



# NABHA POWER LIMITED

**NPL**  
Nabha Power Limited

P.O. Box No -28, Near Nalash, Rajpura-140401, Punjab

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Letter.No.: NPL/HSE/RB/MoEFCC/AD/231129/1

Date 29.11.2023

To,

**The Additional Director,  
Ministry of Environment, Forest and Climate Change  
(Northern Region)  
Integrated Regional Office,  
Bays Nos. 24-25, Sector 31-A,  
Chandigarh-160030**

**Ref: Environmental Clearance No J-13011/44/2008- IA-II (T) dated 3<sup>rd</sup> October 2008  
and as Amended on dated 15<sup>th</sup> November 2010 and Extension dated 5<sup>th</sup> February 2014 &  
Amendment in Environmental Clearance (EC) on dated 04.07.2022.**

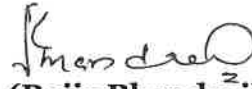
**Sub: Six Monthly Environmental Clearance Compliance Report for the Period of 1<sup>st</sup>  
April 2023 to 30<sup>th</sup> September 2023.**

**Dear Sir,**

Please find enclosed Six-Monthly Environmental Clearance Compliance Report of M/s Nabha Power Ltd., Vill. Nalash, Distt- Patiala (Punjab) for the period from 1<sup>st</sup> April 2023 to 30<sup>th</sup> September 2023.

**Thanking you,**

Yours Sincerely,

  
(Rajiv Bhandari)

**Authorised Signatory**

**Nabha Power Limited**

Encl: As above.

- CC: 1) The Executive Environment Engineer, Regional Office, Patiala, Ground Floor, Vatavaran Bhawan, Nabha Road, Patiala.  
2) Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex East Arjun Nagar, Delhi.  
3) Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jorbagh Road, New Delhi.

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Corporate Office: L&T House, N M Marg, Ballard Estate, Mumbai 400 001

CIN No: U40102PB2007PLC031039

# SIX MONTHLY COMPLIANCE REPORT OF ENVIRONMENTAL CLEARANCE CONDITIONS

**NABHA POWER LIMITED**  
**2×700 MW THERMAL POWER PLANT**



**VILL. NALASH**  
**DISTT. PATIALA**  
**(PUNJAB)**

**Submitted to:**

- Additional Director, Integrated Regional Office (Northern Region), Ministry of Environment, Forests and Climate Change, Chandigarh-160030.
- Ministry of Environment, Forests and Climate Change, New Delhi-110003.
- Central Pollution Control Board, Delhi
- Punjab State Pollution Control Board, Patiala.

*Submitted By:*  
**NABHA POWER LIMITED**  
**VILL. NALASH**  
**PATIALA (PUNJAB)**

**Period: 1<sup>st</sup> April-2023 to 30<sup>th</sup> September-2023.**

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## Introduction

Nabha Power Limited (NPL), was established as Special Purpose Vehicle (SPV) by the erstwhile Punjab State Electricity Board (PSEB) to develop the Rajpura Thermal Power Project at a site near village Nalash, Distt Patiala, Punjab. An RfQ/RfP was floated by PSEB in line with the Case 2 competitive bidding guidelines, Govt of India (GoI) and L&T Power Development Limited (a wholly owned subsidiary of L&T) was identified as the lowest bidder. NPL has signed Power Purchase Agreement on 18th January 2010 with PSEB and the NPL was also transferred to L&T Power Development Limited as its wholly owned subsidiary on 18<sup>th</sup> January 2010.

The 1400 MW power plant is constructed as a unit configuration of 2 x 700 MW units, with one steam turbine and one boiler for each unit.

NPL is having two Pulverized Fuel Boilers, generating steam at 25.71MPa at 568 °C with two Condensing Turbo Generator Sets each having generating capacity of 700 MW of power. Installation of associated mechanical and electrical equipment, auxiliary units like coal, ash handling plant, water treatment plant, cooling water system, electrostatic precipitators (ESPs), NOx control equipment etc. are part of the total installation.

### **SALIENT FEATURES OF NABHA POWER LTD.**

<b>Total Capacity</b>	2x700 MW (1400 MW)
Fuel Requirement and Source	5.8 MT/Year, SECL Mines
Water requirement and source	75 Cusec from Bhakra main canal
<b>Status</b>	Unit # 1 Operational since 1 <sup>st</sup> Feb 2014.
	Unit # 2 Operational since 10 <sup>th</sup> July 2014.

**Project Proponent** : Nabha Power Ltd.  
**Project Status** : U # 1 & U# 2 Synchronised on Feb-2014 and July-2014 respectively  
**References** : 1.No.J-13011/44/2008-IA-II(T)DTD 3<sup>rd</sup>Oct2008  
: 2.No.J-13011/44/2008-IA-II(T)DTD 15<sup>th</sup>Nov2010  
: 3.No.J-13011/44/2008-IA-II(T)DTD 5<sup>th</sup>Feb2014  
: 4.No.J-13011/44/2008-IA-II(T)DTD 4<sup>th</sup>July2022

### Compliance Report for the period of April-2023 to September-2023.

#### 1. J-13011/44/2008- IA-II (T) DTD 3<sup>rd</sup>Oct 2008 for 2x660 MW

S. No.	MOEF Conditions	Compliance Status
1.	The total land requirement for the project shall be restricted to 1278 acres.	The land requirement for 1400 MW has been restricted within 1278 acres only.
2.	Prior clearance from the competent authority shall be obtained for locating the proposed power plant in proximity (about 3 kms) of the defence installation. A copy of the same shall be furnished to the ministry and the regional office of this ministry within one month from the date of issue of this clearance letter.	NOC from Ministry of defence & AAI obtained on 25 <sup>th</sup> May, 2009, Ref No. 21(7)/2008/D(Coord) & 22 <sup>nd</sup> July,2008, Ref No.: No. AAI/20012/664/ 2008-ARI (NOC) respectively.
3.	Sulphur & ash contents in the coal to be used in the project shall not exceed 0.5% & 34%.	Sulphur in the coal being used is below 0.5%. The Testing Report is attached as <b>Annexure 1</b> . The condition of 34% Ash in coal does not exist Now. As per MoEF&CC Notification vide S.O.No.1561(E) Dtd.21.05.2020 "Use of coal by Thermal Power Plants, without stipulations as regards ash content or distance, shall be permitted subject to compliance with specified emission norms for particulate matter" (PM < 50 mg/nm3). We are maintaining the specified emission norms. The stack emission monitoring reports from PPCB as well as from MoEF&CC and NABL approved laboratory for particulate matter are attached as <b>Annexure-2</b> .
4.	A bi-flue stack of height 275 m shall be provided with continuous online monitoring equipment for Sox, NOx & particulate matter. Exit velocity of flue gas should not be less than 25 m/sec.	Continuous online monitoring equipment are functional at 275 Mtr. stack on both the flues attached to Boiler 1 & Boiler 2 and monitoring of PM, Sox & NOx. is being done. As per EC validity extension dated 5.02.2014, exit velocity of flue gases shall not be less than 22 m/s therefore the exit velocity of flue gas is being always maintained more than 22 m/sec in both the stacks. The Stack Emission Monitoring Reports from MoEF & CC and NABL approved laboratory are attached as <b>Annexure-2</b> .
5.	High efficiency Electrostatic Precipitators (ESPs) shall be installed to ensure particulate emission doesn't exceed 50 mg/m <sup>3</sup> .	The ESP's attached to Boilers 1 & 2 are functional and have efficiencies more than 99.99%. The SPM emissions are < 50 mg/Nm <sup>3</sup> . The stack emission monitoring reports from PPCB as well as from MoEF&CC and NABL approved laboratory for particulate matter is attached as <b>Annexure-2</b> .
6.	Space provision shall be kept for retrofitting for FGD, if required at later date.	Complied.
7.	Adequate dust extraction system such as cyclones/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.	The Dust extraction system & Dust suppression system (water sprinklers) are operational in the coal handling area, ash handling and at all transfer points. The photographs of the same is attached as <b>Annexure-3</b> .
8.	Fly ash to be collected in dry form in storage facility (silos) shall be provided. 100% utilization of fly ash	Fly Ash Silos (3 Nos.) are fully operational. The utilization report of Fly ash is being submitted to Regional Office

	shall be achieved from day one. Unutilized fly ash in emergency and bottom ash shall be disposed in ash pond and bottom ash in conventional slurry mode. Mercury and other heavy metals (Hg, Cr, Pb etc.) will be monitored in bottom ash and fly ash as also in the effluent emanating from ash pond.	PPCB, MoEF&CC, CPCB and CEA on yearly basis. Ash utilization report for the period of 1 <sup>st</sup> April-23 to 30 <sup>th</sup> September-2023 is attached as <b>Annexure-4</b> . Analysis of heavy metals are being done for both bottom & fly ash on six monthly basis. Latest reports are attached as <b>Annexure-5</b> .
9.	Ash pond shall be lined with HDPE lining. Adequate safety measures shall also be implemented to protect ash dyke from getting breached.	Ash Pond bed is provided with HDPE lining (500 microns thick) over 50 mm thick sand cushion and top of HDPE liner is protected with 300 mm earth cover.
10.	Closed cycle cooling system with cooling towers shall be provided. Effluents shall be treated as per the prescribed norms.	Closed cycle cooling system with cooling towers is provided. No effluent is generated as the plant is designed for ZLD (Zero Liquid Discharge).
11.	The treated effluents conforming to the prescribed standard 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 effluent & storm water do not get mix.	The Power plant is based on Zero Discharge (ZLD) concept and the treated effluents conforming to prescribed standards are being re- circulated and reused within the Plant. There is no discharge outside the plant boundary.
12.	A Sewage Treatment Plant shall be provided, and treated sewage shall be used for raising green belt/plantation.	The Sewage treatment plant of 50 KLD capacity is in operation. The treated water is being used for green belt development/Plantation. The STP Treated effluent quality reports from PPCB as well as from MoEF&CC and NABL approved laboratory are attached as <b>Annexure-6</b> .
13.	Rainwater harvesting should be adopted. Central Ground Water Authority/board shall be consulted for finalization of appropriate rainwater harvesting technology within a period of three months from the date of clearance and details shall be furnished.	Rainwater harvesting pits are in place and made as per the Rainwater harvesting scheme approved by CGWA.
14.	Adequate safety measures shall be provided in 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 layout shall be submitted to the Ministry as well as to the Regional Office of the Ministry at Chandigarh.	The safety measures submitted to MOEF vide letter ref: NPL/SKN/MOEF/1423 dated: 28th June 2012 have been implemented to check/minimize spontaneous fire in coal yard.
15.	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of project.	Adequate arrangements were made for construction labour such as toilets, STP, safe drinking water, medical health care etc. during project stage.
16.	Storage facilities for liquid fuel such as LDO and HFO/LSHS shall be made in the plant area where risk is minimum to the storage facilities. Onsite and off-site 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, modification required, if any shall be incorporated in the DMP.	The Storage tanks for LDO & HFO storage have been made after necessary risk assessment. On-site disaster management plan is prepared, and the adequacy of the plan is being tested on regular basis through conducting mock drills.
17.	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 Regional Office, Chandigarh.	Regular monitoring of ground water in and around ash pond is being done and reports are being submitted to the PPCB monthly basis. The latest reports are attached as <b>Annexure-7</b> .
18.	A green belt of adequate width and density shall be developed around plant periphery covering about 1/3 <sup>rd</sup> of project area preferably with local species.	1/3 <sup>rd</sup> of the total area have been covered under green belt with native species. The Green Belt Development photographs are attached as <b>Annexure-8</b> .

19.	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.	Annual activities continue across the year as per allocated financial budget to improve the socio-economic status of surrounding areas. Snapshots of the CSR projects and initiatives are attached as <b>Annexure No-9</b> .
20.	First aid & sanitation arrangement shall be made for the drivers and other contract workers during construction phase.	First aid centre (OHC) & adequate sanitation arrangement are available for employees as well as contractual employees.
21.	Noise level emanating from turbines shall be limited to 75 dB (A). For people working in the high noise area, requisite personal protective equipment like Earplug/earmuffs etc. shall be provided. Workers engaged in noisy area such as turbine area, air compressors etc. shall be periodically examined to maintain audiometry record and for any hearing loss including shifting to non-noisy/less noisy areas.	The Noise levels are maintained well below the prescribed standards. PPE's are being provided to all the workers depending upon the task being performed. Medical examination of the workers engaged in high noise area is being done on six monthly basis and records being maintained as per statutory norms.
22.	Regular monitoring of ground level concentration of SO <sub>2</sub> , NO <sub>x</sub> , SPM, RSPM and Hg shall be carried out in the impact zone and records maintained. If at any stage these levels are found to exceed prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring stations and frequency of the monitoring shall be decided in consultation with SPCB. Periodic report to be submitted to Regional office of this Ministry.	Monitoring reports are regularly being submitted to Regional office of Ministry and PPCB. Monitoring reports are attached as <b>Annexure-10</b> .
23.	The project proponent shall advertise in two local newspaper widely circulated in the region around the project, one of which shall be in the vernacular language of the locality/Municipal area/Gram Panchayat concerned and on the company's website within seven days from the date of clearance letter, informing that the project has been accorded environment clearance and copies of clearance letter are available with the State Pollution Control Board/Committee and may also be seen at website of the ministry of Environment and forests at <a href="http://envfor.nic.in">http://envfor.nic.in</a> .	Complied.
24.	A separate Environment Management Cell with qualified staff to be set up for implementation of the stipulated environmental safeguards.	HSE department comprising of qualified staff with adequate experience and knowledge is in place to cater environmental responsibilities & needs.
25.	Half yearly report on status of implementation of the stipulated conditions and environmental safeguards shall be submitted to this Ministry/Regional Office/CPCB/SPCB.	Half year reports are regularly being submitted to <ul style="list-style-type: none"> <li>❖ MoEF&amp;CC New Delhi,</li> <li>❖ MoEF&amp;CC, IRO (North Region), Chandigarh,</li> <li>❖ CPCB, Delhi and</li> <li>❖ PPCB Patiala.</li> </ul>
26.	Regional office of the Ministry of Environment & Forests located at Chandigarh will monitor implementation of stipulated conditions. A complete set of documents including EIA report & EMP report along with additional information submitted from time to time shall be forwarded to the regional office for their use during monitoring.	Complied.

27.	Separate funds shall be allocated for implementation of environmental protection measures along with item-wise break-up. These costs shall be included as part of project cost. The funds earmarked for the environment protection measures shall not be diverted for other purposes & year wise expenditure should be reported to Ministry.	Separate funds are allocated. Funds spent in the FY 2023-2024 (1 <sup>st</sup> April-23 to 30 <sup>th</sup> September-2023) are attached as <b>Annexure No-11</b> .
28.	The project authorities shall inform the regional office as well as the Ministry regarding the date of financial closure and final approval of project by concerned authorities and the dates of start of land development work and commissioning of plant.	Plant is in operation since 2014 after obtaining all necessary approvals from state/central government.
29.	Full co-operation should be extended to the scientists/officers from the Ministry/Regional office of the Ministry at Chandigarh/the CPCB/the SPCB who would be monitoring compliance of environmental status.	NPL is providing full co-operation and support to the scientists/officers of MoEF&CC/CPCB/SPCB. who are monitoring compliance of environmental status, time to time.

**2. J-13011/44/2008- IA-II(T)DTD15th Nov 2010 for change in configuration from 2 x 660 MW to 2 x 700 MW.**

30.	No additional coal consumption beyond 5.8 MTPA (at 85 % PLF) earlier envisaged for 2 x 660 MW and no additional land for the enhanced capacity shall be permitted.	Being Complied.
31.	The project proponent shall upload the status of compliance of the conditions stipulated in the environmental clearance issued vide Ministry's letter of even no. dated 03.10.2008, in its website and update periodically and also simultaneously send the same by email to regional office of Ministry of Environment and Forests.	NPL website is live & the compliance reports are uploaded periodically on website. Website address: <a href="http://www.Intnabhapower.com">http://www.Intnabhapower.com</a>
32.	Critical pollutants levels including NO <sub>x</sub> , RPSM <sup>10</sup> and 2.5, SO <sub>2</sub> shall be regularly monitored, and results displayed in your website and also at main gate of the power plant.	Monitoring results are uploaded on NPL website as well as displayed at main gate. The Photograph of main gate display is attached as <b>Annexure-12</b> .

**3. J-13011/44/2008- IA-II(T) DTD 5<sup>th</sup>Feb2014 for extension of validity of Environmental Clearance.**

S. No.	MOEF Conditions	Compliance Status
33	Harnessing solar power within the premises of the plant particularly at the available roof tops shall be undertaken and status of implementation shall be submitted periodically to regional office of ministry	Solar panels are provided on field hostel roof, Clarifier area, CHP and at DM plant area and are functional. The harness report is attached as <b>Annexure No-13</b> .
34	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 radioactivity and heavy metals in coal and fly ash (including bottom ash) shall be put in place.	Heavy metal & Radioactive contents in coal, fly ash and bottom ash are being analysed on six monthly basis. Latest reports are attached as <b>Annexure-5,14 &amp;15</b> .
35	Exit velocity of flue gases shall not be less than 22 m/s. Mercury emissions from stack shall also be monitored on periodic basis.	The exit velocity of flue gases is more than 22 m/s. Mercury emissions from the stacks are regularly monitored and the reports are being submitted to MOEF&CC on periodic basis. The reports are attached as <b>Annexure-2</b> .



36	Fugitive emissions shall be controlled to prevent impact on agriculture or non-agriculture land.	Adequate measures to control fugitive emissions are already in place.
37	No ground water shall be extracted for use in operation of power plant even in lean season.	Complied.
38	Source sustainability of water requirement shall be carried out by an institute of repute. The study shall also specify the source of water for meeting the requirement during lean season. The report shall be submitted to the Regional Office of ministry within six months.	For Nabha Power Limited the source of water is Bhakhra Canal and necessary permission in this regard was taken from Irrigation Department, Punjab and was submitted with your kind office before grant of Environmental Clearance. When we had applied for Extn. of EC, our plant was already Commissioned, and we were having valid Consent to Operate from State Pollution Control Board. <b>Therefore, the said condition is not applicable on us.</b>
39	Hydro geological study of the area shall be reviewed annually, and report submitted to the ministry. No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the setting up/ operation of the power plant.	The Hydrology study of the area was conducted before the grant of EC by MOEF&CC. No groundwater abstraction is being done. We are only using Canal water for the generation of Power. <b>Therefore, the said condition is not applicable on us.</b>
40	Minimum required environment flow suggested by the competent authority of the state government shall be maintained in the Channel / Rivers (as applicable) even in lean season.	Agreed
41	C.O.C of 5.0 shall be adopted	Adopted and being complied.
42	Fly ash shall not be used for agricultural purpose. No mine void filling will be undertaken as an option for fly ash utilization without adequate lining of mine with suitable media such that no leachate shall take place at any point of time. In case, the option for mine void filling is to be adopted, prior detailed study of soil characteristics of mine area shall be undertaken from an institute of repute and adequate clay lining shall be ascertained by the State Pollution Control Board and implementation done in close coordination with the State Pollution Control Board	Fly ash is being utilized as per the MoEF&CC Notification vide S.O. 5481(E) dated 31.12.2021.
43	Green belt consisting of 3 tiers of plantations of native species around the plant and at least 100m width shall be raised. Wherever 100m width is not feasible a 50 m width shall be raised, and adequate justification shall be submitted to Ministry. Tree density shall not be less than 2500 per ha with survival rate not less than 75 %.	Complied. The Green Belt Development photographs are attached as <b>Annexure-8</b>
44	Three tier green belt shall be developed all around ash pond over and above the green belt around the plant boundary.	Complied.
45	A common Green Endowment Fund shall be created, and the interest earned out of it shall be used for the development and management of Green cover of the area.	Being complied
46	The project proponent shall also adequately contribute in the development of the neighbouring villages. Special package with implementation schedule for free potable drinking water supply in the nearby villages and schools shall be undertaken in a time bound manner.	Being Complied
47	CSR scheme should address Public Hearing issues and shall be undertaken based on need based assessment in and around villages within 5.0 km of the site and in constant consultation with the village Panchayat and District administration. As part of CSR prior identification of local employable youth and eventual employment in the project after imparting	Complied Presently working in 49 villages (5 Km) radius, the schemes are implemented in targeted villages in coordination with village panchayats.  The milestones of H1 are as under: <b>Skills</b>

	<p>relevant training shall also be undertaken. Development of fodder farm, fruit bearing orchards, vocational training etc. can form a part of such program. Company shall provide separate budget for community development activities and income generating programs. Vocational training program for possible self-employment and jobs shall be imparted to identify villagers free of cost.</p>	<ul style="list-style-type: none"> <li>• <b>Facilitated external orders worth 18 Lakhs for women artisans</b> (66 No., 5 centres)</li> <li>• <b>Training in beautician and stitching courses</b> at 4 No. skill centres. 30 have been trained and 123 are undergoing training.</li> </ul> <p><b>Education &amp; Sports</b></p> <ul style="list-style-type: none"> <li>• <b>Learning Enrichment Program</b> - 466 Students, (16 schools) are being covered.</li> <li>• <b>Contingency Support to Govt. Schools-</b> 5 Schools were provided with infrastructure improvement like mid floor repairing, tiling works (Benefits 800 Students)</li> <li>• <b>Personality Development: Students of 5 Govt Schools</b> were trained (350 Students)</li> <li>• <b>NPL Scholarship-</b> 71 recipients (68 girls and 3 boys) under GNM and BCA courses</li> <li>• <b>Safe Drinking Water</b> – Installation of Water coolers and purifiers in 22 Government Schools (benefitted 2500 children)</li> <li>• <b>NPL Sports Academy - 107 children &amp; youth</b> are undergoing athletic training in village Dhumman</li> <li>• <b>Cyclothon under “GO-GREEN initiative”</b> -147 children of 4 villages participated.</li> </ul> <p><b>Rural Infrastructure</b></p> <ul style="list-style-type: none"> <li>• <b>EWS Housing-</b> Handed over EWS housing projects to 5 families.</li> <li>• <b>Road Safety-</b> Organised Road safety drive in association of with Traffic police and Youth Club members, covered 800 vehicles.</li> </ul> <p><b>Health</b></p> <ul style="list-style-type: none"> <li>• <b>Health Camps (6 Nos.)</b> – 933 villagers benefited from health camps.</li> <li>• <b>Infrastructure Support to Govt Hospital</b> provided 4 ACs to Civil Hospital Rajpura and 2 purifiers to CHC Kalumajra</li> <li>• <b>Blood Donation Camps (4 No.)</b> -Over 350 units voluntary donation</li> </ul> <p><b>Water &amp; Sanitation</b></p> <ul style="list-style-type: none"> <li>• <b>Crop Flood Protection</b> by cleaning of natural drains and ponds in 10 villages</li> </ul>
48	<p>It shall be ensured that in-built monitoring mechanism for the 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.</p>	<p>Internal Planning and monitoring done by CSR Committee chaired by Senior Plant Official, the committee's meeting are conducted on quarterly basis.</p>
49	<p>An Environmental cell shall be created at the project site itself and shall be headed by an officer of the company of appropriate seniority and qualification. It shall be ensured that the head of the cell shall directly report to the Head of the organization.</p>	<p>An Environmental Cell Headed by DGM-HSE is already in place, who directly reports to the Head of Organisation.</p>
50	<p>Regular monitoring of ground water level shall be carried out by establishing a network of existing wells and constructing new piezometers. Monitoring around the ash pond area shall be carried out particularly for heavy metals (Hg, Cr, As, Pb) and records maintained and submitted to the Regional Office of this ministry. The data so obtained should be compared with the baseline data so as to ensure that the ground water quality is not adversely affected due to the project.</p>	<p>Regular monitoring of ground water quality including heavy metals is being carried out regularly in and around the Ash Dyke.</p> <p>Piezometer wells are established around the ash pond area and being regularly monitored. The latest reports are attached as <b>Annexure-7</b>.</p>

51	Monitoring of the surface quantity and quality shall also be regularly conducted, and records maintained. The monitored data shall be submitted to the Ministry regularly. Further, monitoring points shall be located between the plant and drainage in the direction of flow of ground water and records maintained. Monitoring for heavy metals in ground water shall be undertaken.	No Ground Water is being abstracted as we are using Bhakra Canal water for generation of Power. The quality and quantity of the canal water is monitored, and records are being maintained. Surface water reports are attached as <b>Annexure-16</b> . We are already monitoring heavy metals in the ground water by taking samples through a piezometer on a monthly basis and submitting the respective reports to the regional office of the PPCB at Patiala. The latest reports are attached as <b>Annexure-7</b> .
52	The environment statement for each financial year ending 31 <sup>st</sup> March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of the Ministry by e-mail.	Complied.  The last environmental statement report was submitted on 29.09.2023 to the Integrated Regional Office of MoEF&CC at Chandigarh and the PPCB, Patiala.
53	The project proponent shall formulate a well laid Corporate Environment Policy and identify and designate responsible officers at all levels of its hierarchy for ensuring adherence to the policy and compliance with the conditions stipulated in this clearance letter and other applicable environmental laws and regulations.	HSE Policy has been framed and accordingly officers have been designated for achieving the objectives by adherence to the Policy. The organisation is certified for Integrated Management System requirements comprising of (ISO 9001, 14001 & 45001 & 50001)

#### 4. No -J-13011/44/2008- IA-II (T) dated 4<sup>th</sup> July 2022, Amendment in Environment Clearance.

54	An epidemiology study shall be carried out in every two years and report shall be submitted to Regional Office of MoEF&CC.	Epidemiology study was carried out. The copy of same is attached as <b>Annexure-17</b> .
55	A Public grievances redressal cell to address the social and environmental concerns shall be established under the supervision of project head, regular status of activities of the cell be submitted in six monthly compliance report.	A Public grievances redressal cell has been made under the chairmanship of O&M Head to address the social and environmental concerns. The copy of Minutes of Meeting is attached as <b>Annexure-18</b> .



## **Annexure – 1**

### **Test Report of Sulphur % in Coal**

## Test Report

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala  Rajpura, 140401 Punjab, India	<b>Sample Reg. No.</b> : B01-2309270004 <b>Sample Reg. Date.</b> : 27/09/2023 <b>Report Date.</b> : 30/09/2023 <b>Report No.</b> : ICB-2309300129 <b>Customer Ref. No.</b> : PO <b>Letter Dated</b> : 25/11/2022 <b>NABL ULR No.</b> : TC592623010012938F
--	---

Sample Particulars			
<b>Name of Sample<sup>#</sup></b>	: Coal		
<b>Submitted By<sup>#</sup></b>	: Nabha Power Limited		
<b>Batch No.<sup>#</sup></b>	: NA	<b>Batch Size<sup>#</sup></b>	: NA
<b>Manufactured By<sup>#</sup></b>	: Not Specified	<b>Mfg. Lic. No.<sup>#</sup></b>	: NA
<b>Supplied By<sup>#</sup></b>	: Not Specified		
<b>Date of Manufacture<sup>#</sup></b>	: NA	<b>Date of Expiry<sup>#</sup></b>	: NA
<b>Sample Qty<sup>#</sup></b>	: 500gm	<b>Sample Condition</b>	: Good
<b>Grade<sup>#</sup></b>	: NA	<b>Brand Name<sup>#</sup></b>	: NA
<b>Official Seal</b>	: Not Applicable	<b>Official Signature</b>	: Not Applicable
<b>Packaging Details</b>	: Packed in poly pack	<b>Declared values(if any)</b>	: Sample collected by Lab rep. on 22.09.2023
<b>Any Other Information</b>	: Sample collected by Lab rep. on 22.09.2023		
<b>Test Report as per</b>	: Party Specification	<b>With Amendent No.(s)</b>	: Not Specified

Test Results						
<b>Analysis started on</b>	: 28/09/2023	<b>Analysis completed on</b>	: 30/09/2023			
<b>Description</b>	: Coal					
<b>S. No.</b>	<b>Parameter</b>	<b>Unit</b>	<b>Instrument</b>	<b>Method</b>	<b>Requirements</b>	<b>Result</b>
	<b>Discipline : Chemical</b>					
	<b>Group : Solid Fuels</b>					
<b>1</b>	<b>Chemical Parameters</b>					
(a)	Sulphur(as S)	%	Muffle Furnace & Balance	IS:1350(P-3)	NA	0.39%

# represents Customer Defined Fields

**Remarks:** Party asked for the above tests only.

\*\*\*\*\*End of Report\*\*\*\*\*



30/09/2023  
**Brijesh Singh**  
Verified by



30/09/2023  
**Kamal Grover**  
Authorised by

### Interstellar Testing Centre PVT. LTD.

86, Industrial Area, Phase-1, Panchkula-134109 (Haryana)  
Panchkula-134109 (Haryana)  
Phone : (O) 0172-2561543, 2565825  
Email : customersupport@itclabs.com  
Visit us : www.itclabs.com

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## **Annexure- 2**

### **Stack Emission Monitoring Results and Photograph of Continuous Emission Monitoring System (CEMS).**

## Test Report

Document QF : 2501  
Page 1 of 3

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2306200743 <b>Sample Reg. Date</b> :20-06-2023 <b>Report Date</b> :27-06-2023 <b>Report No.</b> :ICE-2306271139 <b>NABL ULR No.</b> :TC592623000008215F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25-11-2022
<b>Test Report as per :</b>	: EPA Act 1986/PCLS/2010
<b>Sampling Information :</b>	
Date of Monitoring	: 16-06-2023
Time of Monitoring	: 15:00 to 15:48 hrs
Name of the emission source monitored	: Stack Emission of Boiler
Rated Capacity	: 2322 Ton
Capacity on sampling day	: -do-
Type of fuel used & its consumption	: Coal & 422 Ton/hr
Normal operating schedule	: 24 hrs
Stack Identification	: Stack attached to Boiler Unit-1(2322 Ton)
Type of Stack/Duct	: Metal
Stack Height from Ground Level(m)	: 275
Diameter of the Stack(cm)	: 750
Sampling Duration(minutes)	: 48
Purpose of Monitoring	: For self monitoring
Air Pollution control measure	: ESPs
Status	: Working
Recovery of Material	: -
Fugitive Emission,if any	: Nil
<b>Observations :</b>	

*V Saini*  
Vikrant  
27-06-2023  
Reviewer

*Prem Kumar*  
27-06-2023  
PremKumar  
[Authorized Signatory]

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## Test Report

Document QF : 2501  
Page 2 of 3

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2306200743
	<b>Sample Reg. Date</b> :20-06-2023
	<b>Report Date</b> :27-06-2023
	<b>Report No.</b> :ICE-2306271139
	<b>NABL ULR No.</b> :TC592623000008215F
	<b>Customer Ref. No.</b> :PO
	<b>Letter Dated</b> :25-11-2022

Flue Gas Temperature, °C,Avg.	: 137
Flue Gas Velocity(m/s),Avg.	: 22.40
Volumetric Flow Rate(Nm <sup>3</sup> /hr.)	: 2458661.36
Ambient Air Temperature, °C	: 34

S.No.	Parameters	Method	Specification	Result
	<b>Discipline : Chemical</b>			
	<b>Group : Atmospheric Pollution</b>			
1.	<b>General Parameters</b>			
a.	Particulate Matter, mg/Nm <sup>3</sup> (Corrected to 6% O <sub>2</sub> on dry basis)	IS:11255(P-1)	Max. 50	34.94
b.	Sulphur Dioxide (SO <sub>2</sub> ), mg/Nm <sup>3</sup> (Corrected to 6% O <sub>2</sub> on dry basis)	IS:11255(P-2)	Max. 200	1271.46
c.	Oxides of Nitrogen (NO <sub>x</sub> ), mg/Nm <sup>3</sup> (Corrected to 6% O <sub>2</sub> on dry basis)	IS:11255(P-7)	Max. 450	284.28
d.	Mercury(As Hg),mg/Nm <sup>3</sup>	USEPA Method	Max. 0.03	BLQ(LOQ:0.01)
e.	Carbon Monoxide(CO),% v/v	IS:13270	Max. 1.0	0.2
f.	Carbon Dioxide (CO <sub>2</sub> ), %	IS:13270	Not Specified	10.8

# represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirements as per EPA ACT 1986/PCLS/2010, Sample Collected by lab rep. on dated 16-06-2023, Sampling Procedure : SOP/ITC/EW/056.

**REMARKS :**N/A

*V. Saini*  
Vikrant  
27-06-2023  
Reviewer

*Prem Kumar*  
27-06-2023  
PremKumar  
[Authorized Signatory]

**Interstellar Testing Centre Pvt. Ltd.**  
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<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2306200743 <b>Sample Reg. Date</b> :20-06-2023 <b>Report Date</b> :27-06-2023 <b>Report No.</b> :ICE-2306271139 <b>NABL ULR No.</b> :TC592623000008215F <b>Customer Ref. No.:</b> PO <b>Letter Dated</b> :25-11-2022
---	--

\*\*\*\*\*End Of Report\*\*\*\*\*

V Saini

Vikrant  
27-06-2023  
Reviewer

PremKumar

27-06-2023  
PremKumar  
[Authorized Signatory]

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<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2306200751 <b>Sample Reg. Date</b> :20-06-2023 <b>Report Date</b> :27-06-2023 <b>Report No.</b> :ICE-2306271141 <b>NABL ULR No.</b> :TC592623000008216F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25-11-2022
<b>Test Report as per :</b>	: EPA Act 1986/PCLS/2010
<b>Sampling Information :</b>	
Date of Monitoring	: 16-06-2023
Time of Monitoring	: 17:00 to 17:48 hrs
Name of the emission source monitored	: Stack Emission of Boiler
Rated Capacity	: 2322 Ton
Capacity on sampling day	: -do-
Type of fuel used & its consumption	: Coal & 382 Ton/hr
Normal operating schedule	: 24 hrs
Stack Identification	: Stack attached to Boiler Unit-2(2322 Ton)
Type of Stack/Duct	: Metal
Stack Height from Ground Level(m)	: 275
Diameter of the Stack(cm)	: 750
Sampling Duration(minutes)	: 48
Purpose of Monitoring	: For self monitoring
Air Pollution control measure	: ESPs
Status	: Working
Recovery of Material	: -
Fugitive Emission,if any	: Nil
<b>Observations :</b>	

*V Saini*  
Vikrant  
27-06-2023  
Reviewer

*Prem Kumar*  
27-06-2023  
PremKumar  
[Authorized Signatory]

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	<b>Sample Reg. Date</b> :20-06-2023
	<b>Report Date</b> :27-06-2023
	<b>Report No.</b> :ICE-2306271141
	<b>NABL ULR No.</b> :TC592623000008216F
	<b>Customer Ref. No.</b> :PO
	<b>Letter Dated</b> :25-11-2022

Flue Gas Temperature, °C,Avg.	: 128
Flue Gas Velocity(m/s),Avg.	: 22.50
Volumetric Flow Rate(Nm <sup>3</sup> /hr.)	: 2525065.80
Ambient Air Temperature, °C	: 34

S.No.	Parameters	Method	Specification	Result
	<b>Discipline : Chemical</b>			
	<b>Group : Atmospheric Pollution</b>			
1.	<b>General Parameters</b>			
a.	Particulate Matter, mg/Nm <sup>3</sup> (Corrected to 6% O <sub>2</sub> on dry basis)	IS:11255(P-1)	Max. 50	38.86
b.	Sulphur Dioxide (SO <sub>2</sub> ), mg/Nm <sup>3</sup> (Corrected to 6% O <sub>2</sub> on dry basis)	IS:11255(P-2)	Max. 200	1357.56
c.	Oxides of Nitrogen (NO <sub>x</sub> ), mg/Nm <sup>3</sup> (Corrected to 6% O <sub>2</sub> on dry basis)	IS:11255(P-7)	Max. 450	335.59
d.	Mercury(As Hg),mg/Nm <sup>3</sup>	USEPA Method	Max. 0.03	BLQ(LOQ:0.01)
e.	Carbon Monoxide(CO),% v/v	IS:13270	Max. 1.0	0.2
f.	Carbon Dioxide (CO <sub>2</sub> ), %	IS:13270	Not Specified	9.8

'#' represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirements as per EPA ACT 1986/PCLS/2010, Sample Collected by lab rep. on dated 16-06-2023, Sampling Procedure : SOP/ITC/EW/056.

**REMARKS :**N/A

V Saini

Vikrant  
27-06-2023  
Reviewer

PremKumar

27-06-2023  
PremKumar  
[Authorized Signatory]

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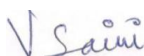


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\*\*\*\*\*End Of Report\*\*\*\*\*



Vikrant  
27-06-2023  
Reviewer



27-06-2023  
PremKumar  
[Authorized Signatory]

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<b>Test Report as per :</b>	: EPA-1986, PCLS/02/2021
<b>Sampling Information :</b>	
Date of Monitoring	: 21-09-2023
Time of Monitoring	: 14:30 to 15:18 hrs
Name of the emission source monitored	: Stack Emission of Boiler
Rated Capacity	: 2322 ton
Capacity on sampling day	: -do-
Type of fuel used & its consumption	: Coal & 405 ton/hr
Normal operating schedule	: 24 hrs
Stack Identification	: Stack attached to Boiler Unit-1
Type of Stack/Duct	: Metal
Stack Height from Ground Level(m)	: 275
Diameter of the Stack(cm)	: 750
Sampling Duration(minutes)	: 48
Purpose of Monitoring	: For Self Monitoring
Air Pollution control measure	: ESPs
Status	: Working
Recovery of Material	: -
Fugitive Emission,if any	: Nil
<b>Observations :</b>	

*V Saini*  
Vikrant  
30-09-2023  
Reviewer

*PremKumar*  
30-09-2023  
PremKumar  
[Authorized Signatory]

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	<b>Sample Reg. Date</b> :25-09-2023
	<b>Report Date</b> :30-09-2023
	<b>Report No.</b> :ICE-2309301199
	<b>NABL ULR No.</b> :TC592623000011549F
	<b>Customer Ref. No.:</b> PO
	<b>Letter Dated</b> :25-11-2022

Flue Gas Temperature, °C,Avg.	: 123
Flue Gas Velocity(m/s),Avg.	: 22.19
Volumetric Flow Rate(Nm <sup>3</sup> /hr.)	: 2570616.48
Ambient Air Temperature, °C	: 33

S.No.	Parameters	Method	Specification	Result
	<b>Discipline : Chemical</b>			
	<b>Group : Atmospheric Pollution</b>			
1.	<b>General Parameters</b>			
a.	Particulate Matter, mg/Nm <sup>3</sup> (Corrected to 6% O <sub>2</sub> on dry basis)	IS:11255(P-1)	Max. 50	45.86
b.	Sulphur Dioxide (SO <sub>2</sub> ), mg/Nm <sup>3</sup> (Corrected to 6% O <sub>2</sub> on dry basis)	IS:11255(P-2)	Max. 600	803.01
c.	Oxides of Nitrogen (NO <sub>x</sub> ), mg/Nm <sup>3</sup> (Corrected to 6% O <sub>2</sub> on dry basis)	IS:11255(P-7)	Max. 300	224.07
d.	Mercury(As Hg),mg/Nm <sup>3</sup>	USEPA Method	Max. 0.03	BLQ(LOQ:0.01)
e.	Carbon Monoxide(CO),% v/v	IS:13270	Max. 1.0	0.2
f.	Carbon Dioxide (CO <sub>2</sub> ), %	IS:13270	Not Specified	11.2

'#' represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirements as per EPA ACT 1986/PCLS/02/2021, Sample Collected by lab rep. on dated 21-09-2023, Sampling Procedure : SOP/ITC/EW/056.

**REMARKS :**N/A

V. Saini

Vikrant  
30-09-2023  
Reviewer

PremKumar

30-09-2023  
PremKumar  
[Authorized Signatory]

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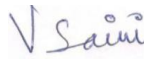
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\*\*\*\*\*End Of Report\*\*\*\*\*

  
Vikrant  
30-09-2023  
Reviewer

  
30-09-2023  
PremKumar  
[Authorized Signatory]

### Interstellar Testing Centre Pvt. Ltd.

86, Industrial Area, Phase-1, Panchkula-134109 (Haryana)  
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Document QF : 2501  
Page 1 of 3

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2309250856 <b>Sample Reg. Date</b> :25-09-2023 <b>Report Date</b> :30-09-2023 <b>Report No.</b> :ICE-2309301201 <b>NABL ULR No.</b> :TC592623000011550F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25-11-2022
<b>Test Report as per :</b>	: EPA-1986, PCLS/02/2021
<b>Sampling Information :</b>	
Date of Monitoring	: 21-09-2023
Time of Monitoring	: 15:40 to 16:28 hrs
Name of the emission source monitored	: Stack Emission of Boiler
Rated Capacity	: 2322 ton
Capacity on sampling day	: -do-
Type of fuel used & its consumption	: Coal & 390 ton/hr
Normal operating schedule	: 24 hrs
Stack Identification	: Stack attached to Boiler Unit-2
Type of Stack/Duct	: Metal
Stack Height from Ground Level(m)	: 275
Diameter of the Stack(cm)	: 750
Sampling Duration(minutes)	: 48
Purpose of Monitoring	: For Self Monitoring
Air Pollution control measure	: ESPs
Status	: Working
Recovery of Material	: -
Fugitive Emission,if any	: Nil
<b>Observations :</b>	

*V Saini*  
Vikrant  
30-09-2023  
Reviewer

*PremKumar*  
30-09-2023  
PremKumar  
[Authorized Signatory]

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## Test Report

Document QF : 2501  
Page 2 of 3

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2309250856 <b>Sample Reg. Date</b> :25-09-2023 <b>Report Date</b> :30-09-2023 <b>Report No.</b> :ICE-2309301201 <b>NABL ULR No.</b> :TC592623000011550F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25-11-2022
---	--

Flue Gas Temperature, °C,Avg.	: 128
Flue Gas Velocity(m/s),Avg.	: 22.33
Volumetric Flow Rate(Nm <sup>3</sup> /hr.)	: 2342937.75
Ambient Air Temperature, °C	: 33

S.No.	Parameters	Method	Specification	Result
	<b>Discipline : Chemical</b>			
	<b>Group : Atmospheric Pollution</b>			
<b>1.</b>	<b>General Parameters</b>			
a.	Particulate Matter, mg/Nm <sup>3</sup> (Corrected to 6% O <sub>2</sub> on dry basis)	IS:11255(P-1)	Max. 50	43.87
b.	Sulphur Dioxide (SO <sub>2</sub> ), mg/Nm <sup>3</sup> (Corrected to 6% O <sub>2</sub> on dry basis)	IS:11255(P-2)	Max. 600	1047.58
c.	Oxides of Nitrogen (NO <sub>x</sub> ), mg/Nm <sup>3</sup> (Corrected to 6% O <sub>2</sub> on dry basis)	IS:11255(P-7)	Max. 300	286.04
d.	Mercury(As Hg),mg/Nm <sup>3</sup>	USEPA Method	Max. 0.03	BLQ(LOQ:0.01)
e.	Carbon Monoxide(CO),% v/v	IS:13270	Max. 1.0	0.2
f.	Carbon Dioxide (CO <sub>2</sub> ), %	IS:13270	Not Specified	11.8

# represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirements as per EPA ACT 1986/PCLS/02/2021, Sample Collected by lab rep. on dated 21-09-2023, Sampling Procedure : SOP/ITC/EW/056.

**REMARKS :**N/A

*V Saini*  
Vikrant  
30-09-2023  
Reviewer

*PremKumar*  
30-09-2023  
PremKumar  
[Authorized Signatory]

**Interstellar Testing Centre Pvt. Ltd.**  
86, Industrial Area, Phase-1, Panchkula-134109 (Haryana)  
Panchkula-134109 (Haryana)  
Phone : (O) 0172-2561543, 2565825  
Email : customersupport@itclabs.com  
Visit us :www.itclabs.com

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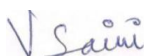
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## Test Report

Document QF : 2501  
Page 3 of 3

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---	--

\*\*\*\*\*End Of Report\*\*\*\*\*



Vikrant  
30-09-2023  
Reviewer



30-09-2023  
PremKumar  
[Authorized Signatory]

### Interstellar Testing Centre Pvt. Ltd.

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# PUNJAB POLLUTION CONTROL BOARD

AIR LABORATORY, HEAD OFFICE, VATAVARAN BHAWAN, PATIALA

Telefax: 0175-2302392

Email : [ppcbairlab@gmail.com](mailto:ppcbairlab@gmail.com)

1. Laboratory Sample No.

2. Name of Industry

3. Name of Sample collecting Officer

4. Designation of authorizing Test

5. Type of Sample

6. Date & Time of Sample collection

7. Date & Time of Sample receipt in Lab.

8. Point of Sample collection

124-126/H.O.Lab./Air/Monitoring/2023-24

M/s Nabha Power Ltd, Village-Nalash, Rajpura, Distt. Patiala.

Er.Mohit Singla, AEE and Mrs Shaminder Kaur JSO  
Environmental Engineer, Regional Office Patiala

Stack Emission

30.6.2023

03.7.2023

Details as given below

17/07/2023

17/07/2023

17/07/2023

17/07/2023

17/07/2023

## RESULTS

S.No.	Point of Sample Collection	Parameter	Results	Prescribed Standard
1.	From port hole on stack after APCD (Unit I - 700 MW 2322 TPH)	Particulate Matter (mg/Nm <sup>3</sup> )	33	50
2.	From port hole on stack after APCD (Unit II - 700 MW 2322 TPH)	Particulate Matter (mg/Nm <sup>3</sup> )	40	50
3.	Coal Bunker I (DE System)	Particulate Matter (mg/Nm <sup>3</sup> )	27	150

Note:- If any, other limits/specific standard has been prescribed time to time by MoEF&CC, CPCB and PPCB then those limits/specific standard would prevail subject to clarification from the concerned Regional Office.

Analysed by

Analysed by

Scientific Officer  
(Air Lab)

Endst. No: 16228-25

Dt. 14/7/23

A copy of the above is forwarded to the following for information and necessary action:

1. The Chief Environmental Engineer (Air), Punjab Pollution Control Board, Jalandhar
2. The Senior Environmental Engineer, Punjab Pollution Control Board, Zonal Office-I, Patiala
3. The Environmental Engineer, Punjab Pollution Control Board, Regional Office, Patiala

Asstt. Scientific Officer  
(Air Lab)





# PUNJAB POLLUTION CONTROL BOARD



AIR LABORATORY, HEAD OFFICE, VATAVARAN BHAWAN, PATIALA

Telefax: 0175-2302392

Email: [ppcbairlab@gmail.com](mailto:ppcbairlab@gmail.com)

1. Laboratory Sample No. 318-319/H.O.Lab./Air/Monitoring/2023-24
2. Name of Industry M/s Nabha Power Ltd, Vill- Nalash, Rajpura, Distt- Patiala
3. Name of Sample collecting Officer Er. Rohit Singla EE, Er. Mohit single AEE & Dr. Gurpreet Singh ASO
4. Designation of authorizing Test Environmental Engineer, Regional Office- Patiala
5. Type of Sample Stack Emission
6. Date & Time of Sample collection 25.09.2023
7. Date & Time of Sample receipt in Lab. 26.09.2023
8. Point of Sample collection Details as given below

file in  
RK  
नवीं डाक  
10/10/23  
डायरी नं. 3969 मिडी

## RESULTS

S.No	Point of Sample Collection	Parameter	Results	Prescribed Standards
1.	From port hole on stack after APCD of Unit-I	Particulate Matter (mg/Nm <sup>3</sup> )	43	50
2.	From port hole on stack after APCD of Unit-II	Particulate Matter (mg/Nm <sup>3</sup> )	39	50

Note:- If any, other limits/specific standard has been prescribed time to time by MoEF&CC, CPCB and PPCB then those limits/specific standard would prevail subject to clarification from the concerned Regional Office.

Analysed by  
6/10/23

Scientific Officer  
(Air Lab)  
6/10/23

Endst. No: 25003-05

Dt. 6/10/23

A copy of the above is forwarded to the following for information and necessary action:

1. The Chief Environmental Engineer (Air), Punjab Pollution Control Board, Jalandhar
2. The Senior Environmental Engineer, Punjab Pollution Control Board, ZO-I Patiala
3. The Environmental Engineer, Punjab Pollution Control Board, Regional Office, Patiala

Asstt. Scientific Officer  
(Air Lab)  
6/10/23



## Annexure-2



**Continuous emission monitoring system installed at main stack for measurement of Particulate Matter & Gaseous Emissions.**

## **Annexure- 3**

### **Measures taken to control fugitive emissions**

### **Annexure-3**



**Dust Extraction System at Crusher House**



**Dust Extraction System at Bunker**



## Annexure-3

### 1. Measures taken to control fugitive emissions during coal handling



**Covered conveyors for transfer of coal from Wagon tippler to coal bunkers for abatement of fugitive emissions**



**Dust suppression (sprinkler system) provided at each coal stockpile to arrest Dust**



**Automated and Mechanized Coal handling System to minimize manual operations**



**Three side covered windscreen to control fugitive emissions due to wind flow**

### Annexure-3



**Dust Suppression System installed at Wagon Tippler Area to control Fugitive Emission During Unloading of Coal.**

# **Annexure-4**

## **Fly Ash Utilization Report**

**NPL 2 X 700MW,RAJPURA,  
ASH GENERATION AND UTILIZATION REPORT FY 2023-24**

<b>Month</b>	<b>Total Ash Generated (MT)</b>	<b>Total Ash Utilized (MT)</b>	<b>% Utilization</b>
<b>Apr-23</b>	206757	198450	95.98%
<b>May-23</b>	205507	200819	97.72%
<b>Jun-23</b>	2,09,592	2,23,831	106.79%
<b>Jul-23</b>	1,79,735	1,66,386	92.57%
<b>Aug-23</b>	2,24,425	1,96,265	87.45%
<b>Sep-23</b>	1,98,004	2,31,008	116.67%
<b>Total</b>	<b>12,24,020</b>	<b>12,16,759</b>	<b>99.41%</b>



**NPL 2 X 700MW,RAJPURA,  
ASH GENERATION AND UTILIZATION REPORT FY 2023-24**

<b>Month</b>	<b>Total Ash Generated (MT)</b>	<b>Total Ash Utilized (MT)</b>	<b>% Utilization</b>
<b>Apr-23</b>	206757	198450	95.98%
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<b>Jun-23</b>	2,09,592	2,23,831	106.79%
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<b>Aug-23</b>	2,24,425	1,96,265	87.45%
<b>Sep-23</b>	1,98,004	2,31,008	116.67%
<b>Total</b>	<b>12,24,020</b>	<b>12,16,759</b>	<b>99.41%</b>

## **Annexure-5**

### **Heavy Metal Analysis in Fly Ash & Bottom Ash Report**

## Test Report

**ORIGINAL**  
Page 1 of 1

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala  Rajpura, 140401 Punjab, India	<b>Sample Reg. No.</b> : B01-2309260003 <b>Sample Reg. Date.</b> : 26/09/2023 <b>Report Date.</b> : 30/09/2023 <b>Report No.</b> : ICB-2309300133 <b>Customer Ref. No.</b> : PO <b>Letter Dated</b> : PO
--	---

Sample Particulars			
<b>Name of Sample<sup>#</sup></b>	: Fly Ash		
<b>Submitted By<sup>#</sup></b>	: Nabha Power Limited		
<b>Batch No.<sup>#</sup></b>	: NA	<b>Batch Size<sup>#</sup></b>	: NA
<b>Manufactured By<sup>#</sup></b>	: Not Specified	<b>Mfg. Lic. No.<sup>#</sup></b>	: NA
<b>Supplied By<sup>#</sup></b>	: Not Specified		
<b>Date of Manufacture<sup>#</sup></b>	: NA	<b>Date of Expiry<sup>#</sup></b>	: NA
<b>Sample Qty<sup>#</sup></b>	: 500gm	<b>Sample Condition</b>	: Good
<b>Grade<sup>#</sup></b>	: NA	<b>Brand Name<sup>#</sup></b>	: NA
<b>Official Seal</b>	: Not Applicable	<b>Official Signature</b>	: Not Applicable
<b>Packaging Details</b>	: Packed in Poly Pack	<b>Declared values(if any)</b>	: Sample Collect by Lab. rep. on 22-09-2023
<b>Any Other Information</b>	: Sample Collect by Lab. rep. on 22-09-2023		
<b>Test Report as per</b>	: Party Specification	<b>With Amendent No.(s)</b>	: Not Specified

Test Results						
Analysis started on : 26/09/2023			Analysis completed on : 28/09/2023			
Description : Fly Ash						
S. No.	Parameter	Unit	Instrument	Method	Requirements	Result
	Discipline : Chemical					
	Group : Solid Fuels					
1	Heavy Metals					
(a)	Arsenic(as As)	(mg/kg)	ICPOES	STP/ITC/F/INST/008	NA	BLQ(LOQ:1.0)
(b)	Lead(as Pb)	(mg/kg)	ICPOES	STP/ITC/F/INST/008	NA	1.11
(c)	Chromium(as Cr)	(mg/kg)	ICPOES	STP/ITC/F/INST/008	NA	1.16
(d)	Mercury(as Hg)	(mg/kg)	ICPOES	STP/ITC/F/INST/008	NA	BLQ(LOQ : 1.0)

# represents Customer Defined Fields

**Remarks:** Party asked for the above tests only.

\*\*\*\*\*End of Report\*\*\*\*\*



30/09/2023  
Brijesh Singh  
Verified by



30/09/2023  
Kamal Grover  
Authorised by

### Interstellar Testing Centre PVT. LTD.

86, Industrial Area, Phase-1, Panchkula-134109 (Haryana)

Panchkula-134109 (Haryana)

Phone : (O) 0172-2561543, 2565825

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## Test Report

**ORIGINAL**  
Page 1 of 1

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala  Rajpura, 140401 Punjab, India	<b>Sample Reg. No.</b> : B01-2309260002 <b>Sample Reg. Date.</b> : 26/09/2023 <b>Report Date.</b> : 30/09/2023 <b>Report No.</b> : ICB-2309300132 <b>Customer Ref. No.</b> : PO <b>Letter Dated</b> : PO
--	---

Sample Particulars			
<b>Name of Sample<sup>#</sup></b>	: Bottom Ash		
<b>Submitted By<sup>#</sup></b>	: Nabha Power Limited		
<b>Batch No.<sup>#</sup></b>	: NA	<b>Batch Size<sup>#</sup></b>	: Not Specified
<b>Manufactured By<sup>#</sup></b>	: Not Specified	<b>Mfg. Lic. No.<sup>#</sup></b>	: NA
<b>Supplied By<sup>#</sup></b>	: Not Specified		
<b>Date of Manufacture<sup>#</sup></b>	: Not Specified	<b>Date of Expiry<sup>#</sup></b>	: Not Specified
<b>Sample Qty<sup>#</sup></b>	: 500gm	<b>Sample Condition</b>	: Good
<b>Grade<sup>#</sup></b>	: Not Specified	<b>Brand Name<sup>#</sup></b>	: NA
<b>Official Seal</b>	: Not Applicable	<b>Official Signature</b>	: Not Applicable
<b>Packaging Details</b>	: Packed in Poly Pack	<b>Declared values(if any)</b>	: Sample Collect by Lab. rep. on 22-09-2023
<b>Any Other Information</b>	: Sample Collect by Lab. rep. on 22-09-2023		
<b>Test Report as per</b>	: Party Specification	<b>With Amendent No.(s)</b>	: Not Specified

Test Results						
Analysis started on		: 26/09/2023	Analysis completed on		: 28/09/2023	
Description		: Bottom Ash				
S. No.	Parameter	Unit	Instrument	Method	Requirements	Result
	Discipline : Chemical					
	Group : Solid Fuels					
1	Heavy Metals					
(a)	Arsenic(as As)	(mg/kg)	ICPOES	STP/ITC/F/INST/008	NA	BLQ(LOQ : 1.0)
(b)	Lead(as Pb)	(mg/kg)	ICPOES	STP/ITC/F/INST/008	NA	BLQ(LOQ : 1.0)
(c)	Chromium(as Cr)	(mg/kg)	ICPOES	STP/ITC/F/INST/008	NA	BLQ(LOQ : 1.0)
(d)	Mercury(as Hg)	(mg/kg)	ICPOES	STP/ITC/F/INST/008	NA	BLQ(LOQ : 1.0)

# represents Customer Defined Fields

**Remarks:** Party asked for the above tests only.

\*\*\*\*\*End of Report\*\*\*\*\*



30/09/2023  
Brijesh Singh  
Verified by



30/09/2023  
Kamal Grover  
Authorised by

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## **Annexure-6**

### **Treated Sewage Monitoring Results**


## Test Report

Document OF : 2501  
Page 1 of 3

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2306190663 <b>Sample Reg. Date</b> :19-06-2023 <b>Report Date</b> :29-06-2023 <b>Report No.</b> :ICE-2306291207 <b>NABL ULR No.</b> :TC592623000008278F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25.11.2022
---	--

<b>Test Report as per IS:</b> EPA Act 1986/PCLS/2010	<b>With Amendment No.(s):</b>
--	-------------------------------

### PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample #	STP Outlet Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number #	NA
h)	D.O.M #	NA
i)	Date of Expiry #	NA
j)	Sample Quantity #	2 Ltr
k)	Batch Size/Location #	NA
l)	Mode of Packing	Packed in can
m)	Date of Receipt	19-06-2023
n)	Date of Start	19-06-2023
o)	Date of Completion	26-06-2023
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample Collected by lab rep. on Dated: 17.06.2023

  
26-06-2023  
Deepika Heera  
[Authorized Signatory]

  
Vikrant  
29-06-2023  
Reviewer

  
29-06-2023  
PremKumar  
[Authorized Signatory]

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## Test Report

Document OF : 2501  
Page 2 of 3

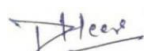
<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura		<b>Sample Reg. No.</b> :E01-2306190663 <b>Sample Reg. Date</b> :19-06-2023 <b>Report Date</b> :29-06-2023 <b>Report No.</b> :ICE-2306291207 <b>NABL ULR No.</b> :TC592623000008278F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25.11.2022
s)	Test Request Submitted By	Nabha Power Limited-Rajpura ( Punjab )
t)	Manufactured By #	NA
u)	Supplied By #	NA

### PART B : SUPPLEMENTARY INFORMATIONS

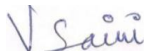
a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

### Description

Description	Colourless Liquid			
S.No.	Parameters	Method	Specification	Result
<b>Discipline : Chemical</b>				
<b>Group : Pollution &amp; Environment</b>				
<b>1.</b>	<b>General Parameters</b>			
a.	Colour	IS 3025 (Part 4) : 2021	Not Specified	Colourless
b.	pH Value	IS: 3025 (Part 11): 2017	6.5-9	7.90
c.	Total Suspended Solids,(mg/L)	IS 3025 (Part 17): 2017	Max. 100	10
d.	Chemical Oxygen Demand(mg/L)	IS 3025 (Part 58) : 2017	Not Specified	44
e.	Bio-chemical Oxygen Demand, mg/L (3 days at 27°C)	IS 3025 (Part 44) : 2019	Max. 30	12
f.	Total Kjeldahl Nitrogen as N (mg/L)	IS 3025 (Part 34) : 2019	Max. 100	4.2
g.	Total Phosphorous as P (mg/L)	APHA 23rd Edition 4500 - P D: 2017	Not Specified	2.27



26-06-2023  
Deepika Heera  
[Authorized Signatory]



Vikrant  
29-06-2023  
Reviewer



29-06-2023  
PremKumar  
[Authorized Signatory]

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**Interstellar Testing Centre Pvt. Ltd.**

86, Industrial Area, Phase-1, Panchkula-134109 (Haryana)  
Panchkula-134109 (Haryana)  
Phone : (O) 0172-2561543, 2565825  
Email : customersupport@itclabs.com  
Visit us : www.itclabs.com

## Test Report

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Page 3 of 3

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura		<b>Sample Reg. No.</b> :E01-2306190663 <b>Sample Reg. Date</b> :19-06-2023 <b>Report Date</b> :29-06-2023 <b>Report No.</b> :ICE-2306291207 <b>NABL ULR No.</b> :TC592623000008278F <b>Customer Ref. No.:</b> PO <b>Letter Dated</b> :25.11.2022		
		<b>Discipline : Biological</b> <b>Group : Pollution &amp; Environment</b> <b>1. Microbiological Tests</b> a. Faecal Coliform		
		APHA 23rd Edition Chapter 9 9221.E	Max. 1000 MPN/100ml	280 MPN/100ml

'#' represents Customer Defined Fields

**NOTE :** NA- Not Applicable, Requirements as per EPA Act 1986/PCLS/2010, Sampling Procedure : SOP/ITC/EW/030, Purpose-For Self Monitoring

**REMARKS :**N/A

\*\*\*\*\*End Of Report\*\*\*\*\*

  
26-06-2023  
**Deepika Heera**  
[Authorized Signatory]

  
Vikrant  
29-06-2023  
**Reviewer**

  
29-06-2023  
**PremKumar**  
[Authorized Signatory]

**Interstellar Testing Centre Pvt. Ltd.**  
86, Industrial Area, Phase-1, Panchkula-134109 (Haryana)  
Panchkula-134109 (Haryana)  
Phone : (O) 0172-2561543, 2565825  
Email : customersupport@itclabs.com  
Visit us :www.itclabs.com

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## Test Report

Document OF : 2501  
Page 1 of 3

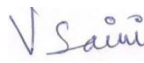
<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2309200704 <b>Sample Reg. Date</b> :20-09-2023 <b>Report Date</b> :29-09-2023 <b>Report No.</b> :ICE-2309290977 <b>NABL ULR No.</b> :TC592623000011547F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25-11-2022
---	--

<b>Test Report as per IS:</b> EPA-1986, PCLS/02/2021	<b>With Amendment No.(s):</b>
--	-------------------------------

### PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample #	STP Outlet Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number #	NA
h)	D.O.M #	NA
i)	Date of Expiry #	NA
j)	Sample Quantity #	2 Ltr
k)	Batch Size/Location #	NA
l)	Mode of Packing	Packed in bottles
m)	Date of Receipt	20-09-2023
n)	Date of Start	20-09-2023
o)	Date of Completion	29-09-2023
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample Collected by lab rep. on 19-09-2023

  
30-09-2023  
Deepika Heera  
[Authorized Signatory]

  
Vikrant  
30-09-2023  
Reviewer

  
30-09-2023  
PremKumar  
[Authorized Signatory]

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Panchkula-134109 (Haryana)  
Phone : (O) 0172-2561543, 2565825  
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Visit us : www.itclabs.com

## Test Report

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Page 2 of 3

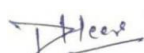
<b>Issued To</b>  Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura		<b>Sample Reg. No.</b> :E01-2309200704
		<b>Sample Reg. Date</b> :20-09-2023
		<b>Report Date</b> :29-09-2023
		<b>Report No.</b> :ICE-2309290977
		<b>NABL ULR No.</b> :TC592623000011547F
		<b>Customer Ref. No.:</b> PO
		<b>Letter Dated</b> :25-11-2022
s)	Test Request Submitted By	Nabha Power Limited-Rajpura ( Punjab )
t)	Manufactured By #	NA
u)	Supplied By #	NA

### PART B : SUPPLEMENTARY INFORMATIONS

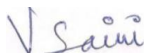
a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

### Description

Description	STP Outlet Water			
S.No.	Parameters	Method	Specification	Result
	<b>Discipline : Chemical</b>			
	<b>Group : Pollution &amp; Environment</b>			
1.	<b>General Parameters</b>			
a.	Colour	IS 3025 (Part 4) : 2021	Not Specified	Colourless
b.	pH Value	IS: 3025 (Part-11): 2022	6.5-9	7.84
c.	Total Suspended Solids,(mg/L)	IS: 3025 (P-17): 2022	Max. 100	2
d.	Total Dissolved Solids (mg/L)	IS: 3025 (P-16): 2023	Not Specified	380
e.	Chemical Oxygen Demand(mg/L)	IS: 3025 (P-58): 2006 (RA 2022)	Not Specified	32
f.	Bio-chemical Oxygen Demand, mg/L (3 days at 27°C)	IS 3025 (Part 44) : 2019	Max. 30	10
g.	Total Kjeldahl Nitrogen as N (mg/L)	IS 3025 (Part 34) : 2019	Not Specified	3.8



30-09-2023  
Deepika Heera  
[Authorized Signatory]



Vikrant  
30-09-2023  
Reviewer



30-09-2023  
PremKumar  
[Authorized Signatory]

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## Test Report

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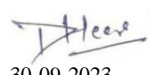
<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura		<b>Sample Reg. No.</b> :E01-2309200704 <b>Sample Reg. Date</b> :20-09-2023 <b>Report Date</b> :29-09-2023 <b>Report No.</b> :ICE-2309290977 <b>NABL ULR No.</b> :TC592623000011547F <b>Customer Ref. No.:</b> PO <b>Letter Dated</b> :25-11-2022		
h.	Total Phosphorous as P (mg/L)	APHA 23rd Edition 4500 - P D: 2017	Not Specified	2.02
<b>Discipline : Biological</b>				
<b>Group : Pollution &amp; Environment</b>				
1.	<b>Microbiological Tests</b>			
a.	Faecal Coliform	APHA 23rd Edition Chapter 9 9221.E	Max. 1000 MPN/100ml	430 MPN/100ml

'#' represents Customer Defined Fields


**NOTE :** NA- Not Applicable. Requirement as per EPA-1986, PCLS/02/2021. Sampling Procedure: SOP/ITC/EW/030.

**REMARKS :**N/A

\*\*\*\*\*End Of Report\*\*\*\*\*

  
30-09-2023  
**Deepika Heera**  
[Authorized Signatory]

  
Vikrant  
30-09-2023  
**Reviewer**

  
30-09-2023  
**PremKumar**  
[Authorized Signatory]

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**PUNJAB POLLUTION CONTROL BOARD VATAVARAN BHAVAN,  
NABHA ROAD, PATIALA  
WATER ANALYSIS REPORT**

- |   |  |
|---|--|
| 1. Laboratory Sample No.                        | E-3524-3525/ H.O.Lab. Monitoring/2023                      |
| 2. Name of Industry                             | M/s.Nabha Power Plant Ltd, Rajpura                         |
| 3. Name of Sample collecting Officer            | Er. Mohit Singla, AEE                                      |
| 4. Designation of the officer authorizing Test. | Environmental Engineer, Regional Office, Patiala           |
| 5. Type of Sample                               | Grab   |
| 6. Date & Time of Sample collection             | 30.06.2023   |
| 7. Date & Time of Sample receipt in Lab.        | 01.07.2023   |
| 8. Period of Analysis                           | 01.07.2023 to 12.07.2023                                   |
| 9. Test Methods                                 | As per relevant parts of IS:3025/IS:1622 & Methods of APHA |

**Results**

Sr. No.	Parameters	Final Outlet of STP	Aeration Tank
1	pH	8.1	-
2	Total Suspended Solids mg/l	27	-
3	Total Dissolved Solids mg/l	543	-
4	Chemical Oxygen Demand mg/l	83	-
5	Bio-chemical Oxygen Demand mg/l	19	-
6	Oil & Grease mg/l	BDL	-
7	Mixed Liquid Suspended Solids mg/l	-	1890
8	Mixed Liquid Volatile Suspended Solids mg/l	-	1020

Remarks: 1.No specific prescribed standards are as per EPA. However, if any stringent/other standards have been imposed by the Board, the same shall prevail.

Note: 2. BDL means Below Method Detection Limit.

---End of Report---

Scientific Officer  
12/7/23

Endst. No: 16140-42

Dt. 13-7-23

A copy of the above is forwarded to the:-

1. The Chief Environment Engineer, Punjab Pollution Control Board, Ludhiana.
2. The Senior Environment Engineer, Punjab Pollution Control Board, Zonal Office-I, Patiala.
3. The Environment Engineer, Punjab Pollution Control Board, Regional Office, Patiala.

Asstt. Scientific Officer



file it  
RK

**PUNJAB POLLUTION CONTROL BOARD VATAVARAN BHAVAN,  
NABHA ROAD, PATIALA  
WATER ANALYSIS REPORT**



- |  |  |
|--|--|
| 1. Laboratory Sample No.                       | E-4096-4101/H.O.Lab. Monitoring/2023                         |
| 2. Name of Industry                            | M/s Nabha Power Plant Ltd, Rajpura                           |
| 3. Name of Sample collecting Officer           | Er. Rohit Singla, EE, Er. Mohit Singla, AEE                  |
| 4. Designation of the officer authorizing Test | Environmental Engineer, Regional Office, Patiala             |
| 5. Type of Sample                              | Grab   |
| 6. Date & Time of Sample collection            | 25.09.2023   |
| 7. Date & Time of Sample receipt in Lab.       | 26.09.2023   |
| 8. Period of Analysis                          | 26.09.2023 to 10.10.2023                                     |
| 9. Test Methods                                | As per relevant parts of IS: 3025/IS: 1622 & Methods of APHA |
- H.E.E.:- 1/2/3/5.A.  
नहीं डाक  
3403 16/10/23

### Results

Sr. No.	Parameters	Final Outlet of STP I	Aeration Tank of STP I	Final Outlet of STP 2	Aeration Tank of STP 2	Cooling Tower Blowdown Storage Tank	Ash Pond Settling Tank
1	pH	7.8	-	8.2	-	-	8.0
2	Total Suspended Solids mg/l	10	-	15	-	-	BDL
3	Total Dissolved Solids mg/l	371	-	456	-	-	-
4	Chemical Oxygen Demand mg/l	40	-	44	-	-	-
5	Bio-chemical Oxygen Demand mg/l	9	-	10	-	-	BDL
6	Oil & Grease mg/l	BDL	-	BDL	-	-	-
7	Zinc mg/l	-	-	-	-	0.26	-
8	Total Chrome mg/l	-	-	-	-	BDL	-
9	Phosphate mg/l	-	-	-	-	1.5	-
10	Mixed Liquid Suspended Solids mg/l	-	1570	-	1860	-	-
11	Mixed Liquid Volatile Suspended Solids mg/l	-	920	-	1080	-	-

Remarks: No specific prescribed standards are as per EPA. However, if any stringent/other standards have been imposed by the Board, the same shall prevail.

Note: 1. BDL means Below Method Detection Limit.  
2. OCIM & Free Chlorine: Facility not available.

---End of Report---

Scientific Officer  
12/10/23

Endst. No: 25972-74

Dt. 13/10/23

A copy of the above is forwarded to the:-

1. The Chief Environment Engineer, Punjab Pollution Control Board, Ludhiana/Patiala.
2. The Senior Environment Engineer, Punjab Pollution Control Board, Zonal Office-1, Patiala.
3. The Environment Engineer, Punjab Pollution Control Board, Regional Office, Patiala.

Asstt. Scientific Officer  
12/10/23

# **Annexure-7**

## **Ground Water Quality Monitoring Results**

## Test Report


Document QF : 2501

Page 1 of 2

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2306190665 <b>Sample Reg. Date</b> :19-06-2023 <b>Report Date</b> :23-06-2023 <b>Report No.</b> :ICE-2306230998 (2) <b>Customer Ref. No.:</b> PO <b>Letter Dated</b> :25.11.2022
---	---

<b>Test Report as per IS:IS 10500 - 2012</b>	<b>With Amendment No.(s):</b> 01 to 04
--	--

### PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample #	Ground Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number #	NA
h)	D.O.M #	NA
i)	Date of Expiry #	NA
j)	Sample Quantity #	2 Ltr 100ml
k)	Batch Size/Location #	NA
l)	Mode of Packing	Packed in can & in plastic container
m)	Date of Receipt	19-06-2023
n)	Date of Start	19-06-2023
o)	Date of Completion	22-06-2023
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample Collected by lab rep. Mr. Ashutosh on 17.06.2023, Sample from Piezometer No.1
s)	Test Request Submitted By	Nabha Power Limited-Rajpura ( Punjab )
t)	Manufactured By #	NA
u)	Supplied By #	NA

### PART B : SUPPLEMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

### Description

## Test Report

Document QF : 2501

Page 2 of 2

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2306190665 <b>Sample Reg. Date</b> :19-06-2023 <b>Report Date</b> :23-06-2023 <b>Report No.</b> :ICE-2306230998 (2) <b>Customer Ref. No.:</b> PO <b>Letter Dated</b> :25.11.2022
---	---

Description	Liquid Sample with Suspended Particles				
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
	<b>Discipline : Chemical</b>				
	<b>Group : Water</b>				
1.	<b>General Parameters</b>				
a.	Total Suspended Solids,(mg/L)	IS:3025(Part 17)		Not Specified	2
b.	Chemical Oxygen Demand(mg/L)	IS: 3025(Part-58)		Not Specified	BLQ(LOQ:4.0)
c.	Bio-chemical Oxygen Demand, mg/L (3 days at 27°C)	IS:3025(P-44)		Not Specified	BLQ(LOQ:1.0)

'#' represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Qunatification, LOQ- Limit of Quantification. Sampling Procedure: SOP/ITC/EW/030


**REMARKS :**N/A

\*\*\*\*\*End Of Report\*\*\*\*\*



## Test Report

Document OF : 2501  
Page 1 of 3

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2306190665 <b>Sample Reg. Date</b> :19-06-2023 <b>Report Date</b> :23-06-2023 <b>Report No.</b> :ICE-2306230998 (1) <b>NABL ULR No.</b> :TC592623000008089F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25.11.2022
<b>Test Report as per IS:IS 10500 - 2012</b>	<b>With Amendment No.(s):</b> 01 to 04
<b>PART A : PARTICULARS OF SAMPLE SUBMITTED</b>	
a) Nature of Sample #	Ground Water
b) Sample Condition	Good
c) Grade / Variety / Type / Class / Size etc.	NA
d) Brand Name	NA
e) Declared Values,if any	NA
f) Code No.	
g) Batch Number #	NA
h) D.O.M #	NA
i) Date of Expiry #	NA
j) Sample Quantity #	2 Ltr 100ml
k) Batch Size/Location #	NA
l) Mode of Packing	Packed in can & in plastic container
m) Date of Receipt	19-06-2023
n) Date of Start	19-06-2023
o) Date of Completion	22-06-2023
p) Seal (Intact/Not Intact/Unsealed)	NA
q) IO'S Signature (Signed/Unsigned)	Unsigned
r) Any Other Information	Sample Collected by lab rep. Mr. Ashutosh on 17.06.2023, Sample from Piezometer No.1

*V Saini*  
Vikrant  
23-06-2023  
Reviewer

*PremKumar*  
23-06-2023  
PremKumar  
[Authorized Signatory]

### Interstellar Testing Centre Pvt. Ltd.

86, Industrial Area, Phase-1, Panchkula-134109 (Haryana)  
Panchkula-134109 (Haryana)  
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## Test Report

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Page 2 of 3

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura		<b>Sample Reg. No.</b> :E01-2306190665 <b>Sample Reg. Date</b> :19-06-2023 <b>Report Date</b> :23-06-2023 <b>Report No.</b> :ICE-2306230998 (1) <b>NABL ULR No.</b> :TC592623000008089F <b>Customer Ref. No.:</b> PO <b>Letter Dated</b> :25.11.2022
s)	Test Request Submitted By	Nabha Power Limited-Rajpura ( Punjab )
t)	Manufactured By #	NA
u)	Supplied By #	NA

### PART B : SUPPLEMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

### Description

Description	Liquid Sample with Suspended Particles				
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
	<b>Discipline : Chemical</b>				
	<b>Group : Water</b>				
1.	<b>Organoleptic &amp;Physical Parameter</b>				
a.	pH Value	IS:3025 (Part - 11):1983(RA:2017)	6.5-8.5	No relaxation	7.42
2.	<b>General Parameters</b>				
a.	Total Dissolved Solids (mg/L)	IS:3025(P-16)	500 Max.	2000 Max.	496
3.	<b>Parameters Concerning Undesirable Substances in excess amount</b>				
a.	Total Hardness(as CaCO <sub>3</sub> ),(mg/L)	IS 3025 (Part 21)	200 Max.	600 Max.	99
4.	<b>Parameters Concerning Toxic Substances</b>				

V Saini  
Vikrant  
23-06-2023  
Reviewer

PremKumar  
23-06-2023  
[Authorized Signatory]

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## Test Report

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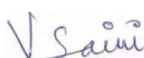
<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura			<b>Sample Reg. No.</b> :E01-2306190665 <b>Sample Reg. Date</b> :19-06-2023 <b>Report Date</b> :23-06-2023 <b>Report No.</b> :ICE-2306230998 (1) <b>NABL ULR No.</b> :TC592623000008089F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25.11.2022		
a.	Lead(as Pb)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	No Relaxation	BLQ(LOQ:0.002)
b.	Mercury(as Hg)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.001 Max.	No Relaxation	BLQ(LOQ:0.001)
c.	Total Arsenic(as As)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	0.05 Max.	BLQ(LOQ:0.002)
d.	Total Chromium(as Cr)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.05 Max.	No Relaxation	BLQ(LOQ:0.002)

\*' represents categories/test parameters not covered under NABL '#' represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Qunatification, LOQ- Limit of Quantification. Sampling Procedure: SOP/ITC/EW/030

**REMARKS :** N/A

\*\*\*\*\*End Of Report\*\*\*\*\*



Vikrant  
23-06-2023  
Reviewer



23-06-2023  
PremKumar  
[Authorized Signatory]

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## Test Report


Document QF : 2501

Page 1 of 2

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2306190666 <b>Sample Reg. Date</b> :19-06-2023 <b>Report Date</b> :23-06-2023 <b>Report No.</b> :ICE-2306231006 (2) <b>Customer Ref. No.:</b> PO <b>Letter Dated</b> :25.11.2022
---	---

<b>Test Report as per IS:IS 10500 - 2012</b>	<b>With Amendment No.(s):</b> 01 to 04
--	--

### PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample #	Ground Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number #	NA
h)	D.O.M #	NA
i)	Date of Expiry #	NA
j)	Sample Quantity #	2 Ltr 100ml
k)	Batch Size/Location #	NA
l)	Mode of Packing	Packed in can & in plastic container
m)	Date of Receipt	19-06-2023
n)	Date of Start	19-06-2023
o)	Date of Completion	22-06-2023
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample Collected by lab rep. Mr. Ashutosh on 17.06.2023, Sample from Piezometer No.2
s)	Test Request Submitted By	Nabha Power Limited-Rajpura ( Punjab )
t)	Manufactured By #	NA
u)	Supplied By #	NA

### PART B : SUPPLIMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

### Description

## Test Report

Document QF : 2501

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<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2306190666 <b>Sample Reg. Date</b> :19-06-2023 <b>Report Date</b> :23-06-2023 <b>Report No.</b> :ICE-2306231006 (2) <b>Customer Ref. No.:</b> PO <b>Letter Dated</b> :25.11.2022
---	---

Description	Liquid Sample with Suspended Particles				
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
	<b>Discipline : Chemical</b>				
	<b>Group : Water</b>				
1.	<b>General Parameters</b>				
a.	Total Suspended Solids,(mg/L)	IS:3025(Part 17)		Not Specified	3
b.	Chemical Oxygen Demand(mg/L)	IS: 3025(Part-58)		Not Specified	BLQ(LOQ:4.0)
c.	Bio-chemical Oxygen Demand, mg/L (3 days at 27°C)	IS:3025(P-44)		Not Specified	BLQ(LOQ:1.0)

'#' represents Customer Defined Fields


**NOTE :** NA- Not Applicable, BLQ- Below limit of Qunatification, LOQ- Limit of Quantification. Sampling Procedure: SOP/ITC/EW/030

**REMARKS :**N/A

\*\*\*\*\*End Of Report\*\*\*\*\*

## Test Report

Document OF : 2501  
Page 1 of 3

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2306190666 <b>Sample Reg. Date</b> :19-06-2023 <b>Report Date</b> :23-06-2023 <b>Report No.</b> :ICE-2306231006 (1) <b>NABL ULR No.</b> :TC592623000008090F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25.11.2022
<b>Test Report as per IS:IS 10500 - 2012</b>	<b>With Amendment No.(s):</b> 01 to 04
<b>PART A : PARTICULARS OF SAMPLE SUBMITTED</b>	
a) Nature of Sample #	Ground Water
b) Sample Condition	Good
c) Grade / Variety / Type / Class / Size etc.	NA
d) Brand Name	NA
e) Declared Values,if any	NA
f) Code No.	
g) Batch Number #	NA
h) D.O.M #	NA
i) Date of Expiry #	NA
j) Sample Quantity #	2 Ltr 100ml
k) Batch Size/Location #	NA
l) Mode of Packing	Packed in can & in plastic container
m) Date of Receipt	19-06-2023
n) Date of Start	19-06-2023
o) Date of Completion	22-06-2023
p) Seal (Intact/Not Intact/Unsealed)	NA
q) IO'S Signature (Signed/Unsigned)	Unsigned
r) Any Other Information	Sample Collected by lab rep. Mr. Ashutosh on 17.06.2023, Sample from Piezometer No.2

*V. Saini*  
Vikrant  
23-06-2023  
Reviewer

*PremKumar*  
23-06-2023  
PremKumar  
[Authorized Signatory]

### Interstellar Testing Centre Pvt. Ltd.

86, Industrial Area, Phase-1, Panchkula-134109 (Haryana)  
Panchkula-134109 (Haryana)  
Phone : (O) 0172-2561543, 2565825  
Email : customersupport@itclabs.com  
Visit us : www.itclabs.com

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## Test Report

Document OF : 2501  
Page 2 of 3

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura		<b>Sample Reg. No.</b> :E01-2306190666 <b>Sample Reg. Date</b> :19-06-2023 <b>Report Date</b> :23-06-2023 <b>Report No.</b> :ICE-2306231006 (1) <b>NABL ULR No.</b> :TC592623000008090F <b>Customer Ref. No.:</b> PO <b>Letter Dated</b> :25.11.2022
s)	Test Request Submitted By	Nabha Power Limited-Rajpura ( Punjab )
t)	Manufactured By #	NA
u)	Supplied By #	NA

### PART B : SUPPLEMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

### Description

Description	Liquid Sample with Suspended Particles				
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
	<b>Discipline : Chemical</b>				
	<b>Group : Water</b>				
1.	<b>Organoleptic &amp;Physical Parameter</b>				
a.	pH Value	IS:3025 (Part - 11):1983(RA:2017)	6.5-8.5	No relaxation	7.46
2.	<b>General Parameters</b>				
a.	Total Dissolved Solids (mg/L)	IS:3025(P-16)	500 Max.	2000 Max.	490
3.	<b>Parameters Concerning Undesirable Substances in excess amount</b>				
a.	Total Hardness(as CaCO <sub>3</sub> ),(mg/L)	IS 3025 (Part 21)	200 Max.	600 Max.	96
4.	<b>Parameters Concerning Toxic Substances</b>				

V Saini  
Vikrant  
23-06-2023  
Reviewer

PremKumar  
23-06-2023  
PremKumar  
[Authorized Signatory]

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86, Industrial Area, Phase-1, Panchkula-134109 (Haryana)  
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Phone : (O) 0172-2561543, 2565825  
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## Test Report

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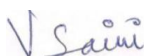
<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura			<b>Sample Reg. No.</b> :E01-2306190666 <b>Sample Reg. Date</b> :19-06-2023 <b>Report Date</b> :23-06-2023 <b>Report No.</b> :ICE-2306231006 (1) <b>NABL ULR No.</b> :TC592623000008090F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25.11.2022		
a.	Lead(as Pb)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	No Relaxation	BLQ(LOQ:0.002)
b.	Mercury(as Hg)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.001 Max.	No Relaxation	BLQ(LOQ:0.001)
c.	Total Arsenic(as As)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	0.05 Max.	BLQ(LOQ:0.002)
d.	Total Chromium(as Cr)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.05 Max.	No Relaxation	BLQ(LOQ:0.002)

\*' represents categories/test parameters not covered under NABL '#' represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Qunatification, LOQ- Limit of Quantification. Sampling Procedure: SOP/ITC/EW/030

**REMARKS :** N/A

\*\*\*\*\*End Of Report\*\*\*\*\*



Vikrant  
23-06-2023  
Reviewer



23-06-2023  
PremKumar  
[Authorized Signatory]

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## Test Report


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<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2306190667 <b>Sample Reg. Date</b> :19-06-2023 <b>Report Date</b> :23-06-2023 <b>Report No.</b> :ICE-2306230997 (2) <b>Customer Ref. No.:</b> PO <b>Letter Dated</b> :25.11.2022
---	---

<b>Test Report as per IS:IS 10500 - 2012</b>	<b>With Amendment No.(s):</b> 01 to 04
--	--

### PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample #	Ground Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number #	NA
h)	D.O.M #	NA
i)	Date of Expiry #	NA
j)	Sample Quantity #	2 Ltr 100ml
k)	Batch Size/Location #	NA
l)	Mode of Packing	Packed in can & in plastic container
m)	Date of Receipt	19-06-2023
n)	Date of Start	19-06-2023
o)	Date of Completion	22-06-2023
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample Collected by lab rep. Mr. Ashutosh on 17.06.2023, Sample from Piezometer No.3
s)	Test Request Submitted By	Nabha Power Limited-Rajpura ( Punjab )
t)	Manufactured By #	NA
u)	Supplied By #	NA

### PART B : SUPPLIMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

### Description

## Test Report

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Page 2 of 2

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2306190667 <b>Sample Reg. Date</b> :19-06-2023 <b>Report Date</b> :23-06-2023 <b>Report No.</b> :ICE-2306230997 (2) <b>Customer Ref. No.:</b> PO <b>Letter Dated</b> :25.11.2022
---	---

Description	Liquid Sample With suspended particles				
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
	<b>Discipline : Chemical</b>				
	<b>Group : Water</b>				
1.	<b>General Parameters</b>				
a.	Total Suspended Solids,(mg/L)	IS:3025(Part 17)		Not Specified	4
b.	Chemical Oxygen Demand(mg/L)	IS: 3025(Part-58)		Not Specified	BLQ(LOQ:4.0)
c.	Bio-chemical Oxygen Demand, mg/L (3 days at 27°C)	IS:3025(P-44)		Not Specified	BLQ(LOQ:1.0)

'#' represents Customer Defined Fields


**NOTE :** NA- Not Applicable, BLQ- Below limit of Qunatification, LOQ- Limit of Quantification. Sampling Procedure: SOP/ITC/EW/030

**REMARKS :**N/A

\*\*\*\*\*End Of Report\*\*\*\*\*

## Test Report

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Page 1 of 3

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2306190667 <b>Sample Reg. Date</b> :19-06-2023 <b>Report Date</b> :23-06-2023 <b>Report No.</b> :ICE-2306230997 (1) <b>NABL ULR No.</b> :TC592623000008091F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25.11.2022
<b>Test Report as per IS:IS 10500 - 2012</b>	<b>With Amendment No.(s):</b> 01 to 04
<b>PART A : PARTICULARS OF SAMPLE SUBMITTED</b>	
a) Nature of Sample #	Ground Water
b) Sample Condition	Good
c) Grade / Variety / Type / Class / Size etc.	NA
d) Brand Name	NA
e) Declared Values,if any	NA
f) Code No.	
g) Batch Number #	NA
h) D.O.M #	NA
i) Date of Expiry #	NA
j) Sample Quantity #	2 Ltr 100ml
k) Batch Size/Location #	NA
l) Mode of Packing	Packed in can & in plastic container
m) Date of Receipt	19-06-2023
n) Date of Start	19-06-2023
o) Date of Completion	22-06-2023
p) Seal (Intact/Not Intact/Unsealed)	NA
q) IO'S Signature (Signed/Unsigned)	Unsigned
r) Any Other Information	Sample Collected by lab rep. Mr. Ashutosh on 17.06.2023, Sample from Piezometer No.3

*V. Saini*  
Vikrant  
23-06-2023  
Reviewer

*PremKumar*  
23-06-2023  
PremKumar  
[Authorized Signatory]

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## Test Report

Document OF : 2501  
Page 2 of 3

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura		<b>Sample Reg. No.</b> :E01-2306190667 <b>Sample Reg. Date</b> :19-06-2023 <b>Report Date</b> :23-06-2023 <b>Report No.</b> :ICE-2306230997 (1) <b>NABL ULR No.</b> :TC592623000008091F <b>Customer Ref. No.:</b> PO <b>Letter Dated</b> :25.11.2022
s)	Test Request Submitted By	Nabha Power Limited-Rajpura ( Punjab )
t)	Manufactured By #	NA
u)	Supplied By #	NA

### PART B : SUPPLEMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

Description					
Description		Liquid Sample With suspended particles			
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
	<b>Discipline : Chemical</b>				
	<b>Group : Water</b>				
1.	<b>Organoleptic &amp;Physical Parameter</b>				
a.	pH Value	IS:3025 (Part - 11):1983(RA:2017)	6.5-8.5	No relaxation	7.40
2.	<b>General Parameters</b>				
a.	Total Dissolved Solids (mg/L)	IS:3025(P-16)	500 Max.	2000 Max.	487
3.	<b>Parameters Concerning Undesirable Substances in excess amount</b>				
a.	Total Hardness(as CaCO <sub>3</sub> ),(mg/L)	IS 3025 (Part 21)	200 Max.	600 Max.	92
4.	<b>Parameters Concerning Toxic Substances</b>				

V. Saini  
Vikrant  
23-06-2023  
Reviewer

PremKumar  
23-06-2023  
PremKumar  
[Authorized Signatory]

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## Test Report

Document OF : 2501  
Page 3 of 3

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura			<b>Sample Reg. No.</b> :E01-2306190667 <b>Sample Reg. Date</b> :19-06-2023 <b>Report Date</b> :23-06-2023 <b>Report No.</b> :ICE-2306230997 (1) <b>NABL ULR No.</b> :TC592623000008091F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25.11.2022		
a.	Lead(as Pb)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	No Relaxation	BLQ(LOQ:0.002)
b.	Mercury(as Hg)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.001 Max.	No Relaxation	BLQ(LOQ:0.001)
c.	Total Arsenic(as As)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	0.05 Max.	BLQ(LOQ:0.002)
d.	Total Chromium(as Cr)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.05 Max.	No Relaxation	BLQ(LOQ:0.002)

\*' represents categories/test parameters not covered under NABL '#' represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification. Sampling Procedure: SOP/ITC/EW/030

**REMARKS :** N/A

\*\*\*\*\*End Of Report\*\*\*\*\*

V Saini  
Vikrant  
23-06-2023  
Reviewer

PremKumar  
23-06-2023  
PremKumar  
[Authorized Signatory]

**Interstellar Testing Centre Pvt. Ltd.**  
86, Industrial Area, Phase-1, Panchkula-134109 (Haryana)  
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Phone : (O) 0172-2561543, 2565825  
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## Test Report


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<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2306190668 <b>Sample Reg. Date</b> :19-06-2023 <b>Report Date</b> :23-06-2023 <b>Report No.</b> :ICE-2306230996 (2) <b>Customer Ref. No.:</b> PO <b>Letter Dated</b> :25.11.2022
---	---

<b>Test Report as per IS:IS 10500 - 2012</b>	<b>With Amendment No.(s):</b> 01 to 04
--	--

### PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample #	Ground Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number #	NA
h)	D.O.M #	NA
i)	Date of Expiry #	NA
j)	Sample Quantity #	2 Ltr 100ml
k)	Batch Size/Location #	NA
l)	Mode of Packing	Packed in can & in plastic container
m)	Date of Receipt	19-06-2023
n)	Date of Start	19-06-2023
o)	Date of Completion	22-06-2023
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample Collected by lab rep. Mr. Ashutosh on 17.06.2023, Sample from Piezometer No.4
s)	Test Request Submitted By	Nabha Power Limited-Rajpura ( Punjab )
t)	Manufactured By #	NA
u)	Supplied By #	NA

### PART B : SUPPLIMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

### Description



## Test Report

Document QF : 2501

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<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2306190668 <b>Sample Reg. Date</b> :19-06-2023 <b>Report Date</b> :23-06-2023 <b>Report No.</b> :ICE-2306230996 (2) <b>Customer Ref. No.:</b> PO <b>Letter Dated</b> :25.11.2022
---	---

Description	Liquid Sample With Suspended Particles				
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
	<b>Discipline : Chemical</b>				
	<b>Group : Water</b>				
1.	<b>General Parameters</b>				
a.	Total Suspended Solids,(mg/L)	IS:3025(Part 17)		Not Specified	3
b.	Chemical Oxygen Demand(mg/L)	IS: 3025(Part-58)		Not Specified	BLQ(LOQ:4.0)
c.	Bio-chemical Oxygen Demand, mg/L (3 days at 27°C)	IS:3025(P-44)		Not Specified	BLQ(LOQ:1.0)

'#' represents Customer Defined Fields


**NOTE :** NA- Not Applicable, BLQ- Below limit of Qunatification, LOQ- Limit of Quantification. Sampling Procedure: SOP/ITC/EW/030

**REMARKS :**N/A

\*\*\*\*\*End Of Report\*\*\*\*\*

## Test Report

Document OF : 2501  
Page 1 of 3

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2306190668 <b>Sample Reg. Date</b> :19-06-2023 <b>Report Date</b> :23-06-2023 <b>Report No.</b> :ICE-2306230996 (1) <b>NABL ULR No.</b> :TC592623000008093F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25.11.2022
<b>Test Report as per IS:IS 10500 - 2012</b>	<b>With Amendment No.(s):</b> 01 to 04
<b>PART A : PARTICULARS OF SAMPLE SUBMITTED</b>	
a) Nature of Sample #	Ground Water
b) Sample Condition	Good
c) Grade / Variety / Type / Class / Size etc.	NA
d) Brand Name	NA
e) Declared Values,if any	NA
f) Code No.	
g) Batch Number #	NA
h) D.O.M #	NA
i) Date of Expiry #	NA
j) Sample Quantity #	2 Ltr 100ml
k) Batch Size/Location #	NA
l) Mode of Packing	Packed in can & in plastic container
m) Date of Receipt	19-06-2023
n) Date of Start	19-06-2023
o) Date of Completion	22-06-2023
p) Seal (Intact/Not Intact/Unsealed)	NA
q) IO'S Signature (Signed/Unsigned)	Unsigned
r) Any Other Information	Sample Collected by lab rep. Mr. Ashutosh on 17.06.2023, Sample from Piezometer No.4

*V. Saini*  
Vikrant  
23-06-2023  
Reviewer

*PremKumar*  
23-06-2023  
PremKumar  
[Authorized Signatory]

### Interstellar Testing Centre Pvt. Ltd.

86, Industrial Area, Phase-1, Panchkula-134109 (Haryana)  
Panchkula-134109 (Haryana)  
Phone : (O) 0172-2561543, 2565825  
Email : customersupport@itclabs.com  
Visit us : www.itclabs.com

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## Test Report

Document OF : 2501  
Page 2 of 3

<b>Issued To</b>  Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura		<b>Sample Reg. No.</b> :E01-2306190668
		<b>Sample Reg. Date</b> :19-06-2023
		<b>Report Date</b> :23-06-2023
		<b>Report No.</b> :ICE-2306230996 (1)
		<b>NABL ULR No.</b> :TC592623000008093F
		<b>Customer Ref. No.:</b> PO
		<b>Letter Dated</b> :25.11.2022
s)	Test Request Submitted By	Nabha Power Limited-Rajpura ( Punjab )
t)	Manufactured By #	NA
u)	Supplied By #	NA

### PART B : SUPPLEMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

### Description

Description	Liquid Sample With Suspended Particles				
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
	<b>Discipline : Chemical</b>				
	<b>Group : Water</b>				
1.	<b>Organoleptic &amp;Physical Parameter</b>				
a.	pH Value	IS:3025 (Part - 11):1983(RA:2017)	6.5-8.5	No relaxation	7.42
2.	<b>General Parameters</b>				
a.	Total Dissolved Solids (mg/L)	IS:3025(P-16)	500 Max.	2000 Max.	483
3.	<b>Parameters Concerning Undesirable Substances in excess amount</b>				
a.	Total Hardness(as CaCO <sub>3</sub> ),(mg/L)	IS 3025 (Part 21)	200 Max.	600 Max.	94
4.	<b>Parameters Concerning Toxic Substances</b>				

V. Saini

Vikrant  
23-06-2023  
Reviewer

PremKumar

23-06-2023  
PremKumar  
[Authorized Signatory]

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### Interstellar Testing Centre Pvt. Ltd.

86, Industrial Area, Phase-1, Panchkula-134109 (Haryana)  
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## Test Report

Document OF : 2501  
Page 3 of 3

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura			<b>Sample Reg. No.</b> :E01-2306190668 <b>Sample Reg. Date</b> :19-06-2023 <b>Report Date</b> :23-06-2023 <b>Report No.</b> :ICE-2306230996 (1) <b>NABL ULR No.</b> :TC592623000008093F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25.11.2022		
a.	Lead(as Pb)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	No Relaxation	BLQ(LOQ:0.002)
b.	Mercury(as Hg)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.001 Max.	No Relaxation	BLQ(LOQ:0.001)
c.	Total Arsenic(as As)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	0.05 Max.	BLQ(LOQ:0.002)
d.	Total Chromium(as Cr)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.05 Max.	No Relaxation	BLQ(LOQ:0.002)

\*' represents categories/test parameters not covered under NABL '#' represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Qunatification, LOQ- Limit of Quantification. Sampling Procedure: SOP/ITC/EW/030

**REMARKS :** N/A

\*\*\*\*\*End Of Report\*\*\*\*\*

V. Saini  
Vikrant  
23-06-2023  
Reviewer

PremKumar  
23-06-2023  
PremKumar  
[Authorized Signatory]

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## Test Report


Document QF : 2501

Page 1 of 2

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2309220797 <b>Sample Reg. Date</b> :22-09-2023 <b>Report Date</b> :29-09-2023 <b>Report No.</b> :ICE-2309290959 (2) <b>Customer Ref. No.:</b> PO <b>Letter Dated</b> :25.11.2022
---	---

<b>Test Report as per IS:IS 10500 - 2012</b>	<b>With Amendment No.(s):</b> 01 to 04
--	--

### PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample #	Ground Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number #	NA
h)	D.O.M #	NA
i)	Date of Expiry #	NA
j)	Sample Quantity #	2 Ltr
k)	Batch Size/Location #	NA
l)	Mode of Packing	Packed in cans
m)	Date of Receipt	22-09-2023
n)	Date of Start	22-09-2023
o)	Date of Completion	29-09-2023
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample Collected by lab rep. Mr. Ram Gopal on 21.09.2023, Sample from Piezometer-1
s)	Test Request Submitted By	Nabha Power Limited-Rajpura ( Punjab )
t)	Manufactured By #	NA
u)	Supplied By #	NA

### PART B : SUPPLIMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

### Description



## Test Report

Document QF : 2501

Page 2 of 2

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2309220797 <b>Sample Reg. Date</b> :22-09-2023 <b>Report Date</b> :29-09-2023 <b>Report No.</b> :ICE-2309290959 (2) <b>Customer Ref. No.:</b> PO <b>Letter Dated</b> :25.11.2022
---	---

Description	Liquid Sample with Suspended particles				
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
	<b>Discipline : Chemical</b>				
	<b>Group : Water</b>				
1.	<b>General Parameters</b>				
a.	Total Suspended Solids,(mg/L)	IS:3025(Part 17)		Not Specified	4
b.	Chemical Oxygen Demand(mg/L)	IS 3025 (Part: 58): 2006		Not Specified	BLQ(LOQ:4.0)
c.	Bio-chemical Oxygen Demand, mg/L (3 days at 27°C)	IS 3025 (Part 44) : 2019		Not Specified	BLQ(LOQ:1.0)

'#' represents Customer Defined Fields


**NOTE :** NA- Not Applicable, LOQ- Limit of Quantification, BLQ- Below limit of Quantification. Sampling Procedure: SOP/ITC/EW/030.

**REMARKS :**N/A

\*\*\*\*\*End Of Report\*\*\*\*\*

## Test Report

Document OF : 2501  
Page 1 of 3

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2309220797 <b>Sample Reg. Date</b> :22-09-2023 <b>Report Date</b> :29-09-2023 <b>Report No.</b> :ICE-2309290959 (1) <b>NABL ULR No.</b> :TC592623000011509F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25.11.2022
<b>Test Report as per IS:IS 10500 - 2012</b>	<b>With Amendment No.(s):</b> 01 to 04
<b>PART A : PARTICULARS OF SAMPLE SUBMITTED</b>	
a) Nature of Sample #	Ground Water
b) Sample Condition	Good
c) Grade / Variety / Type / Class / Size etc.	NA
d) Brand Name	NA
e) Declared Values,if any	NA
f) Code No.	
g) Batch Number #	NA
h) D.O.M #	NA
i) Date of Expiry #	NA
j) Sample Quantity #	2 Ltr
k) Batch Size/Location #	NA
l) Mode of Packing	Packed in cans
m) Date of Receipt	22-09-2023
n) Date of Start	22-09-2023
o) Date of Completion	29-09-2023
p) Seal (Intact/Not Intact/Unsealed)	NA
q) IO'S Signature (Signed/Unsigned)	Unsigned
r) Any Other Information	Sample Collected by lab rep. Mr. Ram Gopal on 21.09.2023, Sample from Piezometer-1

*V. Saini*  
Vikrant  
30-09-2023  
Reviewer

*PremKumar*  
30-09-2023  
PremKumar  
[Authorized Signatory]

### Interstellar Testing Centre Pvt. Ltd.

86, Industrial Area, Phase-1, Panchkula-134109 (Haryana)  
Panchkula-134109 (Haryana)  
Phone : (O) 0172-2561543, 2565825  
Email : customersupport@itclabs.com  
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## Test Report

Document OF : 2501  
Page 2 of 3

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura		<b>Sample Reg. No.</b> :E01-2309220797 <b>Sample Reg. Date</b> :22-09-2023 <b>Report Date</b> :29-09-2023 <b>Report No.</b> :ICE-2309290959 (1) <b>NABL ULR No.</b> :TC592623000011509F <b>Customer Ref. No.:</b> PO <b>Letter Dated</b> :25.11.2022
s)	Test Request Submitted By	Nabha Power Limited-Rajpura ( Punjab )
t)	Manufactured By #	NA
u)	Supplied By #	NA

### PART B : SUPPLEMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

### Description

Description	Liquid Sample with Suspended particles				
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
	<b>Discipline : Chemical</b>				
	<b>Group : Water</b>				
1.	<b>Organoleptic &amp;Physical Parameter</b>				
a.	pH Value	IS:3025 (Part - 11):1983(RA:2017)	6.5-8.5	No relaxation	7.20
2.	<b>General Parameters</b>				
a.	Total Dissolved Solids (mg/L)	IS:3025(P-16)	500 Max.	2000 Max.	440
3.	<b>Parameters Concerning Undesirable Substances in excess amount</b>				
a.	Total Hardness(as CaCO <sub>3</sub> ),(mg/L)	IS 3025 (Part 21)	200 Max.	600 Max.	90
4.	<b>Parameters Concerning Toxic Substances</b>				

V Saini  
Vikrant  
30-09-2023  
Reviewer

PremKumar  
30-09-2023  
PremKumar  
[Authorized Signatory]

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Panchkula-134109 (Haryana)  
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Visit us : www.itclabs.com

## Test Report

Document OF : 2501  
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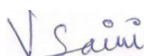
<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura			<b>Sample Reg. No.</b> :E01-2309220797 <b>Sample Reg. Date</b> :22-09-2023 <b>Report Date</b> :29-09-2023 <b>Report No.</b> :ICE-2309290959 (1) <b>NABL ULR No.</b> :TC592623000011509F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25.11.2022		
a.	Lead(as Pb)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	No Relaxation	BLQ(LOQ:0.002)
b.	Mercury(as Hg)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.001 Max.	No Relaxation	BLQ(LOQ:0.001)
c.	Total Arsenic(as As)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	0.05 Max.	BLQ(LOQ:0.002)
d.	Total Chromium(as Cr)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.05 Max.	No Relaxation	BLQ(LOQ:0.002)

\*' represents categories/test parameters not covered under NABL '#' represents Customer Defined Fields

**NOTE :** NA- Not Applicable, LOQ- Limit of Quantification, BLQ- Below limit of Quantification. Sampling Procedure: SOP/ITC/EW/030.

**REMARKS :** N/A

\*\*\*\*\*End Of Report\*\*\*\*\*



Vikrant  
30-09-2023  
Reviewer



30-09-2023  
PremKumar  
[Authorized Signatory]

### Interstellar Testing Centre Pvt. Ltd.

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## Test Report


Document QF : 2501

Page 1 of 2

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2309220798 <b>Sample Reg. Date</b> :22-09-2023 <b>Report Date</b> :29-09-2023 <b>Report No.</b> :ICE-2309290960 (2) <b>Customer Ref. No.:</b> PO <b>Letter Dated</b> :25.11.2022
---	---

<b>Test Report as per IS:IS 10500 - 2012</b>	<b>With Amendment No.(s):</b> 01 to 04
--	--

### PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample #	Ground Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number #	NA
h)	D.O.M #	NA
i)	Date of Expiry #	NA
j)	Sample Quantity #	2 Ltr
k)	Batch Size/Location #	NA
l)	Mode of Packing	Packed in cans
m)	Date of Receipt	22-09-2023
n)	Date of Start	22-09-2023
o)	Date of Completion	29-09-2023
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample Collected by lab rep. Mr. Ram Gopal on 21.09.2023, Sample from Piezometer-2
s)	Test Request Submitted By	Nabha Power Limited-Rajpura ( Punjab )
t)	Manufactured By #	NA
u)	Supplied By #	NA

### PART B : SUPPLIMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

### Description



## Test Report

Document QF : 2501

Page 2 of 2

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2309220798 <b>Sample Reg. Date</b> :22-09-2023 <b>Report Date</b> :29-09-2023 <b>Report No.</b> :ICE-2309290960 (2) <b>Customer Ref. No.:</b> PO <b>Letter Dated</b> :25.11.2022
---	---

Description	Liquid Sample with Suspended particles				
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
	<b>Discipline : Chemical</b>				
	<b>Group : Water</b>				
1.	<b>General Parameters</b>				
a.	Total Suspended Solids,(mg/L)	IS:3025(Part 17)		Not Specified	5
b.	Chemical Oxygen Demand(mg/L)	IS 3025 (Part: 58): 2006		Not Specified	BLQ(LOQ:4.0)
c.	Bio-chemical Oxygen Demand, mg/L (3 days at 27°C)	IS 3025 (Part 44) : 2019		Not Specified	BLQ(LOQ:1.0)

'#' represents Customer Defined Fields


**NOTE :** NA- Not Applicable, LOQ- Limit of Quantification, BLQ- Below limit of Quantification. Sampling Procedure: SOP/ITC/EW/030.

**REMARKS :**N/A

\*\*\*\*\*End Of Report\*\*\*\*\*

## Test Report

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<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2309220798 <b>Sample Reg. Date</b> :22-09-2023 <b>Report Date</b> :29-09-2023 <b>Report No.</b> :ICE-2309290960 (1) <b>NABL ULR No.</b> :TC592623000011493F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25.11.2022
<b>Test Report as per IS:IS 10500 - 2012</b>	<b>With Amendment No.(s):</b> 01 to 04
<b>PART A : PARTICULARS OF SAMPLE SUBMITTED</b>	
a) Nature of Sample #	Ground Water
b) Sample Condition	Good
c) Grade / Variety / Type / Class / Size etc.	NA
d) Brand Name	NA
e) Declared Values,if any	NA
f) Code No.	
g) Batch Number #	NA
h) D.O.M #	NA
i) Date of Expiry #	NA
j) Sample Quantity #	2 Ltr
k) Batch Size/Location #	NA
l) Mode of Packing	Packed in cans
m) Date of Receipt	22-09-2023
n) Date of Start	22-09-2023
o) Date of Completion	29-09-2023
p) Seal (Intact/Not Intact/Unsealed)	NA
q) IO'S Signature (Signed/Unsigned)	Unsigned
r) Any Other Information	Sample Collected by lab rep. Mr. Ram Gopal on 21.09.2023, Sample from Piezometer-2

*V. Saini*  
Vikrant  
30-09-2023  
Reviewer

*PremKumar*  
30-09-2023  
PremKumar  
[Authorized Signatory]

### Interstellar Testing Centre Pvt. Ltd.

86, Industrial Area, Phase-1, Panchkula-134109 (Haryana)  
Panchkula-134109 (Haryana)  
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## Test Report

Document OF : 2501  
Page 2 of 3

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura		<b>Sample Reg. No.</b> :E01-2309220798 <b>Sample Reg. Date</b> :22-09-2023 <b>Report Date</b> :29-09-2023 <b>Report No.</b> :ICE-2309290960 (1) <b>NABL ULR No.</b> :TC592623000011493F <b>Customer Ref. No.:</b> PO <b>Letter Dated</b> :25.11.2022
s)	Test Request Submitted By	Nabha Power Limited-Rajpura ( Punjab )
t)	Manufactured By #	NA
u)	Supplied By #	NA

## PART B : SUPPLEMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

Description					
Description		Liquid Sample with Suspended particles			
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
	<b>Discipline : Chemical</b>				
	<b>Group : Water</b>				
1.	<b>Organoleptic &amp;Physical Parameter</b>				
a.	pH Value	IS:3025 (Part - 11):1983(RA:2017)	6.5-8.5	No relaxation	7.16
2.	<b>General Parameters</b>				
a.	Total Dissolved Solids (mg/L)	IS:3025(P-16)	500 Max.	2000 Max.	439
3.	<b>Parameters Concerning Undesirable Substances in excess amount</b>				
a.	Total Hardness(as CaCO <sub>3</sub> ),(mg/L)	IS 3025 (Part 21)	200 Max.	600 Max.	87
4.	<b>Parameters Concerning Toxic Substances</b>				

V Saini  
Vikrant  
30-09-2023  
Reviewer

PremKumar  
30-09-2023  
PremKumar  
[Authorized Signatory]

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## Test Report

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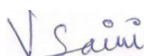
<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura			<b>Sample Reg. No.</b> :E01-2309220798 <b>Sample Reg. Date</b> :22-09-2023 <b>Report Date</b> :29-09-2023 <b>Report No.</b> :ICE-2309290960 (1) <b>NABL ULR No.</b> :TC592623000011493F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25.11.2022		
a.	Lead(as Pb)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	No Relaxation	BLQ(LOQ:0.002)
b.	Mercury(as Hg)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.001 Max.	No Relaxation	BLQ(LOQ:0.001)
c.	Total Arsenic(as As)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	0.05 Max.	BLQ(LOQ:0.002)
d.	Total Chromium(as Cr)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.05 Max.	No Relaxation	BLQ(LOQ:0.002)

\*' represents categories/test parameters not covered under NABL '#' represents Customer Defined Fields

**NOTE :** NA- Not Applicable, LOQ- Limit of Quantification, BLQ- Below limit of Quantification. Sampling Procedure: SOP/ITC/EW/030.

**REMARKS :**N/A

\*\*\*\*\*End Of Report\*\*\*\*\*



Vikrant  
30-09-2023  
Reviewer



30-09-2023  
PremKumar  
[Authorized Signatory]

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## Test Report


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Page 1 of 2

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2309220799 <b>Sample Reg. Date</b> :22-09-2023 <b>Report Date</b> :29-09-2023 <b>Report No.</b> :ICE-2309290961 (2) <b>Customer Ref. No.:</b> PO <b>Letter Dated</b> :25.11.2022
---	---

<b>Test Report as per IS:IS 10500 - 2012</b>	<b>With Amendment No.(s):01 to 04</b>
--	---------------------------------------

### PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample #	Ground Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number #	NA
h)	D.O.M #	NA
i)	Date of Expiry #	NA
j)	Sample Quantity #	2 Ltr
k)	Batch Size/Location #	NA
l)	Mode of Packing	Packed in cans
m)	Date of Receipt	22-09-2023
n)	Date of Start	22-09-2023
o)	Date of Completion	29-09-2023
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample Collected by lab rep. Mr. Ram Gopal on 21.09.2023, Sample from Piezometer-3
s)	Test Request Submitted By	Nabha Power Limited-Rajpura ( Punjab )
t)	Manufactured By #	NA
u)	Supplied By #	NA

### PART B : SUPPLIMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

### Description

## Test Report

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Page 2 of 2

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2309220799 <b>Sample Reg. Date</b> :22-09-2023 <b>Report Date</b> :29-09-2023 <b>Report No.</b> :ICE-2309290961 (2) <b>Customer Ref. No.:</b> PO <b>Letter Dated</b> :25.11.2022
---	---

Description	Liquid Sample with Suspended particles				
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
	<b>Discipline : Chemical</b>				
	<b>Group : Water</b>				
1.	<b>General Parameters</b>				
a.	Total Suspended Solids,(mg/L)	IS:3025(Part 17)		Not Specified	6
b.	Chemical Oxygen Demand(mg/L)	IS 3025 (Part: 58): 2006		Not Specified	BLQ(LOQ:4.0)
c.	Bio-chemical Oxygen Demand, mg/L (3 days at 27°C)	IS 3025 (Part 44) : 2019		Not Specified	BLQ(LOQ:1.0)

'#' represents Customer Defined Fields

**NOTE :** NA- Not Applicable, LOQ- Limit of Quantification, BLQ- Below limit of Quantification. Sampling Procedure: SOP/ITC/EW/030.


**REMARKS :**N/A

\*\*\*\*\*End Of Report\*\*\*\*\*



## Test Report

Document OF : 2501  
Page 1 of 3

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2309220799 <b>Sample Reg. Date</b> :22-09-2023 <b>Report Date</b> :29-09-2023 <b>Report No.</b> :ICE-2309290961 (1) <b>NABL ULR No.</b> :TC592623000011511F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25.11.2022
<b>Test Report as per IS:IS 10500 - 2012</b>	<b>With Amendment No.(s):</b> 01 to 04
<b>PART A : PARTICULARS OF SAMPLE SUBMITTED</b>	
a) Nature of Sample #	Ground Water
b) Sample Condition	Good
c) Grade / Variety / Type / Class / Size etc.	NA
d) Brand Name	NA
e) Declared Values,if any	NA
f) Code No.	
g) Batch Number #	NA
h) D.O.M #	NA
i) Date of Expiry #	NA
j) Sample Quantity #	2 Ltr
k) Batch Size/Location #	NA
l) Mode of Packing	Packed in cans
m) Date of Receipt	22-09-2023
n) Date of Start	22-09-2023
o) Date of Completion	29-09-2023
p) Seal (Intact/Not Intact/Unsealed)	NA
q) IO'S Signature (Signed/Unsigned)	Unsigned
r) Any Other Information	Sample Collected by lab rep. Mr. Ram Gopal on 21.09.2023, Sample from Piezometer-3

*V Saini*  
Vikrant  
30-09-2023  
Reviewer

*PremKumar*  
30-09-2023  
PremKumar  
[Authorized Signatory]

### Interstellar Testing Centre Pvt. Ltd.

86, Industrial Area, Phase-1, Panchkula-134109 (Haryana)  
Panchkula-134109 (Haryana)  
Phone : (O) 0172-2561543, 2565825  
Email : customersupport@itclabs.com  
Visit us : www.itclabs.com

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Document OF : 2501  
Page 2 of 3

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura		<b>Sample Reg. No.</b> :E01-2309220799 <b>Sample Reg. Date</b> :22-09-2023 <b>Report Date</b> :29-09-2023 <b>Report No.</b> :ICE-2309290961 (1) <b>NABL ULR No.</b> :TC592623000011511F <b>Customer Ref. No.:</b> PO <b>Letter Dated</b> :25.11.2022
s)	Test Request Submitted By	Nabha Power Limited-Rajpura ( Punjab )
t)	Manufactured By #	NA
u)	Supplied By #	NA

### PART B : SUPPLEMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

### Description

Description	Liquid Sample with Suspended particles				
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
	<b>Discipline : Chemical</b>				
	<b>Group : Water</b>				
1.	<b>Organoleptic &amp;Physical Parameter</b>				
a.	pH Value	IS:3025 (Part - 11):1983(RA:2017)	6.5-8.5	No relaxation	7.09
2.	<b>General Parameters</b>				
a.	Total Dissolved Solids (mg/L)	IS:3025(P-16)	500 Max.	2000 Max.	432
3.	<b>Parameters Concerning Undesirable Substances in excess amount</b>				
a.	Total Hardness(as CaCO <sub>3</sub> ),(mg/L)	IS 3025 (Part 21)	200 Max.	600 Max.	80
4.	<b>Parameters Concerning Toxic Substances</b>				

V Saini  
Vikrant  
30-09-2023  
Reviewer

PremKumar  
30-09-2023  
PremKumar  
[Authorized Signatory]

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86, Industrial Area, Phase-1, Panchkula-134109 (Haryana)  
Panchkula-134109 (Haryana)  
Phone : (O) 0172-2561543, 2565825  
Email : customersupport@itclabs.com  
Visit us : www.itclabs.com

## Test Report

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Page 3 of 3

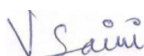
<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura			<b>Sample Reg. No.</b> :E01-2309220799 <b>Sample Reg. Date</b> :22-09-2023 <b>Report Date</b> :29-09-2023 <b>Report No.</b> :ICE-2309290961 (1) <b>NABL ULR No.</b> :TC592623000011511F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25.11.2022		
a.	Lead(as Pb)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	No Relaxation	BLQ(LOQ:0.002)
b.	Mercury(as Hg)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.001 Max.	No Relaxation	BLQ(LOQ:0.001)
c.	Total Arsenic(as As)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	0.05 Max.	BLQ(LOQ:0.002)
d.	Total Chromium(as Cr)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.05 Max.	No Relaxation	BLQ(LOQ:0.002)

\*' represents categories/test parameters not covered under NABL '#' represents Customer Defined Fields

**NOTE :** NA- Not Applicable, LOQ- Limit of Quantification, BLQ- Below limit of Quantification. Sampling Procedure: SOP/ITC/EW/030.

**REMARKS :**N/A

\*\*\*\*\*End Of Report\*\*\*\*\*



Vikrant  
30-09-2023  
Reviewer



30-09-2023  
PremKumar  
[Authorized Signatory]

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## Test Report


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Page 1 of 2

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2309220800 <b>Sample Reg. Date</b> :22-09-2023 <b>Report Date</b> :29-09-2023 <b>Report No.</b> :ICE-2309290962 (2) <b>Customer Ref. No.:</b> PO <b>Letter Dated</b> :25.11.2022
---	---

<b>Test Report as per IS:IS 10500 - 2012</b>	<b>With Amendment No.(s):</b> 01 to 04
--	--

### PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample #	Ground Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number #	NA
h)	D.O.M #	NA
i)	Date of Expiry #	NA
j)	Sample Quantity #	2 Ltr
k)	Batch Size/Location #	NA
l)	Mode of Packing	Packed in cans
m)	Date of Receipt	22-09-2023
n)	Date of Start	22-09-2023
o)	Date of Completion	29-09-2023
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample Collected by lab rep. Mr. Ram Gopal on 21.09.2023, Sample from Piezometer-4
s)	Test Request Submitted By	Nabha Power Limited-Rajpura ( Punjab )
t)	Manufactured By #	NA
u)	Supplied By #	NA

### PART B : SUPPLIMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

### Description

## Test Report

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Page 2 of 2

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2309220800 <b>Sample Reg. Date</b> :22-09-2023 <b>Report Date</b> :29-09-2023 <b>Report No.</b> :ICE-2309290962 (2) <b>Customer Ref. No.:</b> PO <b>Letter Dated</b> :25.11.2022
---	---

Description	Liquid Sample with Suspended particles				
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
	<b>Discipline : Chemical</b>				
	<b>Group : Water</b>				
1.	<b>General Parameters</b>				
a.	Total Suspended Solids,(mg/L)	IS:3025(Part 17)		Not Specified	4
b.	Chemical Oxygen Demand(mg/L)	IS 3025 (Part: 58): 2006		Not Specified	BLQ(LOQ:4.0)
c.	Bio-chemical Oxygen Demand, mg/L (3 days at 27°C)	IS 3025 (Part 44) : 2019		Not Specified	BLQ(LOQ:1.0)

'#' represents Customer Defined Fields


**NOTE :** NA- Not Applicable, LOQ- Limit of Quantification, BLQ- Below limit of Quantification. Sampling Procedure: SOP/ITC/EW/030.

**REMARKS :**N/A


\*\*\*\*\*End Of Report\*\*\*\*\*

## Test Report

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Page 1 of 3

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2309220800 <b>Sample Reg. Date</b> :22-09-2023 <b>Report Date</b> :29-09-2023 <b>Report No.</b> :ICE-2309290962 (1) <b>NABL ULR No.</b> :TC592623000011510F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25.11.2022
<b>Test Report as per IS:IS 10500 - 2012</b>	<b>With Amendment No.(s):</b> 01 to 04
<b>PART A : PARTICULARS OF SAMPLE SUBMITTED</b>	
a) Nature of Sample #	Ground Water
b) Sample Condition	Good
c) Grade / Variety / Type / Class / Size etc.	NA
d) Brand Name	NA
e) Declared Values,if any	NA
f) Code No.	
g) Batch Number #	NA
h) D.O.M #	NA
i) Date of Expiry #	NA
j) Sample Quantity #	2 Ltr
k) Batch Size/Location #	NA
l) Mode of Packing	Packed in cans
m) Date of Receipt	22-09-2023
n) Date of Start	22-09-2023
o) Date of Completion	29-09-2023
p) Seal (Intact/Not Intact/Unsealed)	NA
q) IO'S Signature (Signed/Unsigned)	Unsigned
r) Any Other Information	Sample Collected by lab rep. Mr. Ram Gopal on 21.09.2023, Sample from Piezometer-4

  
Vikrant  
30-09-2023  
Reviewer

  
30-09-2023  
PremKumar  
[Authorized Signatory]

### Interstellar Testing Centre Pvt. Ltd.

86, Industrial Area, Phase-1, Panchkula-134109 (Haryana)  
Panchkula-134109 (Haryana)  
Phone : (O) 0172-2561543, 2565825  
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## Test Report

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s)	Test Request Submitted By	Nabha Power Limited-Rajpura ( Punjab )
t)	Manufactured By #	NA
u)	Supplied By #	NA

### PART B : SUPPLEMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

### Description

Description	Liquid Sample with Suspended particles				
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
	<b>Discipline : Chemical</b>				
	<b>Group : Water</b>				
1.	<b>Organoleptic &amp;Physical Parameter</b>				
a.	pH Value	IS:3025 (Part - 11):1983(RA:2017)	6.5-8.5	No relaxation	7.08
2.	<b>General Parameters</b>				
a.	Total Dissolved Solids (mg/L)	IS:3025(P-16)	500 Max.	2000 Max.	424
3.	<b>Parameters Concerning Undesirable Substances in excess amount</b>				
a.	Total Hardness(as CaCO <sub>3</sub> ),(mg/L)	IS 3025 (Part 21)	200 Max.	600 Max.	81
4.	<b>Parameters Concerning Toxic Substances</b>				

V Saini

Vikrant  
30-09-2023  
Reviewer

PremKumar

30-09-2023  
PremKumar  
[Authorized Signatory]

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## Test Report

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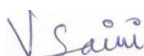
<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura			<b>Sample Reg. No.</b> :E01-2309220800 <b>Sample Reg. Date</b> :22-09-2023 <b>Report Date</b> :29-09-2023 <b>Report No.</b> :ICE-2309290962 (1) <b>NABL ULR No.</b> :TC592623000011510F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25.11.2022		
a.	Lead(as Pb)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	No Relaxation	BLQ(LOQ:0.002)
b.	Mercury(as Hg)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.001 Max.	No Relaxation	BLQ(LOQ:0.001)
c.	Total Arsenic(as As)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	0.05 Max.	BLQ(LOQ:0.002)
d.	Total Chromium(as Cr)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.05 Max.	No Relaxation	BLQ(LOQ:0.002)

\*' represents categories/test parameters not covered under NABL '#' represents Customer Defined Fields

**NOTE :** NA- Not Applicable, LOQ- Limit of Quantification, BLQ- Below limit of Quantification. Sampling Procedure: SOP/ITC/EW/030.

**REMARKS :**N/A

\*\*\*\*\*End Of Report\*\*\*\*\*



Vikrant  
30-09-2023  
Reviewer



30-09-2023  
PremKumar  
[Authorized Signatory]

### Interstellar Testing Centre Pvt. Ltd.

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**PUNJAB POLLUTION CONTROL BOARD VATAVARAN BHAVAN,  
NABHA ROAD, PATIALA  
GROUND WATER REPORT**

- |  |  |
|--|--|
| 1. Laboratory Sample No.                 | GW-350-353/ H.O.Lab./ G.W. Monitoring/2023                                       |
| 2. Name of Industry                      | Ground Water Samples taken from<br>M/s Nabha Power Ltd., Village. Nalas, Rajpura |
| 3. Name of Sample collecting Officer     | Er. Mohit Singla, AEE  |
| 4. Designation of authorizing Test       | EE, RO, Patiala.   |
| 5. Date & Time of Sample collection      | 30.06.2023   |
| 6. Date & Time of Sample receipt in Lab. | 01.07.2023   |
| 7. Period of Analysis                    | 01.07.2023 to 19.07.2023   |
| 8. Test Methods                          | As per relevant parts of IS:3025 & Methods of APHA                               |

**Results**

Sr. no.	Parameters	Near Coal Handling Plant	Near Storm Water Sump	Along ash dykes	Between Ash dyke and water reservior
1	pH	7.9	7.7	7.8	7.5
2	Total Suspended Solids mg/l	BDL	BDL	BDL	BDL
3	Total Dissolved Solids mg/l	491	494	489	476
4	Chemical Oxygen Demand mg/l	BDL	BDL	BDL	BDL
5	Bio-Chemical Oxygen Demand mg/l	BDL	BDL	BDL	BDL
6	Total Hardness mg/l	268	279	276	244
7	Calcium Hardness mg/l	182	187	170	166
8	Magnesium Hardness mg/l	86	92	106	78
9	Total Alkalinity mg/l	288	304	324	296
10	Chloride mg/l	78	82	80	84
11	Sulphate mg/l	49	54	50	52
12	Arsenic mg/l	BDL	BDL	BDL	BDL
13	Mercury mg/l	BDL	BDL	BDL	BDL
14	Magnesium mg/l	21	22	26	19
15	Lead mg/l	BDL	BDL	BDL	BDL
16	Total Chromium mg/l	BDL	BDL	BDL	BDL

Note: BDL means Below Method Detection Limit.

--End of Report--

Scientific Officer  
21/7/23

Endst. No: 16926-28

Dt. 24/7/23

A copy of the above is forwarded to the:-

1. The Chief Environmental Engineer (Water), Punjab Pollution Control Board, Ludhiana.
2. The Senior Environment Engineer, Punjab Pollution Control Board, Zonal Office, -I, Patiala.
- ✓ 3. The Environment Engineer, Punjab Pollution Control Board, Regional Office, Patiala.

Asst. Scientific Officer



1/2/3/

13/09/2023

16/10/23

Put up with report

filed  
RK

PUNJAB POLLUTION CONTROL BOARD

VATAVARAN BHAIVAN,

NABHA ROAD, PATIALA

GROUND WATER REPORT



1. Laboratory Sample No.

2. Name of Industry

3. Name of Sample collecting Officer

4. Designation of authorizing Test

5. Date &amp; Time of Sample collection

6. Date &amp; Time of Sample receipt in Lab.

7. Period of Analysis

8. Test Methods

GW-400-403/ H.O.Lab./ G.W. Monitoring/2023

Ground Water Samples taken from

M/s Nabha Power Ltd., Village. Nalas, Rajpura

Er. Mohit Singla, AEE

EE, RO, Patiala.

25.09.2023

26.09.2023

26.09.2023 to 05.10.2023

As per relevant parts of IS:3025 &amp;

Methods of APHA

## Results

Sr. no.	Parameters	Near Coal Handling Plant	Near Storm Water Sump	Along ash dykes	Between Ash dyke and water reservoir
1	pH	8.5	7.9	7.8	7.7
2	Total Suspended Solids mg/l	BDL	BDL	BDL	BDL
3	Total Dissolved Solids mg/l	449	529	541	534
4	Chemical Oxygen Demand mg/l	BDL	BDL	BDL	BDL
5	Bio-Chemical Oxygen Demand mg/l	BDL	BDL	BDL	BDL
6	Total Hardness mg/l	247	296	303	298
7	Calcium Hardness mg/l	168	198	201	203
8	Magnesium Hardness mg/l	79	98	102	95
9	Total Alkalinity mg/l	268	324	356	352
10	Chloride mg/l	72	84	96	90
11	Sulphate mg/l	44	58	66	64
12	Arsenic mg/l	BDL	BDL	BDL	BDL
13	Mercury mg/l	BDL	BDL	BDL	BDL
14	Magnesium mg/l	19	24	25	23
15	Lead mg/l	BDL	BDL	BDL	BDL
16	Total Chromium mg/l	BDL	BDL	BDL	BDL

Note: BDL means Below Method Detection Limit.

--End of Report--

Scientific Officer

Endst. No:

25516-18

Dt.

10/10/23

A copy of the above is forwarded to the:-

1. The Chief Environmental Engineer (Water), Punjab Pollution Control Board, Ludhiana/Patiala.
2. The Senior Environment Engineer, Punjab Pollution Control Board, Zonal Office, -I, Patiala.
3. The Environment Engineer, Punjab Pollution Control Board, Regional Office, Patiala.

Asst. Scientific Officer

# **Annexure-8**

## **Green Belt Photographs**



## Annexure-8

NPL is having a complete dedicated team of skilled horticulturists for the forestation and greenery development program at our plant. A green belt are developed inside as well outside plant premises. Also, small patches of gardens are developed inside of the plant premises wherever the open space is available to improve the plant beautification.



**Pic-1 Green belt around coal stockpile area**



**Pic-2 Green belt around plant premises**



**Pic-3 Green belt along boundary**



**Pic-4 Green belt on both sides of road**



**Pic-5 Green belt area railway siding**



## **Annexure-09**

### **CSR Projects and Initiatives FY-24 (April-Sep-2023)**



# ***Nabha Power Limited***

**Corporate Social Responsibility**

**CE REVIEW- H1 FY 24**

## **Outreach**

Villages: **49**

Population: **47600**

Panchayats: **47**

Periphery: **5 Km. radius**



# H1 FY24 Progress Report



# Thematic Focus Area



Health



Skill &  
Entrepreneurship  
Development



Education & Sports



Water & Environment



Rural Development



Disaster  
Management



# SKILL & ENTREPRENEURSHIP DEVELOPMENT



# NPL PRODUCTION CENTERS

**5 Centres**  
**5 Villages**

## Products made

School Dress, Apparel, Jute Products,  
**Paper Bags & Fulkaari**

## Active Artisans

**66**

## H1 Earnings

**INR 18+ Lakhs**





# SKILL DEVELOPMENT CENTERS

**Cumulative Coverage**  
**5 Villages; 147 Women**

**Stitching Course; 2 centres**



**Beautician Course; 2 centres**



**30**  
**Trained**

**123**  
**Trainees**





**Award of Certificates of Stitching Course FY23 on 31 Aug 2023**



EDUCATION

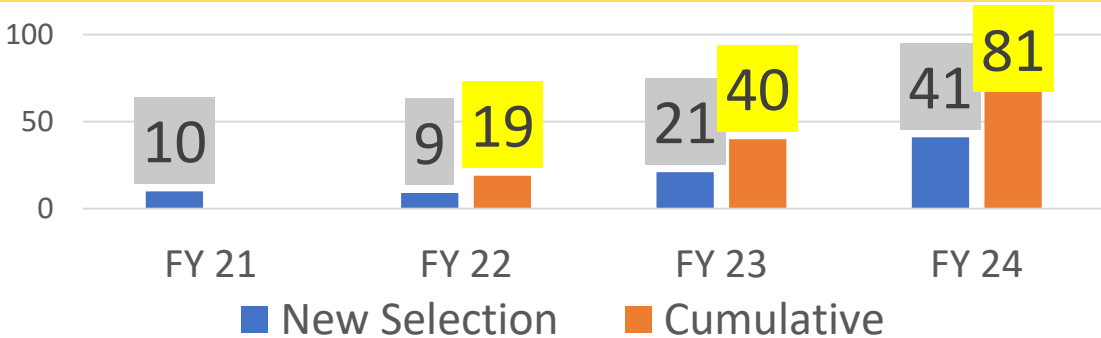




# NPL SCHOLARSHIPS



Annual Enrollment & Cumulative Nos.



81 NPL Scholars







# SAMBHAAVNAA Personality Development Training

400 Students of  
Govt. Schools

Class XI & XII

200 Already  
Trained by  
Sept 2023





# LEARNING ENRICHMENT PROGRAMME



16 Govt. Primary  
Schools

466+ Students

16 NPL Educators



**Project aiming to improve learning level of Class 3<sup>rd</sup> to 5<sup>th</sup> students in Math and English, in addition to overall development of children through co-curricular activities**







# SWACHH PIO

## Provision of Water Coolers & Purifiers



Water Coolers &  
Purifiers with 1+3  
yrs. AMC

FY 23

11 Schools

FY 24

22 Schools

Total Govt Schools Covered

33





# CONTINGENCY SUPPORT TO SCHOOLS

## Minor repair & construction in Govt Schools

Name of the Govt. School	Type of work
GMS Jansua	Paver work in school compound
GMS Rangian	Plastering of Boundary Wall
GES Gurditpura	Tiling in Classroom & mid day meal-room
GES Sarai banjara	Tiling in Classroom and corridor
GSS Ugani Sahib	Pathway
GES Dadu Majra	Kitchen Shed (in progress)



Interlock tiles work in GMS, Jansua



Tiling work in GES Gurdittpura



Plastering of ext. wall in GES Rangian



Completed





# NPL SPORTS ACADEMY

## Village Dhumma



26 Sept 2023

Total  
Trainees  
89



Girls &  
Boys  
Ratio  
49:40



18 Trainees  
have won  
accolades in  
various  
State,  
District and  
Block Level



5 June 2023



25 Sept 2023



# SPORTS

## Development of Playground



To promote sports culture in villages, construction of Sports ground is under progress at vill. Badal Colony.



# SPORTS

## Rural Sports Tournament



Under youth connect initiative, awareness drives were organized against drugs and its harmful effects, subsequently youth were also encouraged for participation in sports and other curricular activities.





HEALTH

# NPL AROGYA

## Health Camps

6 Health Camps

Vision Correction, Diabetes & BP detection, Blood Examination and referral to Govt. Hospital

933 Beneficiaries

(Vision Correction of 241 Beneficiaries)



17 July – Nalash



18 July- Rangian



19 July- Bakshiwala



17 Aug – Sarai Banjara



15 Sept- Harna



20 Sept - Mirjapur





# NPL AROGYA

## Anti Dengue Drive (Post Floods)

Fumigation & Spray of  
Insecticide in 11 Villages

8000+ Beneficiaries







To encourage youth participation in social activities, 4 Blood donations camps were organized covering Vill. Sindhraan, Balsuan, Gurditpura and Uppal Heri in association with Youth club members and respective village panchayats.





# RURAL DEVELOPMENT

# RURAL INFRASTRUCTURE

## EWS Housing- 10 Nos.

**Dabali Khurd**



**Niamatpur**



**Bhappal**



**Kotla**



**Haripur**



**Bhagrana**



Location	Work Status
Kotla	Wall plastering work is under progress
Dabali Kalan	Wall plastering work is under progress
Niamatpura	Fitting of Electrical & Plumbing is under progress.
Sural Khurd	Fitting of Electrical & Plumbing is under progress.

Brick work above the foundation is in progress at Bhappal, Bhagrana, Basantpura and Haripur.



## Majri-Kehargarh Road



Construction of Kehargarh-Majri link road under progress – approx. Length 2.5 kms

## Renovation of existing Panchayat buildings/Dhramshalas completed at Vill. Rangian, Balsuan and Dabali Khurd.



A decorative gray border surrounds the slide content. A yellow triangle is located in the bottom right corner, pointing towards the center.

# Water & Environment



# WATER & ENVIRONMENT

## Cleaning of Ponds/Drains



To avoid flooding and water logging during ongoing monsoon season, surrounding village panchayats have been supported with required machinery to clean natural ponds/drains.



# WATER & ENVIRONMENT

## Crop Protection



Considering farmers request to safeguard their crops from stray animals, construction of precast boundary wall is in progress towards Nalash Kalan, Rangian. Appox. Stretch of 250 mtr has been completed





Nabha Power Limited



Thank you

## **Annexure-10**

# **Ambient Air Quality Monitoring Results**



## Test Report

Document QF : 2501  
Page 1 of 2

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2306200752 <b>Sample Reg. Date</b> :20-06-2023 <b>Report Date</b> :27-06-2023 <b>Report No.</b> :ICE-2306271131 <b>NABL ULR No.</b> :TC592623000008217F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25-11-2022
---	--

<b>Test Report as per :</b>	: NAAQS 2009
<b>Sampling Information :</b>	
Location of Sampling Point	: Near NDTC (AAQMS-1)
Date of Monitoring	: 15-06-2023
Time of Monitoring	: 15:27 hrs
Purpose of Monitoring	: For Self Monitoring
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.32
Volume of air sampled,m3	: 1900.80
Avg. Ambient Temperature,°C	: 34

<b>Description</b>				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
1.	<b>Ambient Air Quality Parameters(Time weighted Avg- 24 Hours)</b>			
a.	Sulphur Dioxide(SO <sub>2</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-2): 2017	80 Max	19.29
b.	Nitrogen Dioxide(NO <sub>2</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-6): 2017	80 Max	25.41
c.	Particulate Matter (PM <sub>10</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-23): 2017	100 Max	79.82
d.	Particulate matter (PM 2.5),µg/m <sup>3</sup>	IS: 5182 (P-24)-2019	60 Max	39.98
e.	Ammonia(NH <sub>3</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-25): 2018	400 Max	31.30
f.	Lead(As Pb),µg/m <sup>3</sup>	STP/ITC/EW/002	1.0 Max	BLQ(LOQ:0.1)

*V Saini*  
Vikrant  
27-06-2023  
Reviewer

*PremKumar*  
27-06-2023  
PremKumar  
[Authorized Signatory]

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- Legal disputes are subjected to Panchkula Jurisdiction only.

## Test Report

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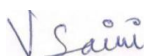
g.	Mercury(as Hg), µg/m <sup>3</sup>	STP/ITC/EW/002	Not Specified	BLQ(LOQ:1.0)
2.	<b>Ambient Air Quality Parameters(Time weighted Avg- 8 Hours)</b>			
a.	Ozone(O <sub>3</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-9): 2019	100 Max.	23.15
b.	Carbon Monoxide(CO),mg/m <sup>3</sup>	IS: 5182 (P-10): 2019	2 Max.	1.3
3.	<b>Ambient Air Quality Parameters(Time weighted Avg- Annual*)</b>			
a.	Benzene(C <sub>6</sub> H <sub>6</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-11): 2017	5 Max	BLQ(LOQ:1.0)
b.	Benzo(a) Pyrene Particulate Phase only,ng/m <sup>3</sup>	IS: 5182 (P-12): 2019	1 Max	BLQ(LOQ:0.5)
c.	Arsenic(as As),ng/m <sup>3</sup>	STP/ITC/EW/002	6 Max.	BLQ(LOQ:1.0)
d.	Nickel(As Ni),ng/m <sup>3</sup>	STP/ITC/EW/002	20 Max.	BLQ(LOQ:1.0)

\*# represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirement as per NAQQS 2009.  
Sampling Procedure: SOP/ITC/EW/056.

**REMARKS :**\*Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

\*\*\*\*\*End Of Report\*\*\*\*\*



Vikrant  
27-06-2023  
Reviewer



27-06-2023  
PremKumar  
[Authorized Signatory]

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---	--

<b>Test Report as per :</b>	: NAAQS 2009
<b>Sampling Information :</b>	
Location of Sampling Point	: Near Loco Shed (AAQMS-2)
Date of Monitoring	: 15-06-2023
Time of Monitoring	: 15:10 hrs
Purpose of Monitoring	: For Self Monitoring
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.33
Volume of air sampled,m3	: 1915.20
Avg. Ambient Temperature,°C	: 34

<b>Description</b>				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
1.	<b>Ambient Air Quality Parameters(Time weighted Avg- 24 Hours)</b>			
a.	Sulphur Dioxide(SO <sub>2</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-2): 2017	80 Max	9.89
b.	Nitrogen Dioxide(NO <sub>2</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-6): 2017	80 Max	22.54
c.	Particulate Matter (PM <sub>10</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-23): 2017	100 Max	79.89
d.	Particulate matter (PM 2.5),µg/m <sup>3</sup>	IS: 5182 (P-24)-2019	60 Max	38.72
e.	Ammonia(NH <sub>3</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-25): 2018	400 Max	30.87
f.	Lead(As Pb),µg/m <sup>3</sup>	STP/ITC/EW/002	1.0 Max	BLQ(LOQ:0.1)

*V. Saini*  
Vikrant  
27-06-2023  
Reviewer

*Prem Kumar*  
27-06-2023  
PremKumar  
[Authorized Signatory]

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---	--

g.	Mercury(as Hg), µg/m <sup>3</sup>	STP/ITC/EW/002	Not Specified	BLQ(LOQ:1.0)
2.	<b>Ambient Air Quality Parameters(Time weighted Avg- 8 Hours)</b>			
a.	Ozone(O <sub>3</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-9): 2019	100 Max.	26.18
b.	Carbon Monoxide(CO),mg/m <sup>3</sup>	IS: 5182 (P-10): 2019	2 Max.	1.4
3.	<b>Ambient Air Quality Parameters(Time weighted Avg- Annual*)</b>			
a.	Benzene(C <sub>6</sub> H <sub>6</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-11): 2017	5 Max	BLQ(LOQ:1.0)
b.	Benzo(a) Pyrene Particulate Phase only,ng/m <sup>3</sup>	IS: 5182 (P-12): 2019	1 Max	BLQ(LOQ:0.5)
c.	Arsenic(as As),ng/m <sup>3</sup>	STP/ITC/EW/002	6 Max.	BLQ(LOQ:1.0)
d.	Nickel(As Ni),ng/m <sup>3</sup>	STP/ITC/EW/002	20 Max.	BLQ(LOQ:1.0)


\*# represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirement as per NAQQS 2009.  
Sampling Procedure: SOP/ITC/EW/056.

**REMARKS :**\*Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

\*\*\*\*\*End Of Report\*\*\*\*\*

  
Vikrant  
27-06-2023  
Reviewer

  
27-06-2023  
PremKumar  
[Authorized Signatory]

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---	--

<b>Test Report as per :</b>	: NAAQS 2009
<b>Sampling Information :</b>	
Location of Sampling Point	: Near Strom Water Sump (AAQMS-3)
Date of Monitoring	: 15-06-2023
Time of Monitoring	: 15:46 hrs
Purpose of Monitoring	: For Self Monitoring
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.33
Volume of air sampled,m3	: 1915.20
Avg. Ambient Temperature,°C	: 35

<b>Description</b>				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
1.	<b>Ambient Air Quality Parameters(Time weighted Avg- 24 Hours)</b>			
a.	Sulphur Dioxide(SO <sub>2</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-2): 2017	80 Max	12.25
b.	Nitrogen Dioxide(NO <sub>2</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-6): 2017	80 Max	26.08
c.	Particulate Matter (PM <sub>10</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-23): 2017	100 Max	80.51
d.	Particulate matter (PM 2.5),µg/m <sup>3</sup>	IS: 5182 (P-24)-2019	60 Max	36.22
e.	Ammonia(NH <sub>3</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-25): 2018	400 Max	36.64
f.	Lead(As Pb),µg/m <sup>3</sup>	STP/ITC/EW/002	1.0 Max	BLQ(LOQ:0.1)

*V Saini*  
Vikrant  
27-06-2023  
Reviewer

*PremKumar*  
27-06-2023  
PremKumar  
[Authorized Signatory]

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---	--

g.	Mercury(as Hg), µg/m <sup>3</sup>	STP/ITC/EW/002	Not Specified	BLQ(LOQ:1.0)
2.	<b>Ambient Air Quality Parameters(Time weighted Avg- 8 Hours)</b>			
a.	Ozone(O <sub>3</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-9): 2019	100 Max.	24.50
b.	Carbon Monoxide(CO),mg/m <sup>3</sup>	IS: 5182 (P-10): 2019	2 Max.	1.4
3.	<b>Ambient Air Quality Parameters(Time weighted Avg- Annual*)</b>			
a.	Benzene(C <sub>6</sub> H <sub>6</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-11): 2017	5 Max	BLQ(LOQ:1.0)
b.	Benzo(a) Pyrene Particulate Phase only,ng/m <sup>3</sup>	IS: 5182 (P-12): 2019	1 Max	BLQ(LOQ:0.5)
c.	Arsenic(as As),ng/m <sup>3</sup>	STP/ITC/EW/002	6 Max.	BLQ(LOQ:1.0)
d.	Nickel(As Ni),ng/m <sup>3</sup>	STP/ITC/EW/002	20 Max.	BLQ(LOQ:1.0)

\*# represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirement as per NAQQS 2009.  
Sampling Procedure: SOP/ITC/EW/056.

**REMARKS :**\*Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

\*\*\*\*\*End Of Report\*\*\*\*\*

  
Vikrant  
27-06-2023  
Reviewer

  
27-06-2023  
PremKumar  
[Authorized Signatory]

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## Test Report

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<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2306200755 <b>Sample Reg. Date</b> :20-06-2023 <b>Report Date</b> :27-06-2023 <b>Report No.</b> :ICE-2306271122 <b>NABL ULR No.</b> :TC592623000008220F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25-11-2022
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<b>Test Report as per :</b>	: NAAQS 2009
<b>Sampling Information :</b>	
Location of Sampling Point	: Near Switch Yard (AAQMS-4)
Date of Monitoring	: 15-06-2023
Time of Monitoring	: 14:42 hrs
Purpose of Monitoring	: For Self Monitoring
Duration of Monitoring, minutes	: 1440
Avg. Flow Rate of Sampling, m <sup>3</sup> /min	: 1.32
Volume of air sampled, m <sup>3</sup>	: 1900.80
Avg. Ambient Temperature, °C	: 35

<b>Description</b>				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
1.	<b>Ambient Air Quality Parameters (Time weighted Avg- 24 Hours)</b>			
a.	Sulphur Dioxide(SO <sub>2</sub> ), µg/m <sup>3</sup>	IS: 5182 (P-2): 2017	80 Max	12.20
b.	Nitrogen Dioxide(NO <sub>2</sub> ), µg/m <sup>3</sup>	IS: 5182 (P-6): 2017	80 Max	23.20
c.	Particulate Matter (PM <sub>10</sub> ), µg/m <sup>3</sup>	IS: 5182 (P-23): 2017	100 Max	79.33
d.	Particulate matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>	IS: 5182 (P-24)-2019	60 Max	41.25
e.	Ammonia(NH <sub>3</sub> ), µg/m <sup>3</sup>	IS: 5182 (P-25): 2018	400 Max	34.89
f.	Lead(As Pb), µg/m <sup>3</sup>	STP/ITC/EW/002	1.0 Max	BLQ(LOQ:0.1)

*V. Saini*  
Vikrant  
27-06-2023  
Reviewer

*Prem Kumar*  
27-06-2023  
PremKumar  
[Authorized Signatory]

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## Test Report

Document QF : 2501  
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<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2306200755 <b>Sample Reg. Date</b> :20-06-2023 <b>Report Date</b> :27-06-2023 <b>Report No.</b> :ICE-2306271122 <b>NABL ULR No.</b> :TC592623000008220F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25-11-2022
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g.	Mercury(as Hg), µg/m <sup>3</sup>	STP/ITC/EW/002	Not Specified	BLQ(LOQ:1.0)
2.	<b>Ambient Air Quality Parameters(Time weighted Avg- 8 Hours)</b>			
a.	Ozone(O <sub>3</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-9): 2019	100 Max.	24.17
b.	Carbon Monoxide(CO),mg/m <sup>3</sup>	IS: 5182 (P-10): 2019	2 Max.	1.3
3.	<b>Ambient Air Quality Parameters(Time weighted Avg- Annual*)</b>			
a.	Benzene(C <sub>6</sub> H <sub>6</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-11): 2017	5 Max	BLQ(LOQ:1.0)
b.	Benzo(a) Pyrene Particulate Phase only,ng/m <sup>3</sup>	IS: 5182 (P-12): 2019	1 Max	BLQ(LOQ:0.5)
c.	Arsenic(as As),ng/m <sup>3</sup>	STP/ITC/EW/002	6 Max.	BLQ(LOQ:1.0)
d.	Nickel(As Ni),ng/m <sup>3</sup>	STP/ITC/EW/002	20 Max.	BLQ(LOQ:1.0)

\*# represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirement as per NAQQS 2009.  
Sampling Procedure: SOP/ITC/EW/056.

**REMARKS :**\*Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

\*\*\*\*\*End Of Report\*\*\*\*\*

  
Vikrant  
27-06-2023  
Reviewer

  
27-06-2023  
PremKumar  
[Authorized Signatory]

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Document QF : 2501  
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<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2306200756 <b>Sample Reg. Date</b> :20-06-2023 <b>Report Date</b> :27-06-2023 <b>Report No.</b> :ICE-2306271120 <b>NABL ULR No.</b> :TC592623000008221F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25-11-2022
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<b>Test Report as per :</b>	: NAAQS 2009
<b>Sampling Information :</b>	
Location of Sampling Point	: Village- Dadumajra
Date of Monitoring	: 17-06-2023
Time of Monitoring	: 15:40 hrs
Purpose of Monitoring	: For Self Monitoring
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.23
Volume of air sampled,m3	: 1771.20
Avg. Ambient Temperature,°C	: 34

<b>Description</b>				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
1.	<b>Ambient Air Quality Parameters(Time weighted Avg- 24 Hours)</b>			
a.	Sulphur Dioxide(SO <sub>2</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-2): 2017	80 Max	15.24
b.	Nitrogen Dioxide(NO <sub>2</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-6): 2017	80 Max	22.16
c.	Particulate Matter (PM <sub>10</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-23): 2017	100 Max	80.17
d.	Particulate matter (PM 2.5),µg/m <sup>3</sup>	IS: 5182 (P-24)-2019	60 Max	39.12
e.	Ammonia(NH <sub>3</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-25): 2018	400 Max	30.19
f.	Lead(As Pb),µg/m <sup>3</sup>	STP/ITC/EW/002	1.0 Max	BLQ(LOQ:0.1)

*V Saini*  
Vikrant  
27-06-2023  
Reviewer

*Prem Kumar*  
27-06-2023  
PremKumar  
[Authorized Signatory]

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## Test Report

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Page 2 of 2

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2306200756 <b>Sample Reg. Date</b> :20-06-2023 <b>Report Date</b> :27-06-2023 <b>Report No.</b> :ICE-2306271120 <b>NABL ULR No.</b> :TC592623000008221F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25-11-2022
---	--

g.	Mercury(as Hg), µg/m <sup>3</sup>	STP/ITC/EW/002	Not Specified	BLQ(LOQ:1.0)
2.	<b>Ambient Air Quality Parameters(Time weighted Avg- 8 Hours)</b>			
a.	Ozone(O <sub>3</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-9): 2019	100 Max.	25.19
b.	Carbon Monoxide(CO),mg/m <sup>3</sup>	IS: 5182 (P-10): 2019	2 Max.	1.2
3.	<b>Ambient Air Quality Parameters(Time weighted Avg- Annual*)</b>			
a.	Benzene(C <sub>6</sub> H <sub>6</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-11): 2017	5 Max	BLQ(LOQ:1.0)
b.	Benzo(a) Pyrene Particulate Phase only,ng/m <sup>3</sup>	IS: 5182 (P-12): 2019	1 Max	BLQ(LOQ:0.5)
c.	Arsenic(as As),ng/m <sup>3</sup>	STP/ITC/EW/002	6 Max.	BLQ(LOQ:1.0)
d.	Nickel(As Ni),ng/m <sup>3</sup>	STP/ITC/EW/002	20 Max.	BLQ(LOQ:1.0)

\*# represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirement as per NAQQS 2009.  
Sampling Procedure: SOP/ITC/EW/056.

**REMARKS :**\*Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

\*\*\*\*\*End Of Report\*\*\*\*\*

  
Vikrant  
27-06-2023  
Reviewer

  
27-06-2023  
PremKumar  
[Authorized Signatory]

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<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2306200757 <b>Sample Reg. Date</b> :20-06-2023 <b>Report Date</b> :27-06-2023 <b>Report No.</b> :ICE-2306271117 <b>NABL ULR No.</b> :TC592623000008222F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25-11-2022
---	--

<b>Test Report as per :</b>	: NAAQS 2009
<b>Sampling Information :</b>	
Location of Sampling Point	: Village- Dabhali
Date of Monitoring	: 17-06-2023
Time of Monitoring	: 15:10 hrs
Purpose of Monitoring	: For Self Monitoring
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.32
Volume of air sampled,m3	: 1900.80
Avg. Ambient Temperature,°C	: 34

<b>Description</b>				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
1.	<b>Ambient Air Quality Parameters(Time weighted Avg- 24 Hours)</b>			
a.	Sulphur Dioxide(SO <sub>2</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-2): 2017	80 Max	14.27
b.	Nitrogen Dioxide(NO <sub>2</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-6): 2017	80 Max	21.16
c.	Particulate Matter (PM <sub>10</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-23): 2017	100 Max	76.21
d.	Particulate matter (PM 2.5),µg/m <sup>3</sup>	IS: 5182 (P-24)-2019	60 Max	37.81
e.	Ammonia(NH <sub>3</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-25): 2018	400 Max	28.15
f.	Lead(As Pb),µg/m <sup>3</sup>	STP/ITC/EW/002	1.0 Max	BLQ(LOQ:0.1)

*V. Saini*  
Vikrant  
27-06-2023  
Reviewer

*Prem Kumar*  
27-06-2023  
PremKumar  
[Authorized Signatory]

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## Test Report

Document QF : 2501  
Page 2 of 2

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2306200757 <b>Sample Reg. Date</b> :20-06-2023 <b>Report Date</b> :27-06-2023 <b>Report No.</b> :ICE-2306271117 <b>NABL ULR No.</b> :TC592623000008222F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25-11-2022
---	--

g.	Mercury(as Hg), µg/m <sup>3</sup>	STP/ITC/EW/002	Not Specified	BLQ(LOQ:1.0)
2.	<b>Ambient Air Quality Parameters(Time weighted Avg- 8 Hours)</b>			
a.	Ozone(O <sub>3</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-9): 2019	100 Max.	22.11
b.	Carbon Monoxide(CO),mg/m <sup>3</sup>	IS: 5182 (P-10): 2019	2 Max.	1.4
3.	<b>Ambient Air Quality Parameters(Time weighted Avg- Annual*)</b>			
a.	Benzene(C <sub>6</sub> H <sub>6</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-11): 2017	5 Max	BLQ(LOQ:1.0)
b.	Benzo(a) Pyrene Particulate Phase only,ng/m <sup>3</sup>	IS: 5182 (P-12): 2019	1 Max	BLQ(LOQ:0.5)
c.	Arsenic(as As),ng/m <sup>3</sup>	STP/ITC/EW/002	6 Max.	BLQ(LOQ:1.0)
d.	Nickel(As Ni),ng/m <sup>3</sup>	STP/ITC/EW/002	20 Max.	BLQ(LOQ:1.0)


\*# represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirement as per NAQQS 2009.  
Sampling Procedure: SOP/ITC/EW/056.

**REMARKS :**\*Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

\*\*\*\*\*End Of Report\*\*\*\*\*

  
Vikrant  
27-06-2023  
Reviewer

  
27-06-2023  
PremKumar  
[Authorized Signatory]

**Interstellar Testing Centre Pvt. Ltd.**  
86, Industrial Area, Phase-1, Panchkula-134109 (Haryana)  
Panchkula-134109 (Haryana)  
Phone : (O) 0172-2561543, 2565825  
Email : customersupport@itclabs.com  
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## Test Report

Document QF : 2501  
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<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2306200758 <b>Sample Reg. Date</b> :20-06-2023 <b>Report Date</b> :27-06-2023 <b>Report No.</b> :ICE-2306271116 <b>NABL ULR No.</b> :TC592623000008223F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25-11-2022
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<b>Test Report as per :</b>	: NAAQS 2009
<b>Sampling Information :</b>	
Location of Sampling Point	: Village- Salempur
Date of Monitoring	: 17-06-2023
Time of Monitoring	: 16:10 hrs
Purpose of Monitoring	: For Self Monitoring
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.32
Volume of air sampled,m3	: 1900.80
Avg. Ambient Temperature,°C	: 34

<b>Description</b>				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
1.	<b>Ambient Air Quality Parameters(Time weighted Avg- 24 Hours)</b>			
a.	Sulphur Dioxide(SO <sub>2</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-2): 2017	80 Max	11.21
b.	Nitrogen Dioxide(NO <sub>2</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-6): 2017	80 Max	18.17
c.	Particulate Matter (PM <sub>10</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-23): 2017	100 Max	78.25
d.	Particulate matter (PM 2.5),µg/m <sup>3</sup>	IS: 5182 (P-24)-2019	60 Max	32.45
e.	Ammonia(NH <sub>3</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-25): 2018	400 Max	28.30
f.	Lead(As Pb),µg/m <sup>3</sup>	STP/ITC/EW/002	1.0 Max	BLQ(LOQ:0.1)

*V Saini*  
Vikrant  
27-06-2023  
Reviewer

*PremKumar*  
27-06-2023  
PremKumar  
[Authorized Signatory]

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---	--

g.	Mercury(as Hg), µg/m <sup>3</sup>	STP/ITC/EW/002	Not Specified	BLQ(LOQ:1.0)
2.	<b>Ambient Air Quality Parameters(Time weighted Avg- 8 Hours)</b>			
a.	Ozone(O <sub>3</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-9): 2019	100 Max.	21.95
b.	Carbon Monoxide(CO),mg/m <sup>3</sup>	IS: 5182 (P-10): 2019	2 Max.	1.2
3.	<b>Ambient Air Quality Parameters(Time weighted Avg- Annual*)</b>			
a.	Benzene(C <sub>6</sub> H <sub>6</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-11): 2017	5 Max	BLQ(LOQ:1.0)
b.	Benzo(a) Pyrene Particulate Phase only,ng/m <sup>3</sup>	IS: 5182 (P-12): 2019	1 Max	BLQ(LOQ:0.5)
c.	Arsenic(as As),ng/m <sup>3</sup>	STP/ITC/EW/002	6 Max.	BLQ(LOQ:1.0)
d.	Nickel(As Ni),ng/m <sup>3</sup>	STP/ITC/EW/002	20 Max.	BLQ(LOQ:1.0)

\*# represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirement as per NAQQS 2009.  
Sampling Procedure: SOP/ITC/EW/056.

**REMARKS :**\*Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

\*\*\*\*\*End Of Report\*\*\*\*\*

  
Vikrant  
27-06-2023  
Reviewer

  
27-06-2023  
PremKumar  
[Authorized Signatory]

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## Test Report

Document QF : 2501  
Page 1 of 2

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2309250860 <b>Sample Reg. Date</b> :25-09-2023 <b>Report Date</b> :30-09-2023 <b>Report No.</b> :ICE-2309301206 <b>NABL ULR No.</b> :TC592623000011559F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25-01-2022
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<b>Test Report as per :</b>	: NAAQS 2009
<b>Sampling Information :</b>	
Location of Sampling Point	: Near NDTC (AAQMS-1)
Date of Monitoring	: 19-09-2023
Time of Monitoring	: 12:40 hrs
Purpose of Monitoring	: For Self Monitoring
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.22
Volume of air sampled,m3	: 1756.80
Avg. Ambient Temperature,°C	: 33

<b>Description</b>				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
1.	<b>Ambient Air Quality Parameters(Time weighted Avg- 24 Hours)</b>			
a.	Sulphur Dioxide(SO <sub>2</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-2): 2017	80 Max	6.89
b.	Nitrogen Dioxide(NO <sub>2</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-6): 2017	80 Max	13.82
c.	Particulate Matter (PM <sub>10</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-23): 2017	100 Max	71.74
d.	Particulate matter (PM 2.5),µg/m <sup>3</sup>	IS: 5182 (P-24)-2019	60 Max	39.56
e.	Ammonia(NH <sub>3</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-25): 2018	400 Max	30.79
f.	Lead(As Pb),µg/m <sup>3</sup>	STP/ITC/EW/002	1.0 Max	BLQ(LOQ:0.1)

*V Saini*  
Vikrant  
30-09-2023  
Reviewer

*PremKumar*  
30-09-2023  
PremKumar  
[Authorized Signatory]

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## Test Report

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<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2309250860 <b>Sample Reg. Date</b> :25-09-2023 <b>Report Date</b> :30-09-2023 <b>Report No.</b> :ICE-2309301206 <b>NABL ULR No.</b> :TC592623000011559F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25-01-2022
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g.	Mercury(as Hg), µg/m <sup>3</sup>	STP/ITC/EW/002	Not Specified	BLQ(LOQ:1.0)
2.	<b>Ambient Air Quality Parameters(Time weighted Avg- 8 Hours)</b>			
a.	Ozone(O <sub>3</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-9): 2019	100 Max.	24.98
b.	Carbon Monoxide(CO),mg/m <sup>3</sup>	IS: 5182 (P-10): 2019	2 Max.	1.2
3.	<b>Ambient Air Quality Parameters(Time weighted Avg- Annual*)</b>			
a.	Benzene(C <sub>6</sub> H <sub>6</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-11): 2017	5 Max	BLQ(LOQ: 1.0)
b.	Benzo(a) Pyrene Particulate Phase only,ng/m <sup>3</sup>	IS: 5182 (P-12): 2019	1 Max	BLQ(LOQ:0.5)
c.	Arsenic(as As),ng/m <sup>3</sup>	STP/ITC/EW/002	6 Max.	BLQ(LOQ:1.0)
d.	Nickel(As Ni),ng/m <sup>3</sup>	STP/ITC/EW/002	20 Max.	BLQ(LOQ:1.0)


\*# represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirement as per NAQQS 2009.  
Sampling Procedure: SOP/ITC/EW/056.

**REMARKS :**\*Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

\*\*\*\*\*End Of Report\*\*\*\*\*

  
Vikrant  
30-09-2023  
Reviewer

  
30-09-2023  
PremKumar  
[Authorized Signatory]

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## Test Report

Document QF : 2501  
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<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2309250861 <b>Sample Reg. Date</b> :25-09-2023 <b>Report Date</b> :30-09-2023 <b>Report No.</b> :ICE-2309301207 <b>NABL ULR No.</b> :TC592623000011551F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25-11-2022
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<b>Test Report as per :</b>	: NAAQS 2009
<b>Sampling Information :</b>	
Location of Sampling Point	: Near Loco Shed (AAQMS-2)
Date of Monitoring	: 19-09-2023
Time of Monitoring	: 12:00 hrs
Purpose of Monitoring	: For Self Monitoring
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.23
Volume of air sampled,m3	: 1771.20
Avg. Ambient Temperature,°C	: 33

<b>Description</b>				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
1.	<b>Ambient Air Quality Parameters(Time weighted Avg- 24 Hours)</b>			
a.	Sulphur Dioxide(SO <sub>2</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-2): 2017	80 Max	11.57
b.	Nitrogen Dioxide(NO <sub>2</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-6): 2017	80 Max	21.71
c.	Particulate Matter (PM <sub>10</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-23): 2017	100 Max	70.90
d.	Particulate matter (PM 2.5),µg/m <sup>3</sup>	IS: 5182 (P-24)-2019	60 Max	39.56
e.	Ammonia(NH <sub>3</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-25): 2018	400 Max	29.75
f.	Lead(As Pb),µg/m <sup>3</sup>	STP/ITC/EW/002	1.0 Max	BLQ(LOQ:0.1)

*V. Saini*  
Vikrant  
30-09-2023  
Reviewer

*PremKumar*  
30-09-2023  
PremKumar  
[Authorized Signatory]

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## Test Report

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<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2309250861 <b>Sample Reg. Date</b> :25-09-2023 <b>Report Date</b> :30-09-2023 <b>Report No.</b> :ICE-2309301207 <b>NABL ULR No.</b> :TC592623000011551F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25-11-2022
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g.	Mercury(as Hg), µg/m <sup>3</sup>	STP/ITC/EW/002	Not Specified	BLQ(LOQ:1.0)
2.	<b>Ambient Air Quality Parameters(Time weighted Avg- 8 Hours)</b>			
a.	Ozone(O <sub>3</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-9): 2019	100 Max.	22.80
b.	Carbon Monoxide(CO),mg/m <sup>3</sup>	IS: 5182 (P-10): 2019	2 Max.	1.3
3.	<b>Ambient Air Quality Parameters(Time weighted Avg- Annual*)</b>			
a.	Benzene(C <sub>6</sub> H <sub>6</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-11): 2017	5 Max	BLQ(LOQ: 1.0)
b.	Benzo(a) Pyrene Particulate Phase only,ng/m <sup>3</sup>	IS: 5182 (P-12): 2019	1 Max	BLQ(LOQ:0.5)
c.	Arsenic(as As),ng/m <sup>3</sup>	STP/ITC/EW/002	6 Max.	BLQ(LOQ:1.0)
d.	Nickel(As Ni),ng/m <sup>3</sup>	STP/ITC/EW/002	20 Max.	BLQ(LOQ:1.0)


\*# represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirement as per NAQQS 2009.  
Sampling Procedure: SOP/ITC/EW/056.

**REMARKS :**\*Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

\*\*\*\*\*End Of Report\*\*\*\*\*

  
Vikrant  
30-09-2023  
Reviewer

  
30-09-2023  
PremKumar  
[Authorized Signatory]

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## Test Report

Document QF : 2501  
Page 1 of 2

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2309250862 <b>Sample Reg. Date</b> :25-09-2023 <b>Report Date</b> :30-09-2023 <b>Report No.</b> :ICE-2309301208 <b>NABL ULR No.</b> :TC592623000011552F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25-11-2022
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<b>Test Report as per :</b>	: NAAQS 2009
<b>Sampling Information :</b>	
Location of Sampling Point	: Near Strom Water Sump (AAQMS-3)
Date of Monitoring	: 20-09-2023
Time of Monitoring	: 13:30 hrs
Purpose of Monitoring	: For Self Monitoring
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.24
Volume of air sampled,m3	: 1785.60
Avg. Ambient Temperature,°C	: 33

<b>Description</b>				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
1.	<b>Ambient Air Quality Parameters(Time weighted Avg- 24 Hours)</b>			
a.	Sulphur Dioxide(SO <sub>2</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-2): 2017	80 Max	9.56
b.	Nitrogen Dioxide(NO <sub>2</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-6): 2017	80 Max	20.78
c.	Particulate Matter (PM <sub>10</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-23): 2017	100 Max	71.91
d.	Particulate matter (PM 2.5),µg/m <sup>3</sup>	IS: 5182 (P-24)-2019	60 Max	39.98
e.	Ammonia(NH <sub>3</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-25): 2018	400 Max	31.68
f.	Lead(As Pb),µg/m <sup>3</sup>	STP/ITC/EW/002	1.0 Max	BLQ(LOQ:0.1)

*V. Saini*  
Vikrant  
30-09-2023  
Reviewer

*PremKumar*  
30-09-2023  
PremKumar  
[Authorized Signatory]

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## Test Report

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<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2309250862 <b>Sample Reg. Date</b> :25-09-2023 <b>Report Date</b> :30-09-2023 <b>Report No.</b> :ICE-2309301208 <b>NABL ULR No.</b> :TC592623000011552F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25-11-2022
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g.	Mercury(as Hg), µg/m <sup>3</sup>	STP/ITC/EW/002	Not Specified	BLQ(LOQ:1.0)
2.	<b>Ambient Air Quality Parameters(Time weighted Avg- 8 Hours)</b>			
a.	Ozone(O <sub>3</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-9): 2019	100 Max.	25.70
b.	Carbon Monoxide(CO),mg/m <sup>3</sup>	IS: 5182 (P-10): 2019	2 Max.	1.3
3.	<b>Ambient Air Quality Parameters(Time weighted Avg- Annual*)</b>			
a.	Benzene(C <sub>6</sub> H <sub>6</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-11): 2017	5 Max	BLQ(LOQ: 1.0)
b.	Benzo(a) Pyrene Particulate Phase only,ng/m <sup>3</sup>	IS: 5182 (P-12): 2019	1 Max	BLQ(LOQ:0.5)
c.	Arsenic(as As),ng/m <sup>3</sup>	STP/ITC/EW/002	6 Max.	BLQ(LOQ:1.0)
d.	Nickel(As Ni),ng/m <sup>3</sup>	STP/ITC/EW/002	20 Max.	BLQ(LOQ:1.0)


\*# represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirement as per NAQQS 2009.  
Sampling Procedure: SOP/ITC/EW/056.

**REMARKS :**\*Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

\*\*\*\*\*End Of Report\*\*\*\*\*

  
Vikrant  
30-09-2023  
Reviewer

  
30-09-2023  
PremKumar  
[Authorized Signatory]

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<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2309250863 <b>Sample Reg. Date</b> :25-09-2023 <b>Report Date</b> :30-09-2023 <b>Report No.</b> :ICE-2309301209 <b>NABL ULR No.</b> :TC592623000011553F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25-11-2022
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<b>Test Report as per :</b>	: NAAQS 2009
<b>Sampling Information :</b>	
Location of Sampling Point	: Near Switch Yard (AAQMS-4)
Date of Monitoring	: 20-09-2023
Time of Monitoring	: 14:20 hrs
Purpose of Monitoring	: For Self Monitoring
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.23
Volume of air sampled,m3	: 1771.20
Avg. Ambient Temperature,°C	: 33

<b>Description</b>				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
1.	<b>Ambient Air Quality Parameters(Time weighted Avg- 24 Hours)</b>			
a.	Sulphur Dioxide(SO <sub>2</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-2): 2017	80 Max	13.77
b.	Nitrogen Dioxide(NO <sub>2</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-6): 2017	80 Max	24.68
c.	Particulate Matter (PM <sub>10</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-23): 2017	100 Max	72.83
d.	Particulate matter (PM <sub>2.5</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-24)-2019	60 Max	38.30
e.	Ammonia(NH <sub>3</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-25): 2018	400 Max	32.86
f.	Lead(As Pb),µg/m <sup>3</sup>	STP/ITC/EW/002	1.0 Max	BLQ(LOQ:0.1)

*V. Saini*  
Vikrant  
30-09-2023  
Reviewer

*PremKumar*  
30-09-2023  
PremKumar  
[Authorized Signatory]

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## Test Report

Document QF : 2501  
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<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2309250863 <b>Sample Reg. Date</b> :25-09-2023 <b>Report Date</b> :30-09-2023 <b>Report No.</b> :ICE-2309301209 <b>NABL ULR No.</b> :TC592623000011553F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25-11-2022
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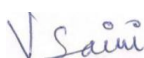
g.	Mercury(as Hg), µg/m <sup>3</sup>	STP/ITC/EW/002	Not Specified	BLQ(LOQ:1.0)
2.	<b>Ambient Air Quality Parameters(Time weighted Avg- 8 Hours)</b>			
a.	Ozone(O <sub>3</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-9): 2019	100 Max.	26.94
b.	Carbon Monoxide(CO),mg/m <sup>3</sup>	IS: 5182 (P-10): 2019	2 Max.	1.2
3.	<b>Ambient Air Quality Parameters(Time weighted Avg- Annual*)</b>			
a.	Benzene(C <sub>6</sub> H <sub>6</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-11): 2017	5 Max	BLQ(LOQ: 1.0)
b.	Benzo(a) Pyrene Particulate Phase only,ng/m <sup>3</sup>	IS: 5182 (P-12): 2019	1 Max	BLQ(LOQ:0.5)
c.	Arsenic(as As),ng/m <sup>3</sup>	STP/ITC/EW/002	6 Max.	BLQ(LOQ:1.0)
d.	Nickel(As Ni),ng/m <sup>3</sup>	STP/ITC/EW/002	20 Max.	BLQ(LOQ:1.0)

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**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirement as per NAQQS 2009.  
Sampling Procedure: SOP/ITC/EW/056.

**REMARKS :**\*Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

\*\*\*\*\*End Of Report\*\*\*\*\*



Vikrant  
30-09-2023  
Reviewer



30-09-2023  
PremKumar  
[Authorized Signatory]

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## Test Report

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<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2309250864 <b>Sample Reg. Date</b> :25-09-2023 <b>Report Date</b> :30-09-2023 <b>Report No.</b> :ICE-2309301210 <b>NABL ULR No.</b> :TC592623000011554F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25-11-2022
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<b>Test Report as per :</b>	: NAAQS 2009
<b>Sampling Information :</b>	
Location of Sampling Point	: Village-Dabhali
Date of Monitoring	: 21-09-2023
Time of Monitoring	: 12:30 hrs
Purpose of Monitoring	: For Self Monitoring
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.24
Volume of air sampled,m3	: 1785.60
Avg. Ambient Temperature,°C	: 33

<b>Description</b>				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
1.	<b>Ambient Air Quality Parameters(Time weighted Avg- 24 Hours)</b>			
a.	Sulphur Dioxide(SO <sub>2</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-2): 2017	80 Max	6.82
b.	Nitrogen Dioxide(NO <sub>2</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-6): 2017	80 Max	16.79
c.	Particulate Matter (PM <sub>10</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-23): 2017	100 Max	72.36
d.	Particulate matter (PM 2.5),µg/m <sup>3</sup>	IS: 5182 (P-24)-2019	60 Max	38.59
e.	Ammonia(NH <sub>3</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-25): 2018	400 Max	29.90
f.	Lead(As Pb),µg/m <sup>3</sup>	STP/ITC/EW/002	1.0 Max	BLQ(LOQ:0.1)

*V Saini*  
Vikrant  
30-09-2023  
Reviewer

*PremKumar*  
30-09-2023  
PremKumar  
[Authorized Signatory]

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## Test Report

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<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2309250864 <b>Sample Reg. Date</b> :25-09-2023 <b>Report Date</b> :30-09-2023 <b>Report No.</b> :ICE-2309301210 <b>NABL ULR No.</b> :TC592623000011554F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25-11-2022
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g.	Mercury(as Hg), µg/m <sup>3</sup>	STP/ITC/EW/002	Not Specified	BLQ(LOQ:1.0)
2.	<b>Ambient Air Quality Parameters(Time weighted Avg- 8 Hours)</b>			
a.	Ozone(O <sub>3</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-9): 2019	100 Max.	22.80
b.	Carbon Monoxide(CO),mg/m <sup>3</sup>	IS: 5182 (P-10): 2019	2 Max.	1.2
3.	<b>Ambient Air Quality Parameters(Time weighted Avg- Annual*)</b>			
a.	Benzene(C <sub>6</sub> H <sub>6</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-11): 2017	5 Max	BLQ(LOQ: 1.0)
b.	Benzo(a) Pyrene Particulate Phase only,ng/m <sup>3</sup>	IS: 5182 (P-12): 2019	1 Max	BLQ(LOQ:0.5)
c.	Arsenic(as As),ng/m <sup>3</sup>	STP/ITC/EW/002	6 Max.	BLQ(LOQ:1.0)
d.	Nickel(As Ni),ng/m <sup>3</sup>	STP/ITC/EW/002	20 Max.	BLQ(LOQ:1.0)


\*# represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirement as per NAQPS 2009.  
Sampling Procedure: SOP/ITC/EW/056.

**REMARKS :**\*Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

\*\*\*\*\*End Of Report\*\*\*\*\*

  
Vikrant  
30-09-2023  
Reviewer

  
30-09-2023  
PremKumar  
[Authorized Signatory]

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## Test Report

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<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2309250865 <b>Sample Reg. Date</b> :25-09-2023 <b>Report Date</b> :30-09-2023 <b>Report No.</b> :ICE-2309301212 <b>NABL ULR No.</b> :TC592623000011555F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25-11-2022
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<b>Test Report as per :</b>	: NAAQS 2009
<b>Sampling Information :</b>	
Location of Sampling Point	: Village Salempur
Date of Monitoring	: 21-09-2023
Time of Monitoring	: 13:40 hrs
Purpose of Monitoring	: For Self Monitoring
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.22
Volume of air sampled,m3	: 1756.80
Avg. Ambient Temperature,°C	: 33

<b>Description</b>				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
1.	<b>Ambient Air Quality Parameters(Time weighted Avg- 24 Hours)</b>			
a.	Sulphur Dioxide(SO <sub>2</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-2): 2017	80 Max	12.77
b.	Nitrogen Dioxide(NO <sub>2</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-6): 2017	80 Max	19.68
c.	Particulate Matter (PM <sub>10</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-23): 2017	100 Max	73.60
d.	Particulate matter (PM 2.5),µg/m <sup>3</sup>	IS: 5182 (P-24)-2019	60 Max	37.46
e.	Ammonia(NH <sub>3</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-25): 2018	400 Max	28.42
f.	Lead(As Pb),µg/m <sup>3</sup>	STP/ITC/EW/002	1.0 Max	BLQ(LOQ:0.1)

*V Saini*  
Vikrant  
30-09-2023  
Reviewer

*PremKumar*  
30-09-2023  
PremKumar  
[Authorized Signatory]

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## Test Report

Document QF : 2501  
Page 2 of 2

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2309250865 <b>Sample Reg. Date</b> :25-09-2023 <b>Report Date</b> :30-09-2023 <b>Report No.</b> :ICE-2309301212 <b>NABL ULR No.</b> :TC592623000011555F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25-11-2022
---	--

g.	Mercury(as Hg), µg/m <sup>3</sup>	STP/ITC/EW/002	Not Specified	BLQ(LOQ:1.0)
2.	<b>Ambient Air Quality Parameters(Time weighted Avg- 8 Hours)</b>			
a.	Ozone(O <sub>3</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-9): 2019	100 Max.	22.47
b.	Carbon Monoxide(CO),mg/m <sup>3</sup>	IS: 5182 (P-10): 2019	2 Max.	1.3
3.	<b>Ambient Air Quality Parameters(Time weighted Avg- Annual*)</b>			
a.	Benzene(C <sub>6</sub> H <sub>6</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-11): 2017	5 Max	BLQ(LOQ: 1.0)
b.	Benzo(a) Pyrene Particulate Phase only,ng/m <sup>3</sup>	IS: 5182 (P-12): 2019	1 Max	BLQ(LOQ:0.5)
c.	Arsenic(as As),ng/m <sup>3</sup>	STP/ITC/EW/002	6 Max.	BLQ(LOQ:1.0)
d.	Nickel(As Ni),ng/m <sup>3</sup>	STP/ITC/EW/002	20 Max.	BLQ(LOQ:1.0)


\*# represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirement as per NAQQS 2009.  
Sampling Procedure: SOP/ITC/EW/056.

**REMARKS :**\*Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

\*\*\*\*\*End Of Report\*\*\*\*\*

  
Vikrant  
30-09-2023  
Reviewer

  
30-09-2023  
PremKumar  
[Authorized Signatory]

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## Test Report

Document QF : 2501  
Page 1 of 2

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2309250866 <b>Sample Reg. Date</b> :25-09-2023 <b>Report Date</b> :30-09-2023 <b>Report No.</b> :ICE-2309301213 <b>NABL ULR No.</b> :TC592623000011556F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25-11-2022
---	--

<b>Test Report as per :</b>	: NAAQS 2009
<b>Sampling Information :</b>	
Location of Sampling Point	: Village- Dadumajra
Date of Monitoring	: 22-09-2023
Time of Monitoring	: 16:20 hrs
Purpose of Monitoring	: For Self Monitoring
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.25
Volume of air sampled,m3	: 1800.00
Avg. Ambient Temperature,°C	: 33

<b>Description</b>				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
1.	<b>Ambient Air Quality Parameters(Time weighted Avg- 24 Hours)</b>			
a.	Sulphur Dioxide(SO <sub>2</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-2): 2017	80 Max	7.62
b.	Nitrogen Dioxide(NO <sub>2</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-6): 2017	80 Max	22.56
c.	Particulate Matter (PM <sub>10</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-23): 2017	100 Max	71.82
d.	Particulate matter (PM 2.5),µg/m <sup>3</sup>	IS: 5182 (P-24)-2019	60 Max	37.75
e.	Ammonia(NH <sub>3</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-25): 2018	400 Max	29.46
f.	Lead(As Pb),µg/m <sup>3</sup>	STP/ITC/EW/002	1.0 Max	BLQ(LOQ:0.1)

*V. Saini*  
Vikrant  
30-09-2023  
Reviewer

*PremKumar*  
30-09-2023  
PremKumar  
[Authorized Signatory]

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## Test Report

Document QF : 2501  
Page 2 of 2

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2309250866 <b>Sample Reg. Date</b> :25-09-2023 <b>Report Date</b> :30-09-2023 <b>Report No.</b> :ICE-2309301213 <b>NABL ULR No.</b> :TC592623000011556F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25-11-2022
---	--

g.	Mercury(as Hg), µg/m <sup>3</sup>	STP/ITC/EW/002	Not Specified	BLQ(LOQ:1.0)
2.	<b>Ambient Air Quality Parameters(Time weighted Avg- 8 Hours)</b>			
a.	Ozone(O <sub>3</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-9): 2019	100 Max.	23.96
b.	Carbon Monoxide(CO),mg/m <sup>3</sup>	IS: 5182 (P-10): 2019	2 Max.	1.3
3.	<b>Ambient Air Quality Parameters(Time weighted Avg- Annual*)</b>			
a.	Benzene(C <sub>6</sub> H <sub>6</sub> ),µg/m <sup>3</sup>	IS: 5182 (P-11): 2017	5 Max	BLQ(LOQ: 1.0)
b.	Benzo(a) Pyrene Particulate Phase only,ng/m <sup>3</sup>	IS: 5182 (P-12): 2019	1 Max	BLQ(LOQ:0.5)
c.	Arsenic(as As),ng/m <sup>3</sup>	STP/ITC/EW/002	6 Max.	BLQ(LOQ:1.0)
d.	Nickel(As Ni),ng/m <sup>3</sup>	STP/ITC/EW/002	20 Max.	BLQ(LOQ:1.0)


\*# represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirement as per NAQQS 2009.  
Sampling Procedure: SOP/ITC/EW/056.

**REMARKS :**\*Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

\*\*\*\*\*End Of Report\*\*\*\*\*

  
Vikrant  
30-09-2023  
Reviewer

  
30-09-2023  
PremKumar  
[Authorized Signatory]

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**Annexure-11**  
**Expenses Incurred for**  
**Environment Protection**  
**Measures in FY 23-24**  
**(April to Sep-2023)**

Details of Expenses Incurred for Environment Protection Measures FY 2023-24 (01.04.2023 to 30.09.2023)		
S.No.	Particulars	Amount (Rs)
<b>A</b>	<b>Air Pollution</b>	
1	Cost of Energy Consumption in ESPs/Bag Filters	67455023
2	Cost of Maintenance of Ash Silos	125000
3	Cost of operation of Dust Suppression and Extraction System	438000
4	Cost of electrical spares & consumables for ESP maintenance	437102
5	Cost of electrical services for ESP	792789
6	AMC Services for ESP for FY 22-23	1493000
7	ESP Spares & Consumables	305000
	<b>Water Pollution</b>	
8	Cost of Energy Consumption in STP	183473
9	Cost of Energy Consumption in ETP	5863580
10	Cost of Chemical used at ETP and STP	2650148
	<b>Environment Monitoring Expenses</b>	
11	Cost of Manpower	606520
12	Cost of Consumables	126476
13	Cost of running of Environment monitoring vehicle	424811
14	AMC/Calibration for environment monitoring equipments.	51500
15	AMC/Calibration/ maintenance of online environment monitoring equipments.	4356000
	<b>Third Party MoEF&amp;CC approved laboratory testing charges.</b>	
16	Third Party MoEF&CC approved laboratory testing charges for AAQ,Stack,Waste Water,Fly Ash, Bottom Ash etc.	129859
	<b>Infrastructure Development</b>	
17	Construction of Roads	5888920
18	Provision of Wind shields at CHP	888000
	<b>Green Belt Development &amp; Maintenance</b>	
19	Development and Maintenance of Green Plants	3183412
20	Maintenance of Landscape Area	1364319
	<b>Solar Harnessing Expenses</b>	
21	Solar Harnessing and maintenance Expenses	150000
	<b>Salary &amp; Wages of HSE Professionals</b>	
22	Salary & Wages of HSE Professionals	1789306
	<b>Ash Dyke Management</b>	
23	Expenses for Ash Dyke Maintenance(Civil)	285800
24	Expenses for Ash Dyke Maintenance(Mechanical)	100000
	<b>Energy Consumption for transportation of Bottom Ash.</b>	
25	Energy Consumption for transportation of Bottom Ash & Fly Ash	72758317
	<b>Training, Subscription &amp; Legal Updates and Promotional Activities</b>	
26	Subscription & Legal Updates	18408
27	World Environment Day Celebration	7993
	<b>Disposal of Hazardous Waste</b>	
28	Disposal of Hazardous Waste charges	27208
29	Bio-Medical Waste disposal charges	12,348
	<b>Housekeeping Expenses</b>	
30	Housekeeping Expenses	9823000
	<b>Compliance Audit for Ash disposal</b>	
31	Compliance Audit for Ash disposal	345150
	Total in Rupees(₹)	182068114

## **Annexure-12**

**The Photograph of Main Gate  
Display.**



**NABHA POWER LIMITED**



2 X 700 MW RAJPURA SUPER THERMAL POWER STATION

**ENVIRONMENTAL DATA DISPLAY**

	UNIT-1	UNIT-2	UOM
OPACITY	41.3	42.0	mg/NM3
SO2	885.9	1265.8	mg/NM3
NOX	221.9	197.5	mg/NM3





## **Annexure-13**

### **Solar Harness Report.**



## Solar Energy Report for the Period

From

1<sup>st</sup> April-2023 to 30<sup>th</sup> September-2023

Sr. No	Month	Numbers of Unit Generated (KWh)
1	April-23	25791.30
2	May-23	25525.70
3	June-23	22705.10
4	July-23	9571.30
5	Aug-23	13081.50
6	Sep-23	18766.81
Total generation in KWh		115441.71

## **Annexure-14**

### **Test Report of Heavy Metal Analysis in Coal.**

## Test Report

**ORIGINAL**  
Page 1 of 1

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala  Rajpura, 140401 Punjab, India	<b>Sample Reg. No.</b> : B01-2309260001 <b>Sample Reg. Date.</b> : 26/09/2023 <b>Report Date.</b> : 30/09/2023 <b>Report No.</b> : ICB-2309300131 <b>Customer Ref. No.</b> : PO <b>Letter Dated</b> : PO
--	---

Sample Particulars			
<b>Name of Sample<sup>#</sup></b>	: Coal		
<b>Submitted By<sup>#</sup></b>	: Nabha Power Limited		
<b>Batch No.<sup>#</sup></b>	: NA	<b>Batch Size<sup>#</sup></b>	: NA
<b>Manufactured By<sup>#</sup></b>	: Not Specified	<b>Mfg. Lic. No.<sup>#</sup></b>	: NA
<b>Supplied By<sup>#</sup></b>	: Not Specified		
<b>Date of Manufacture<sup>#</sup></b>	: NA	<b>Date of Expiry<sup>#</sup></b>	: NA
<b>Sample Qty<sup>#</sup></b>	: 500gm	<b>Sample Condition</b>	: Good
<b>Grade<sup>#</sup></b>	: NA	<b>Brand Name<sup>#</sup></b>	: NA
<b>Official Seal</b>	: Not Applicable	<b>Official Signature</b>	: Not Applicable
<b>Packaging Details</b>	: Packed in Poly Pack	<b>Declared values(if any)</b>	: Sample Collect by Lab. rep. on 22-09-2023
<b>Any Other Information</b>	: Sample Collect by Lab. rep. on 22-09-2023		
<b>Test Report as per</b>	: Party Specification	<b>With Amendent No.(s)</b>	: Not Specified

Test Results						
Analysis started on		: 26/09/2023	Analysis completed on		: 28/09/2023	
Description		: Coal				
S. No.	Parameter	Unit	Instrument	Method	Requirements	Result
	Discipline : Chemical					
	Group : Solid Fuels					
1	Heavy Metals					
(a)	Arsenic(as As)	(mg/kg)	ICPOES	STP/ITC/F/INST/008	NA	BLQ(LOQ : 1.0)
(b)	Lead(as Pb)	(mg/kg)	ICPOES	STP/ITC/F/INST/008	NA	5.23
(c)	Chromium(as Cr)	(mg/kg)	ICPOES	STP/ITC/F/INST/008	NA	3.16
(d)	Mercury(as Hg)	(mg/kg)	ICPOES	STP/ITC/F/INST/008	NA	BLQ(LOQ : 1.0)

# represents Customer Defined Fields

**Remarks:** Party asked for the above tests only.

\*\*\*\*\*End of Report\*\*\*\*\*



30/09/2023  
Brijesh Singh  
Verified by



30/09/2023  
Kamal Grover  
Authorised by

### Interstellar Testing Centre PVT. LTD.

86, Industrial Area, Phase-1, Panchkula-134109 (Haryana)

Panchkula-134109 (Haryana)

Phone : (O) 0172-2561543, 2565825

Email : customersupport@itclabs.com

Visit us : www.itclabs.com

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## **Annexure-15**

### **Test Report of Radioactivity in Coal, Fly Ash& Bottom Ash.**



# Sophisticated Analytical Instruments Laboratories

**Society** (Registered as Society with Registrar of Firms & Societies, Punjab, Chandigarh)

Thapar Technology Campus, Bhadson Road, Patiala-147 004 (India)

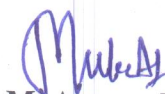
## TEST REPORT

Test Report No.:	NN(D)/23-24/388	Date:	21.10.2023
Service No.	NN(D)/23-24/388 (01)	Customer's Ref.	Sample Collected by Mr. Amit Kumar on dtd 19.09.2023
Customer's name and address:			
M/s Nabha Power Limited Post Box 28, Near village Nalash Rajpura, Distt. Patiala 140401, Punjab Kind attn.: Mr. Raman Singh			
Sample Description	Bottom Ash		
Condition of the sample received	O.K.		
Customer's sample identification No. (if any)	01- Bottom Ash		
Quantity/number of samples	1 Kg / 1		
Sampling Procedure (if any)	--		
Test parameters	Alpha emitters, Beta emitters, Gamma emitters		
Standard/Specification/Method followed	As mentioned below		
Deviations (if any)	--		
Documents constituting this report (if any)	--		
Date of Receipt of Job	Date of Completion of Job	Total Number of Pages	
20.09.2023	21.10.2023	3	

## TEST RESULTS

S. No.	Parameters	Test Method	Unit	Results (01- Bottom Ash)
1	Alpha emitters	EPA-600/4-78-039 July 1978 Followed by Radiation Counting System RC605 A with Alpha Scintillation detector	Bq/Kg	Not detected
2	Beta emitters	EPA-600/4-78-039 July 1978 Followed by Radiation Counting System RC605A with GM detector Probe	Bq/Kg	Not detected
3	Gamma emitters	EPA-600/4-78-039 July 1978 Followed by Radiation Counting System RC605A A with GM detector Probe	Bq/Kg	Not detected

Page 1 of 3

  
M. Agarwal

Technical Manager  
(Authorized Signatory)

- Note:
1. The results listed refer only to the tested samples and applicable parameters. Endorsement of products is neither inferred nor implied
  2. Samples will be destroyed after one month (except water, wastewater) from the date of issue of the test report unless otherwise specified
  3. This report is not to be reproduced wholly or in part and cannot be used as an evidence in the products is neither inferred nor implied. court of law and should not be used in any advertising media without special permission in writing.
  4. In case any reconfirmation of contents of the test report is required, please contact the authorized signatory of the test report within 15 days of the issue of test report



**Sophisticated Analytical Instruments Laboratories Society** (Registered as Society with Registrar of Firms & Societies, Punjab, Chandigarh)  
Thapar Technology Campus, Bhadson Road, Patiala-147 004 (India)

**TEST REPORT**

Test Report No.:	NN(D)/23-24/388	Date:	21.10.2023
Service No.	NN(D)/23-24/388 (02)	Customer's Ref.	Sample Collected by Mr. Amit Kumar on dtd 19.09.2023
Customer's name and address:			
M/s Nabha Power Limited Post Box 28, Near village Nalash Rajpura, Distt. Patiala 140401, Punjab Kind attn.: Mr. Hemant Purushottom Nimkar			
Sample Description	Fly Ash		
Condition of the sample received	O.K.		
Customer's sample identification No. (if any)	02- Fly Ash		
Quantity/number of samples	1 Kg / 1		
Sampling Procedure (if any)	--		
Test parameters	Alpha emitters, Beta emitters, Gamma emitters		
Standard/Specification/Method followed	As mentioned below		
Deviations (if any)	--		
Documents constituting this report (if any)	--		
Date of Receipt of Job	Date of Completion of Job	Total Number of Pages	
20.09.2023	21.10.2023	3	

**TEST RESULTS**

S. No.	Parameters	Test Method	Unit	Results (02 - Fly Ash)
1	Alpha emitters	EPA-600/4-78-039 July 1978 Followed by Radiation Counting System RC605A A with Alpha Scintillation detector	Bq/Kg	Not detected
2	Beta emitters	EPA-600/4-78-039 July 1978 Followed by Radiation Counting System RC605A A with GM detector Probe	Bq/Kg	Not detected
3	Gamma emitters	EPA-600/4-78-039 July 1978 Followed by Radiation Counting System RC605A A with GM detector Probe	Bq/Kg	Not detected

Page 2 of 3

  
M. Agarwal

**Technical Manager**  
(Authorized Signatory)

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**Sophisticated Analytical Instruments Laboratories Society** (Registered as Society with Registrar of Firms & Societies, Punjab, Chandigarh)  
Thapar Technology Campus, Bhadson Road, Patiala-147 004 (India)

**TEST REPORT**

Test Report No.:	NN(D)/23-24/388	Date:	21.10.2023
Service No.	NN(D)/23-24/388 (03)	Customer's Ref.	Sample Collected by Mr. Amit Kumar on dtd 19.09.2023
Customer's name and address: <b>M/s Nabha Power Limited</b> Post Box 28, Near village Nalash Rajpura, Distt. Patiala 140401, Punjab Kind attn.: Mr. Hemant Purushottom Nimkar			
Sample Description	Coal		
Condition of the sample received	O.K.		
Customer's sample identification No. (if any)	03- Coal		
Quantity/number of samples	1 Kg / 1		
Sampling Procedure (if any)	--		
Test parameters	Alpha emitters, Beta emitters, Gamma emitters		
Standard/Specification/Method followed	As mentioned below		
Deviations (if any)	--		
Documents constituting this report (if any)	--		
Date of Receipt of Job	Date of Completion of Job	Total Number of Pages	
20.09.2023	21.10.2023	3	

**TEST RESULTS**

S. No.	Parameters	Test Method	Unit	Results (03 - Coal)
1	Alpha emitters	EPA-600/4-78-039 July 1978 Followed by Radiation Counting System RC605A A with Alpha Scintillation detector	Bq/Kg	Not detected
2	Beta emitters	EPA-600/4-78-039 July 1978 Followed by Radiation Counting System RC605A A with GM detector Probe	Bq/Kg	Not detected
3	Gamma emitters	EPA-600/4-78-039 July 1978 Followed by Radiation Counting System RC605A A with GM detector Probe	Bq/Kg	Not detected

Page 3 of 3

.....End of the report.....

  
Mr. Agarwal

**Technical Manager**  
(Authorized Signatory)

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## **Annexure-16**


### **Test Report of Surface Water Quality.**

## Test Report

Document OF : 2501  
Page 1 of 3

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2306190664 <b>Sample Reg. Date</b> :19-06-2023 <b>Report Date</b> :23-06-2023 <b>Report No.</b> :ICE-2306230995 <b>NABL ULR No.</b> :TC592623000008088F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25.11.2022
<b>Test Report as per IS:</b> BIS Specification IS:10500-2012	<b>With Amendment No.(s):</b> 01 to 04
<b>PART A : PARTICULARS OF SAMPLE SUBMITTED</b>	
a) Nature of Sample #	Water Sample (Marked Surface Water)
b) Sample Condition	Good
c) Grade / Variety / Type / Class / Size etc.	NA
d) Brand Name	NA
e) Declared Values,if any	NA
f) Code No.	
g) Batch Number #	NA
h) D.O.M #	NA
i) Date of Expiry #	NA
j) Sample Quantity #	2 Ltr
k) Batch Size/Location #	NA
l) Mode of Packing	Packed in can
m) Date of Receipt	19-06-2023
n) Date of Start	19-06-2023
o) Date of Completion	21-06-2023
p) Seal (Intact/Not Intact/Unsealed)	NA
q) IO'S Signature (Signed/Unsigned)	Unsigned
r) Any Other Information	Sample Collected by lab rep. Mr. Ashutosh on 17.06.2023

  
Vikrant  
23-06-2023  
Reviewer

  
23-06-2023  
PremKumar  
[Authorized Signatory]

### Interstellar Testing Centre Pvt. Ltd.

86, Industrial Area, Phase-1, Panchkula-134109 (Haryana)  
Panchkula-134109 (Haryana)  
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Email : customersupport@itclabs.com  
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Page 2 of 3

<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura		<b>Sample Reg. No.</b> :E01-2306190664 <b>Sample Reg. Date</b> :19-06-2023 <b>Report Date</b> :23-06-2023 <b>Report No.</b> :ICE-2306230995 <b>NABL ULR No.</b> :TC592623000008088F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25.11.2022
s)	Test Request Submitted By	Nabha Power Limited-Rajpura ( Punjab )
t)	Manufactured By #	NA
u)	Supplied By #	NA

### PART B : SUPPLEMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

### Description

Description		Clear Colorless Liquid				
S.No.	Parameters	Instrument	Method	Acceptable Limit	Permissible Limit	Result
	<b>Discipline : Chemical</b>					
	<b>Group : Water</b>					
1.	<b>Organoleptic &amp; Physical Parameter</b>					
a.	Colour (True Colour)	Visual	IS 3025 (Part 4) : 2021	5 Max.	15 Max.	2
b.	Odour	Organoleptic	IS: 3025 (P-5)-2018	Agreeable	Agreeable	Agreeable
c.	Turbidity (NTU)	Turbidity Meter	IS:3025(Part 10):1984(RA:2017)	1 Max.	5 Max.	<0.5
d.	pH Value	pH Meter	IS: 3025 (Part-11): 2022	6.5-8.5	No relaxation	8.01

V. Saini  
Vikrant  
23-06-2023  
Reviewer

PremKumar  
23-06-2023  
PremKumar  
[Authorized Signatory]

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### Interstellar Testing Centre Pvt. Ltd.

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<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura			<b>Sample Reg. No.</b> :E01-2306190664 <b>Sample Reg. Date</b> :19-06-2023 <b>Report Date</b> :23-06-2023 <b>Report No.</b> :ICE-2306230995 <b>NABL ULR No.</b> :TC592623000008088F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25.11.2022			
e.	Total Dissolved Solids,(mg/L)	Gravimetric	IS: 3025 (P-16)-1984 (RA 2017)	500 Max.	2000 Max.	215
2.	<b>Parameters Concerning Undesirable Substances in excess amount</b>					
a.	Chloride(as Cl)(mg/L)	Titration	IS: 3025 (P-32)-1988 (RA2019)	250 Max.	1000 Max.	14
b.	Fluoride as F(mg/L)	Visual	IS: 3025 (P-60)-2008 (RA 2019)	1.0 Max.	1.5 Max.	BLQ(LOQ:0.1)
c.	Free Residual Chlorine, (mg/L)	Titration	IS: 3025 (P-26): 2021	0.2 Min.	1.0 Max.	Not Applicable
d.	Iron (as Fe)(mg/L)	UV-Spectrophotometer	IS: 3025 (P-53)-2003 (RA 2019)	1.0 Max.	No relaxation	BLQ(LOQ:0.08)
e.	Nitrate as NO <sub>3</sub> (mg/L)	UV-Spectrophotometer	APHA 23rd Edition 2017, 4500 NO <sub>3</sub>	45 Max.	No Relaxation	BLQ(LOQ:1.0)
f.	Sulphate(as SO <sub>4</sub> )(mg/L)	UV-Spectrophotometer	IS: 3025 (P-24/Sec-1)-2022	200 Max.	400 Max.	42
g.	Total Alkalinity(as CaCO <sub>3</sub> )(mg/L)	Titration	IS: 3025 (Part 23)-1986 (RA 2019)	200 Max.	600 Max.	69
h.	Total Hardness(as CaCO <sub>3</sub> )(mg/L)	Titration	IS: 3025 (Part 21)-2009 (RA 2019)	200 Max.	600 Max.	129

'#' represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification. Sampling Procedure: SOP/ITC/EW/030

**REMARKS :** N/A

\*\*\*\*\*End Of Report\*\*\*\*\*

*V. Saini*  
Vikrant  
23-06-2023  
Reviewer

*Prem Kumar*  
23-06-2023  
PremKumar  
[Authorized Signatory]

**Interstellar Testing Centre Pvt. Ltd.**  
86, Industrial Area, Phase-1, Panchkula-134109 (Haryana)  
Panchkula-134109 (Haryana)  
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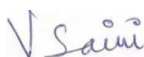
<b>Issued To</b> Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	<b>Sample Reg. No.</b> :E01-2309220796 <b>Sample Reg. Date</b> :22-09-2023 <b>Report Date</b> :29-09-2023 <b>Report No.</b> :ICE-2309290958 <b>NABL ULR No.</b> :TC592623000011521F <b>Customer Ref. No.</b> :PO <b>Letter Dated</b> :25.11.2022
---	--

**Test Report as per IS:**BIS Specification IS:10500-2012

**With Amendment No.(s):**01 to 04

### PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample #	Water Sample (Marked Surface Water)
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number #	NA
h)	D.O.M #	NA
i)	Date of Expiry #	NA
j)	Sample Quantity #	2 Ltr
k)	Batch Size/Location #	NA
l)	Mode of Packing	Packed in cans
m)	Date of Receipt	22-09-2023
n)	Date of Start	22-09-2023
o)	Date of Completion	29-09-2023
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample Collected by lab rep. Mr. Ram Gopal on 21.09.2023



Vikrant  
29-09-2023  
Reviewer



29-09-2023  
PremKumar  
[Authorized Signatory]

### Interstellar Testing Centre Pvt. Ltd.

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s)	Test Request Submitted By	Nabha Power Limited-Rajpura ( Punjab )
t)	Manufactured By #	NA
u)	Supplied By #	NA

## PART B : SUPPLEMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

Description					
Description		Liquid Sample with Suspended particles			
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
	<b>Discipline : Chemical</b>				
	<b>Group : Water</b>				
1.	<b>Organoleptic &amp;Physical Parameter</b>				
a.	Colour (True Colour)	IS 3025 (Part 4) : 2021	5 Max.	15 Max.	2
b.	Odour	IS: 3025 (P-5)-2018	Agreeable	Agreeable	Agreeable
c.	Turbidity (NTU)	IS:3025(Part 10):1984(RA:2017)	1 Max.	5 Max.	2.6
d.	pH Value	IS: 3025 (Part-11): 2022	6.5-8.5	No relaxation	8.04
e.	Total Dissolved Solids,(mg/L)	IS: 3025 (P-16)-1984 (RA 2017)	500 Max.	2000 Max.	292

*V. Saini*  
Vikrant  
29-09-2023  
Reviewer

*Prem Kumar*  
29-09-2023  
PremKumar  
[Authorized Signatory]

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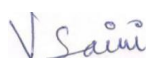
<b>Issued To</b>  Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura			<b>Sample Reg. No.</b> :E01-2309220796		
			<b>Sample Reg. Date</b> :22-09-2023		
			<b>Report Date</b> :29-09-2023		
			<b>Report No.</b> :ICE-2309290958		
			<b>NABL ULR No.</b> :TC592623000011521F		
			<b>Customer Ref. No.:</b> PO		
			<b>Letter Dated</b> :25.11.2022		
<b>2.</b>	<b>Parameters Concerning Undesirable Substances in excess amount</b>				
a.	Chloride(as Cl)(mg/L)	IS: 3025 (P-32)-1988 (RA2019)	250 Max.	1000 Max.	16
b.	Fluoride as F(mg/L)	IS: 3025 (P-60)-2008 (RA 2019)	1.0 Max.	1.5 Max.	0.1
c.	Free Residual Chlorine, (mg/L)	IS: 3025 (P-26): 2021	0.2 Min.	1.0 Max.	Not Applicable
d.	Iron (as Fe)(mg/L)	IS: 3025 (P-53)-2003 (RA 2019)	1.0 Max.	No relaxation	BLQ(LOQ:0.08)
e.	Nitrate as NO <sub>3</sub> (mg/L)	APHA 23rd Edition 2017, 4500 NO3	45 Max.	No Relaxation	BLQ(LOQ:1.0)
f.	Sulphate(as SO <sub>4</sub> )(mg/L)	IS: 3025 (P-24/Sec-1)-2022	200 Max.	400 Max.	46
g.	Total Alkalinity(as CaCO <sub>3</sub> )(mg/L)	IS: 3025 (Part 23)-1986 (RA 2019)	200 Max.	600 Max.	70
h.	Total Hardness(as CaCO <sub>3</sub> ),(mg/L)	IS: 3025 (Part 21)-2009 (RA 2019)	200 Max.	600 Max.	140

'#' represents Customer Defined Fields

**NOTE** : NA- Not Applicable, LOQ- Limit of Quantification, BLQ- Below limit of Quantification. Sampling Procedure: SOP/ITC/EW/030.

**REMARKS** :The above referred sample of Water Sample (Marked Surface Water) conforms to BIS Specification IS:10500-2012 with upto date amdts with respect to the above tests.

\*\*\*\*\*End Of Report\*\*\*\*\*



Vikrant  
29-09-2023  
Reviewer



29-09-2023  
PremKumar  
[Authorized Signatory]

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# **Annexure-17**

## **Epidemiology Study Report**



# **Epidemiological Study Around Rajpura Power Project**

**Nabha Power Limited Village: Nalash,  
Tehsil: Rajpura, District: Patiala**



Report Prepared by

**EMTRC Consultants Private Limited**

Tower 5, Flat 102, CWG Village, Delhi 110092

Website- [www.emtrc.in](http://www.emtrc.in), email- [emtrcjkm@gmail.com](mailto:emtrcjkm@gmail.com)

**JANUARY 2023**

31-01-2023

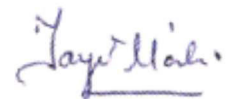
### **CERTIFICATE**

Nabha Power Limited commissioned Epidemiological Study around its 2 x 700 MW Power Limited located at Village Nalash, Tehsil Rajpura, District Patiala.

The primary objective of the Epidemiological Study is to evaluate the nature of environmental pollutants, quantify and assess their effects on human health, generate health data of by collecting representative samples of population residing in the area and suggest corrective measures to improve health status of population under study area.

Five locations were selected for the study; upwind direction which is unaffected by the power plant, downwind location and locations having maximum ground level concentrations with severe impact. Samples of groundwater, surface water, soil, cereals and vegetables were collected from the study area and analysed at EMTRC Lab. Ambient air quality data of the study area was obtained from NPL. Human health survey was done in December 2022 by organizing camps at 5 locations around the power project.

We wish to place on record our sincere gratitude and thanks to the Dr Ashish Garg (MBBS, MD-Medicine) other and Interns of Neelam Hospital, Rajpura and Mr. Nitin Pandey (CSR Department-NPL) for organizing the medical camps and doing the health check-ups of resident population as per the standard protocol. We are also grateful to Mr. Rajiv Bhandari, (AGM - EHS) and Mr. Hemant Purushottam Nimkar (Sr. Manager - EHS) for all cooperation received during the study period. Special thanks are to Mr Suresh Kumar Narang, CEO for his constant oversight and encouragement during the course of this study.



Dr. JK MOITRA  
Project Coordinator

## ABBREVIATION

ACGIH - American Conference of Governmental Industrial Hygienists  
CPCB - Central Pollution Control Board  
COPC - Chemical of Potential Concern  
COPD - Chronic Obstructive Pulmonary Disorder  
CADD - Chronic Average Daily Dose (mg/kg-day)  
HSDB - Hazardous Substances Data Bank  
HQ - Hazard Quotient  
HI - Hazard Index  
IRIS - Integrated Risk Information System of USEPA  
LOAEL - Lowest Observable Adverse Effect Level  
LADD - Lifetime Average Daily Dose (mg/kg-day)  
mg/l - Milligram per liter  
 $\mu\text{g}/\text{m}^3$  - Milligram per Cubic Meter (of air)  
 $\mu\text{g}$  - Microgram (one-millionth of a gram)  
MOEF - Ministry of Environment & Forests (Govt of India)  
NOAEL - No Observable Adverse Effect Level  
NIOSH - National Institute for Occupational Safety and Health  
 $\text{PM}_{2.5}$  - Particulate Matter up to 2.5 micrometer size  
 $\text{PM}_{10}$  - Particulate Matter up to 10 micrometer size  
ppb - Parts per Billion  
ppm - Parts per Million  
RME - Reasonable Maximum Exposure (Upper Percentile)  
RfD - Reference Dose  
STEL - Short Term Exposure Limit  
TWA - Time Weighted Average  
UNEP - United Nations Environment Program  
USEPA - United States Environmental Protection Agency  
WHO - World Health Organization

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## EXECUTIVE SUMMARY

Nabha Power Limited operates the 2x700 MW coal based thermal power plant at village Nalash near Rajpura town in Punjab. It is the first power plant to be owned and operated by Larsen & Toubro Limited. The power generated from this plant is contracted with Punjab State Power Corporation Limited for a period of 25 years under a Power Purchase Agreement (PPA). The plant is built on supercritical technology of Mitsubishi Heavy Industries, Japan (now Mitsubishi Hitachi Power Systems).

The plant sources its fuel from South Eastern Coalfields Limited (a subsidiary of Coal India Limited) under a 20-year Fuel Supply Agreement (FSA). Bhakra-Nangal distributary is the perennial source of water for the plant under an allocation by the state irrigation department. The plant is operated by an in-house experienced team of operations and maintenance professionals.

Commercial operation dates (COD) for Unit-1 and Unit-2 were February 1 and July 10, 2014, respectively.

Nabha Power Limited, being a proactive and environmentally responsible organization, decided to generate the existing health status of human population vis-à-vis baseline environmental conditions around the power plant. It initiated Epidemiological Study by awarding the work to EMTRC Consultants Private Limited, Delhi.

The study includes the following objectives:

- To quantify environmental pollutant and its effects on human health.
- To generate health data of population in and around the plant through Epidemiological study on representative number of population.
- To analyse the health effects of individual pollutants.
- To suggest corrective measures to improve health status of population under study area.

Coal fired Thermal Power Plants emits several air pollutants that are originally present in coal. Pollutants like particulate matter containing metals, oxides of sulphur, oxides of nitrogen, carbon monoxide, and organic compounds are generated during coal burning. These air pollutants are

reported to cause a wide range of adverse health effects. Environmental impacts of power plant air pollutants emissions include adverse health, acidification of the environment, bioaccumulation of toxic metals, and contamination of water bodies and reduced visibility due to haze.

Coal is pulverized in coal mills to size less than 200 microns. The pulverized coal is fed to steam generator (Boiler) for combustion and generation of steam. The steam so generated is fed in to turbine, which converts the thermal energy of steam into mechanical energy and drives the generator for producing electricity. Exhaust steam from the turbine is condensed by means of a condenser. Thus the water evaporated in the boiler is conserved in a closed cycle. The products of combustion are exhausted from the boiler through a chimney into the atmosphere after cleaning through ESP. The ash from the boiler furnace bottom is disposed of by means of wet disposal system. The fly ash arrested in the Electrostatic Precipitators is transported pneumatically to fly ash silos. The fly ash is utilized for brick manufacturing; mines back filling, low land filling, etc. Unutilized portion of the fly ash is disposed of in slurry form in ash dyke.

**Wind Profiles:** Dispersion profile of air pollutants being emitted from a chimney depends upon the wind direction and wind speed. Historical met data of the area was collected from Climatological Tables published by the India Meteorological Department (1980-2010). The predominant wind direction is from North-West during all the months except monsoon season. During monsoon season the wind flows from South East. The wind direction was used to find out the predominant wind direction, most dominant and least dominant wind directions. Accordingly camps for health study was established.

**Impacted and Unimpacted Areas around the Power Plant:** Name of impacted and non-impacted villages around NPL are shown below:

S.N	Name of Villages	Distance & Direction from NPL	Impacted/ Non-impacted
1	Suralkalan	1.7 Km, West	Slightly Impacted
2	Dabhalikalan	3.8 Km, South	Moderately Impacted
3	Dadumajra	3.5 Km, North	Slightly impacted
4	Nalash	2.0 Km, South East	Severely Impacted
5	Bakshiwala	4.5 Km, South West	Non-Impacted

**Sampling Locations:** Ambient air quality data around the power plant was generated by NPL over the last few years. These data were used to analyse and assess the impact. Samples of groundwater and soil was collected from surrounding villages. Surface water sample was taken from the Bhakra distributary / canal and analysed. This canal water is used for irrigation by the farmers of the area. Samples of locally grown cereals and vegetables, milk and grass were collected from the area and analysed for heavy metals. The sampling locations represented the impacted area and non-impacted area around the power plant. Samples were collected in October 2022.

**Ambient Air Quality:** Ambient air quality monitoring was done inside & outside the plant boundary at seven locations. Monitoring was done round the year for 24-hours, one sample season. Following pollutants were monitored: PM<sub>2.5</sub>, PM<sub>10</sub>, NO<sub>2</sub>, SO<sub>2</sub>, CO, Pb, As, Ni (in PM<sub>10</sub>), NH<sub>3</sub>, O<sub>3</sub>, benzene, Benzo-a-pyrene. Results for the year 2019 to 2022 were provided by Nabha Power Limited. The results of all parameters are well within the NAAQS.

Sr. No	Date		Parameters (24-hour average)				
			PM <sub>10</sub> , µg/m <sup>3</sup>	PM <sub>2.5</sub> µg/m <sup>3</sup>	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> µg/m <sup>3</sup>	CO mg/m <sup>3</sup>
1	2019	Minimum	68	38	8	17	0.58
		Maximum	82	47	17	33	0.95
		Average	74	42	13	26	0.71
2	2020	Minimum	61	30	6	9	0.55
		Maximum	96	54	15	31	1.4
		Average	77	42	11	22	0.85
3	2021	Minimum	68	31	6	10	1
		Maximum	97	57	16	33	3.6
		Average	86	43	10	17	1.65
4	2022	Minimum	80	35	5	10	1.1
		Maximum	90	43	12	22	1.4
		Average	84	39	8	14	1.26
National Standard			100	60	80	80	2

**Note :** Pb, As, Ni, NH<sub>3</sub>, O<sub>3</sub>, benzene, Benzo-a-pyrene were found to be not detectable.

The results are graphically shown below:



**Ground Water Quality:** Ground water is the main source of drinking and irrigation. Nine ground water samples were collected from villages located around the plant. The water samples were analysed for physicochemical and biological parameters as per the Standard Methods (APHA). The results were compared with the drinking water quality standard prescribed by the Bureau of Indian Standards (IS: 10500:2012). The pH of the samples was found to be alkaline (7.41 - 8.18). TDS values of the sample ranges between 150 - 1380 mg/l. Hardness content of the sample ranges between 52 - 440 mg/l. Calcium values of the samples ranges between 16 - 120 mg/l. Magnesium values of the samples ranges between 2.9 - 34 mg/l. Chloride values of the samples ranges between 35 - 280 mg/l. The ground water did not show any oil or bacterial contamination. Heavy metals like Pb, Cu, Mn, Cr, Ni, Cd, Hg, As, and Se were found to be below the detectable limit.

**Surface Water Quality:** One canal water sample was collected. The sample was analyzed for physico-chemical and biological parameters as per Standard Methods (APHA). Hg, As, Pb and Cr were found to be below the detectable limit. The water quality is fit for drinking after conventional treatment and irrigation.

**Soil Quality:** Nine soil samples were collected from agriculture fields around the plant. The samples were analysed for metallic constituents. The results are as follows: Lead <0.3 mg/kg, Nickel 6.2 to 8.5 mg/kg, Cadmium <0.1 mg/kg, Chromium <0.2 mg/kg, Arsenic < 0.2 mg/kg and Mercury <0.1 mg/kg. Soils are of mineral origin and metals are always present in traces, which acts as micronutrients for plant growth and health. The values were found to be normal.

**Heavy Metals in Food Samples:** Rice, dal, wheat and maize and locally grown vegetables are the staple food of the people of this area. Samples of locally grown rice, dal, wheat, jowar, gram, pulses, potato, onion, tomato were collected from the market. No heavy metals (arsenic, mercury, cadmium, chromium, lead and nickel) were not detectable in the food samples (Below the detectable limit of 0.1 mg/kg).

**Human Health Survey:** In order to develop health records and draw profile of health status for target population groups, health survey was done at 5 locations around the plant. These villages covered the impacted area, non-impact area and control area. Health check-up was done for 309 residents, who are exposed to the existing environmental conditions for more than 5 years.

### Summary of Health Checkup Done at 5 Locations Around NPL (in %)

	Name of Location	Over Weight	Cough	High BP	Headache	Other Noted Health Problems
1	Surkalan Slightly impacted	28	13	35	19	Knee joint pain in elderly
2	Dabhali kalan Moderately impacted	29	10	58	23	-
3	Dadumajra Slightly impacted	16	2	28	10	Knee joint pain in elderly
4	Nalash Severely impacted	20	6	61	14	-
5	Bakshiwala Non-Impacted -Control)	23	7	57	26	-

### Conclusion

- Air Environment:** The ambient air quality of the impacted and non-impacted areas is found to be well-within the prescribed National Standards.
- Water Environment:** The ground water samples were found to meet the BIS standards at all locations. The surface water sample were found to meet the Best Designated Use Criteria 'C' of CPCB (fit for drinking after conventional treatment and irrigation).
- Soil Environment:** Lead, nickel, arsenic, mercury, cobalt, cadmium, chromium levels were found to be within the normal level. pH was found to be moderately alkaline, Organic Matter was found to be sufficient and Conductivity was found to be average in all soil samples.
- Impact on Human Health: Human Health Survey:** Human health profiling was done for 309 resident people of five villages, who are exposed to the existing environment for more than seven years. High BP was found in majority of male adults; Nalash - 61%, Dhabali - 58% Bakshiwala - 57% and Surkalan - 35%. Major complaints of elderly people in Surkalan and Dadumajra were related to pain in knee joints.

No cases of respiratory disorders linked to air pollution like Bronchitis, Asthma or Chronic Obstructive Pulmonary Disorder were found in the people. No disease or any chronic condition that could be related to air pollution / effluent discharges from coal based power plant has been observed in the population of the study area. None of the people in the study area reported any serious health problem such as Cancer, Gross Neurologic, Hepatic or Renal Damage and Congenital Abnormality.

## CHAPTER 1: INTRODUCTION

### 1.1 Introduction of Epidemiological Study

Epidemiological study describes the nature and significance of the potential short-term (i.e., acute) and long-term (i.e., chronic) health risks posed to people exposed to the Chemicals of Potential Concern (COPC). The primary objective of the EPIDEMIOLOGICAL is to describe the nature and significance of potential health risks to humans from COPC. EPIDEMIOLOGICAL Methodology developed by United States Environmental Protection Agency (USEPA) is widely followed all over the world. The main components of the risk assessment methodology include the following:

**Problem Formulation:** Identification of Chemicals of Potential Concern (COPC), characterization of receptors, and identification of exposure pathways. The COPC identified in ambient air around coal fired power plant are BAP, Pb, Ni and As in PM<sub>10</sub>. Profile of the COPCs are given in Appendix.

**Toxicity Assessment:** Identification of potential adverse effects of COPC and determination of the maximum **dose** that are likely to result in adverse health effects (exposure limits, EL);

**Exposure Assessment:** Quantification of the total dose of COPC received by human receptors via all relevant exposure pathways;

**Risk Characterization:** Comparison of estimated exposures with Exposure Limits to provide an indication of whether unacceptable risks are likely to exist in defined scenarios.

Exposure pathways describe the routes through which contaminants in the environment (soil, air water etc.) come into contact with receptors of concern. These pathways may require direct contact between receptors and media of concern (e.g., inhalation of air), or may rely on indirect pathways which require movement of the chemical in the environment (e.g., transfer of chemicals from soil into vegetables or meat and then to receptors through food consumption). Although human behavioral and physical characteristics will vary, it was assumed that all human receptors are subjected to the same exposure pathways. COPC present in air emissions can descend to ground level where human receptors can be exposed via the direct inhalation

exposure pathway. COPC in air emissions may be transported to other media where exposure may occur. Possible “indirect” exposure pathways include ‘ingestion’ of COPC in soil dust, and consumption of agricultural products, meat, fish, etc. Environmental media that are potentially affected by discharges from power plant includes:

- Ambient air through direct emission and dispersion as vapor or suspended particulate;
- Surface soils, through deposition from the air column;
- Fish through the aquatic food chain;
- Vegetation, including home garden produce, crops, as well as natural vegetation, both through direct deposition, and indirectly *via* uptake from soil;
- Agricultural products through uptake from soils, vegetation and water;
- Drinking groundwater

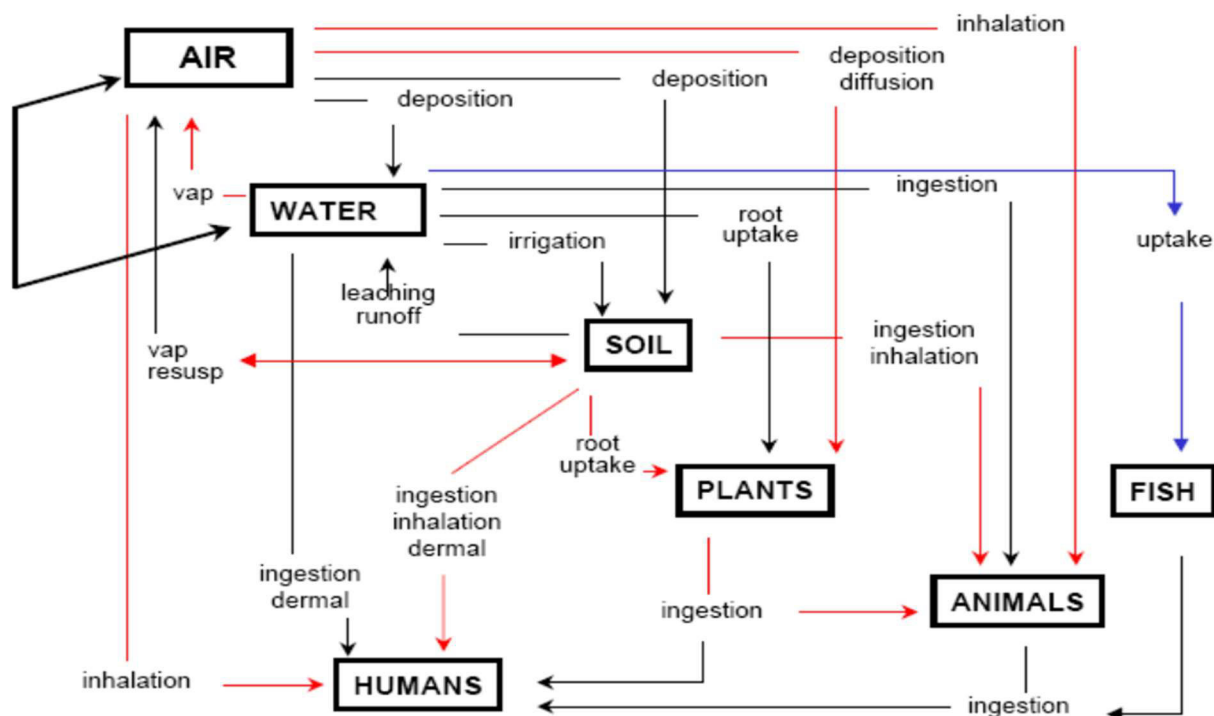


Figure 1: Typical Human Exposure Pathways from Power Plant Emissions



## 1.2 Concept of Epidemiological Study

Epidemiological is the process to estimate the nature and probability of adverse health effects in humans who may be exposed to chemicals in contaminated environmental media, now or in the future. Epidemiological addresses following things:

- Types of health problems may be caused by environmental stressors
- Chance that people will experience health problems when exposed to different levels of stressors
- The level below which some stressors don't pose a human health risk
- Environmental stressors that people are exposed to and at what levels and for how long
- People who likely to be susceptible to environmental stressors because of factors such as age, genetics, pre-existing health conditions, ethnic practices, gender, etc.
- People more likely to be exposed to environmental stressors because of factors such as where they work, where they play, what they like to eat, etc.

These issues help decision makers to understand the possible human health risks from environmental media. An exposure assessment is the quantitative or qualitative evaluation of that contact; it describes the intensity, frequency, and duration of contact, and often evaluates the rates at which the chemical crosses the boundary (chemical intake or uptake rates), the route by which it crosses the boundary (exposure route; e.g., dermal, oral, or respiratory), and the resulting amount of the chemical that actually crosses the boundary (a dose) and the amount absorbed (internal dose). Planning and scoping is must to make judgments about major risk assessments.

The following structure focuses on Epidemiological:

Who/ What/ Where is at risk?

- Individual
- General population
- Children, teenagers, pregnant/nursing women
- Population subgroups – highly susceptible (for example, due to asthma, genetics, etc.) and/or highly exposed (based on geographic area, gender, racial or ethnic group, or economic status)

What is the environmental hazard of concern?

- Chemicals (single or multiple/cumulative risk)

- Physical (dust, heat)
- Microbiological or biological
- Nutritional (for example, diet, fitness, or metabolic state)
- Socio-Economic (for example, access to health care)

Where do these environmental hazards come from?

- Point sources (for example, smoke or water discharge from a factory);
- Non-point sources (for example, automobile exhaust)

How does exposure occur?

- Pathways (recognizing that one or more may be involved)
  - Air
  - Surface Water
  - Groundwater
  - Soil
  - Food
  - Non-food consumer products, pharmaceuticals

Routes (and related human activities that lead to exposure)

- Ingestion (both food and water)
- Contact with skin
- Inhalation
- Non-dietary ingestion (for example, “hand-to-mouth” behavior)

What does the body do with the environmental hazard and how is this impacted by factors such as age, race, sex, genetics, etc.?)

- Absorption – does the body take up the environmental hazard
- Distribution – does the environmental hazard travel throughout the body or does it stay in one place?
- Metabolism – does the body breakdown the environmental hazard?
- Excretion – how does the body get rid of it?

What are the health effects?

- Example of some health effects include cancer, heart disease, liver disease and nerve disease.

How long does it take for an environmental hazard to cause a toxic effect? Does it matter when in a lifetime exposure occurs?

- How long?
  - Acute – right away or within a few hours to a day
  - Sub chronic – weeks or months (for humans generally less than 10% of their lifespan)
  - Chronic – a significant part of a lifetime or a lifetime (for humans at least seven years)
  - Intermittent
- Timing - Is there a critical time during a lifetime when a chemical is most toxic (e.g., fetal development, childhood, during aging)?

### 1.3 Objectives and Scope of the Study

The study includes the following objectives:

- To access the information through quantifying environmental pollutant and its effects on human health
- To evaluate the nature of pollutants.
- To estimate physico-chemical load of contaminants.
- To generate health data of population in and around the plant through Epidemiological study on representative number of population and livestock samples
- To suggest corrective measures to improve health status of population in the study area.

### 1.4 Study Methodology

- Identification of the plant boundary, location of plant equipment, stack, ash pond and the area of study, identification of human settlements in the study area.
- Quantify the pollutants present in different environmental media to which people are exposed, like ambient air, ground water and surface water, soil and food grown on the soil.
- Obtain information on diet, living and working conditions, income, time-activity pattern,
- Generate health data of representative population to establish the baseline and estimate the health risk
- Suggest preventive and corrective measures to improve the environment, if any evidence of adverse impact of human population is observed during the study.

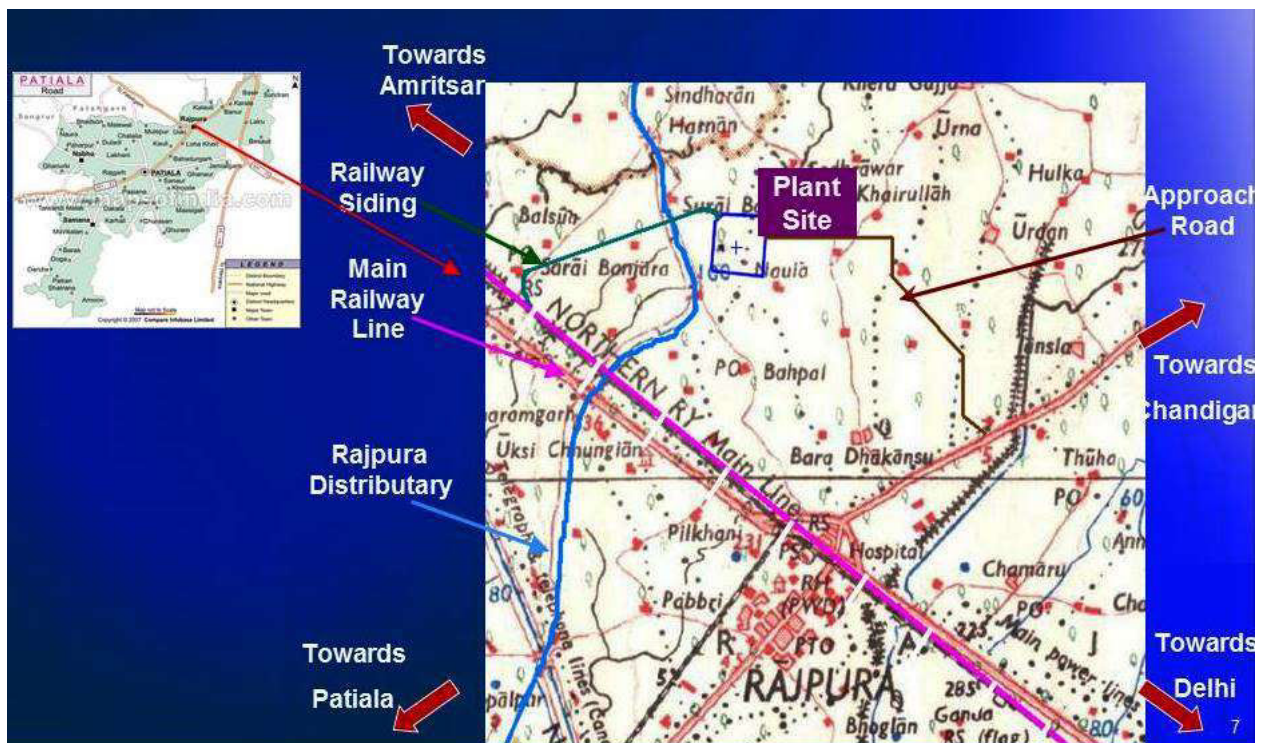
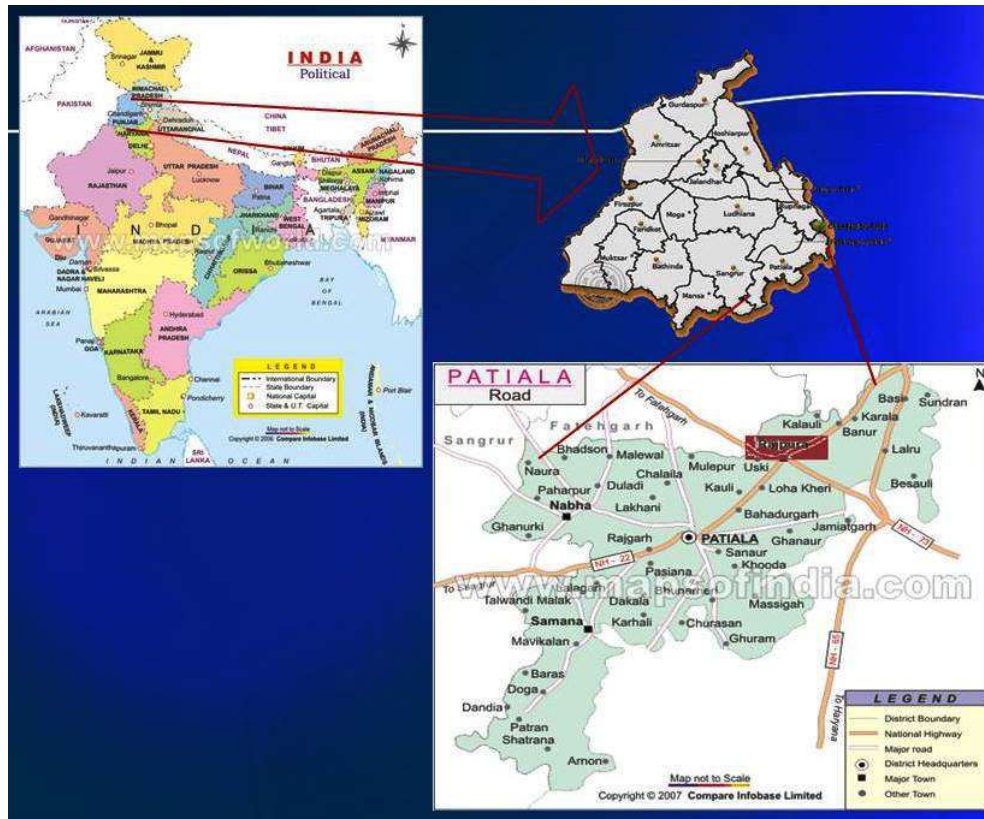


Figure 2 : Location Map



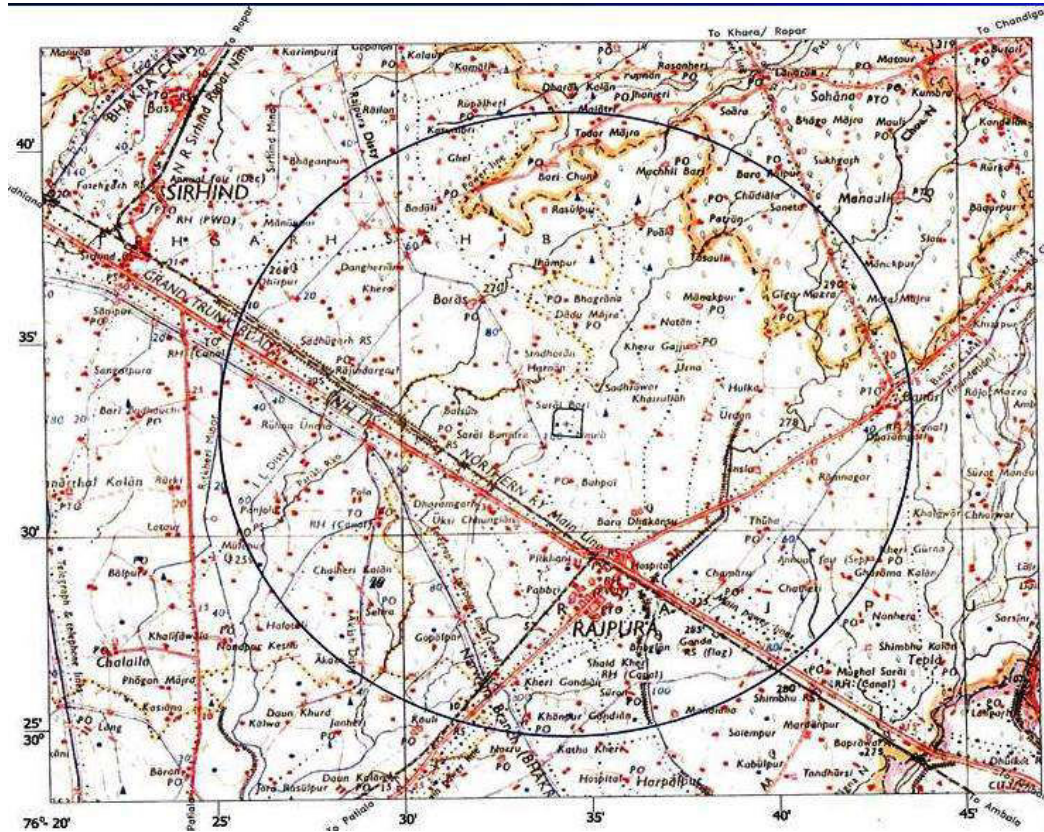


Figure 3: Location of the Power Plant on Survey of India Toposheet



Figure 4: Google Image of Rajpura Power Project

## CHAPTER 2 : BASELINE ENVIRONMENTAL STATUS

### 2.1 Meteorology

Air emissions will follow the wind direction, therefore identification of impacted area and non-impacted around the source is important. The height of emission release governs the location of impact point. Maximum impact from an elevated source is observed at a location which is 6 to 10 times the height of the source in downwind direction. Historical Meteorological Data were obtained from the Climatological Tables of IMD (Ambala)

**Table 1 Meteorological Data of Ambala (Source-IMD-1950 to 2010)**

Month	Temperature (deg C) daily Max Min		Relative Humidity, % Max Min		Rainfall (mm)	Wind speed kmph	Pre-dominant wind direction (from)	Cloud cover (Oktas)
January	20.4	6.6	80	55	38.5	5.9	NW, W, SE	1.9
February	23.3	9.2	72	48	28.4	6.8	NW, W, SE	1.8
March	29.0	13.9	64	41	29.5	7.9	NW, W, SE	1.6
April	35.8	19.6	47	28	6.1	7.4	NW, W, SE	1.1
May	39.6	23.8	41	26	19.3	7.9	SE, W, NW	1.1
June	39.4	26.6	55	38	73.2	8.6	SE, W, NW	1.8
July	34.8	25.7	80	64	267.2	7.9	SE, W, NW	3.9
August	33.3	25.1	84	70	267.2	6.2	SE, W, NW	3.9
September	34.0	23.6	79	61	161.3	5.4	NW, SE	1.7
October	32.6	18.1	69	46	32.9	5.2	NW, SE	0.6
November	28.0	11.1	70	45	9.3	5.5	NW, SE	0.7
December	22.5	7.4	79	52	13.2	5.1	NW, SE	1.4
Annual	31.1	17.6	68	48	961.4	6.7	NW, SE	1.8

### Name of Impacted and Non-impacted villages from NPL Emissions

S.N	Name of Villages	Distance & Direction from NPL	Impacted/ Non-impacted
1	Suralkalan	1.7 Km, West	Slightly Impacted
2	Dabhalikalan	3.8 Km, South	Moderately Impacted
3	Dadumajra	3.5 Km, North	Slightly impacted
4	Nalash	2.0 Km, South East	Severely Impacted
5	Bakshiwala	4.5 Km, South West	Non-Impacted

**2.2 Ambient Air Quality:** Ambient air quality monitoring inside & outside the plant boundary were done at seven locations. Monitoring was done for 24-hours for PM<sub>2.5</sub>, PM<sub>10</sub>, NO<sub>2</sub>, SO<sub>2</sub>, CO, Pb, As, Ni (in PM<sub>10</sub>), NH<sub>3</sub>, O<sub>3</sub>, Benzene, Benzo-a-pyrene. Results of monsoon and post-



monsoon months were provided by Nabha Power Limited. The results of all parameters are well within the NAAQS.

**Table:2 Ambient Air Quality inside & outside the Plant Boundary (24-h avg in  $\mu\text{g}/\text{m}^3$ )**

Sr. No	Monitoring Location	Date	Parameters				
			PM <sub>10</sub> µg/m <sup>3</sup>	PM <sub>2.5</sub> µg/m <sup>3</sup>	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> µg/m <sup>3</sup>	CO mg/m <sup>3</sup>
1	Dabhali	20-06-2019	70	38	12	22	0.61
		10-09-2019	72	40	12	25	0.59
		29-11-2019	72	41	10	21	0.95
2	Salempura	20-06-2019	71	40	12	26	0.65
		10-09-2019	70	41	14	27	0.65
		29-11-2019	70	39	8	17	0.93
3	Dadumajra	20-06-2019	73	42	12	23	0.67
		10-09-2019	73	38	13	25	0.62
		29-11-2019	68	38	11	23	0.88
4	Near Storm Water Sump	18-06-2019	71	40	13	24	0.68
		10-09-2019	77	46	17	29	0.73
		28-11-2019	71	39	12	26	0.66
5	Near Loco Shed	18-06-2019	79	47	12	26	0.66
		10-09-2019	77	46	15	31	0.71
		28-11-2019	79	42	14	29	0.71
6	Near Switch Yard	18-06-2019	76	43	15	26	0.69
		10-09-2019	78	46	16	30	0.69
		28-11-2019	75	44	16	33	0.74
7	Near NDCT	18-06-2019	77	43	14	26	0.58
		10-09-2019	74	41	14	27	0.76
		28-11-2019	82	46	15	30	0.70
		Min	68	38	8	17	0.58
		Max	82	47	17	33	0.95
		Average	74	42	13	26	0.71
		National Standard	100 (24-hrs average)	60 (24-hrs average)	80 (24-hrs average)	80 (24-hr average)	4 (1-hrs average)

Source : Eco Laboratories & Consultants Pvt. Ltd. (Sector-74, Mohali, Punjab-160071)

**Cont.....Ambient Air Quality inside & outside the Plant Boundary (24-h avg in  $\mu\text{g}/\text{m}^3$ )**

Sr. No	Monitoring Location	Date	Parameters				
			PM <sub>10</sub> $\mu\text{g}/\text{m}^3$	PM <sub>2.5</sub> $\mu\text{g}/\text{m}^3$	SO <sub>2</sub> $\mu\text{g}/\text{m}^3$	NO <sub>2</sub> $\mu\text{g}/\text{m}^3$	CO $\text{mg}/\text{m}^3$
1	Dabhali	13-03-2020	66	30	12	23	0.77
		24-06-2020	64	33	9	19	0.56
		11-09-2020	70	38	12	28	0.61
		23-12-2020	93	51	10	16	1.2
2	Salempura	13-03-2020	72	38	9	19	0.73
		24-06-2020	67	36	8	17	0.64
		11-09-2020	77	44	11	26	0.65
		23-12-2020	95	54	13	18	1.3

3	Dadumajra	13-03-2020	70	36	9	25	0.76
		24-06-2020	66	34	7	19	0.60
		11-09-2020	75	43	9	23	0.69
		23-12-2020	96	54	11	19	1.3
4	Near Storm Water Sump	13-03-2020	65	36	11	24	0.60
		24-06-2020	61	30	8	18	0.55
		11-09-2020	75	42	10	23	0.73
		22-12-2020	88	43	8	12	1.2
5	Near Loco Shed	13-03-2020	75	40	12	30	0.68
		24-06-2020	71	39	10	22	0.63
		11-09-2020	79	47	13	26	0.64
		21-12-2020	88	49	11	19	1.3
6	Near Switch Yard	13-03-2020	73	41	15	31	0.68
		24-06-2020	66	35	9	20	0.58
		11-09-2020	72	40	13	27	0.71
		22-12-2020	91	46	6	9	1.3
7	Near NDCT	13-03-2020	78	43	13	28	0.63
		24-06-2020	69	38	11	25	0.61
		11-09-2020	72	40	12	25	0.68
		21-12-2020	89	46	10	14	1.4
		Min	61	30	6	9	0.55
		Max	96	54	15	31	1.4
		Average	77	42	11	22	0.85
National Standard			100 (24-hrs average)	60 (24-hrs average)	80 (24-hrs average)	80 (24-hr average)	4 (1-hrs average)

Source : Eco Laboratories & Consultants Pvt. Ltd. (Sector-74, Mohali, Punjab-160071)  
Inter stellar Testing Centre Pvt. Ltd. (Industrial Area Phase-1, Panchkula-134109, Haryana)

**Cont.....Ambient Air Quality inside & outside the Plant Boundary (24-h avg in  $\mu\text{g}/\text{m}^3$ )**

Sr. No	Monitoring Location	Date	Parameters				
			PM <sub>10</sub> $\mu\text{g}/\text{m}^3$	PM <sub>2.5</sub> $\mu\text{g}/\text{m}^3$	SO <sub>2</sub> $\mu\text{g}/\text{m}^3$	NO <sub>2</sub> $\mu\text{g}/\text{m}^3$	CO $\text{mg}/\text{m}^3$
1	Dabhali	13-03-2021	86	43	10	19	1.3
		19-06-2021	65	34	17	20	1.3
		10-09-2021	82	37	10	17	1.8
		17-12-2021	90	51	8	13	1.0
2	Salempura	13-03-2021	92	48	12	17	1.4
		19-06-2021	73	38	16	19	1.4
		10-09-2021	87	35	9	14	1.4
		17-12-2021	92	48	13	27	1.2
3	Dadumajra	13-03-2021	89	44	10	15	1.2
		19-06-2021	68	31	14	18	1.5
		10-09-2021	93	40	12	18	2.5
		17-12-2021	94	53	12	19	1.1
4	Near Storm Water Sump	10-03-2021	84	43	8	12	1.3
		07-09-2021	86	40	12	17	1.0



		15-12-2021	94	55	12	20	1.3
5	Near Loco Shed	10-03-2021	81	40	9	13	1.3
		07-09-2021	81	37	8	14	2.2
		15-12-2021	89	49	8	13	1.5
6	Near Switch Yard	10-03-2021	88	45	6	10	1.4
		07-09-2021	85	39	6	10	3.6
		15-12-2021	97	57	16	33	1.4
7	Near NDCT	10-03-2021	87	40	6	10	1.2
		07-09-2021	89	42	11	18	2.6
		Min	68	31	6	10	1
		Max	97	57	16	33	3.6
		Average	86	43	10	17	1.65
National Standard			100 (24-hrs average)	60 (24-hrs average)	80 (24-hrs average)	80 (24-hr average)	4 (1-hrs average)

Source : Interstellar Testing Centre Pvt. Ltd. (Industrial Area Phase-1, Panchkula-134109, Haryana)

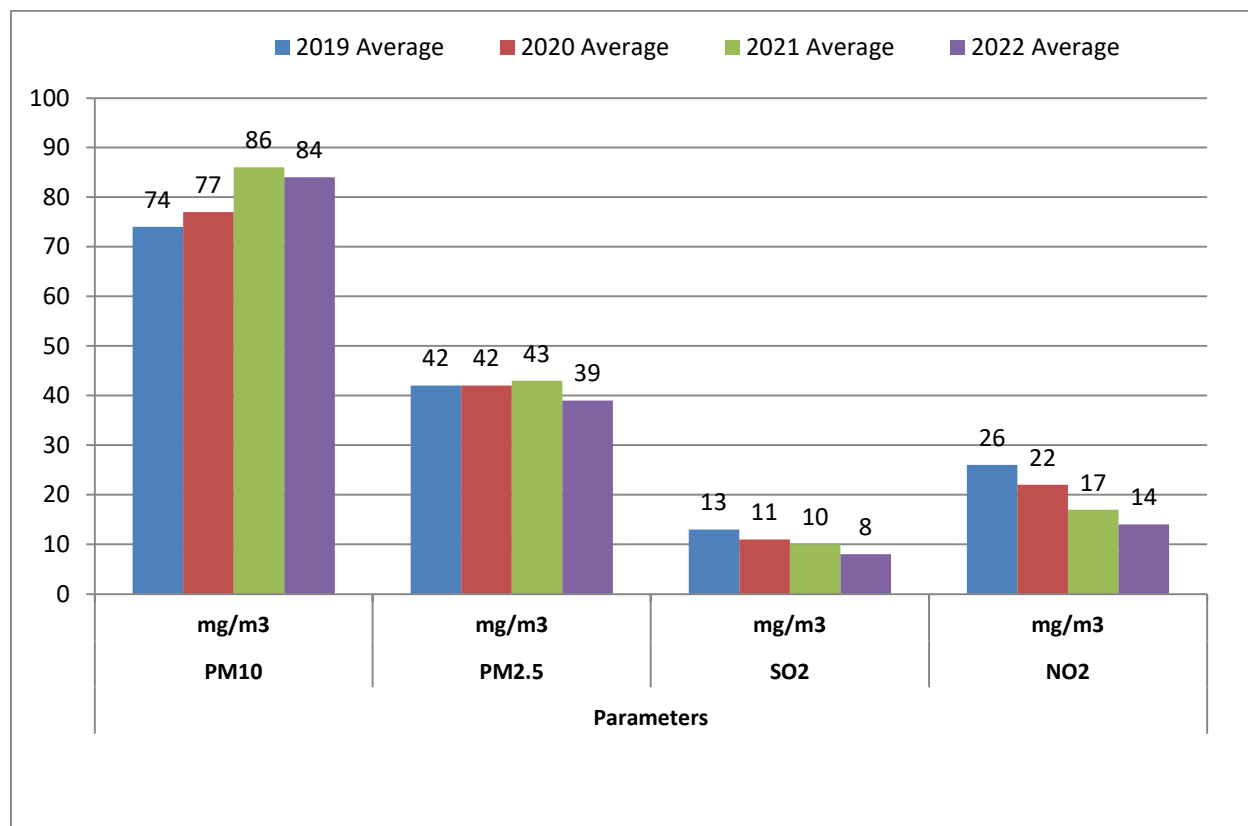
**Cont.....Ambient Air Quality inside & outside the Plant Boundary (24-h avg in  $\mu\text{g}/\text{m}^3$ )**

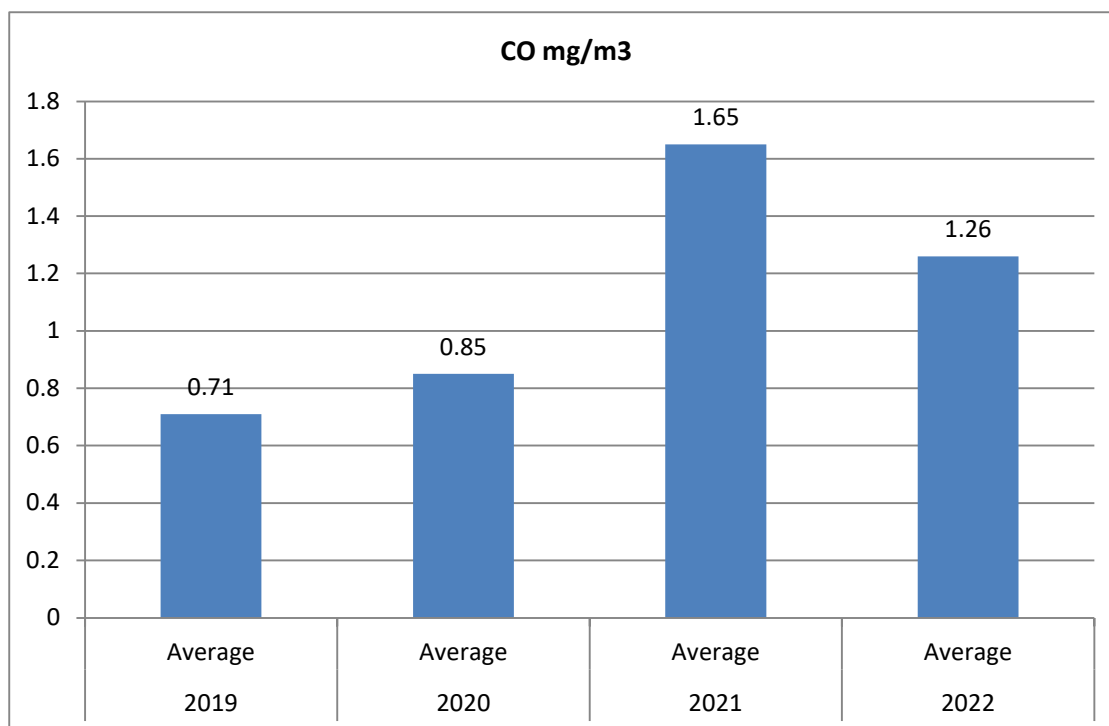
Sr. No	Monitoring Location	Date	Parameters				
			PM <sub>10</sub> μg/m <sup>3</sup>	PM <sub>2.5</sub> μg/m <sup>3</sup>	SO <sub>2</sub> μg/m <sup>3</sup>	NO <sub>2</sub> μg/m <sup>3</sup>	CO mg/m <sup>3</sup>
1	Dabhali	16-06-2022	87	40	12	22	1.3
		10-09-2022	83	35	7	10	1.1
2	Salempura	16-06-2022	83	37	8	15	1.3
		10-09-2022	90	41	10	15	1.3
3	Dadumajra	16-06-2022	83	41	10	19	1.2
		10-09-2022	86	37	5	10	1.2
4	Near Storm Water Sump	13-06-2022	87	43	8	13	1.4
		08-09-2022	81	36	7	10	1.4
5	Near Loco Shed	13-06-2022	84	43	10	15	1.3
		08-09-2022	85	38	6	12	1.3
6	Near Switch Yard	13-06-2022	83	42	6	11	1.3
		08-09-2022	86	39	8	13	1.1
7	Near NDCT	13-06-2022	80	38	12	22	1.4
		08-09-2022	82	37	7	11	1.1
		Min	80	35	5	10	1.1
		Max	90	43	12	22	1.4
		Average	84	39	8	14	1.26
National Standard			100 (24-hrs average)	60 (24-hrs average)	80 (24-hrs average)	80 (24-hr average)	4 (1-hrs average)

Source : Inter stellar Testing Centre Pvt. Ltd. (Industrial Area Phase-1, Panchkula-134109, Haryana)

**Cont.....Ambient Air Quality inside & outside the Plant Boundary (24-h avg in  $\mu\text{g}/\text{m}^3$ )**

Sr. No	Date		Parameters				
			PM <sub>10</sub> $\mu\text{g}/\text{m}^3$	PM <sub>2.5</sub> $\mu\text{g}/\text{m}^3$	SO <sub>2</sub> $\mu\text{g}/\text{m}^3$	NO <sub>2</sub> $\mu\text{g}/\text{m}^3$	CO $\text{mg}/\text{m}^3$
1	2019	Minimum	68	38	8	17	0.58
		Maximum	82	47	17	33	0.95
		<b>Average</b>	<b>74</b>	<b>42</b>	<b>13</b>	<b>26</b>	<b>0.71</b>
2	2020	Minimum	61	30	6	9	0.55
		Maximum	96	54	15	31	1.4
		<b>Average</b>	<b>77</b>	<b>42</b>	<b>11</b>	<b>22</b>	<b>0.85</b>
3	2021	Minimum	68	31	6	10	1
		Maximum	97	57	16	33	3.6
		<b>Average</b>	<b>86</b>	<b>43</b>	<b>10</b>	<b>17</b>	<b>1.65</b>
4	2022	Minimum	80	35	5	10	1.1
		Maximum	90	43	12	22	1.4
		<b>Average</b>	<b>84</b>	<b>39</b>	<b>8</b>	<b>14</b>	<b>1.26</b>





## 2.3 Ground Water Quality

Ground water (hand pump / tube well) is the main source of drinking and irrigation in the study area. Ground water samples (9 Nos) were collected from villages located around the power plant. The water samples were analysed for physicochemical and biological parameters as per the Standard Methods (APHA). The results were compared with the drinking water quality standard prescribed by the Bureau of Indian Standards (IS: 10500:2012). The pH of the samples was found to be alkaline (7.41 - 8.18). TDS values of the sample ranges between 150 - 1380 mg/l. Hardness content of the sample ranges between 52 - 440 mg/l. Calcium values of the samples ranges between 16 - 120 mg/l. Magnesium values of the samples ranges between 2.9 - 34 mg/l. Chloride values of the samples ranges between 35 - 280 mg/l. Fluoride levels were found to be within the beneficial levels of 0.4 mg/l to 1.5 mg/l ( less than 0.4 mg/l fluoride in drinking water will cause dental caries and more than 1.5 mg/l fluoride in drinking water will cause dental and skeletal fluorosis). The ground water did not show any oil or bacterial contamination. Heavy metals like Pb, Cu, Mn, Cr, Ni, Cd, Hg, As, and Se were found to be below the detectable limit.

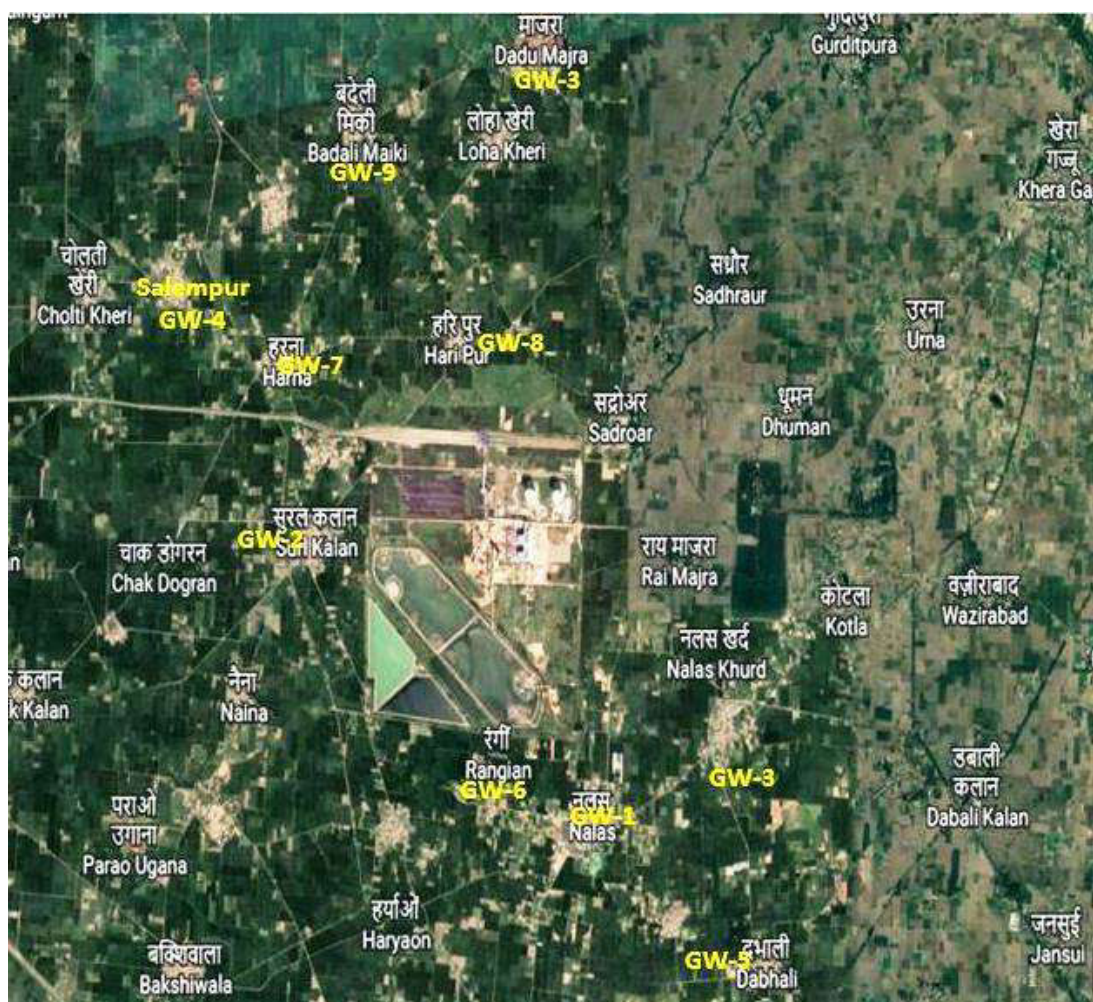


Figure 5: Ground Water Sampling Locations

Table 3: Ground Water Quality Test Results

	Parameters	Unit	Nalash	Surkalan	Dadu majra	Salempur	Dabhali	Acceptable Limit IS:10500:2012	Permissible Limit IS:10500:2012
1	pH	-	8.14	7.41	8.14	8.18	7.78	6.5 to 8.5	No relaxation
2	Conductivity	µmhos/cm	1120	890	850	880	1980	-	-
3	Turbidity	NTU	1.5	<1	<1	1.8	2	5	15
4	Total Dissolved Solids	mg/l	790	630	590	620	1380	500	2000
5	Total Hardness as CaCO <sub>3</sub>	mg/l	210	260	210	260	440	200	600
6	Calcium as Ca	mg/l	60	64	56	68	120	75	200



7	Magnesium as Mg	mg/l	14.6	24	17	22	34	30	100
8	Sulphate	mg/l	72	58	52	65	112	200	400
9	Chlorides as Cl	mg/l	90	72	60	80	280	250	1000
10	Nitrates as NO <sub>3</sub>	mg/l	8.5	7.5	7.2	10.5	12.5	45	No relaxation
11	Fluoride as F	mg/l	0.54	0.45	0.42	1.24	1.32	1.0	1.5
12	Iron as Fe	mg/l	0.18	0.12	0.08	0.22	0.26	0.3	No relaxation
13	Copper as Cu	mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	1.5
14	Lead as Pb	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	No relaxation
15	Manganese as Mn	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	0.1	0.3
16	Zinc as Zn	mg/l	0.58	0.48	0.40	0.82	1.08	5	15
17	Chromium	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	0.05	No relaxation
18	Nickel as Ni	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	No relaxation
19	Oil & Grease	mg/l	Nil	Nil	Nil	Nil	Nil		0.03
20	Cadmium as Cd	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	0.003	No relaxation
21	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	No relaxation
22	Arsenic as As	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	0.01	0.05
23	Selenium as Se	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	No relaxation
24	Total coliform	MPN/100 ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil

**Cont.....Ground Water Quality Test Results**

	Parameters	Unit	Rangia	Harna	Haripur	Badalimajra	Acceptable Limit IS:10500:2012	Permissible Limit IS:10500:2012
1	pH	-	7.89	7.68	8.08	8.12	6.5 to 8.5	No relaxation
2	Conductivity	µmhos/cm	920	710	980	210	-	-
3	Turbidity	NTU	1.5	<1	1.5	<1	5	15
4	Total Dissolved Solids	mg/l	650	510	690	150	500	2000
5	Total Hardness as CaCO <sub>3</sub>	mg/l	250	260	210	52	200	600
6	Calcium as Ca	mg/l	60	64	60	16	75	200
7	Magnesium as Mg	mg/l	24	24	14.6	2.9	30	100
8	Sulphate	mg/l	72	62	72	28	200	400

9	Chlorides as Cl	mg/l	85	70	85	35	250	1000
10	Nitrates as NO <sub>3</sub>	mg/l	9.2	8.2	10.8	6.8	45	No relaxation
11	Fluoride as F	mg/l	0.40	1.14	1.24	0.42	1.0	1.5
12	Iron as Fe	mg/l	0.12	0.22	0.24	0.08	0.3	No relaxation
13	Copper as Cu	mg/l	<0.02	<0.02	<0.02	<0.02	0.05	1.5
14	Lead as Pb	mg/l	<0.01	<0.01	<0.01	<0.01	0.01	No relaxation
15	Manganese as Mn	mg/l	<0.05	<0.05	<0.05	<0.05	0.1	0.3
16	Zinc as Zn	mg/l	0.75	0.85	0.95	0.25	5	15
17	Chromium	mg/l	<0.005	<0.005	<0.005	<0.005	0.05	No relaxation
18	Nickel as Ni	mg/l	<0.01	<0.01	<0.01	<0.01	0.02	No relaxation
19	Oil & Grease	mg/l	Nil	Nil	Nil	Nil		0.03
20	Cadmium as Cd	mg/l	<0.001	<0.001	<0.001	<0.001	0.003	No relaxation
21	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001	0.001	No relaxation
22	Arsenic as As	mg/l	<0.001	<0.001	<0.001	<0.001	0.01	0.05
23	Selenium as Se	mg/l	<0.01	<0.01	<0.01	<0.01	0.01	No relaxation
24	Total coliform	MPN/100 ml	Nil	Nil	Nil	Nil	Nil	Nil

## 2.4 Surface Water Quality

One canal water sample was collected. The sample was analyzed for physico-chemical and biological parameters as per Standard Methods (APHA). Hg, As, Pb and Cr were found to be below the detectable limit. The surface water quality is fit for irrigation purpose.

## 2.5 Soil Quality

Nine soil samples were collected from agriculture fields around the plant. The samples were analysed for pH, conductivity, Organic Matter and metallic constituents. pH was found to be moderately alkaline (7.8 to 8.5), conductivity was found to be normal (<1000 µmhos/cm) and Organic Matter was found to be sufficient (0.8%). The concentration of Lead was found to be <0.3 mg/kg, Nickel: 6.2 to 8.5 mg/kg, Cadmium: <0.1 mg/kg, Chromium: <0.2 mg/kg, Arsenic: < 0.2 mg/kg and Mercury: <0.1 mg/kg.

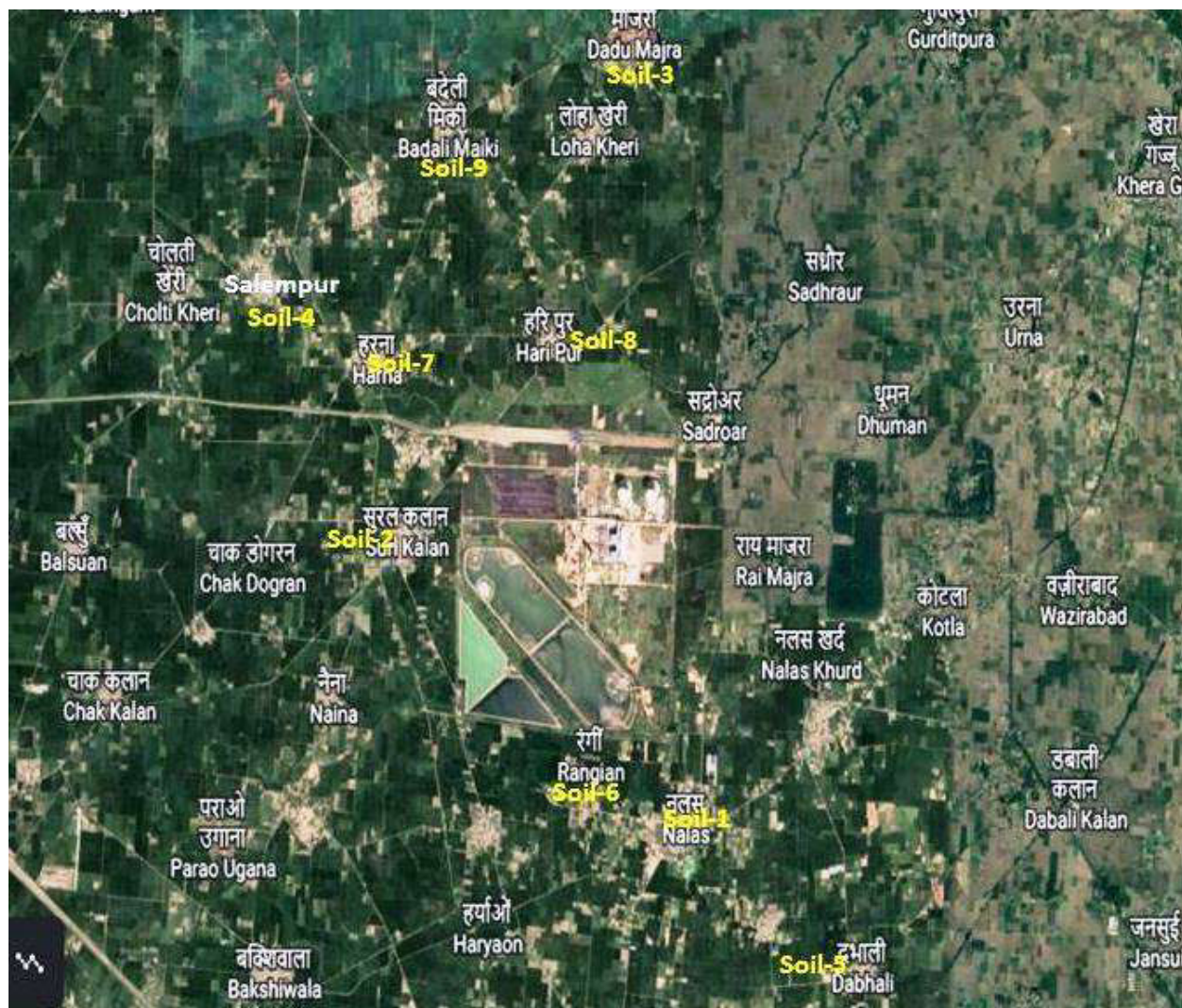


Figure 6: Soil Sampling Locations

Table 4: Soil Quality Test Results

	Parameters	Unit	Nalas	Surkalan	Dadumajra	Salempur	Dabhali
1	pH ( 20% slurry)	-	8.35	8.32	8.26	8.16	8.18
2	Conductivity (20% slurry)	µmhos/cm	120	70	120	60	110
3	Organic Matter	%	0.82	0.80	0.90	0.78	0.88
4	Available Phosphorous	kg/ha	52	48	52	45	56
5	Available Nitrogen	kg/ha	174	168	176	162	180
6	Nickel as Ni	mg/kg	8.5	7.5	6.8	6.5	7.2
7	Copper as Cu	mg/kg	3.2	3.5	2.5	2.8	2.8
8	Cadmium as Cd	mg/kg	ND	ND	ND	ND	ND
9	Chromium as Cr	mg/kg	0.18	0.16	0.12	0.10	0.14

10	Iron as Fe	mg/kg	2.8	4.2	3.2	3.8	3.5
11	Zinc as Zn	mg/kg	22	32	18	26	26
12	Lead as Pb	mg/kg	ND	ND	ND	ND	ND
13	Arsenic	mg/kg	ND	ND	ND	ND	ND
14	Mercury	mg/kg	ND	ND	ND	ND	ND

**cont.....Soil Quality Test Results**

	Parameters	Unit	Rangia	Harna	Haripur	Badali Maiki
1	pH ( 20% slurry)	-	7.98	7.90	8.38	7.96
2	Conductivity (20% slurry)	µmhos/cm	60	110	90	50
3	Organic Matter	%	0.80	0.92	0.88	0.78
4	Available Phosphorous	kg/ha	45	58	52	45
5	Available Nitrogen	kg/ha	172	180	182	170
6	Nickel as Ni	mg/kg	6.5	7.8	8.2	6.2
7	Copper as Cu	mg/kg	2.2	2.5	3.8	2.8
8	Cadmium as Cd	mg/kg	ND	ND	ND	ND
9	Chromium as Cr	mg/kg	0.10	0.12	0.18	0.14
10	Iron as Fe	mg/kg	2.8	2.5	3.5	2.2
11	Zinc as Zn	mg/kg	22	24	28	20
12	Lead as Pb	mg/kg	ND	ND	ND	ND
13	Arsenic	mg/kg	ND	ND	ND	ND
14	Mercury	mg/kg	ND	ND	ND	ND

## 2.6 Heavy Metals in Food Samples

Rice, dal, wheat and maize and locally grown vegetables are the staple food of the people of this area. Chicken, goat meat and eggs are also consumed by about 30% people. Samples of rice, dal, wheat, gram, pulses, potato, onion, tomato were collected from 9 crop fields around the power plant. No heavy metals were detected in any of the food samples (heavy metals like Arsenic, mercury, cadmium, chromium, lead and nickel were found to be less than 0.1 mg/kg).



## CHAPTER 3: BASELINE HEALTH STATUS

### 3.1 Pre-Project Data of Human Health

Village-wise or Taluk-wise health records of population of villages of the study area is not available with the Health Department of State Government.

### 3.2 Primary Health Survey

A cross-sectional study is an observational one. The defining feature of a cross-sectional study is that it can compare different population groups at a single point in time. This is like taking a snapshot. Findings are drawn from whatever fits into the frame. The benefit of a cross-sectional study design is that it allows comparing many different variables at the same time. However, cross-sectional studies may not provide definite information about cause-and-effect relationships. This is because such studies offer a snapshot of a single moment in time; they do not consider what happens before or after the snapshot is taken.

Principally two issues were focused during the survey; i) the types of health problems likely to be caused by discharges from coal based thermal power plant and ii) the spectrum of health problems that the subjects living in the study area might experience when exposed to different environmental media.

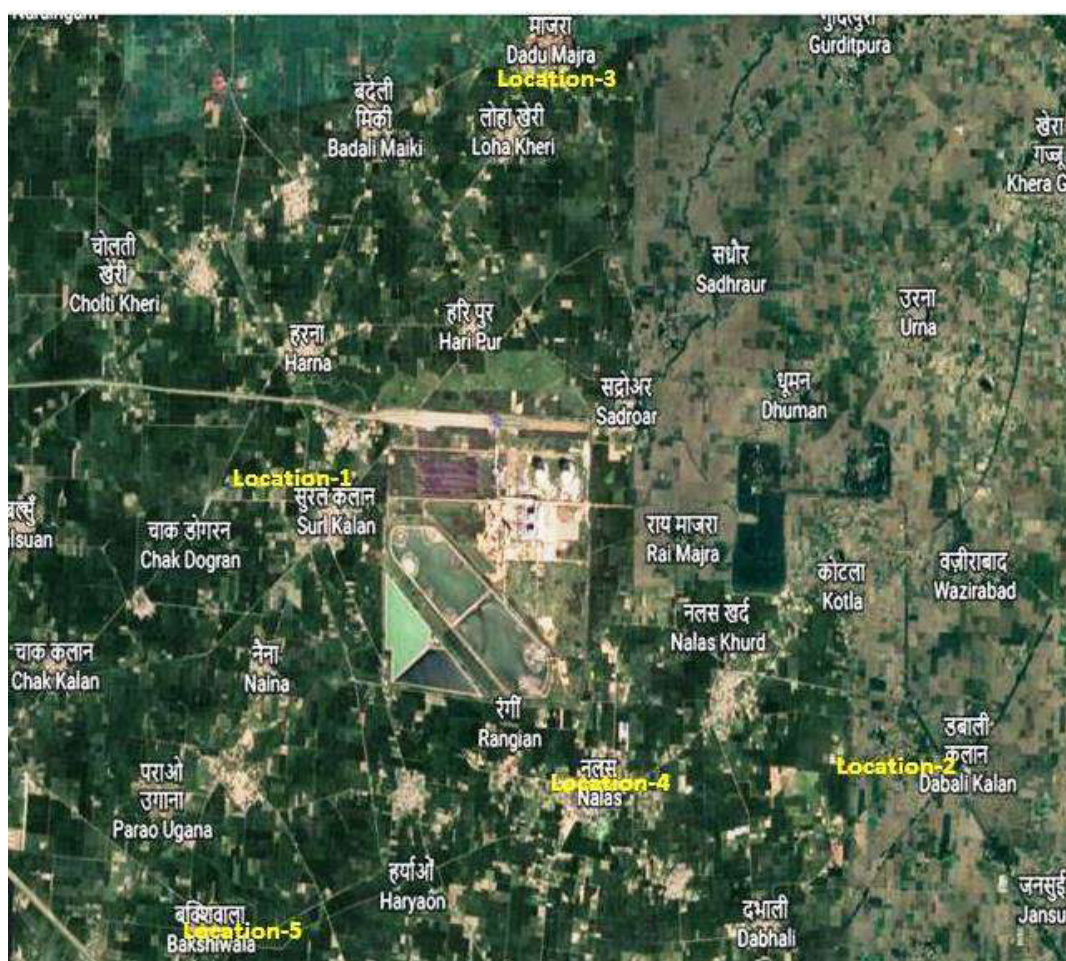
Suitable random sample of people living in the impact and non-impact zone was considered for health check-up. The sample people live, eat and work in similar microenvironment and are likely to be exposed to similar environmental pollutants. For completing the exercise designed questionnaire was used. The design of the questionnaire was "Interviewer Administered".

Primary health survey was carried out by organizing health camps at five (5) locations during the period 07-12-2022 to 09-12-2022. The selected locations represented the highest and moderate impact area and control area due to stack emissions from NPL. Cross-sectional population was screened for the health check-up. Health check-up was done using a questionnaire. Each subject was initially asked questions by the team and then the health checkup was done by a qualified Doctor.

A total of 309 subjects includes children, adolescents, adults and elderly, who were exposed in the existing environment for more than 5 years. The selected locations for carrying out health survey is provided in Table 6 and marked in Figure 6.

**Table 5: Name of Locations Selected for Carrying out Health Survey**

S. No	Location	Distance & Direction from NPL	Impacted / Control Area	Date of Health Check-up	Persons Checked
1	Surkalan	1.7 Km, West	Slightly Impacted	08-12-2022 (FN)	74
2	Dabhali	3.8 Km, South	Moderately Impacted	07-12-2022 (AN)	38
3	Dadumajra	3.5 Km, North	Slightly impacted	08-12-2022 (AN)	110
4	Nalas	2.0 Km, South East	Severely Impacted	07-12-2022 (FN)	44
5	Bakshiwala	4.5 Km, South West	Non-Impacted	09-12-2022 (FN)	43
	Total				309



**Figure 7 Health Survey Locations Marked on Google Image**

### 3.3 Findings of Primary Health Survey

Five vital signs were observed for each subject; namely height, weight, temperature, blood pressure and pulse rate. General appearance of each subject like development and nutrition status, body habits, deformities, attention to grooming, cleanliness of nail, skin, hair and tongue were also noted. Lung Function was done for willing and capable subjects. ECG was done for subjects who complained of heart problems and as recommended by the Doctor-in-charge. Routine urine test and blood test were done for subjects who were recommended by the Doctor-in-charge.

The physical examination included the following parameters:

**HEENT** (Head, Eyes, Ears, Nose, Throat)

**Head:** Size and shape

**Eyes:** Inspection of conjunctivae and lids, Examination of pupils and irises (e.g., reaction to light and accommodation, size and symmetry).

**Ears, Nose and Throat:** External inspection of ears and nose (e.g., overall appearance, scars, lesions, masses), Otoscopic examination of external auditory canals and tympanic membranes, Assessment of hearing (e.g., whispered voice, finger rub, tuning fork), Inspection of nasal mucosa, septum and turbinate, Inspection of lips, teeth and gums, Examination of pharynx, oral mucosa, salivary glands, hard and soft palates, tongue, tonsils and posterior pharynx.

**Neck:** Examination of neck (e.g., masses, overall appearance, symmetry, tracheal position, crepitus), Examination of thyroid (e.g., enlargement, tenderness, mass)

**Respiratory System:** Assessment of respiratory effort (e.g., intercostal retractions, use of accessory muscles, diaphragmatic movement), Percussion of chest (e.g., dullness, flatness, hyper-resonance), Palpation of chest (e.g., tactile fremitus), Auscultation of lungs (e.g., breath sounds, adventitious sounds, rubs), Lung Function using Peak Expiratory Function Meter.

**Cardiovascular System:** Palpation of heart (e.g., location, size, thrills), Auscultation of heart with notation of abnormal sounds and murmurs, examination of carotid arteries (e.g., pulse amplitude, bruits), abdominal aorta (e.g., size, bruits), femoral arteries (e.g., pulse amplitude, bruits), pedal pulses (e.g., pulse amplitude) and extremities for edema and/or varicosities

### 3.4 Body Mass Index (BMI)

BMI is calculated using the weight and height of the people. Normal BMI ranges from  $18.5 \text{ kg/m}^2$  –  $24.9 \text{ kg/m}^2$ . Person with BMI below  $18.5 \text{ kg/m}^2$  is termed underweight and above  $25 \text{ kg/m}^2$  is overweight. People with BMI greater than  $30 \text{ kg/m}^2$  are termed obese.

**Table 6 : BMI Results of the Five Sampling Locations (n= 309)**

	Name of Location	Normal Weight (%)	Overweight (%)	Obese %	Underweight (%)
1	Surkalan	37.83	28.37	8.1	25.67
2	Dabhalikalan	31.57	28.95	34.21	5.26
3	Dadumajra	45.45	16.36	5.4	32.72
4	Nalas	59.1	20.45	20.45	0
5	Bakshiwala	65.11	23.25	11.63	0

Majority of people in Bakshiwala and Nalash were found to have normal weight. Majority of people in Dabhalii and Surkalan were found to be overweight. 32.72% people of Dadumajra were found to be underweight. 34.21% people of Dabhali were found to be Obese.

### 3.5 Lung Function Test

The peak expiratory flow rate (PEFR) is a test that measures how fast a person can exhale (breathe out). This test checks lung functioning, and is often used by patients who have asthma. Asthma is a chronic condition characterized by ongoing inflammation of the airways. Common asthma symptoms include shortness of breath that worsens with activity, wheezing, and cough. The flow of exhaled air from the lungs may be restricted due to inflammation or congestion from excess mucous.

The basic pulmonary function as per the standard prescribed by the American Thoracic Society was conducted [including the equipment that met the specifications so as to have reproducible and reliable measurements of lung functions]. Each subject was educated before the Spirometry that was undertaken by a trained person in a comfortable and sitting posture so as to get the best value. Out of the three attempts made by each subject, best value is selected.



**Table 7: Normal PEF Values for Males (l / min)**

Age in years	PEF Values of People of Specified Height and Years				
	60"	65"	70"	75"	80"
20	554	602	649	693	740
25	543	590	636	679	725
30	532	577	622	664	710
35	521	565	609	651	695
40	509	552	596	636	680
45	498	540	583	622	665
50	486	527	569	607	649
55	475	515	556	593	634
60	463	502	542	578	618
65	452	490	529	564	603
70	440	477	515	550	587

**Table 8: Normal PEF Values for Females (l / min)**

Age in years	PEF Values of People of Specified Height and Years				
	60"	65"	70"	75"	80"
20	390	423	460	496	529
25	385	418	454	490	523
30	380	413	448	483	516
35	375	408	442	476	509
40	370	402	436	470	502
45	365	397	430	464	495
50	360	391	424	457	488
55	355	386	418	451	482
60	350	380	412	445	475
65	345	375	406	439	468
70	340	369	400	432	461

**Table 9: Normal PEF Values for Adolescents (l / min)**

Height (Inches)	Males & Females
43"	147
44"	160
45"	173
46"	187
47"	200
48"	214
49"	227
50"	240
51"	254
52"	267

53"	280
54"	293
55"	307
56"	320
57"	334
58"	347
59"	360
60"	373
61"	387
62"	400
63"	413
64"	427
65"	440
66"	454

**Table 10: Results of Lung Function Test**

Location	Males		Females	
	Normal PEF % population	Below Normal PEF % population	Normal PEF % population	Below Normal PEF % population
Surkalan	90	10	93	7
Dabhalikalan	91	9	92	8
Dadumajra	92	8	92	8
Nalash	90	10	90	10
Bakshiwala	93	8	95	5

**Observation:** 93% males and 95% females of the study area have normal lung function. This shows a healthy population status of the study area.

### 3.6. General Health Parameters

Majority of subjects were from good to moderate socio economic background but their health was not under any stress due to environmental factors, nutritional factors, or availability of primary health care, etc. The general hygiene related to nails, skin and teeth of the people were found to be good. Malnutrition was absent. No disease or any chronic condition that could be related to environmental pollution has been observed in the population of study area.

None of the people reported cancer, gross neurologic, cardiovascular, hepatic or renal damage/ There was not a single case of congenital abnormality.

**Table 11 General Health Disorders Found in Population around NPL**

S. No	Disorders	% cases observed
<b>Cardiovascular Disorders</b>		
1	Persistent chest pain	2
2	Abnormal pulse rate	1
3	Hypertension	7
<b>Respiratory Disorders</b>		
1	Cough	5.8
2	Headache	11
3	Breathlessness	3
4	Asthma	0
5	Chronic Obstructive Pulmonary Disease (COPD)	0
<b>Other Health Disorders</b>		
1	Dental problems	10
2	Joint pain	26
2	Diabetes Mellitus	14
3	Eye Disorder	8
4	Low hemoglobin in Females	15
5	Low hemoglobin in Males	10

**Table 12: Cases of Health Disorders found in Population around NPL**

	Name of Disorders	%		Name of Disorders	%
1	<b>Eye Checkup</b>		4	<b>Dental Checkup</b>	
	Corneal clouding	0.8		Fluorosis	0.6
	Conjunctival Xerosis	1		Leadline	0.4
	Muddy conjunctiva	0.8		Bleeding gums	1.2
	Cataract	4		Dental caries	2
2	<b>Ear Check up</b>			Pyorrhea	3
	Ear ache	0.4	5	<b>Skin check up</b>	
	Ear discharge	0		Dermatitis	2
	Deafness	0.4		Rash	1
	Ear Infection	0.4		Fungal or Bacterial Infection	1
3	<b>Tongue check up</b>		6	Oedema (Present)	0.4
	Desquamation		7	Tonsils (Enlarged)	0.4
	Thrush	1		Neck lymph nodes (enlarged)	0.4
	Protruded	1	8		

**Table 13- Results of Health Survey: Category of Disease Vs. Age Group**

<b>LOCATION 1 SURKALAN</b>					
<b>Category of Disease</b>	<b>% of Cases Reported in Following Age Groups</b>				
	<b>Children (5 to 12)</b>	<b>Adolescence (12+ to 18)</b>	<b>Adult (18+ to 40)</b>	<b>Middle Age (40+ to 60)</b>	<b>Elderly Above 60</b>
Addiction				1	
High BP			3	15	17
Low BP			4	1	1
Coughing			4	4	5
Fever			3		2
Headache			8	3	8
Breathlessness				1	3
Chest Pain			1		1
<b>LOCATION 2 DABHALIKALAN</b>					
<b>Category of Disease</b>	<b>% of Cases Reported in Following Age Groups</b>				
	<b>Children</b>	<b>Adolescence</b>	<b>Adult</b>	<b>Middle Age</b>	<b>Above 60</b>
Addiction					
High BP			13	24	21
Low BP		1		2	
Coughing		4	2		4
Fever	2	4	1		
Headache			10	5	8
Breathlessness			3		
Chest Pain				2	
<b>LOCATION 3 DADUMAJRA</b>					
<b>Category of Disease</b>	<b>% of Cases Reported in Following Age Groups</b>				
	<b>Children</b>	<b>Adolescence</b>	<b>Adult</b>	<b>Middle Age</b>	<b>Above 60</b>
Addiction				1	
High BP			3	11	14
Low BP			1		
Coughing				1	1
Fever					2
Headache			3	1	6
Breathlessness					
Chest Pain			1		2
<b>LOCATION 4 NALASH</b>					
<b>Category of Disease</b>	<b>% of Cases Reported in Following Age Groups</b>				
	<b>Children</b>	<b>Adolescence</b>	<b>Adult</b>	<b>Middle Age</b>	<b>Above 60</b>
Addiction				1	
High BP			6	10	45
Low BP					



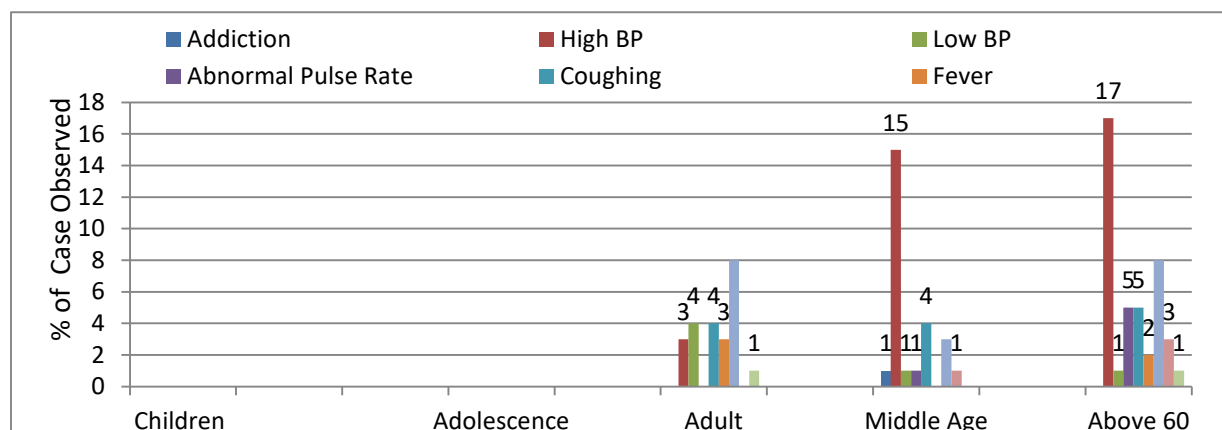
Coughing			2		4
Fever	1	1	2		6
Headache			2	2	10
Breathlessness					
Chest Pain			1		2
<b>LOCATION 5 BAKSHIWALA</b>					
Category of Disease	% of Cases Reported in Following Age Groups				
	Children	Adolescence	Adult	Middle Age	Above 60
Addiction					
High BP			9	25	23
Low BP					
Coughing		1	3	3	
Headache			2	14	10
Breathlessness					
Chest Pain					

**Table 14 Summary of Health Checkup Done at Five Locations**

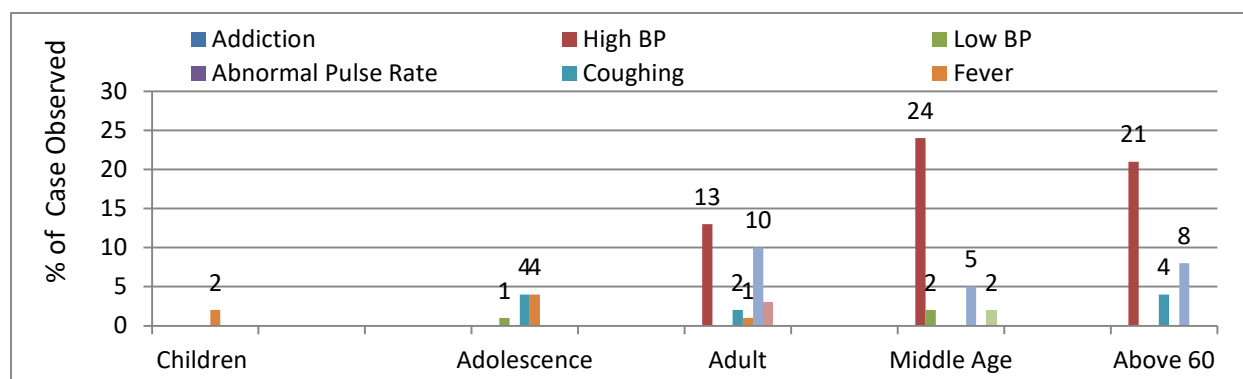
	Name of Location	Over Weight	Cough	High BP	Headache	Other Noted Health Problems
1	Surkalan Slightly impacted	28	13	35	19	Knee joint pain in elderly
2	Dabhali kalan Moderately impacted	29	10	58	23	-
3	Dadumajra Slightly impacted	16	2	28	10	Knee joint pain in elderly
4	Nalash Severely impacted	20	6	61	14	-
5	Bakshiwala Non-Impacted -Control)	23	7	57	26	-

### 3.7 Observation on Each Locations

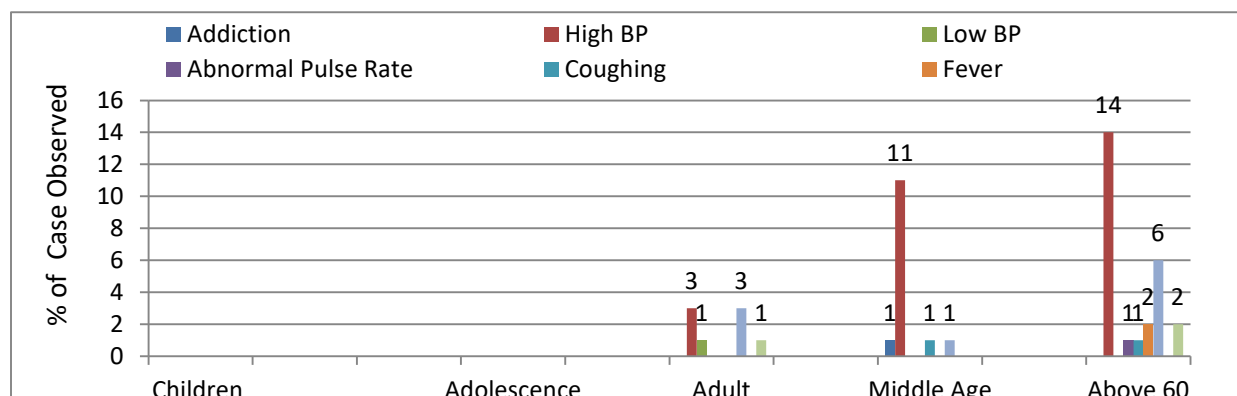
**1. Surkalan:** 3% of adult age and 2% of aged were suffering from fever. 4% adult, 4% middle age and 5% of aged were suffering from coughing. 3% of adult age, 15% of middle aged and 17% of elderly aged have high BP. 4% of adult age, 1% of middle aged and 1% of elderly aged have low BP. 1% of adult and 1% of aged were suffering from prominent chest pain. 8% of adult, 3 % of middle aged 8% of aged were suffering from headache. No people were suffering from asthma and COPD were reported.



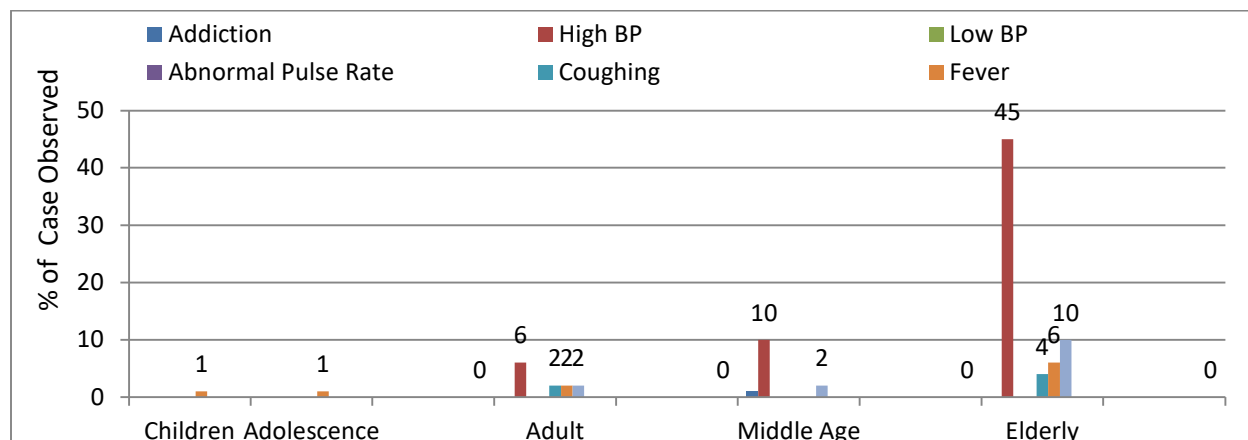
**2. Dabhalikalan:** 2% children, 4% adolescence and 1% of adult aged were suffering from fever. 4% adolescence, 2% adult and 4% of aged were suffering from coughing. 13% of adult age, 24% of middle aged and 21% of elderly aged have high BP. 1% of adolescence age and 2% of middle aged have low BP. 2% of middle age was suffering from prominent chest pain. 10% of adult, 5 % of middle aged 8% of aged were suffering from headache. No cases of asthma and COPD were reported.



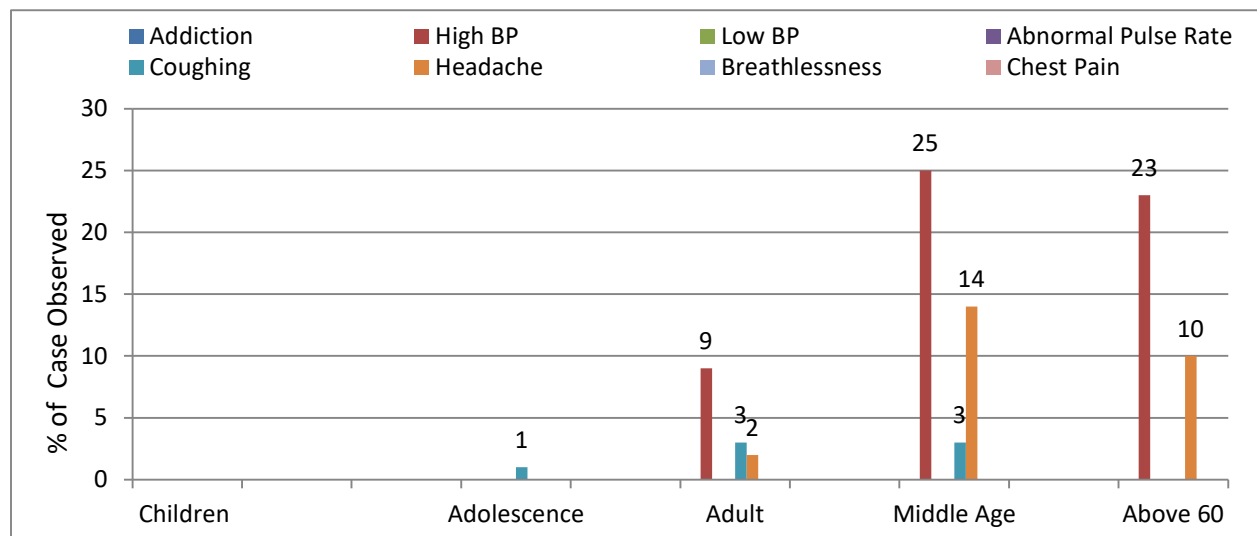
**3. Dadumajra:** 2% of aged were suffering from fever. 1% middle age and 1% of aged were suffering from coughing. 3% of adult age, 11% of middle aged and 14% of elderly aged have high BP. 1% of adult age have low BP. 1% of adult and 2% of aged were suffering from prominent chest pain. 3% of adult, 1 % of middle aged 6% of aged were suffering from headache. No people were suffering from asthma and COPD were reported.



**4. Nalash:** 1% children, 1% adolescence 2% adult and 6% of aged were suffering from fever. 2% adult and 4% of aged were suffering from coughing. 6% of adult age, 10% of middle aged and 45% of elderly aged have high BP. 1% of adult and 2% of aged was suffering from prominent chest pain. 2% of adult, 2 % of middle aged 10% of aged were suffering from headache. No cases of asthma and COPD were reported.



**5. Bakshiwal:** 1% adolescence, 3% adult and 3% middle age were suffering from coughing. 9% of adult age, 25% of middle aged and 23% of elderly aged have high BP. 2% of adult, 14 % of middle aged 10% of aged were suffering from headache. No people were suffering from asthma and COPD were reported.





## CHAPTER 4 : SUMMARY & RECOMMENDATION

- a. Air Environment: The ambient air quality of the impacted and non-impacted areas is found to be well-within the prescribed National Standards.
- b. Water Environment: The ground water samples were found to meet the BIS standards at all locations. The surface water sample were found to meet the Best Designated Use Criteria 'C' of CPCB (fit for irrigation and drinking after conventional treatment).
- c. Soil Environment: Lead, nickel, arsenic, mercury, cobalt, cadmium, chromium levels were found to be within the normal level. Organic matter was found to be suffience, conductivity was found to be normal and pH was found to be moderately alkaline.
- d. Crops and vegetables: No heavy metals were detected in the crops and vegetable samples.
- e. Impact on Human Health: Human Health Survey: Human health profiling was done for 309 resident people of five villages, who are exposed to the existing environment for more than seven years. High BP was found in majority of male adults; Nalash - 61%, Dhabali - 58% Bakshiwalwa - 57% and Surkalan - 35%. Major complaints of elderly people in Surkalan and Dadumajra were related to pain in knee joints.

No cases of respiratory disorders linked to air pollution like Bronchitis, Asthma or Chronic Obstructive Pulmonary Disorder were found in the people. No disease or any chronic condition that could be related to air pollution / effluent discharges from coal based power plant has been observed in the population of the study area. None of the people in the study area reported any serious health problem such as Cancer, Gross Neurologic, Hepatic or Renal Damage and Congenital Abnormality.

### Recommendation

Considering the fact that there is a growing international pressure against coal based thermal power plants because it is perceived that the emission and discharges are causative factors for some adverse human health impacts, the health study should be continuously done after a gap of two years or as suggested by the regulatory authorities.

## **APPENDIX - A**

## **REFERENCES**

## REFERENCES

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## **APPENDIX-B**

# **PHOTO GALLERY**





HEALTH CHECKUP CAMP SURAL KALAN





HEALTH CHECKUP CAMP SURAL KALAN





HEALTH CHECKUP CAMP DABHALIKALAN





HEALTH CHECKUP CAMP DADUMAJRA









## HEALTH CHECKUP CAMP BAKSHIWALA

## **APPENDIX-C**

# **TEST RESULTS**

# EMTRC CONSULTANTS PRIVATE LIMITED

EMTRC Lab: Recognized by Ministry of Environment, Forests & Climate Change, Govt. of India

Gazette Notification SO: 3744 (E), 17-10-2019 Accredited by NABL - ISO/IEC 17025:2005 (TC-7376)

Registered Office Tower 5 / 102 (FF), CWG village, NH24, Near Akshardham Temple, Delhi 110092

Phone: 9810032481, 011 21211228, email: emtrcjkm@gmail.com , website: www.emtrc.in


## TEST REPORT

Date: 24-10-2022

Report No. : EMTRC/NPL - 01/2022  
Issued To : Nabha Power Limited  
Village Nalash, Tehsil Rajpura, District Patiala, Punjab  
No. of Pages : 1 of 1  
Type of Sample : Ground Water  
Date of Sampling : 17-10-2022  
Location of Sampling : Nalash  
Sampling Procedure : Grab Sampling  
Sample Collected & Brought to Lab by : EMTRC Staff

## TEST RESULTS

	Parameters	Unit	Test Methods	RESULTS	Acceptable Limit IS:10500:2012	Permissible Limit IS:10500:2012
1	pH	-	APHA-4500	8.14	6.5 to 8.5	No relaxation
2	Conductivity	µmhos/cm	APHA-2510	1120	-	-
3	Turbidity	NTU	APHA-2030B	1.5	5	15
4	Total Dissolved Solids	mg/l	APHA-2540B	790	500	2000
5	Total Hardness as CaCO <sub>3</sub>	mg/l	APHA-2340C	210	200	600
6	Calcium as Ca	mg/l	APHA-4500B	60	75	200
7	Magnesium as Mg	mg/l	APHA-4500B	14.6	30	100
8	Sulphate	mg/l	APHA-4500B	72	200	400
9	Chlorides as Cl	mg/l	APHA-4500B	90	250	1000
10	Nitrates as NO <sub>3</sub>	mg/l	APHA-4500	8.5	45	No relaxation
11	Fluoride as F	mg/l	APHA-4500D	0.54	1.0	1.5
12	Iron as Fe	mg/l	APHA-3111B	0.18	0.3	No relaxation
13	Copper as Cu	mg/l	APHA-3111B	<0.02	0.05	1.5
14	Lead as Pb	mg/l	APHA-3111B	<0.01	0.01	No relaxation
15	Manganese as Mn	mg/l	APHA-3111B	<0.05	0.1	0.3
16	Zinc as Zn	mg/l	APHA-3111B	0.58	5	15
17	Chromium	mg/l	APHA-3111B	<0.005	0.05	No relaxation
18	Nickel as Ni	mg/l	APHA-3111B	<0.01	0.02	No relaxation
19	Oil & Grease	mg/l	APHA-5520D	Nil		0.03
20	Cadmium as Cd	mg/l	APHA-3111B	<0.001	0.003	No relaxation
21	Mercury as Hg	mg/l	APHA-3111B	<0.001	0.001	No relaxation
22	Arsenic as As	mg/l	APHA-3111B	<0.002	0.01	0.05
23	Selenium as Se	mg/l	APHA-3111B	<0.01	0.01	No relaxation
24	Total coliform	MPN/100 ml	APHA-9230B	Nil	Nil	Nil

  
Authorized Signatory  
MUKESH KUMAR

## ENVIRONMENT MONITORING TRAINING & RESEARCH CENTRE

EMTRC Lab: F-66, Road-2, UPSIDC Industrial Area, Masuri Gulawthi Road, Ghaziabad (UP) 201009



# EMTRC CONSULTANTS PRIVATE LIMITED

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Phone: 9810032481, 011 21211228, email: emtrcjkm@gmail.com , website: www.emtrc.in


## TEST REPORT

Date: 24-10-2022

Report No. : EMTRC/NPL - 02/2022  
Issued To : Nabha Power Limited  
Village Nalash, Tehsil Rajpura, District Patiala, Punjab  
No. of Pages : 1 of 1  
Type of Sample : Ground Water  
Date of Sampling : 17-10-2022  
Location of Sampling : Surkalan  
Sampling Procedure : Grab Sampling  
Sample Collected & Brought to Lab by : EMTRC Staff

## TEST RESULTS

	Parameters	Unit	Test Methods	RESULTS	Acceptable Limit IS:10500:2012	Permissible Limit IS:10500:2012
1	pH	-	APHA-4500	7.41	6.5 to 8.5	No relaxation
2	Conductivity	µmhos/cm	APHA-2510	890	-	-
3	Turbidity	NTU	APHA-2030B	<1	5	15
4	Total Dissolved Solids	mg/l	APHA-2540B	630	500	2000
5	Total Hardness as CaCO <sub>3</sub>	mg/l	APHA-2340C	260	200	600
6	Calcium as Ca	mg/l	APHA-4500B	64	75	200
7	Magnesium as Mg	mg/l	APHA-4500B	24	30	100
8	Sulphate	mg/l	APHA-4500B	58	200	400
9	Chlorides as Cl	mg/l	APHA-4500B	72	250	1000
10	Nitrates as NO <sub>3</sub>	mg/l	APHA-4500	7.5	45	No relaxation
11	Fluoride as F	mg/l	APHA-4500D	0.45	1.0	1.5
12	Iron as Fe	mg/l	APHA-3111B	0.12	0.3	No relaxation
13	Copper as Cu	mg/l	APHA-3111B	<0.02	0.05	1.5
14	Lead as Pb	mg/l	APHA-3111B	<0.01	0.01	No relaxation
15	Manganese as Mn	mg/l	APHA-3111B	<0.05	0.1	0.3
16	Zinc as Zn	mg/l	APHA-3111B	0.48	5	15
17	Chromium	mg/l	APHA-3111B	<0.005	0.05	No relaxation
18	Nickel as Ni	mg/l	APHA-3111B	<0.01	0.02	No relaxation
19	Oil & Grease	mg/l	APHA-5520D	Nil		0.03
20	Cadmium as Cd	mg/l	APHA-3111B	<0.001	0.003	No relaxation
21	Mercury as Hg	mg/l	APHA-3111B	<0.001	0.001	No relaxation
22	Arsenic as As	mg/l	APHA-3111B	<0.002	0.01	0.05
23	Selenium as Se	mg/l	APHA-3111B	<0.01	0.01	No relaxation
24	Total coliform	MPN/100 ml	APHA-9230B	Nil	Nil	Nil

  
Authorized Signatory  
MUKESH KUMAR

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Phone: 9810032481, 011 21211228, email: emtrcjkm@gmail.com, website: www.emtrc.in


## TEST REPORT

Date: 24-10-2022

Report No. : EMTRC/NPL - 03/2022  
Issued To : Nabha Power Limited  
Village Nalash, Tehsil Rajpura, District Patiala, Punjab  
No. of Pages : 1 of 1  
Type of Sample : Ground Water  
Date of Sampling : 17-10-2022  
Location of Sampling : Dadumajra  
Sampling Procedure : Grab Sampling  
Sample Collected & Brought to Lab by : EMTRC Staff

## TEST RESULTS

	Parameters	Unit	Test Methods	RESULTS	Acceptable Limit IS:10500:2012	Permissible Limit IS:10500:2012
1	pH	-	APHA-4500	8.14	6.5 to 8.5	No relaxation
2	Conductivity	µmhos/cm	APHA-2510	850	-	-
3	Turbidity	NTU	APHA-2030B	<1	5	15
4	Total Dissolved Solids	mg/l	APHA-2540B	590	500	2000
5	Total Hardness as CaCO <sub>3</sub>	mg/l	APHA-2340C	210	200	600
6	Calcium as Ca	mg/l	APHA-4500B	56	75	200
7	Magnesium as Mg	mg/l	APHA-4500B	17	30	100
8	Sulphate	mg/l	APHA-4500B	52	200	400
9	Chlorides as Cl	mg/l	APHA-4500B	60	250	1000
10	Nitrates as NO <sub>3</sub>	mg/l	APHA-4500	7.2	45	No relaxation
11	Fluoride as F	mg/l	APHA-4500D	0.42	1.0	1.5
12	Iron as Fe	mg/l	APHA-3111B	0.08	0.3	No relaxation
13	Copper as Cu	mg/l	APHA-3111B	<0.02	0.05	1.5
14	Lead as Pb	mg/l	APHA-3111B	<0.01	0.01	No relaxation
15	Manganese as Mn	mg/l	APHA-3111B	<0.05	0.1	0.3
16	Zinc as Zn	mg/l	APHA-3111B	0.40	5	15
17	Chromium	mg/l	APHA-3111B	<0.005	0.05	No relaxation
18	Nickel as Ni	mg/l	APHA-3111B	<0.01	0.02	No relaxation
19	Oil & Grease	mg/l	APHA-5520D	Nil		0.03
20	Cadmium as Cd	mg/l	APHA-3111B	<0.001	0.003	No relaxation
21	Mercury as Hg	mg/l	APHA-3111B	<0.001	0.001	No relaxation
22	Arsenic as As	mg/l	APHA-3111B	<0.002	0.01	0.05
23	Selenium as Se	mg/l	APHA-3111B	<0.01	0.01	No relaxation
24	Total coliform	MPN/100 ml	APHA-9230B	Nil	Nil	Nil

  
Authorized Signatory  
MUKESH KUMAR

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## TEST REPORT

Date: 24-10-2022

Report No. : EMTRC/NPL - 04/2022  
Issued To : Nabha Power Limited  
Village Nalash, Tehsil Rajpura, District Patiala, Punjab  
No. of Pages : 1 of 1  
Type of Sample : Ground Water  
Date of Sampling : 17-10-2022  
Location of Sampling : Salempur  
Sampling Procedure : Grab Sampling  
Sample Collected & Brought to Lab by : EMTRC Staff

## TEST RESULTS

	Parameters	Unit	Test Methods	RESULTS	Acceptable Limit IS:10500:2012	Permissible Limit IS:10500:2012
1	pH	-	APHA-4500	8.18	6.5 to 8.5	No relaxation
2	Conductivity	µmhos/cm	APHA-2510	880	-	-
3	Turbidity	NTU	APHA-2030B	1.8	5	15
4	Total Dissolved Solids	mg/l	APHA-2540B	620	500	2000
5	Total Hardness as CaCO <sub>3</sub>	mg/l	APHA-2340C	260	200	600
6	Calcium as Ca	mg/l	APHA-4500B	68	75	200
7	Magnesium as Mg	mg/l	APHA-4500B	22	30	100
8	Sulphate	mg/l	APHA-4500B	65	200	400
9	Chlorides as Cl	mg/l	APHA-4500B	80	250	1000
10	Nitrates as NO <sub>3</sub>	mg/l	APHA-4500	10.5	45	No relaxation
11	Fluoride as F	mg/l	APHA-4500D	1.24	1.0	1.5
12	Iron as Fe	mg/l	APHA-3111B	0.22	0.3	No relaxation
13	Copper as Cu	mg/l	APHA-3111B	<0.02	0.05	1.5
14	Lead as Pb	mg/l	APHA-3111B	<0.01	0.01	No relaxation
15	Manganese as Mn	mg/l	APHA-3111B	<0.05	0.1	0.3
16	Zinc as Zn	mg/l	APHA-3111B	0.82	5	15
17	Chromium	mg/l	APHA-3111B	<0.005	0.05	No relaxation
18	Nickel as Ni	mg/l	APHA-3111B	<0.01	0.02	No relaxation
19	Oil & Grease	mg/l	APHA-5520D	Nil		0.03
20	Cadmium as Cd	mg/l	APHA-3111B	<0.001	0.003	No relaxation
21	Mercury as Hg	mg/l	APHA-3111B	<0.001	0.001	No relaxation
22	Arsenic as As	mg/l	APHA-3111B	<0.001	0.01	0.05
23	Selenium as Se	mg/l	APHA-3111B	<0.01	0.01	No relaxation
24	Total coliform	MPN/100 ml	APHA-9230B	Nil	Nil	Nil

  
Authorized Signatory  
MUKESH KUMAR

## ENVIRONMENT MONITORING TRAINING & RESEARCH CENTRE

EMTRC Lab: F-66, Road-2, UPSIDC Industrial Area, Masuri Gulawthi Road, Ghaziabad (UP) 201009

# EMTRC CONSULTANTS PRIVATE LIMITED

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Phone: 9810032481, 011 21211228, email: emtrcjkm@gmail.com , website: www.emtrc.in


## TEST REPORT

Date: 24-10-2022

Report No. : EMTRC/NPL - 05/2022  
Issued To : Nabha Power Limited  
Village Nalash, Tehsil Rajpura, District Patiala, Punjab  
No. of Pages : 1 of 1  
Type of Sample : Ground Water  
Date of Sampling : 17-10-2022  
Location of Sampling : Dhabali  
Sampling Procedure : Grab Sampling  
Sample Collected & Brought to Lab by : EMTRC Staff

## TEST RESULTS

	Parameters	Unit	Test Methods	RESULTS	Acceptable Limit IS:10500:2012	Permissible Limit IS:10500:2012
1	pH	-	APHA-4500	7.78	6.5 to 8.5	No relaxation
2	Conductivity	µmhos/cm	APHA-2510	1980	-	-
3	Turbidity	NTU	APHA-2030B	2	5	15
4	Total Dissolved Solids	mg/l	APHA-2540B	1380	500	2000
5	Total Hardness as CaCO <sub>3</sub>	mg/l	APHA-2340C	440	200	600
6	Calcium as Ca	mg/l	APHA-4500B	120	75	200
7	Magnesium as Mg	mg/l	APHA-4500B	34	30	100
8	Sulphate	mg/l	APHA-4500B	112	200	400
9	Chlorides as Cl	mg/l	APHA-4500B	280	250	1000
10	Nitrates as NO <sub>3</sub>	mg/l	APHA-4500	12.5	45	No relaxation
11	Fluoride as F	mg/l	APHA-4500D	1.32	1.0	1.5
12	Iron as Fe	mg/l	APHA-3111B	0.26	0.3	No relaxation
13	Copper as Cu	mg/l	APHA-3111B	<0.02	0.05	1.5
14	Lead as Pb	mg/l	APHA-3111B	<0.01	0.01	No relaxation
15	Manganese as Mn	mg/l	APHA-3111B	<0.05	0.1	0.3
16	Zinc as Zn	mg/l	APHA-3111B	1.08	5	15
17	Chromium	mg/l	APHA-3111B	<0.005	0.05	No relaxation
18	Nickel as Ni	mg/l	APHA-3111B	<0.01	0.02	No relaxation
19	Oil & Grease	mg/l	APHA-5520D	Nil		0.03
20	Cadmium as Cd	mg/l	APHA-3111B	<0.001	0.003	No relaxation
21	Mercury as Hg	mg/l	APHA-3111B	<0.001	0.001	No relaxation
22	Arsenic as As	mg/l	APHA-3111B	<0.001	0.01	0.05
23	Selenium as Se	mg/l	APHA-3111B	<0.01	0.01	No relaxation
24	Total coliform	MPN/100 ml	APHA-9230B	Nil	Nil	Nil

  
Authorized Signatory  
MUKESH KUMAR

## ENVIRONMENT MONITORING TRAINING & RESEARCH CENTRE

EMTRC Lab: F-66, Road-2, UPSIDC Industrial Area, Masuri Gulawthi Road, Ghaziabad (UP) 201009

# EMTRC CONSULTANTS PRIVATE LIMITED

EMTRC Lab: Recognized by Ministry of Environment, Forests & Climate Change, Govt. of India

Gazette Notification SO: 3744 (E), 17-10-2019 Accredited by NABL - ISO/IEC 17025:2005 (TC-7376)

Registered Office Tower 5 / 102 (FF), CWG village, NH24, Near Akshardham Temple, Delhi 110092

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## TEST REPORT

Date: 24-10-2022

Report No. : EMTRC/NPL - 02/2022  
Issued To : Nabha Power Limited  
Village Nalash, Tehsil Rajpura, District Patiala, Punjab  
No. of Pages : 1 of 1  
Type of Sample : Ground Water  
Date of Sampling : 17-10-2022  
Location of Sampling : Rangia  
Sampling Procedure : Grab Sampling  
Sample Collected & Brought to Lab by : EMTRC Staff

## TEST RESULTS

	Parameters	Unit	Test Methods	RESULTS	Acceptable Limit IS:10500:2012	Permissible Limit IS:10500:2012
1	pH	-	APHA-4500	7.89	6.5 to 8.5	No relaxation
2	Conductivity	µmhos/cm	APHA-2510	920	-	-
3	Turbidity	NTU	APHA-2030B	1.5	5	15
4	Total Dissolved Solids	mg/l	APHA-2540B	650	500	2000
5	Total Hardness as CaCO <sub>3</sub>	mg/l	APHA-2340C	250	200	600
6	Calcium as Ca	mg/l	APHA-4500B	60	75	200
7	Magnesium as Mg	mg/l	APHA-4500B	24	30	100
8	Sulphate	mg/l	APHA-4500B	72	200	400
9	Chlorides as Cl	mg/l	APHA-4500B	85	250	1000
10	Nitrates as NO <sub>3</sub>	mg/l	APHA-4500	9.2	45	No relaxation
11	Fluoride as F	mg/l	APHA-4500D	0.40	1.0	1.5
12	Iron as Fe	mg/l	APHA-3111B	0.12	0.3	No relaxation
13	Copper as Cu	mg/l	APHA-3111B	<0.02	0.05	1.5
14	Lead as Pb	mg/l	APHA-3111B	<0.01	0.01	No relaxation
15	Manganese as Mn	mg/l	APHA-3111B	<0.05	0.1	0.3
16	Zinc as Zn	mg/l	APHA-3111B	0.75	5	15
17	Chromium	mg/l	APHA-3111B	<0.005	0.05	No relaxation
18	Nickel as Ni	mg/l	APHA-3111B	<0.01	0.02	No relaxation
19	Oil & Grease	mg/l	APHA-5520D	Nil		0.03
20	Cadmium as Cd	mg/l	APHA-3111B	<0.001	0.003	No relaxation
21	Mercury as Hg	mg/l	APHA-3111B	<0.001	0.001	No relaxation
22	Arsenic as As	mg/l	APHA-3111B	<0.001	0.01	0.05
23	Selenium as Se	mg/l	APHA-3111B	<0.01	0.01	No relaxation
24	Total coliform	MPN/100 ml	APHA-9230B	Nil	Nil	Nil

  
Authorized Signatory  
MUKESH KUMAR

## ENVIRONMENT MONITORING TRAINING & RESEARCH CENTRE

EMTRC Lab: F-66, Road-2, UPSIDC Industrial Area, Masuri Gulawthi Road, Ghaziabad (UP) 201009



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## TEST REPORT

Date: 24-10-2022

Report No. : EMTRC/NPL - 07/2022  
Issued To : Nabha Power Limited  
Village Nalash, Tehsil Rajpura, District Patiala, Punjab  
No. of Pages : 1 of 1  
Type of Sample : Ground Water  
Date of Sampling : 17-10-2022  
Location of Sampling : Harna  
Sampling Procedure : Grab Sampling  
Sample Collected & Brought to Lab by : EMTRC Staff

## TEST RESULTS

	Parameters	Unit	Test Methods	RESULTS	Acceptable Limit IS:10500:2012	Permissible Limit IS:10500:2012
1	pH	-	APHA-4500	7.68	6.5 to 8.5	No relaxation
2	Conductivity	µmhos/cm	APHA-2510	710	-	-
3	Turbidity	NTU	APHA-2030B	<1	5	15
4	Total Dissolved Solids	mg/l	APHA-2540B	510	500	2000
5	Total Hardness as CaCO <sub>3</sub>	mg/l	APHA-2340C	260	200	600
6	Calcium as Ca	mg/l	APHA-4500B	64	75	200
7	Magnesium as Mg	mg/l	APHA-4500B	24	30	100
8	Sulphate	mg/l	APHA-4500B	62	200	400
9	Chlorides as Cl	mg/l	APHA-4500B	70	250	1000
10	Nitrates as NO <sub>3</sub>	mg/l	APHA-4500	8.2	45	No relaxation
11	Fluoride as F	mg/l	APHA-4500D	1.14	1.0	1.5
12	Iron as Fe	mg/l	APHA-3111B	0.22	0.3	No relaxation
13	Copper as Cu	mg/l	APHA-3111B	<0.02	0.05	1.5
14	Lead as Pb	mg/l	APHA-3111B	<0.01	0.01	No relaxation
15	Manganese as Mn	mg/l	APHA-3111B	<0.05	0.1	0.3
16	Zinc as Zn	mg/l	APHA-3111B	0.85	5	15
17	Chromium	mg/l	APHA-3111B	<0.005	0.05	No relaxation
18	Nickel as Ni	mg/l	APHA-3111B	<0.01	0.02	No relaxation
19	Oil & Grease	mg/l	APHA-5520D	Nil		0.03
20	Cadmium as Cd	mg/l	APHA-3111B	<0.001	0.003	No relaxation
21	Mercury as Hg	mg/l	APHA-3111B	<0.001	0.001	No relaxation
22	Arsenic as As	mg/l	APHA-3111B	<0.001	0.01	0.05
23	Selenium as Se	mg/l	APHA-3111B	<0.01	0.01	No relaxation
24	Total coliform	MPN/100 ml	APHA-9230B	Nil	Nil	Nil

  
Authorized Signatory  
MUKESH KUMAR

## ENVIRONMENT MONITORING TRAINING & RESEARCH CENTRE

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## TEST REPORT

Date: 24-10-2022

Report No. : EMTRC/NPL - 08/2022  
Issued To : Nabha Power Limited  
Village Nalash, Tehsil Rajpura, District Patiala, Punjab  
No. of Pages : 1 of 1  
Type of Sample : Ground Water  
Date of Sampling : 17-10-2022  
Location of Sampling : Haripur  
Sampling Procedure : Grab Sampling  
Sample Collected & Brought to Lab by : EMTRC Staff

## TEST RESULTS

	Parameters	Unit	Test Methods	RESULTS	Acceptable Limit IS:10500:2012	Permissible Limit IS:10500:2012
1	pH	-	APHA-4500	8.08	6.5 to 8.5	No relaxation
2	Conductivity	µmhos/cm	APHA-2510	980	-	-
3	Turbidity	NTU	APHA-2030B	1.5	5	15
4	Total Dissolved Solids	mg/l	APHA-2540B	690	500	2000
5	Total Hardness as CaCO <sub>3</sub>	mg/l	APHA-2340C	210	200	600
6	Calcium as Ca	mg/l	APHA-4500B	60	75	200
7	Magnesium as Mg	mg/l	APHA-4500B	14.6	30	100
8	Sulphate	mg/l	APHA-4500B	72	200	400
9	Chlorides as Cl	mg/l	APHA-4500B	85	250	1000
10	Nitrates as NO <sub>3</sub>	mg/l	APHA-4500	10.8	45	No relaxation
11	Fluoride as F	mg/l	APHA-4500D	1.24	1.0	1.5
12	Iron as Fe	mg/l	APHA-3111B	0.24	0.3	No relaxation
13	Copper as Cu	mg/l	APHA-3111B	<0.02	0.05	1.5
14	Lead as Pb	mg/l	APHA-3111B	<0.01	0.01	No relaxation
15	Manganese as Mn	mg/l	APHA-3111B	<0.05	0.1	0.3
16	Zinc as Zn	mg/l	APHA-3111B	0.95	5	15
17	Chromium	mg/l	APHA-3111B	<0.005	0.05	No relaxation
18	Nickel as Ni	mg/l	APHA-3111B	<0.01	0.02	No relaxation
19	Oil & Grease	mg/l	APHA-5520D	Nil		0.03
20	Cadmium as Cd	mg/l	APHA-3111B	<0.001	0.003	No relaxation
21	Mercury as Hg	mg/l	APHA-3111B	<0.001	0.001	No relaxation
22	Arsenic as As	mg/l	APHA-3111B	<0.001	0.01	0.05
23	Selenium as Se	mg/l	APHA-3111B	<0.01	0.01	No relaxation
24	Total coliform	MPN/100 ml	APHA-9230B	Nil	Nil	Nil

  
Authorized Signatory  
MUKESH KUMAR

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## TEST REPORT

Date: 24-10-2022

Report No. : EMTRC/NPL - 09/2022  
Issued To : Nabha Power Limited  
Village Nalash, Tehsil Rajpura, District Patiala, Punjab  
No. of Pages : 1 of 1  
Type of Sample : Ground Water  
Date of Sampling : 17-10-2022  
Location of Sampling : Badalimai  
Sampling Procedure : Grab Sampling  
Sample Collected & Brought to Lab by : EMTRC Staff

## TEST RESULTS

	Parameters	Unit	Test Methods	RESULTS	Acceptable Limit IS:10500:2012	Permissible Limit IS:10500:2012
1	pH	-	APHA-4500	8.12	6.5 to 8.5	No relaxation
2	Conductivity	µmhos/cm	APHA-2510	210	-	-
3	Turbidity	NTU	APHA-2030B	<1	5	15
4	Total Dissolved Solids	mg/l	APHA-2540B	150	500	2000
5	Total Hardness as CaCO <sub>3</sub>	mg/l	APHA-2340C	52	200	600
6	Calcium as Ca	mg/l	APHA-4500B	16	75	200
7	Magnesium as Mg	mg/l	APHA-4500B	2.9	30	100
8	Sulphate	mg/l	APHA-4500B	28	200	400
9	Chlorides as Cl	mg/l	APHA-4500B	35	250	1000
10	Nitrates as NO <sub>3</sub>	mg/l	APHA-4500	6.8	45	No relaxation
11	Fluoride as F	mg/l	APHA-4500D	0.42	1.0	1.5
12	Iron as Fe	mg/l	APHA-3111B	0.08	0.3	No relaxation
13	Copper as Cu	mg/l	APHA-3111B	<0.02	0.05	1.5
14	Lead as Pb	mg/l	APHA-3111B	<0.01	0.01	No relaxation
15	Manganese as Mn	mg/l	APHA-3111B	<0.05	0.1	0.3
16	Zinc as Zn	mg/l	APHA-3111B	0.25	5	15
17	Chromium	mg/l	APHA-3111B	<0.005	0.05	No relaxation
18	Nickel as Ni	mg/l	APHA-3111B	<0.01	0.02	No relaxation
19	Oil & Grease	mg/l	APHA-5520D	Nil		0.03
20	Cadmium as Cd	mg/l	APHA-3111B	<0.001	0.003	No relaxation
21	Mercury as Hg	mg/l	APHA-3111B	<0.001	0.001	No relaxation
22	Arsenic as As	mg/l	APHA-3111B	<0.001	0.01	0.05
23	Selenium as Se	mg/l	APHA-3111B	<0.01	0.01	No relaxation
24	Total coliform	MPN/100 ml	APHA-9230B	Nil	Nil	Nil

  
Authorized Signatory  
MUKESH KUMAR

## ENVIRONMENT MONITORING TRAINING & RESEARCH CENTRE

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## TEST REPORT

Date: 24-10-2022

Report No. : EMTRC/NPL - 10/2022  
Issued To : Nabha Power Limited  
Village Nalash, Tehsil Rajpura, District Patiala, Punjab  
No. of Pages : 1 of 1  
Type of Sample : Surface Water  
Date of Sampling : 17-10-2022  
Location of Sampling : Bhakra Nagal  
Sampling Procedure : Grab Sampling  
Sample Collected & Brought to Lab by : EMTRC Staff

## TEST RESULTS

	Parameters	Unit	Test Methods	RESULTS
1	pH	-	APHA-4500	7.82
2	Conductivity	µmhos/cm	APHA-2510	260
3	Turbidity	NTU	APHA-2030B	1.5
4	Temperature	°C	APHA-4500	24
5	Total Dissolved Solids	mg/l	APHA-2540B	180
6	Total Hardness as CaCO <sub>3</sub>	mg/l	APHA-2340C	110
7	Calcium as Ca	mg/l	APHA-4500B	36
8	Magnesium as Mg	mg/l	APHA-4500B	4.8
9	BOD	mg/l	IS:3025 P44 1993 (RA 2003)	2.5
10	COD	mg/l	APHA-5220C	15
11	Sulphate	mg/l	APHA-4500B	24
12	Chlorides as Cl	mg/l	APHA-4500B	32
13	Nitrates as NO <sub>3</sub>	mg/l	APHA-4500	4.8
14	Fluoride as F	mg/l	APHA-4500D	0.38
15	Iron as Fe	mg/l	APHA-3111B	0.14
16	Copper as Cu	mg/l	APHA-3111B	<0.02
17	Lead as Pb	mg/l	APHA-3111B	<0.01
18	Manganese as Mn	mg/l	APHA-3111B	<0.05
19	Zinc as Zn	mg/l	APHA-3111B	0.32
20	Chromium	mg/l	APHA-3111B	<0.005
21	Nickel as Ni	mg/l	APHA-3111B	<0.01
22	Oil & Grease	mg/l	APHA-5520D	0.28
23	Cadmium as Cd	mg/l	APHA-3111B	<0.001
24	Mercury as Hg	mg/l	APHA-3111B	<0.001
25	Arsenic as As	mg/l	APHA-3111B	<0.001
26	Selenium as Se	mg/l	APHA-3111B	<0.01
27	Total coliform	MPN/100 ml	APHA-9230B	80

  
Authorized Signatory  
MUKESH KUMAR

## ENVIRONMENT MONITORING TRAINING & RESEARCH CENTRE

EMTRC Lab: F-66, Road-2, UPSIDC Industrial Area, Masuri Gulawthi Road, Ghaziabad (UP) 201009



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## TEST REPORT

Date: 24-10-2022

Report No. : EMTRC/NPL - 11/2022  
Issued To : Nabha Power Limited  
Village Nalash, Tehsil Rajpura, District Patiala, Punjab  
No. of Pages : 1 of 1  
Type of Sample : Soil Sample  
Date of Sampling : 17-10-2022  
Sampling Procedure : SOP  
Sample Collected & Brought to Lab by : EMTRC Staff

## TEST RESULTS

	Parameters	Unit	Nalash	Dhabali	Dadumajra	Surkalan	Salempur
1	pH ( 20% slurry)	-	8.35	8.18	8.26	8.32	8.16
2	Conductivity (20% slurry)	µmhos/cm	120	110	120	70	60
3	Organic Matter	%	0.82	0.88	0.90	0.80	0.78
4	Available Phosphorous	kg/ha	52	56	52	48	45
5	Available Nitrogen	kg/ha	174	180	176	168	162
6	Nickel as Ni	mg/kg	8.5	7.2	6.8	7.5	6.5
7	Copper as Cu	mg/kg	3.2	2.8	2.5	3.5	2.8
8	Cadmium as Cd	mg/kg	ND	ND	ND	ND	ND
9	Chromium as Cr	mg/kg	0.18	0.14	0.12	0.16	0.10
10	Iron as Fe	mg/kg	2.8	3.5	3.2	4.2	3.8
11	Zinc as Zn	mg/kg	22	26	18	32	26
12	Lead as Pb	mg/kg	ND	ND	ND	ND	ND
13	Arsenic	mg/kg	ND	ND	ND	ND	ND
14	Mercury	mg/kg	ND	ND	ND	ND	ND

  
Authorized Signatory  
MUKESH KUMAR

## ENVIRONMENT MONITORING TRAINING & RESEARCH CENTRE

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## TEST REPORT

Date: 24-10-2022

Report No. : EMTRC/NPL - 12/2022  
Issued To : Nabha Power Limited  
Village Nalash, Tehsil Rajpura, District Patiala, Punjab  
No. of Pages : 1 of 1  
Type of Sample : Soil Sample  
Date of Sampling : 17-10-2022  
Sampling Procedure : SOP  
Sample Collected & Brought to Lab by : EMTRC Staff

## TEST RESULTS

	Parameters	Unit	Harna	Rangia	Badali Majra	Haripur
1	pH ( 20% slurry)	-	7.90	7.98	7.96	8.38
2	Conductivity (20% slurry)	µmhos/cm	110	60	50	90
3	Organic Matter	%	0.92	0.80	0.78	0.88
4	Available Phosphorous	kg/ha	58	45	45	52
5	Available Nitrogen	kg/ha	180	172	170	182
6	Nickel as Ni	mg/kg	7.8	6.5	6.2	8.2
7	Copper as Cu	mg/kg	2.5	2.2	2.8	3.8
8	Cadmium as Cd	mg/kg	ND	ND	ND	ND
9	Chromium as Cr	mg/kg	0.12	0.10	0.14	0.18
10	Iron as Fe	mg/kg	2.5	2.8	2.2	3.5
11	Zinc as Zn	mg/kg	24	22	20	28
12	Lead as Pb	mg/kg	ND	ND	ND	ND
13	Arsenic	mg/kg	ND	ND	ND	ND
14	Mercury	mg/kg	ND	ND	ND	ND

  
Authorized Signatory  
MUKESH KUMAR

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EMTRC Lab: F-66, Road-2, UPSIDC Industrial Area, Masuri Gulawthi Road, Ghaziabad (UP) 201009

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## TEST REPORT


Date: 24-10-2022

Report No. : EMTRC/NPL - 12/2022  
Issued To : Nabha Power Limited  
Village Nalash, Tehsil Rajpura, District Patiala, Punjab  
No. of Pages : 1 of 1  
Type of Sample : Fruits & Vegetables  
Date of Sampling : 17-10-2022 & 18-10-2022  
Sample Collected & Brought to Lab by : EMTRC Staff

## TEST RESULTS

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Dhabali Village					
Parameter	Unit	Grass	Milk	Rice	Wheat
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Dhabali Village					
Parameter	Unit	Potato	Tomato	Onion	Chana Dal
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND

  
Authorized Signatory  
MUKESH KUMAR

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## TEST REPORT


Date: 24-10-2022

Report No. : EMTRC/NPL - 13/2022  
Issued To : Nabha Power Limited  
Village Nalash, Tehsil Rajpura, District Patiala, Punjab  
No. of Pages : 1 of 1  
Type of Sample : Fruits & Vegetables  
Date of Sampling : 17-10-2022 & 18-10-2022  
Sample Collected & Brought to Lab by : EMTRC Staff

## TEST RESULTS

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Dadumajra Village					
Parameter	Unit	Grass	Jowar	Rice	Wheat
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Dadumajra Village					
Parameter	Unit	Potato	Tomato	Onion	Green Chilli
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND

  
Authorized Signatory  
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## TEST REPORT


Date: 24-10-2022

Report No. : EMTRC/NPL - 14/2022  
Issued To : Nabha Power Limited  
Village Nalash, Tehsil Rajpura, District Patiala, Punjab  
No. of Pages : 1 of 1  
Type of Sample : Fruits & Vegetables  
Date of Sampling : 17-10-2022 & 18-10-2022  
Sample Collected & Brought to Lab by : EMTRC Staff

## TEST RESULTS

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Nalash					
Parameter	Unit	Grass	Gram	Rice	Wheat
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Nalash					
Parameter	Unit	Potato	Tomato	Onion	Green Chilli
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND

  
Authorized Signatory  
MUKESH KUMAR

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Gazette Notification SO: 3744 (E), 17-10-2019 Accredited by NABL - ISO/IEC 17025:2005 (TC-7376)

Registered Office Tower 5 / 102 (FF), CWG village, NH24, Near Akshardham Temple, Delhi 110092

Phone: 9810032481, 011 21211228, email: emtrcjkm@gmail.com , website: www.emtrc.in

## TEST REPORT


Date: 24-10-2022

Report No. : EMTRC/NPL - 15/2022  
Issued To : Nabha Power Limited  
Village Nalash, Tehsil Rajpura, District Patiala, Punjab  
No. of Pages : 1 of 1  
Type of Sample : Fruits & Vegetables  
Date of Sampling : 17-10-2022 & 18-10-2022  
Sample Collected & Brought to Lab by : EMTRC Staff

## TEST RESULTS

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Salempur Village					
Parameter	Unit	Grass	Jowar	Rice	Wheat
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Salempur Village					
Parameter	Unit	Potato	Tomato	Onion	Tur Dal
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND

  
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## TEST REPORT


Date: 24-10-2022

Report No. : EMTRC/NPL - 16/2022  
Issued To : Nabha Power Limited  
Village Nalash, Tehsil Rajpura, District Patiala, Punjab  
No. of Pages : 1 of 1  
Type of Sample : Fruits & Vegetables  
Date of Sampling : 17-10-2022 & 18-10-2022  
Sample Collected & Brought to Lab by : EMTRC Staff

## TEST RESULTS

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Surkalan Village					
Parameter	Unit	Grass	Jowar	Rice	Wheat
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Surkalan Village					
Parameter	Unit	Potato	Tomato	Onion	Chana Dal
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND

  
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## TEST REPORT


Date: 24-10-2022

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Issued To : Nabha Power Limited  
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No. of Pages : 1 of 1  
Type of Sample : Fruits & Vegetables  
Date of Sampling : 17-10-2022 & 18-10-2022  
Sample Collected & Brought to Lab by : EMTRC Staff

## TEST RESULTS

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Rangia Village					
Parameter	Unit	Grass	Jowar	Rice	Wheat
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Rangia Village					
Parameter	Unit	Potato	Tomato	Onion	Masood Dal
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND

  
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## TEST REPORT


Date: 24-10-2022

Report No. : EMTRC/NPL - 18/2022  
Issued To : Nabha Power Limited  
Village Nalash, Tehsil Rajpura, District Patiala, Punjab  
No. of Pages : 1 of 1  
Type of Sample : Fruits & Vegetables  
Date of Sampling : 17-10-2022 & 18-10-2022  
Sample Collected & Brought to Lab by : EMTRC Staff

## TEST RESULTS

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Harna Village					
Parameter	Unit	Grass	Milk	Rice	Wheat
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Harna Village					
Parameter	Unit	Potato	Tomato	Onion	Green Chilli
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND

  
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Date: 24-10-2022

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Village Nalash, Tehsil Rajpura, District Patiala, Punjab  
No. of Pages : 1 of 1  
Type of Sample : Fruits & Vegetables  
Date of Sampling : 17-10-2022 & 18-10-2022  
Sample Collected & Brought to Lab by : EMTRC Staff

## TEST RESULTS

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Haripur Village					
Parameter	Unit	Grass	Gram	Rice	Wheat
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Haripur Village					
Parameter	Unit	Potato	Tomato	Onion	Chana Dal
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND

  
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MUKESH KUMAR

## **Annexure-18**

### **Public Grievances Redressal Cell Minutes of Meeting**



Minutes Of Meeting			
Date	28.Sep.23	Time	15:00 Hrs
Subject	Public Grievances Redressal Cell		
Venue	Call		
Participants	<ol style="list-style-type: none"><li>1. Mr. Rajesh Kumar</li><li>2. Mr. Prateek Gupta</li><li>3. Mr. Amit Kumar Garg</li><li>4. Mr. Devdutta Sarma</li><li>5. Mr. Gagandeep Singh Bajwa</li></ol>		

1. Mr. Devdutta Sarma apprised the committee members of the action undertaken regarding the issues recorded in the MOM dated 02.Feb.23.

(A) Issue of Wild Boars.

- a. NPL had sent a letter on 14<sup>th</sup> Nov'22 to District Forest Officer (DFO), Patiala with a request to help NPL solve the Wild Boar problem by sending a team. Mr. Gagandeep Singh, CSR Department & Mr. Gurjeet Singh, Administration Department, had visited the office of Chief Conservative (Wildlife) Mohali on 20<sup>th</sup> Feb'23 and met Mr. Arun Kumar, DFO on the subject matter. During the interaction, DFO suggested that NPL may write to DFO Patiala along with the written request of surrounding villages panchayats.
- b. Mr. Gagandeep Singh had obtained the written request letters on 27<sup>th</sup> February 2023 from Village Panchayats of Rangian, Sural Kalan, Nalash Kalan and Nalash Khurd requesting NPL to curb the issue of wild boars. Panchayat letters were forwarded to District Forest Officer (Wildlife) Patiala on 28th February 2023.
- c. Based on the letter received from NPL, District Forest Officer (Wildlife) Patiala wrote a letter dated 9<sup>th</sup> March 2023 to Forest Conservator (Wildlife) Parks and Protected area, Mohali seeking their advice on the subject matter. That letter is also marked to NPL and Village panchayats of Rangian, Sural Kalan, Nalash Kalan and Nalash Khurd. There has been no further update from the officials.
- d. In parallel, NPL had initiated construction of pre-fabricated boundary wall of approx. 2.5 kms adjoining Rangian/Nalash Kalan/Nalash Khurd villages. The same is expected to be completed by 31<sup>st</sup> Dec'23. This would help in curbing the wild boar menace.



(B) Speed breakers in villages.

The following actions were undertaken:

Mr. Gagandeep Singh had obtained written request letters, stating the need of speed breakers, from concerned Panchayats. NPL had fixed speed breakers at Jansua and Rai Majra villages, during May'23.

2. Further, Mr. Devdutta Sarma apprised the committee members of the various requests received during April-Sept'23 period, and the actions & initiatives taken by NPL.

(A) Village Panchayats of Rai Majra, Kotla, Mirzapur & Sadrar villages had made request for repair of roads which were damaged during the July'23 floods and construction of 2 drain outlets for egress of water. NPL has initiated the process and is expected to be completed by 31<sup>st</sup> Dec'23.

(B) Pruning of tree branches on both sides of the roads passing through Rai Majra, Kotla and Mirzapur villages is being undertaken in view of the ensuing foggy season. Also, pruning of tree branches lined all around our plant boundary shall be done. This work is expected to be completed by 15<sup>th</sup> Dec'23.

(C) The railway underpass of Sural Khurd & Harna was getting flooded whenever it rained. NPL has initiated construction of 1 additional drain for quick egress of water. The work is expected to be completed by 31<sup>st</sup> Dec'23.

As there were no other open points for discussion and as no other member had any other points for discussion, the meeting was concluded.