monitoring of environmental parameters including groundwater water quality in and around the plant site is necessary for long term environmental management planning.

Table 2: Concentration of heavy metals in leachates and CPCB norms for effluent discharge

S.N.	Sample Description	Fe	Mn	Cu	Pb	Zn	As	Ni	Cr
1.	Leachate (Dry fly ash)	2.48	0.944	0.016	0.009	1.13	BDL	0.117	1.162
2.	Leachate (Bottom ash)	1.61	0.414	0.029	0.005	1.84	0.002	0.15	0.53
3.	Leachate (Pond ash)	1.80	0.379	0.018	0.006	1.14	0.001	0.32	0.36
	CPCB standard for effluent discharge	**3.00**	**2.00**	**3.00**	**0.1**	**5.0**	**0.2**	**3.00**	**2.00**

Concentration in ppm

5.3 Radionuclide activity in coal and coal residue

All minerals and raw materials contain radionuclides of natural origin. The most important for the purpose of radiation protection are the radionuclides in the ^{238}U and ^{232}Th decay series. In most human activities involving minerals and raw materials, the levels of exposure to these radionuclides are not significantly greater than normal background levels and are not of concern for radiation protection. However, certain work activities can give rise to significantly enhanced exposures that may need to be controlled by regulation. Material giving rise to these enhanced exposures has become known as naturally occurring radioactive material (NORM).

Most coal contains uranium and thorium, as well as their decay products and ^{40}K. The total levels of individual radionuclides typically are not great and are generally about the same as in other rocks near the coal, which varies according to region and geology. Enhanced radionuclide concentration in coal tends to be associated with the presence of other heavy metals and high sulfur content. During combustion, the radionuclides are retained and concentrated in the dry fly ash and bottom ash, with a greater concentration to be found in the fly ash. The concentration of uranium and thorium in bottom and dry fly ash can be up to ten times greater than for the burnt coal, while other radionuclides such as ^{210}Pb and ^{40}K can concentrate to an even greater degree in the dry fly ash.

Coal mining itself also gives rise to a potential NORM issue. Coal can be mined in either open pits or underground mines, and produces a significant amount of waste rock, and drainage water that can present with elevated levels of radioactivity. Underground coal mines are subject to increased radon levels, while sediments discharged in waste water into the environment have been measured with activities as high as 55,000 Bq/kg of ^{226}Ra and 15,000 Bq/kg of ^{228}Ra (IAEA 2003, Tech Report 419).

Table 3: Radionuclide activity in coal and coal residue

S.N.	Sample Name	^{238}U	^{226}Ra	^{40}K
		Bq/kg		
1.	Coal (ROM)	59.9 ± 1.1	51.9 ± 0.4	102.8 ± 2.8
2.	Coal (Imported)	23.4 ± 0.9	26.0 ± 0.3	81.1 ± 2.6
3.	Coal (Washed)	45.2 ± 1.1	40.9 ± 0.4	82.2 ± 2.9
4.	Mixed Sample	33.6 ± 1.2	43.3 ± 0.4	96.0 ± 3.3
5.	Dry Fly Ash	133.6 ± 1.6	117.1 ± 0.5	280.4 ± 3.8
6.	Bottom Ash	95.0 ± 1.5	114.6 ± 2	263.1 ± 4.1
7.	Pond Ash	97.1± 1.4	91.1 ± 0.5	228.3 ± 3.7

Radionuclides activity for ^{238}U (95.5 Bq/kg), ^{226}Ra (114.6 Bq/kg), and ^{40}K (263 Bq/kg) in the analyzed dry fly ash of TSPL are lower than the world average radionuclides activity in dry fly ash (**Table 3**). The reported world

average radionuclides activity value in dry fly ash for ^{238}U, ^{226}Ra and ^{40}K are 200 Bq kg^{-1}, 240 Bq kg^{-1} and 265 Bq kg^{-1} respectively as per standard values published by United Nations Scientific Committee on the Effect of Atomic Radiation (UNSCEAR-2000)

The variation of the activity concentration values is due to the differences physical, chemical and geo-chemical properties of materials. In general all radionuclide concentrations are higher in coal residuals than the coal samples. The radionuclide activity follow the decreasing order of Dry fly ash > Bottom ash > Pond ash > Coal. The higher values for fly ash may be attributed to its finer size as compared to bottom and pond ash.

6.0 Environmental Management

Talwandi Sabo Power Limited (TSPL) has taken a number of initiatives for environmental management and installed following pollution controlled system to prevent contamination of natural resources:

1. Installation of hybrid ESP (ESP+FF) to limit the particulate matter emissions.
2. Dry fly ash is conveyed through closed pneumatic system and stored in silos.
3. Provision of HDPE lining in ash pond provided to prevent leaching and contamination of ground water.
4. Disposal of ash slurry through closed pipelines in ash dyke by High Concentration Slurry Disposal (HCSD) System.
5. Development of greenbelt around the ash dyke to prevent fugitive dust emissions.

Historically, wastes have always created a disposal problem. The problem of flyash disposal has assumed such an enormous scale in the country that the Ministry of Environment and Forests (MoEF) issued a regulation on 14 September 1999 and amended time to time specifying

normative levels for progressive utilization of flyash. Accordingly TSPL has taken initiative to dispose fly ash for various constructive purposes like.

1. Dry fly ash is disposed to cement and fly ash brick manufacturing units
2. Bottom ash is disposed to brick kilns for clay fly ash brick manufacturing
3. Pond ash is disposed to road construction projects

7.0 Conclusion:

Geochemical study of coal and ash samples collected from Talwandi Sabo power plant has been carried out to assess possible contamination and health risk due to the disposal of fly ash. Total 10 samples comprising four coal (Indian coal, imported coal, washed coal and mixed coal), three ash (dry fly ash, bottom ash, and pond ash) and three leachates (dry fly ash, bottom ash and pond ash) were collected and analyze for heavy metal contents and radioactivity. The analysis result shows dominance of Fe, Mn, Cr and Zn in the heavy metal content in the coal and coal residue of TSPL. Concentration of heavy metals in Indian coal (ROM) are higher as compared to imported coal. In general, concentration of heavy metals in fly ash is higher as compared to feed coal. Among heavy metals Pb, Cc, Cr and Ni shows maximum enrichment in fly ash. These are volatile elements and are generally associated organic matter in coal.

Radionuclides activity for ^{238}U (133.6 Bq/kg), ^{226}Ra (117.1 Bq/kg), and ^{40}K (280.4 Bq/kg) in the analyzed dry fly ash of TSPL are lower than the world average radionuclides activity in dry fly ash. Possible radiation health hazards to the exposed community were evaluated based on the measured activity concentrations of ^{226}Ra, ^{238}U and ^{40}K. Radium equivalent activity (Ra_{eq}) in the coal and ash samples of TSPL is lower than 370 Bq/kg as recommended. In general concentration of measured heavy metals in leachates are less that the CPCB specified limits for inland surface water discharge. This shows that there is no serious issue of groundwater contamination due to fly ash disposal at the TSPL site at present scenario.

However, continuous monitoring of radioactivity and environmental parameters including groundwater water quality in and around the plant site is recommended.

Annexure-12

Report on

Annual Social Audit *of*

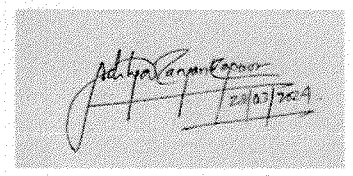
Corporate Social Responsibility (CSR) schemes

implemented by

Talwandi Sabo Power Limited

District Mansa, Punjab for the year 2023-2024

Submitted by:



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Introduction

Talwandi Sabo Power Limited (TSPL) stands as a significant thermal power plant situated in Punjab's Mansa district, India. Boasting an impressive installed capacity of 1980 MW, utilising supercritical technology, TSPL ranks among the nation's most efficient power facilities. TSPL functions under the aegis of Vedanta Limited, a preeminent international natural resources conglomerate headquartered in India. Vedanta Limited's extensive operations encompass the mining, oil and gas, and aluminium sectors, with a presence in India, Australia, Zambia, and various other countries worldwide.

In today's interconnected world, organisations like TSPL engage in multifaceted interactions with various social entities. Corporate Social Responsibility (CSR) is a pivotal management concept endorsed by the United Nations Industrial Development Organization, emphasising the integration of social and environmental concerns into business operations and stakeholder interactions. India's Ministry of Corporate Affairs underscores the significance of CSR, citing the Companies Act of 2013 as a landmark initiative mandating CSR provisions for select categories of companies, positioning India as a pioneer in regulated CSR practices conducive to sustainable development and public-private partnerships.

TSPL epitomises responsible corporate citizenship through its robust CSR program, meticulously crafted to benefit villages surrounding its operations. Collaborating with diverse stakeholders, including local communities, government agencies, development organisations, and civil society groups, TSPL ensures community engagement, appropriate project design, efficient implementation, and long-term sustainability.

With a commitment to prioritise local communities, TSPL directs the majority of its CSR resources towards initiatives in proximate areas. Stringent monitoring and auditing mechanisms, overseen by internal and third-party auditors, coupled with reviews by the Business Unit Executive Committee and CSR Board Committee, ensure the efficacy and transparency of CSR projects. TSPL diligently reports its CSR activities to regulatory bodies, adhering to statutory requirements.

The Corporate Social Responsibility policy of Talwandi Sabo Power Limited centres on key thematic areas: health, livelihood, women's empowerment, and community development.

Aligning with this policy, TSPL has spearheaded several impactful projects, which are the following:

1. Project Navi Disha: Promoting sustainable agriculture practices.
2. Project SEHAT (Safe and Effective Health Action by TSPL): Providing quality healthcare services through Primary Health Centers (PHCs) and regular health camps.
3. Project TARA (TSPL Action for Rural Ajeevika): Empowering women in rural areas.
4. TSPL Gram Nirman Project: Enhancing community infrastructure.

Moreover, throughout the preceding years, TSPL's unwavering dedication to fulfilling its societal responsibility has manifested itself in the form of community asset development. This commitment unequivocally illustrates TSPL's enduring commitment to a society marked by overall well-being and a sustainable trajectory.

Objectives

The objectives of the annual social audit conducted by the Central University of Punjab for Talwandi Sabo Power Limited (TSPL) at the request of TSPL are as follows:

1. To assess the efficacy of TSPL's corporate social responsibility (CSR) initiatives in converting the company's social commitments into palpable results during the specified time period.
2. To delineate and understand the requirements of local communities and other stakeholders with whom TSPL is actively involved to fulfill its social responsibilities.
3. To evaluate the extent to which TSPL's CSR program meets the needs of stakeholders and local communities.
4. To provide suggestions for modifications and alterations that TSPL can incorporate to implement its CSR activities more effectively in the future.
5. To recommend any policy-related interventions that TSPL can incorporate into its CSR policies to enhance the impact of its social initiatives.

Methodology

The methodology for social audit conducted by the Central University of Punjab for Talwandi Sabo Power Limited's (TSPL) Corporate Social Responsibility (CSR) schemes was a comprehensive process. It was designed to thoroughly assess the effectiveness and impact of Talwandi Sabo Power Limited (TSPL) corporate social responsibility initiatives on the communities they serve. There is a series of multistep methodology involved to gain the insights into the real-world outcomes of TSPL's CSR endeavours.

The team began with stakeholder mapping and engagement technique to initiate the process of audit. Initially, by conducting a comprehensive stakeholder analysis to identify all relevant parties affected by TSPL's CSR activities. This includes community members, local authorities, NGOs, and other key stakeholders. The team engaged with these stakeholders through group discussions and interviews, and visiting participatory workshops to understand their perspectives, needs, and expectations regarding TSPL's CSR efforts.

Furthermore, the audit team collaborated with TSPL's CSR team to review and refine the design of existing and proposed CSR programs based on the findings of the stakeholder engagement and baseline assessment. The social audit team tried to develop clear program objectives, targets, and indicators for monitoring and evaluation and established mechanisms for real-time monitoring of program implementation progress, including regular site visits, progress reports, and feedback loops with beneficiaries and implementing partners.

While commencing with the auditing process, the auditing team brought with the 'on-spot verification.' This entailed physically visiting the sites where TSPL's CSR activities were being carried out. Due to the physical presence on the ground, the auditing team was able to closely monitor the progress of these initiatives and were able to engage directly with the relevant stakeholders. This hands-on approach allowed for the evaluation of the tangible impact of TSPL's efforts and the assessment of their alignment with their intended objectives.

In addition to on-spot verification, the team employed qualitative data collection techniques such as Focused Group Discussions (FGDs) and unstructured interviews. Through these methods, they engaged with beneficiaries of TSPL's CSR activities, including members of the local community members, farmers, representatives of beneficiary organisations such as Nabha Foundation, and other relevant stakeholders. By fostering open dialogue and gathering

firsthand accounts, the team has sought to gain a deeper understanding of how these initiatives were perceived and experienced by those directly impacted. This qualitative data provided valuable insights into the nuanced ways in which CSR interventions were influencing the lives and livelihoods of individuals and communities.

The questions posed during FGDs and interviews were carefully crafted to reflect the auditors' understanding of the ground realities and specific contexts in which TSPL's CSR activities were being implemented. This ensured that the feedback obtained was both relevant and meaningful, shedding light on areas of success, challenges, and opportunities for improvement.

However, utilising a participatory approach to assess the impact of TSPL's CSR initiatives on beneficiary communities involves engaging beneficiaries in reflective dialogues, participatory mapping exercises, and storytelling sessions to capture their lived experiences and perceptions of change resulting from TSPL's interventions. In the whole process, the team used qualitative data collection methods such as focus group discussions, key informant interviews, and participatory video to gather rich, context-specific insights into the socio-economic, environmental, and cultural dimensions of impact.

Sources of Data

In order to accomplish the objectives, the social audit gathered information from seven diverse villages: Behniwal, Raipur 1 & 2, Banawali, Chehlanwali, Perron, and Talwandi Aklian. Additionally, data was collected from neighbouring villages where TSPL had implemented specific improvements, particularly in relation to Self Help Groups. A variety of methods were employed to obtain the necessary information, including:

1. Village Panchayat offices were used as a source to collect relevant data from all seven villages. This included demographic profiles, data on infrastructure facilities such as health and education, and information about marginalised communities.
2. Focused Group Discussions (FGDs) were conducted with various stakeholders who were actively involved in TSPL's CSR initiatives to supplement the data collected from Panchayat offices. The FGD technique was used to understand the overall impact and scope of future interventions, considering the views of multiple stakeholders in any social context. Data was collected through interactions with the following stakeholders:

a. Officials of TSPL associated with CSR activities.
b. Staff and officials of Primary Health Centre (PHC) supported by TSPL in Behnival.
c. Officials of Nabha Foundation engaged in the Sustainable Agriculture Promotion Project (Navi Disha) in collaboration with TSPL.
d. Farmers who are actively engaged and beneficiaries of the Sustainable Agriculture Promotion Project (Navi Disha) project.
e. Relevant data were also collected through interviews with Panchayat officials, doctors employed in PHC, people engaged in Gurudwara management at the village level, and ward councillors at the Panchayat level.

By using a combination of these methods, the auditors were able to gather comprehensive data from various sources and stakeholders to evaluate the effectiveness of TSPL's CSR initiatives and suggest changes and modifications for future implementation.

Phases of Social Audit

The audit process was taken through following phases:

Phase	Activities
Phase I: Preparatory Phase	• Obtain records from TSPL. • Review census and district administration data at the village level. • Hire and train field workers. • Organise records in a clear and coherent format.
Phase II: Social Audit	• Conducted on-site verification of CSR activities in eight villages. • Engaged in focused group discussions with various stakeholders to gather their feedback. • Interviewed panchayat officials, doctors, and ward councillors to gain insights.
Phase III: Post-Audit Phase	• Conducting Focused Group Discussions (FGDs) with the beneficiaries.

	• Collecting feedback from the field workers who participated in the social audit process. • Sharing the key findings of the social audit with the beneficiaries and collaborating with them. • Identifying and consolidating any grievances that arise during the audit process. • Providing recommendations for action based on the social audit findings.

Table 1: Audit activities shown in three phases.

Methods of Findings

The research employed content analysis as a qualitative method to analyze data gathered from focused group discussions (FGDs) and interviews with Panchayat officials and beneficiaries. The primary objective of this analysis was to gain a comprehensive understanding of the projects' impact and the needs of the targeted group. Particular attention was paid to assessing the project's relevance within the local social environment and its alignment with the community's futuristic needs. This analytical approach aligns with Section 135 (Schedule VII) of the Companies Act, 2013 which emphasises the importance of considering social and environmental factors in corporate decision-making.

Major Findings

In accordance with the above stated objectives and follow-up projects, the results of the social audit are categorised into the following subsections:

1. Efficacy of **Sustainable Agriculture** in Improving Livelihood (Navi Disha Project)
2. Impact on Health Sector via **Safe & Effective Health Action by TSPL** (SEHAT) Project
3. Women Empowerment through **TSPL Action for Rural Ajeevika** (TARA) Project
4. TSPL's **Gram Nirman Project** and its Outcomes
5. Effectiveness of TSPL **Computer Literacy Center**

Sustainable Agriculture: Navi Disha Project

General Observation

Project Navi Disha, a collaborative initiative between Talwandi Sabo Power Limited (TSPL) and the Nabha Foundation, is focused on promoting sustainable agriculture practices in the region. The project aims to transform traditional farming methods by introducing Integrated Pest Management (IPM), encouraging the use of organic inputs, and implementing healthy practices such as crop rotation, multi-cropping, and crop diversion.

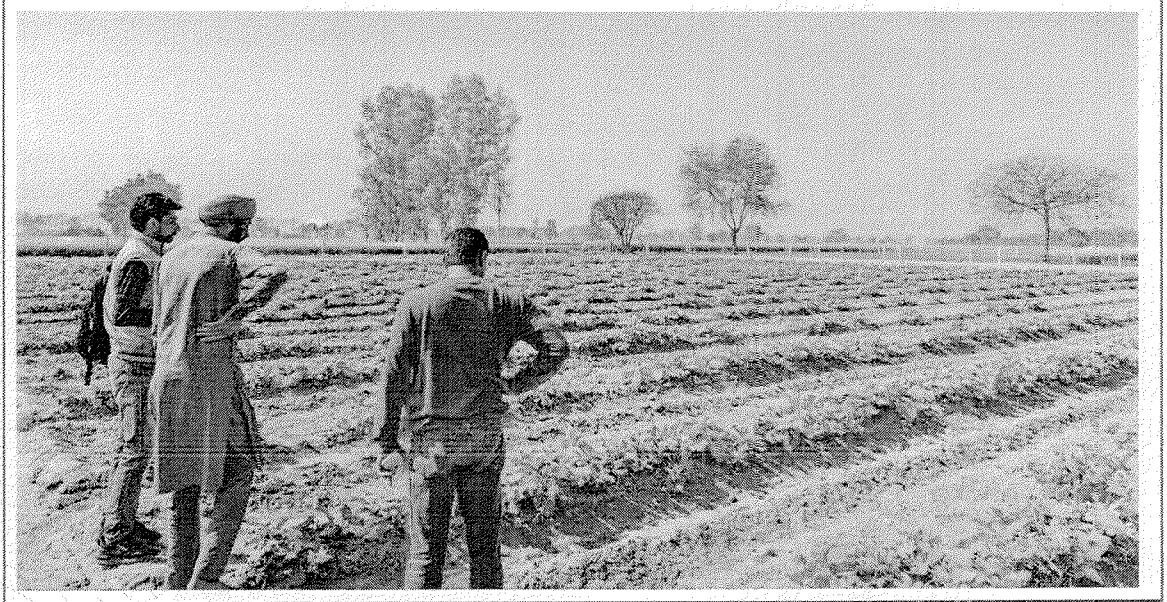


Figure 1: A visit to the beneficiary's farm near Makha village.

By adopting these sustainable techniques, farmers can significantly reduce their agricultural costs, minimize reliance on chemical fertilizers, and positively impact the farming community. The project's accomplishments have been commendable, with over 2000 farmers benefiting in 2023 and a total of 2400+ farmers of 26 villages associated with Navi Disha. These achievements have contributed to improved sustainable development efforts in the region.

This project serves as an exemplary model for promoting sustainable agriculture. It is found that by empowering farmers with new knowledge and resources, the project encourages a shift towards environmentally friendly and economically viable farming practices. Its success highlights the transformative potential of collaborative initiatives in addressing the challenges faced by the agricultural sector.

Going forward, Project Navi Disha holds immense promise for further exploration and expansion. The project can explore innovative technologies and methodologies to enhance its impact, fostering a vibrant and thriving agricultural ecosystem. By continuing to support and empower farmers, we can expect their contribution to a sustainable future where agriculture is not only productive but also environmentally responsible.

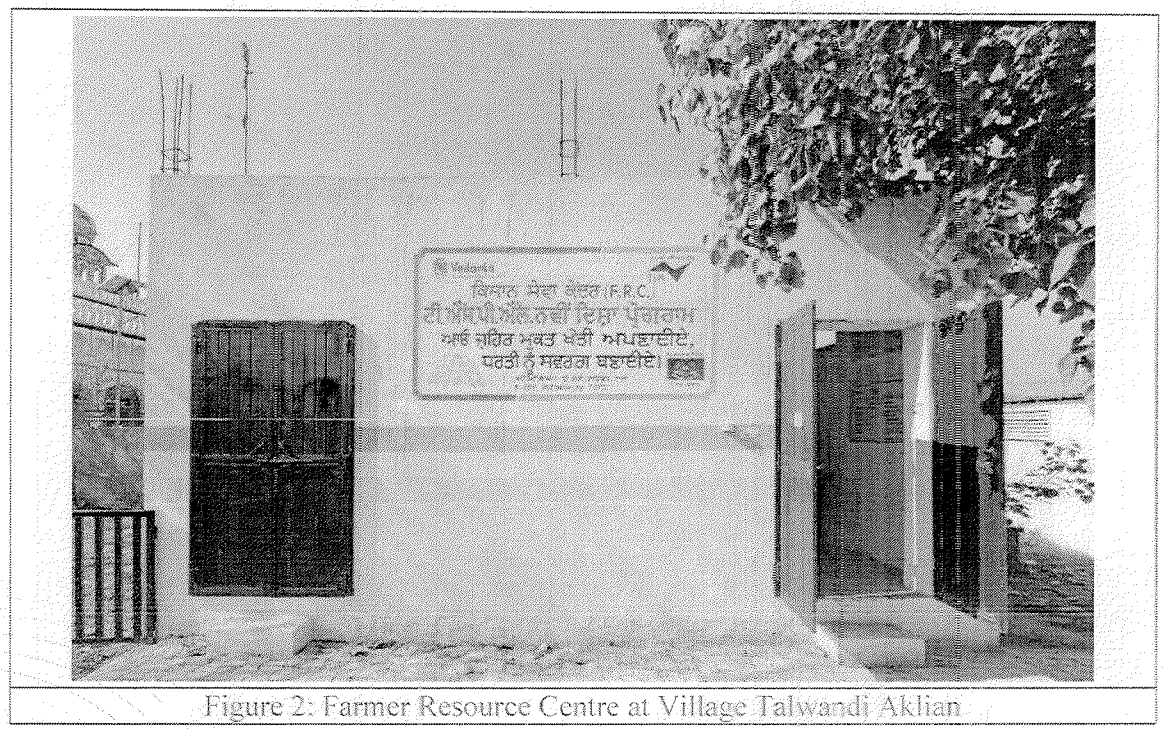


Figure 2: Farmer Resource Centre at Village Talwandi Aklian

Here are the key aspects of Navi Disha projects that were audited:

1. The Navi Disha initiative, Talwandi Sabo Power Limited (TSPL), has demonstrated a steadfast commitment to promoting sustainable agriculture and enhancing the livelihoods of farmers throughout the year. During our visit to local communities and stakeholders, we found the initiative has implemented a comprehensive range of activities aimed at fostering agricultural innovation, environmental stewardship, and community development.

2. In 2023, the Navi Disha team engaged with farmers through individual visits, awareness camps, and training sessions on sustainable agricultural practices. It was found that more than 70 individual farm visits were conducted throughout the year.

3. To empower farmers with the knowledge and resources to improve crop yields and enhance soil health, they have conducted more than 7 training programs on Improved Agricultural Practices, Soil Health, and Use of Farmyard Manure.

4. To promote the adoption of environmentally friendly farming techniques such as Integrated Pest Management (IPM) and paddy straw management, they have a target of 40 sessions annually but managed to conduct 23 sessions by mid-year. Moreover, some expert support sessions, field school training and techniques by Krishi Vigyan Kendra (KVK) also contribute to enhancing farmers' technical knowledge and skills.

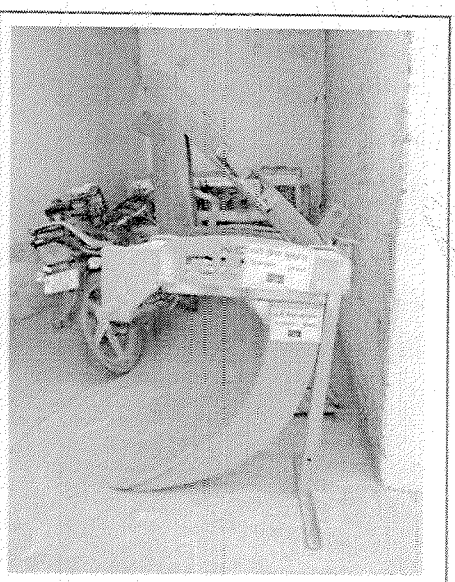


Figure 2: Machineries stored at the Farmer's Resource Centre

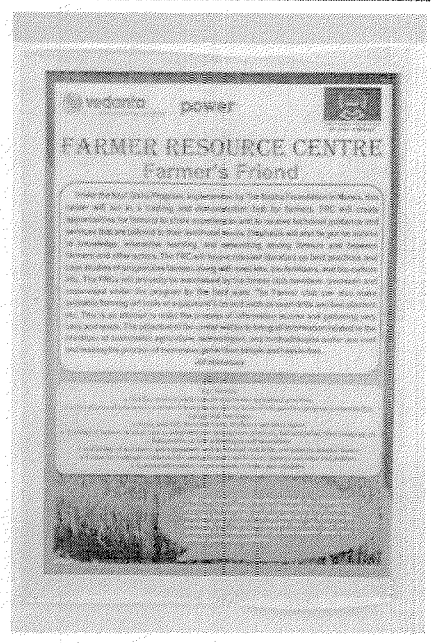


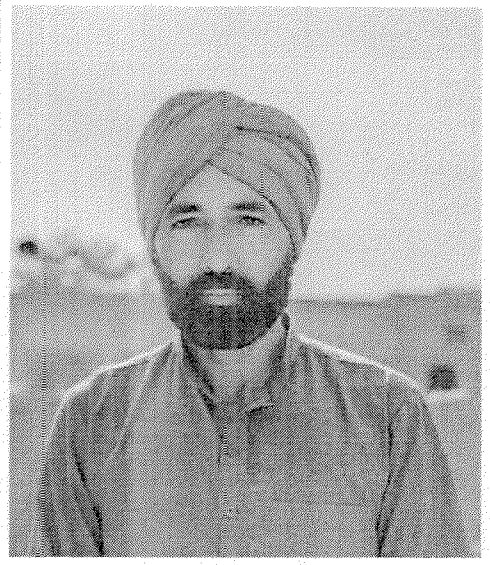
Figure 3: A poster explaining the purpose of the Farmer Resource Centre.

5. It was observed that new Farmers' Resource Centers (FRCs) were established in few village and its activities were expanded to other villages. The FRCs are for the distribution of essential resources such as bio-cultures, Trichoderma bio-agents, and waste decomposers which have further supported the farmers in their agricultural endeavours.

6. Farmers' Resource Centers (FRC) is also equipped with multi crop bed-planter. The utilisation and effectiveness of the machinery were confirmed during a field visit with the beneficiary farmers. The centre's expansion helped for the initiatives such as model farm training, farmer group meetings, and expert consultations that have facilitated knowledge-sharing and capacity-building among farming communities. The Navi Disha initiative's impact extends beyond agriculture, with interventions such as animal health checkup camps, beekeeping training, and mushroom cultivation contributing to the overall well-being and economic resilience of rural communities. They have also expressed their initiative for the collaboration with government agencies, agricultural institutes, and corporate partners to enhance the sustainability and scalability of the initiative's activities. Likely, the farmers are looking for a better or specific market to sell their organic products.

7. During our visit, we found the places where they are applying the initiatives such as the application of bio-culture kits and new technological support for waste decomposers which underscore the commitment of TSPL in association with

Success Stories



***Hardeep Singh*, Beneficiary**

"Since 2017, I have been lucky enough to be part of the Navi Disha project team. It's been awesome working with them! I have learned how to do organic farming and have grown a bunch of different vegetables using organic methods. Lately, with the help of the Nabha Foundation, I have also started growing wheat organically."

the Nabha Foundation to promoting organic farming and reducing environmental impact.

8. We have also observed that their Dairy Products initiative embarked on their additional source of income. According to their narrative, recently they have increased the number of veterinary visits to the villages and recently they have conducted these visits in Dhinger and Behniwal village in the early month of 2024.

9. Farmers and stakeholders confirmed the various activities which were successfully implemented under Project Navi Disha. Few farmers also highlighted some areas that needs further impetus like, establishment of vermi bags and increasing the frequency of Kisaan Sammelan, which will provide them a platform to share their skills and expertise.

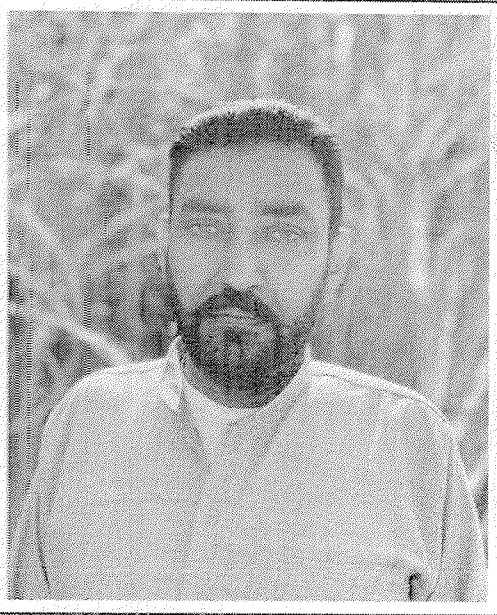
Feedback from the Stakeholders

As part of our audit process, we engaged in focused group discussions with beneficiary farmers and conducted interviews with different beneficiaries and farmer groups to assess the impact of TSPL's agricultural initiatives. Our on-site visits to various agricultural sites, including farmlands, Farming Research Centres, and mixed crop farming areas where farmers express their satisfaction with TSPL's support and guidance, particularly in promoting improved agricultural practices and organic farming methods. As we met Hardeep Singh, who has been working with the assistance of the Navi Disha project team since 2017 and explained the working of bed planters and related tools and techniques in organic farming practices. He also expressed a desire for additional assistance in accessing mainstream markets to sell his product effectively.

Farmers associated with this project have attended several awareness programs conducted under Project Navi Disha and learned to identify the use of homemade remedies and working with selective environmental friendly insects in their farming practices. We received positive feedback on this issue and it led to a notable reduction in the use of pesticides and chemical. Such practices have reduced the input costs of the farmers contributing to their profitability. Farmers also access certain social media channel on online platforms like, YouTube which are created and managed by the team members of Navi Disha. They have also made a WhatsApp group to share information, doubts and knowledge.

Further, the encouragement of allied activities such as dairy farming, mushroom production, seed cultivation, bee keeping and fishery has diversified farmers' income sources and enhanced food security in the community. The farmers also reported increased income and access to additional nutritional resources as a result of these initiatives. Overall, they are optimistic toward the approaches and methodologies applied by the Nabha Foundation under the aegis of TSPL through the Navi Disha project.

Success Stories



***Balkand Singh*, Beneficiary**

" Before, I wasn't sure if my crops would grow well without pesticides and sprays. To be on the safe side, I started by growing just a small patch organically. Guess what? It worked like a charm! Now, I'm growing all my sugarcane using organic methods and earning a whopping Rs. 8000 per Kanaal.**"**

Recommendations

As per the feedback received from farmers, the following recommendations are proposed to TSPL in order to further enhance the well-being of farmers:

1. The farmers requested financial assistance for the acquisition of agricultural tools, specifically small-scale machinery, in order to facilitate their personal agricultural operations.
2. With regard to the heavy machinery, such as the rotavator, the beneficiaries requested that either the machinery be provided to their group or that it be issued to each member in a rotational manner.
3. The farmers requested for the provision of soil testing kits or laboratories in their vicinity. This would enable them to conduct regular monitoring of the quality of their soil and products.

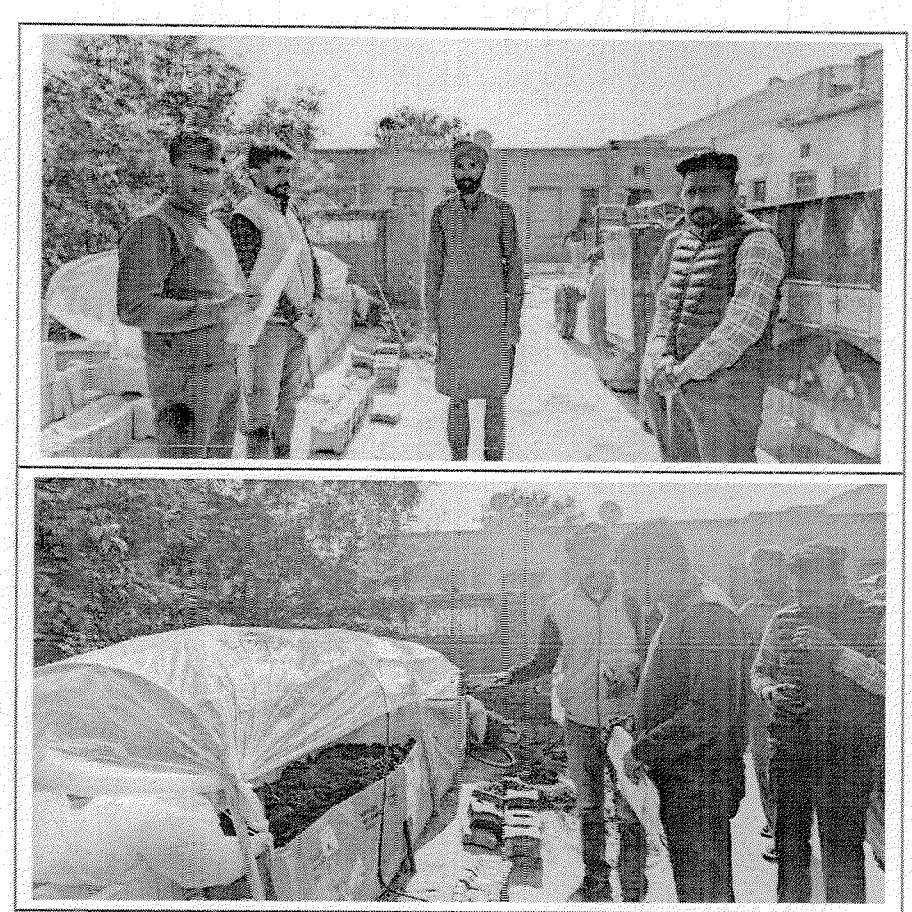


Figure 4: Inspecting farmer's homemade manure and facilities.

Health Sector: Project SEHAT (Safe & Effective Health Action by TSPL)

General Observations

Since its inception in 2016, TSPL has demonstrated unwavering commitment to fostering community well-being through various health-centric initiatives. Notably, TSPL has played a pivotal role in supporting the establishment and operation of a Primary Health Centre (PHC) in Behniwal village, located within the Mansa district of Punjab. This PHC, now known as the 'Aam Aadmi Clinic' following a transition in January 2023, stands as a beacon of healthcare accessibility for the local populace.

TSPL Supports PHC at Behniwal with dental and housekeeping services and periodically organising general health camps and specialized health camps at nearby villages. In addition to this, TSPL is also supporting Civil Hospital, Mansa with one dedicated lab technician for

pathology laboratory. TSPL actively facilitates health camps throughout the year, covering around 10 villages and addressing pressing health concerns within these communities. The significance of TSPL's initiatives cannot be overstated, particularly considering the limited healthcare infrastructure available in the region. The PHC at Behniwal serves as the sole healthcare facility accessible to ~10,000 beneficiaries residing around the vicinity of TSPL. Operating round-the-clock, this facility provides essential medical services and emergency care, with a modest indoor setup accommodating ten beds to cater to critical cases.

TSPL's CSR efforts have received positive feedback from locals and stakeholders, highlighting their impact on community health. We recognise and commend their remarkable and proactive approach in promoting healthy living and sustainable development. However, the interventions by the project SEHAT – Safe & Effective Health Action by TSPL in the promotion of health and well beings of the local community members are as follows:

1. Project SEHAT (Safe and Effective Health Action by TSPL) is aligned with the objectives outlined in Sustainable Development Goal 3, to ensure equitable access to healthcare services of the highest quality within the community.
2. Through TSPL's health initiative, they have strengthened the existing government healthcare ecosystem by providing comprehensive support to the rural primary health centre which is located in Behniwal village.
3. Through project SEHAT, TSPL has comprehensive support extended to various medical services where the healthcare professionals such as dentists are providing their services.
4. According to our observations, TSPL's initiative has expanded the Primary Health Center (PHC) services to include paramedical and laboratory services.
5. TSPL Conducts regular health camps in the nearby villages ensuring quality doorstep health care services.
6. In addition to its primary operations, TSPL undertakes two eye camps and three awareness camps per month in the designated villages surrounding its facilities.
7. TSPL periodically organizes eye care camps and health awareness sessions on crucial health topics like malaria, dengue, menstrual hygiene etc. which is very popular among the nearby villages.
8. In total, the organisation has conducted approximately 81 health camps during the calendar year of 2023, as well as 16 eye camps within the same timeframe. Additionally,

it has conducted 34 awareness camps during the year. The SEHAT project is being implemented by a Delhi based reputed NGO - ' PHDRDF'.

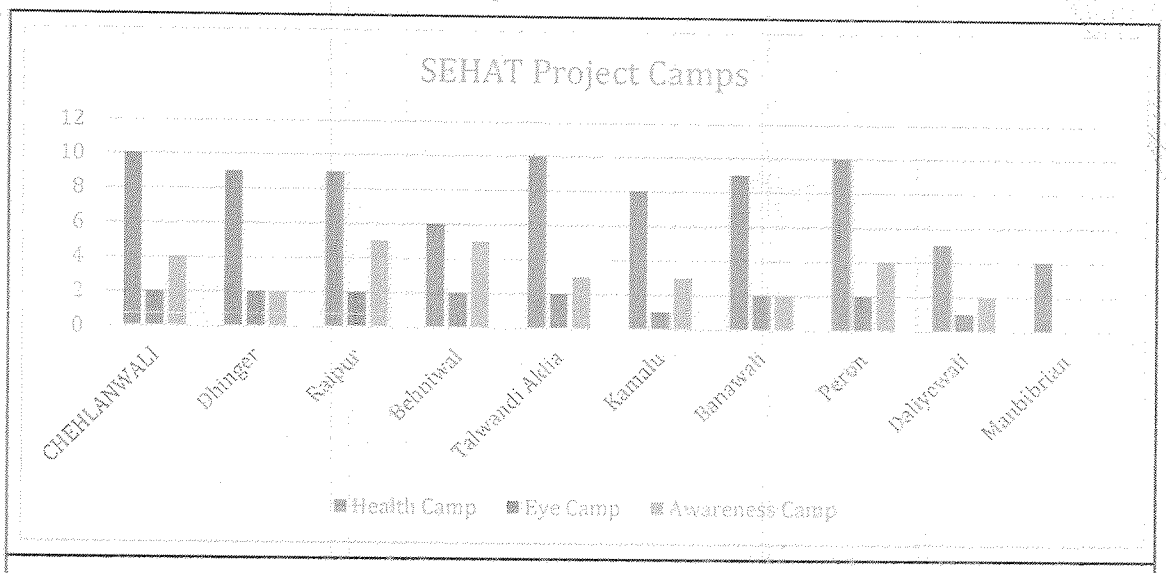


Figure 4: Villages that benefitted from health camps organised by TSPL

Feedback from the Stakeholders

A comprehensive discussion was held with numerous stakeholders, including medical professionals, staff members, patients, and officials from village Panchayats, in order to evaluate the efficacy of health initiatives and subsequently identify any areas that may be in need of improvement. We interviewed beneficiaries at the clinic and health camp, and the vast majority acknowledged the positive impact of the medical team from the health centre on the enhancement of the health sector within the region. A substantial proportion of the beneficiaries interviewed and majority expressed their satisfaction and a desire for the continuity of initiatives such as health camps and other amenities at the health centre. Though they have suggested that the implementation of enhanced diagnostic services for pathological testing, as well as the provision of an ambulance facility at the health centre, would be more beneficial. The ward and the doctors expressed their satisfaction with the intervention of TSPL in PHC for the benefits and well-being of local community members. Even the Panchayat officials and ward councillors of the village Panchayat commended the commendable efforts made by TSPL in supporting the PHC and other initiatives related to healthcare. Furthermore, the beneficiaries expressed appreciation for the initiative of organising dental checkups and gynaecologist visits to the camps in villages during the current year. In addition to other camps such as medical

health examinations, female participants were also provided with sanitary pads and necessary information regarding their health.

Recommendations

Community members emphasized the need for regular visits by medical professionals to healthcare camps and door-to-door healthcare services for elderly individuals. While these initiatives have proven beneficial for a considerable population, there is a need for a suitable vehicle for mobilizing equipment and supplies during the organization of camps. Representatives from the staff and stakeholders have requested a van or an adequate vehicle to facilitate the efficient transportation of medical stock and amenities to different villages. This would enhance the accessibility of healthcare services and provide a more comprehensive approach to healthcare delivery in rural areas.

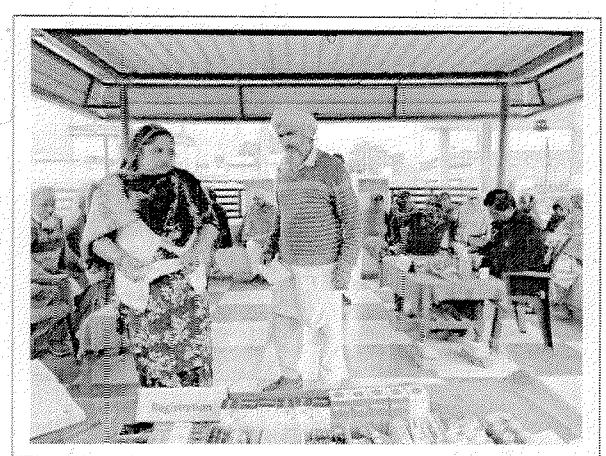


Figure 5: A health camp in progress at Raipur

Women Empowerment: Project TARA (TSPL Action for Rural Ajeevika)

General Observations

TSPL's TARA (TSPL Action for Rural Ajeevika) initiative is a collaborative effort with Ambuja Cement Foundation aimed at empowering women in rural areas. Through this project, TSPL has transformed the lives of over 2000 community women by providing them with a range of opportunities and support mechanisms. These include skill development, capacity-building activities, vocational training, access to microcredit, and mentorship support, all geared towards fostering self-reliance (Atma-Nirbhar) among women.

This project operates through self-help groups (SHGs) established in consultation with village Panchayats. Around 2000 women members from 20 villages are organised into 200 different groups, each facilitated by a volunteer woman from the respective village. These facilitators act as intermediaries, connecting individual members with trainers, project coordinators, and other officials, ensuring effective coordination and support delivery.

Over the past three years, the TARA project has initiated various training programs tailored to meet the specific needs of rural women. Recognizing the significant but often unrecognised contribution of rural women to household and agricultural work, the project aims to address this disparity by empowering women to achieve financial independence. By enabling women to become economically self-sufficient, the TARA initiative represents a fundamental step towards their overall empowerment and societal progress.

The TSPL Action for Rural Ajeevika Project incorporates several noteworthy features:

1. Based on the organisation's data, there are 6 Income Generating Activity (IGA)-based training programs. It was confirmed by the stakeholders that all the projected training programs were completed.
2. In this project, the organisation's aim is to establish women empowerment centres in villages through self-help groups (SHGs). Women volunteers from each village serve as a bridge connecting members, trainers, project coordinators, and authorities.
3. During our visit to one of the centres at Karamgarh village under the TARA initiative, we observed the workplace were adequately equipped in terms of facilities like, training equipment, drinking water and first aid kits. Training equipment, including various types of sewing machines along with other machines essential for skill development programs were in place.
4. The building is well-furnished and maintained which provides a conducive learning environment for participants.
5. Based on the data provided by officials, the TARA project has conducted various training programs encompassing tailoring classes, manufacturing of office file folders, jute bags, and production of pickles and detergent powder. These training initiatives have yielded positive outcomes, with project members receiving external orders, including advance orders from district administrative offices for file covers.
6. As it is found out from previous year data, the project primarily caters to members from marginal communities, offering women as well as community a distinct advantage.

This project provides the necessary tools and training for participants to work in a group as a community to establish self-sustaining entrepreneurial ventures.

7. These training programs have significantly enhanced members' confidence levels, with many expressing a transformation in their self-perception. Upon interaction with the participants we felt certain degree of confidence in them, in line with the objective of the project that aspires for self-reliance among rural women.
8. The members actively engage through a WhatsApp group to share experiences and discuss training programs. Their enthusiasm is evident in their utilisation of mobile applications such as YouTube to explore new designs and enhance their acquired skills.
9. The facility maintains a detailed record of each member. The work timings are conducive for individuals who are also engaged in managing their household. According to the available data, the attendance rate among the members were high and was consistently maintained.
10. The project has organized excursions to trade fairs and workshops, bestowing members with opportunities to learn and engage with other groups and individuals. Importantly, TSPL funds one of the excursions to visit other enterprise/fair/market annually.
11. During the preceding year, the organization collaborated with the district administration of Mansa for the production of office file covers, resulting in an increase in demand and supply. This microenterprise center, which was initially operating from Karamgarh Autanwali to assist self-help group women in the circular economy initiative, has recently expanded to the village of Saddasingwala, where a stitching centre was established under the aegis of this project.
12. Two additional micro-enterprises based on self-help groups also have been established, one in Moosa village for the stitching of school uniforms and shirts, and another in Karamgarh Autawali for the production of jute bags.
13. Several new groups are joining and learning continuously through active participation in seminars and workshops which are conducted for the self-help groups organised by TSPL. Recently, they have organised a trouser stitching workshop and seminar in Jherianwali village.
14. The members of the CSR project team at TSPL also helped the registration of this corporate entity in accordance with the provisions outlined in the Companies Act of 2013. This will help them to independently operate in competitive business environment.

15. During the group interviews, the members expressed their satisfaction and delight in being associated with the project. They cited it as an opportunity to earn money and enhance their status within their households.

In conclusion, the TARA project has effectively empowered rural women through training opportunities and avenues for financial independence.

Figure 6: International Women's Day Celebration at Karamgarh

Recommendations

The members have communicated their satisfaction with the project and have proposed to increase the frequency of specialised training programs. Several members were interested to acquire multiple skills to enjoy the freedom and to adapt with the changing circumstances while considering family obligations and resource availability. Additionally, the members have highlighted the necessity for supplementary training equipment, which will facilitate practical training for all involved members and to address increased demand for production within deadlines. It is recommended that, adequate lavatory facilities and water coolers should be made available at the workspace. Along with that, fire safety measures and first aid amenities, along with appropriate training facilities to address such contingencies, should be prioritised.

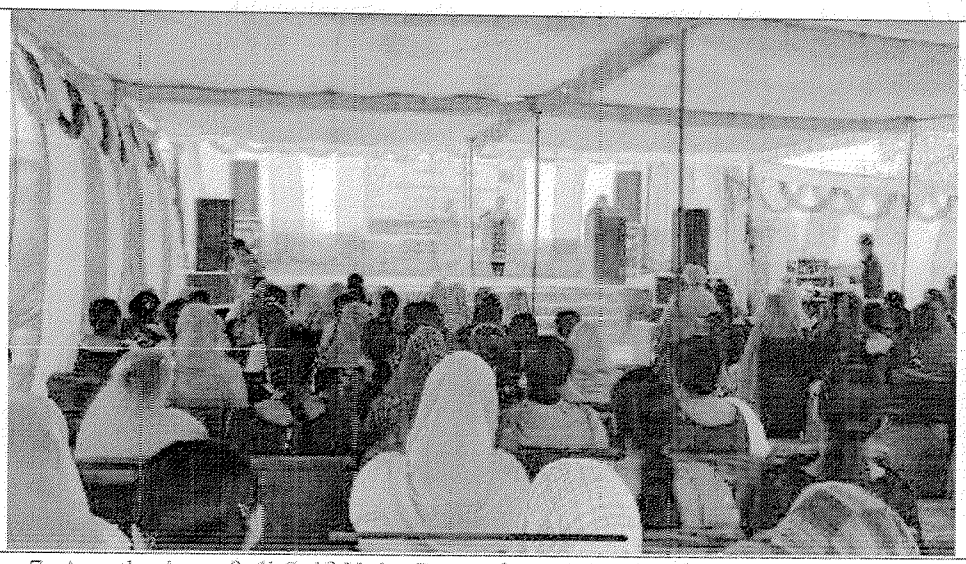


Figure 7: A gathering of all Self-Help Group for celebrating International Women's Day

Village (Community) Asset Development: TSPL Gram Nirman Project

The TSPL Gram Nirman Project constitutes a comprehensive initiative aimed at promoting the welfare of individuals residing in rural communities. Through the construction of infrastructure such as roads and community centres in more than 10 distinct villages, the TSPL has endeavoured to enhance the quality of life for approximately 30,000 individuals in the region. In order to ascertain the specific requirements of each village, the TSPL team is engaged in collaborative efforts with village panchayat and Mansa district administration to facilitate discussions and formulate various projects. Moreover, under the Gram Nirman project, they have conducted consultations with local leaders, youth organisations, and other entities to gain insights into their priorities. We undertook a thorough evaluation of the work done in the present financial year and engaged in discussions with the community members to identify additional needs. Furthermore, we organized focus group discussions with the village council heads, youth groups, and other organizations to assess the effectiveness of our projects. Subsequently, we held deliberations with the village council head and other villagers to solicit their feedback.

Village: Raipur

The village panchayat system is currently being managed by the Village Development Committee members, who serve as the direct representatives of the village. During our meeting with a few such members, including Mr. Nirmal Singh and Mr. Sukhraj, we gained valuable insights into the progress made by Talwandi Sabo Power Limited (TSPL) over the past financial year.

Given that the village is divided into two sections, we convened with Mr. Nirmal and his associates, who offered detailed and affirmative accounts of the works accomplished by TSPL in Raipur - 1. Subsequently, we conducted a site visit to several locations with Mr. Sukhraj, who provided assurance regarding the installation and operational status of the recently constructed assets for the village Raipur - 2 also. It includes:

1. The TSPL Gram Nirman Project has installed barbed wire fencing around the village pond located near the Government School in the village.
2. The project has constructed one Community Resting Shed during the Fiscal Year 2023-24 and another is reported to be under construction.

3. According to village officials, they have constructed a Community House (Dharamshala for marginalised community) in Raipur - 2.
4. It is confirmed that two water reverse osmosis (RO) plants were installed in the financial years 2020 and 2022 in response to previous requests.
5. They have constructed a Community park in the vicinity of the village.
6. In addition to the community resting center and park, there is an Open Gym for all community members.
7. They have also installed 26 solar street lights.

Feedback by Village Officials

The local Village Panchayats are now working collaboratively with the Village Development Committee. Subsequently, we paid a visit to two members of the Village Development Committee, one of whom was a former Sarpanch. They expressed their appreciation for TSPL's increasing efforts towards the development of the village and requested further interventions.

Major Requests from the Community

As we met the stockholders and beneficiaries of the village Raipur 1 and Raipur 2 and they have requested to address the following issues:

1. They requested to paint and renovate the existing Dharamshala and the Bus Stand of the village.
2. They have requested for a separate shed for sitting and resting to the elderly people nearby the school.
3. Additionally, a request has been made for approximately 100 additional benches within the vicinity of and inside the Crematorium Ground.

Village: Perron

During our visit to Perron village to meet with stakeholders and other community members, the meeting was facilitated and organized by Mr. Satnam Singh, a member of the Village Development Committee of Perron. During our meetings, we observed the following interventions implemented by the TSPL:

1. The project has constructed a water drainage and management system which was managed by Mr. Sandhara Singh, a wage worker for the maintenance and management of the well.
2. The project has successfully implemented the installation of fifteen solar street lights in the vicinity of the village.
3. In addition to the solar street lights, the project has also constructed two toilet blocks at the Government School of the Village, addressing the sanitation needs of the students.
4. During our official visit to the village, we verified the installation of a traffic mirror.

Feedback by Village Officials

The village development committee members expressed satisfaction with the interventions and initiatives undertaken by TSPL in their village. With Mr. Sandhara Singh, the labourer employed at the recently constructed water management well of the village, we assessed the operational conditions and Mr Singh expressed his satisfaction with the interventions implemented by TSPL.

Major Request from the Community

The stakeholders have requested the following issues to be addressed:

1. The village development committee member requested for the construction of a stage and a shed at the commonly utilised meeting grounds (Sath) of the village.
2. In addition, they brought forward a request for the renovation and repair of the Bus Stand, specifically the Raipur side.
3. Furthermore, the residents requested that the stadium in the village be painted.
4. Additionally, they requested that a new bathroom be constructed at the Government School in the village.

Village: Behniwal

During our visit to Behniwal Village, we had a conversation with Sarpanch Gurjant Singh. Upon our arrival in the village, we conducted our verification of the following interventions:

1. During the fiscal year 2023-2024, TSPL completed the installation of sixteen solar-powered street lights.

2. The functionality and structure of the crematorium were evaluated which was completed during the preceding years. The Sarpanch expressed his satisfaction on this intervention.

Feedback by Panchayat Officials

The sarpanch and other community stakeholders were satisfied with the initiatives executed by the project Gram Nirman of TSPL.

Village: Talwandi Aklian

In the village Talwandi Aklia, we met Mr. Balchhinder Singh, a Village Development Committee member for the verification of the localities under the intervention of Gram Niram Project. They are as follows:

1. The stadium, specifically the paved blocks of the building, underwent renovations.
2. We visited and confirmed the installation of three new solar-powered street lights.
3. Additionally, we witnessed the volleyball court, which was constructed and became operational as a result of this project.
4. The bus stop was repaired, and the shed received a fresh coat of paint during the renovation.
5. The community park's shed was constructed in the village.
6. A community restroom was constructed under this project.

Feedback by Village Officials

The following are the feedback obtained from members of the Village Development Committee:

The members acknowledged the happiness about the facility and the services provided to them through Health Camps, Self-help groups initiatives along with the interventions in agriculture that was provided through the Navi Disha project. They expressed that they expect more interventions in rural infrastructure from the TARA project.

Major Request from the Community

Community members have formally communicated their requests for various interventions that they believe would be advantageous to the community. The following are the list:

1. The community formally requested the construction of an eco-friendly crematorium and expressed their requirement for benches and a shed within the crematorium ground.
2. They requested for the repair and renovation of a Dharamshala in the village.
3. Among other renovations, they strongly emphasized the repair and renovation of an old well in the village which is culturally associated with the village.
4. They requested for more solar-powered street lights.
5. In addition, they also requested the installation of tree guards in the village.
6. They requested to whitewash village stadium along with some maintenance work.
7. Additionally, the installation of interlock tiles was requested for the interior of the Community Marriage Palace (Dharamshala).
8. They requested for the construction of a running track around the village playground.

Village: Banawali

At Banawali village, Mr Naib Singh and other members assisted us to pay our inspection visit to the several intervention points of the Gram Nirman project. We have observed as follow:

1. As per the previous year request for the repair and renovation of the Community centre which is also used as a dispensary and for organising health camps was completed in this fiscal year.
2. The community centre also includes a newly built washroom in its premises.
3. Additionally, the Gram Nirman project has provided 8 traffic mirrors and few solar street lights to the village.
4. A community park was also built under this project in the village.

Feedback by Village Officials

The panchayat and village development committee officials expressed their appreciation for the various initiatives undertaken by TSPL in their village.

Major Request from the Community

The stakeholders of the village expressed satisfaction with this Gram Nirman project work and requested the following:

1. The committee member requested the construction of an environmental friendly crematorium.

2. They communicated their dire need for rainwater drainage and sewage management system in the village and requested TSPL to look into this.
3. Additionally, they requested support for the construction of the main gate of village school.

Village: Chehlanwali

During our visit to the Chehlanwali Village, we did onsite verification of the interventions through the help of the community members. The interventions mentioned includes:

1. The repair and renovation of the two government schools which were completed, and they also feature artistic *bala* paintings on their walls.
2. The villagers expressed their satisfaction with the interventions in previous years but are eager to see new initiatives from the TSPL projects.
3. A new cycle stand in the school was completed during the present financial year.

Feedback by Panchayat Officials

The efforts done by TSPL through this project was recognised and appreciated by the village community members.

Major Request from the Community

One of the stakeholders, the Principal of the school, Mr. Rajendra Singh, highlighted the necessity for establishing a computer training center in the village, emphasizing its significance for the technological advancement of the youth.

Figure 8: Getting feedback from the stakeholders

TSPL Computer Literacy Initiative

The TSPL organization recently took an innovative step by establishing a computer literacy center in Raipur village, situated in Mansa, in collaboration with the Vedanta Foundation. The primary objective of this center is to enhance computer literacy among the youth and children residing in rural areas. To date, more than eighty-five individuals from the younger generation have successfully completed a six-month Diploma in Computer Application program and have been awarded their respective certificates.

As per the employee, Ms. Sukhpreet Kaur, the aforementioned initiative was initially launched in March 2023. The TSPL Computer Literacy Centre provides various computer courses ranging from a three-month certificate course to a six-month diploma in computer application. The center has witnessed a notable turnout, with over one hundred enrollments. It is worth mentioning that during the initial enrolment phase in March 2023, Mr. Navtej Singh served as the instructor, and they commenced the course with ninety-eight candidates. The course was successful with only twelve dropout cases.

Subsequently, during the second session in September 2023, there were ninety-three enrolments, out of which ten individuals discontinued the course. The remaining participants recently completed their respective courses and received their certificates. The third enrolment session is scheduled to commence from April 2024.

Feedback by the Officials

While communicating to the Sarpanch of Raipur, Gurwinder Singh praised this initiative and expressed gratitude to the TSPL team and Vedanta Foundation for establishing a computer centre. Although every member of the community was content and believes that, it will significantly benefit the youth and children, nurturing their digital literacy for the future.

Major Request from the Stakeholders

This initiative is in its nascent stages which has also elicited a remarkable response from stakeholders. Upon our observation, it was noted that only 10 computers had been installed for the training program. Consequently, due to the high enrolment relative to the number of available computers, it became necessary to organize classes in multiple batches of 20-25 students, each session lasting for two hours. Accordingly, to facilitate smooth functioning and training process, it is imperative to install additional computers. Moreover, students have expressed the need for the installation of a water dispenser.

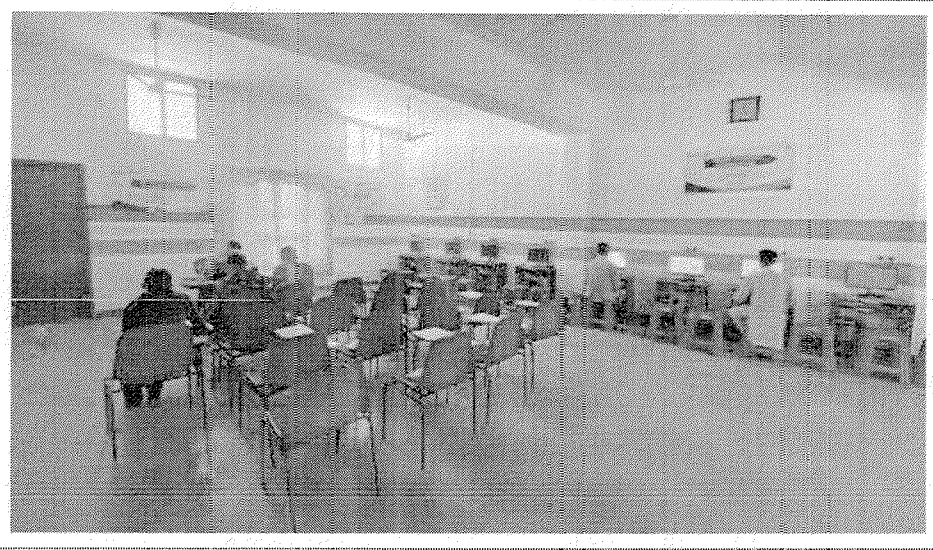


Figure 9: TSPL Computer Literacy Initiative

Overall Perception of the Stakeholders

While conducting social audit for the CSR activities of TSPL, we came across various junctures where the initiatives of TSPL intersects with the lives of rural communities. It was very encouraging to find that young women from rural areas, where the majority of women were from marginalized communities, coming out from the confinement of their household and forming self-help groups and learning several skills to upgrade their life. This has very positive response from overall village community who appreciated the initiatives of TSPL by providing the platform to rural women.

Similarly, the project Navi Disha, which is one of the flagship programme launched by TSPL since the inception of their CSR activities, is now a major intervention which is positively affecting the lives of more than 20 adjoining villages. The rural farmers were excited to take us to their respective farms and show us their organic farms. Their less dependence on pesticides and chemical fertilizers have significantly reduced their input price and has increased their household savings.

Project Sehat was another such initiative which drew applauds from across the rural community. It is one of the earliest CSR initiatives and considering the rural areas of one of the backward regions of Punjab, where health facilities are still scare, this project was a very welcome initiative. Everyone including common villagers, village council members as well as Panchayat members provided positive feedback about this project. TSPL Gram Nirman Project

addressed those infrastructural needs of the village development which are generally ignored by formal development projects by Village administration. Initiatives like, establishing Reverse Osmosis plant for villagers, construction and maintenance of *dharamshala*, toilets in schools, construction of roads, public parks, playing grounds, water works, installing traffic mirrors, and solar lighting facilities are bunch of small yet significant activities which actually transforms the everyday quality of life in village. Common villagers as well as village panchayat members now have a feel that their village is not less than any planned urban colonies. Year after year, we see that villagers are becoming more aware of their community infrastructural needs and they request their respective representatives to include their request for implementation in next year plan.

Major Recommendations

The CSR interventions by Talwandi Sabo Power Plant, Mansa are being implemented under five major projects:

1. Project Navi Disha: for sustainablwe agricultural practices.
2. Project SEHAT: Safe and Effective Health Action by TSPL (Health Care services through PHC and Health Camp).
3. Project TARA (TSPL Action for Rural Ajeevika) -Women Empowerment project.
4. TSPL Gram Nirman Project: dedicated for improving rural infrastructure.
5. TSPL Computer Literacy Centre: for imparting computer skills among villagers.

These projects are being implemented through TSPL from last few years with active involvement of district administration, NGOs and village community. It is to be noted that the activities and intervention conducted under these project are in consonance with Global Sustainable Development Goals (SDG) like women empowerment, environment sustainability and affordable and accessible health care for all and certain values and initiatives enshrined in the schemes floated by the Government of India like, Skill India Programme and Pradhanmantri Gramodaya Yojna.

Considering the geographical area of Mansa district where these interventions are being carried out, which is one of the most economically backward areas of the state of Punjab, these interventions are really making some positive vibrations among the rural population at large. Importantly, these interventions are still in their nascent stage and they will gain more

momentum with the passing time encompassing more avenues of everyday lives of the village community towards a sustainable future. We strongly recommend that these projects and their interventions should be continued in future for the benefit of all the stakeholders.

Concluding Remarks

Throughout the entire auditing process, it was a valuable opportunity to discern the positive impact of corporate social responsibility (CSR) initiatives on individuals. TSPL has significantly influenced the quotidian lives of the people residing in its vicinity, resulting in tangible benefits for the community. It is remarkable to observe the transformative changes throughout these years that TSPL is initiating in developing various facilities conducive to sustainable growth and development for the future. We hold high expectations that TSPL will continue to lend its unwavering support to these transformative initiatives. Last but not least, I extend my heartfelt congratulations to the dedicated officials and staff associated with the CSR team of TSPL for their unwavering dedication and exceptional work.

tsplindia.co/sustainability/environment/compliance-report/environmental-clearance/

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TSPL India / Sustainability / Environment / Compliance Report / Environmental Clearance

ENVIRONMENT

- Bio-Medical Waste Generation
- Environmental Clearance
- Monthly Report

Environmental Clearance

Document Name	Download
Half Yearly Compliance Report from April 2023 to September 2023	

Annexure-13

Annexure-14

TSPL Environment

From: TSPL Environment
Sent: 20 April 2024 14:24
To: chdmoefenv@gmail.com; Environment Wing IRO Chandigarh
Cc: Vikas Sharma Vashisht; tarun.jindal@kepcokps.in; chahat.bansal
Subject: Submission of month-wise Quantity of fly ash disposed and water consumption along with nature/source of water for the period FY 2023-2024.
Attachments: TSPL Ash disposal and Water consumption data FY 23-24.pdf

To,
The Additional Director(s),
Ministry of Environment, Forests & Climate Change,
Govt. of India, Northern Regional Office,
Bays No.24-25, Sector 31-A,
Dakshin Marg,
Chandigarh-160030.

Dear Sir,

This has reference to the above cited subject please find enclosed herewith month-wise Quantity of fly ash disposed/utilized and water consumption along with nature/source of water for the period FY 2023-24 of Talwandi Sabo Power Limited, Village Banwala, Mansa-Talwandi Sabo Road, District-Mansa, Punjab.

Yours faithfully,

For Talwandi Sabo Power Limited,

Banawala Distt. Mansa

Punjab.

Thanks and Regards,
Chahat Bansal
Executive-Environment

vedanta
transforming for good | power

TSPL/ ENV/F&W/ MoEF&CC/APRIL-2024/01 Dated: 19/04/2024

To,
The Additional Director(s),
Ministry of Environment, Forests & Climate Change,
Govt. of India, Northern Regional Office, Bays No.24-25, Sector 31-A,
Dakshin Marg,
Chandigarh-160030.

Subject: - Submission of month-wise Quantity of fly ash disposed and water consumption along with nature/source of water for the period FY 2023-24.

Ref: - Compliance status of the conditions stipulated in Environmental Clearance of 1980 MW (3x660 MW) Talwandi Sabo Power Limited and additional conditions stipulated in Office Memorandums No. J-11013/41/2006-IA. II (I) & F.No.22-13/2010-IA.III dated 06/04/2011 & 28/08/2019.

Dear Sir,

This has reference to the above cited subject please find enclosed herewith Annexure-1, Quantity of fly ash Utilized / disposed and water consumption month-wise along with nature/source of water for the period FY 2023-24 of Talwandi Sabo Power Limited, Village Banwala, Mansa-Talwandi Sabo Road, District-Mansa, Punjab.

Hope the information will suffice your requirements

Yours faithfully,
For, **Talwandi Sabo Power Limited,**

TALWANDI SABO POWER LIMITED MANSA

Vikas Sharma Vashisht
Head- Environment

Encl.: As above

TALWANDI SABO POWER LIMITED
Site Cum Regd. Office: Village Banawala, Mansa - Talwandi Sabo Road, Distt. Mansa, Punjab - 151302 INDIA
Tel. 91-1659-2480000 | Telefax: 01659-248083 | website: www.tsplindia.co

CIN No. U40101PB2007PLC031035

Annexure- 1

Quantity of Fly Ash Disposed & Water Consumption Data for the FY 2023-24

Sr. No.	Month	Total Qty. ash Disposed/Utilized	Raw Water*	Treated Water	Total Qty. Water Consumed
	UOM	MT	Klitrs	Klitrs	Klitrs
1	Apr-23	197971	1855179	50590	1905769
2	May-23	313509	1709574	31698	1741272
3	Jun-23	296415	1634532	35430	1669962
4	Jul-23	173009	1503431	44933	1548364
5	Aug-23	222562	2009855	43000	2052855
6	Sep-23	228816	1660005	49127	1709132
7	Oct-23	277329	1679029	32728	1711757
8	Nov-23	244678	1359694	14183	1373877
9	Dec-23	313368	1136234	10086	1146320
10	Jan-24	254363.6	1176612	30801	1207413
11	Feb-24	251759.5	1543610	27127	1570737
12	Mar-24	365486.0	1536060	36384	1572444
Total		3139267	18803815	406087	19209902

* Source of Raw water : Canal water

(Ashish Pathiya)

MANSA