

To  
The Deputy Director General of Forest  
Integrated Regional Office  
Ministry of Environment, Forest & Climate Change  
Regional Office (EZ), A/3,  
Chandrashekharpur, Bhubaneswar – 751023

Email: [roez.bsr-mef@nic.in](mailto:roez.bsr-mef@nic.in)

**Sub:** Submission of Half Yearly Compliance Report of Environment Clearance issued to Utkal-D Coal Mines of NALCO for the period of Apr'23 to Sep'23

**Ref:**

1. Environment Clearance of Utkal-D Coal Mines issued by MOEFCC vide letter no. J-11015/203/2006-IA.II(M) dated 29.01.2007.
2. Environment Clearance of Utkal-D Coal Mines transferred by MOEFCC vide letter no. J-11015/203/2006-IA.II(M) dated 11.08.2020.

Sir,

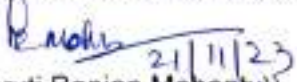
Inviting reference to the subject cited above, please find enclosed the Half Yearly Compliance Report for the period of Apr'23 to Sep'23 for the conditions stipulated in Environment Clearance of Utkal-D Coal Mines of NALCO issued vide MOEF & CC's letter no. J-11015/203/2006-IA.II(M) dated 29.01.2007 and letter no. J-11015/203/2006-IA.II(M) dated 11.08.2020 for your kind consideration. The copy of the compliance report is also being sent in the soft format to email id for your kind perusal.

We wish to inform that all the necessary actions are being taken in compliance to the specific and general condition of Environment Clearance granted to Utkal-D Coal Mines of NALCO.

We trust that the information furnished is in line with your requirement.

Thanking You

Yours Faithfully  
For and on behalf of NALCO

  
( Smruti Ranjan Mohanty )

GGM (T & C) and Authorized Signatory

Enclosure(s).

**नेशनल एल्यूमिनियम कम्पनी लिमिटेड**

(भारत सरकार का एक उद्यम)

**निगम कार्यालय**

नालको भवन, पि-1, नयापल्ली, भुवनेश्वर - 751 013, भारत

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फैक्स Fax-(0674) 2301290, 2300580, 2300740, 2300640 & 2300246, वेबसाइट Website: [www.nalcoindia.com](http://www.nalcoindia.com)

CIN: L27203OR1981GOI000920

**National Aluminium Company Limited**

(A Government of India Enterprise)

**CORPORATE OFFICE**

Nalco Bhawan, P/1, Nayapalli, Bhubaneswar - 751 013, India

**:: 02 ::**

Copy to:

1. AIG of Forest, Ministry of Environment Forest & Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi – 110003 (email: monitoring-ec@nic.in)
2. Member Secretary, Central Pollution Control Board, Parivesh Bhawan', East Arjun Nagar, Shahdara, New Delhi – 110032 (email: mscb.cpcb@nic.in)
3. Zonal Office, Central Pollution Control Board, Southern Conclave, Block 502, 5<sup>th</sup> & 6<sup>th</sup> Floor, 1582 Rajdanga Main Road, Kolkata, WB – 700107 (email: rdkolkata.cpcb@gov.in)
4. Member Secretary, State Pollution Control Board, Parivesh Bhawan, A/118, Unit 8, Nilkantha Nagar, Nayapalli, Bhubaneswar, Odisha – 751012 (email: paribesh1@ospcbboard.org)
5. Regional Officer, State Pollution Control Board, S-3/3, Industrial Estate, Hakimpada, Angul, Odisha (email: rospcb.angul@ospcbboard.org)



**HALF YEARLY COMPLIANCE  
REPORT  
(APRIL 2023 TO SEPTEMBER 2023)**

**For**

**Utkal “D” Coal Mines  
At. Tehsil Chhendipada,  
District Angul, Odisha**

**Of**

**National Aluminium Company Limited  
(NALCO)**


## **Half Yearly EC Compliances Report of Utkal-D Coal Mines**

**MOEFCC File No. J-11015/203/2006-IA.II(M) dated: 29.01.2007**


**MOEFCC File No. J-11015/203/2006-IA.II(M) dated 11.08.2020**

### **A. Specific Conditions**

<b>S. No</b>	<b>Conditions</b>	<b>Compliance Status / Remark</b>
(i)	The Orissa Mining Company Ltd (OMCL) shall ensure strict compliance of all the environmental conditions imposed in this environmental for Utkal – D coal mining project.	Environment Clearance issued to M/s Orissa Mining Company Ltd (OMCL) has been transferred to National Aluminium Company Limited (NALCO) vide MOEF&CC letter J-11015/203/2006-IA.II(M), dated 11.08.2020. Presently NALCO is ensuring strict compliance of all the environmental conditions imposed vide this environmental clearance of Utkal D coal mining project.
(ii)	The OMCL shall be responsible for this project under the varies Acts, namely the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act.1981, the Environment (Protection) Act, 1986 and Public Liability Insurance Act, 1991 along with their amendments and Rules framed thereunder.	Environment Clearance issued to M/s Orissa Mining Company Ltd (OMCL) has been transferred to National Aluminium Company Limited (NALCO) vide MOEFCC letter J-11015/203/2006-IA.II(M), dated 11.08.2020.  Presently NALCO will be responsible for this project under the varies Acts, namely the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act.1981, the Environment (Protection) Act, 1986 and Public Liability Insurance Act, 1991 along with their amendments and Rules framed thereunder.
(iii)	In case of change of technology from opencast to underground, a fresh clearance shall be obtained. The present clearance is only for opencast mining.	Noted. There is no proposal of changing the technology from opencast to underground as of now. Opencast mining will be carried out at Utkal D coal mines.
(iv)	All the conditions stipulated by SPCB in their NOC shall be effectively implemented.	All the conditions stipulated by SPCB in their NOC is being complied.
(v)	Mining operations in forest area shall be restricted only to that area for which forestry clearance for diversion of forestland has been obtained.	The mining operation strictly is being carried out only in area where forestry clearance for diversion of forestland has been obtained.

S. No	Conditions	Compliance Status / Remark
(vi)	Mining shall be carried out as per statuette at a safe distance from the Singhada Jhor and the nallah flowing within the lease boundary. An embankment of 3m height shall be constructed within 2 years of start of mining operations along the southern bank of the Jhor and also by the side of the diverted nallahs.	Mining activities is being carried out as per statuette at a safe distance from the Singhada Jhor and the nallah flowing within the lease boundary by maintaining a distance of 15m as specified in amended Consent to Operate (CTO) issued by SPCB vide Letter No.-14903/IND-I-CON-6762 dated 19.08.2022. Embankment of 3m height along the southern bank of the Jhor and also by the side of the diverted nallahs is under progress.
(vii)	Top soil shall be stacked properly with proper slope at earmarked site(s) and should not be kept active and shall be used for reclamation and development of greenbelt.	The excavated top soil has been stacked with terracing method and proper slope and height is being maintained at earmarked site as per approved Mining Plan. Garland drainage also been constructed around the top soil storage area for rain water drainage and for top soil protection. In future top soil will be used for reclamation and development of greenbelt. Location of the top soil is enclosed as <b>Annexure 1</b> .
(viii)	OB should be stacked at earmarked external OB dump site within mining lease area and shall be a maximum height of 90m only and cons it of benches of 30m each. The ultimate slope of the dump shall not exceed 28°, Monitoring and management of reclaimed dump site should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forests and its Regional Office located at Bhubaneswar on six monthly basis.	OB is being removed and stacked at earmarked site as per approved mining plan in terracing method up to maximum 60m height and slope angle is being maintained as per guide line of MoEF&CC. Final terraces will be used for plantation work. The compliance status of dump is being submitted to MoEF&CC and SPCB, Bhubaneswar. 
(ix)	Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediments flow from soil, OB and mineral dumps. The water so collected should be utilized for watering the mine area roads, green belt development etc. The drains should be regularly desilted and maintained properly. Garland drains (size, gradient and length) and sump capacity should be designed keeping 50% safety	The appropriate size of catch drain around the OB dumps has been constructed to arrest silt and sediments flow from soil, OB and mineral dumps. The collected water is being utilized for sprinkling on haul roads and green belt development. The drain is being regularly desilted and maintained properly. The garland drains of width 2.5m with 60:1 gradient and 2.3 km length has been constructed till date. Capacity of sump is designed for 24,500 KL by keeping 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Retention period of two days is provided to allow proper settling of silt material.




S. No	Conditions	Compliance Status / Remark
	margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity should also provide for adequate retention period to allow proper settling of silt material.	
(x)	Dimension of the retaining wall at the toe of the dumps and OB benches within the mine to check run-off and siltation should be based on the rainfall data.	Dimension of the retaining wall and toe of the dumps is being designed as per guidelines. OB benches are maintained with the maximum height 6-7 m and width 10m to check run-off and siltation. This is based on the rainfall data and as per guidance of local office of the SPCB.
(xi)	Crushers at the CHP should be operated with high efficiency bag filters and water sprinkling system should be provided to check fugitive emissions from crushing operations, conveyor system, haulage roads, transfer points etc.	Note. No CHP installed in mines as of now.
(xii)	Drills should be wet operated only.	At present two nos of wet operated drills are used for drilling work.
(xiii)	Controlled blasting should be practiced with use of delay detonators and only during day time. The mitigate measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented.	Controlled blasting is being done with use of delay detonators and only during day time. Required mitigation measures are being adopted to control the ground vibrations and to arrest the flying rocks and boulders.
(xiv)	The total area brought under afforestation shall not be less than 291.13 ha and shall include external OB dump (Area 106.57 ha), back filling area covering 60 ha, balance excavated void (106.42 ha), along mining lease boundary, greenbelt (6 ha), safety zone (12.14 ha) and vacant/undisturbed area by planting native species in consultation with the local DFO/Agriculture dept. The density of the trees should be around 2500plants/ha.	Noted.
(xv)	Backfilling shall begin from the 21 <sup>st</sup> year of mining operations. A progressive mine closure plan shall be implemented and OB generated shall be back filled covering a total	Note. Not applicable as of now as backfilling work not yet started.

S. No	Conditions	Compliance Status / Remark
	area of 60 ha. Plantation shall be develop over the back filled area and on balanced of the excavated area (void) covering an area of 106.42 ha, the higher benches of which shall be gently sloped.	
(xvi)	Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and construction of new piezometers. The monitoring for quantity should be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality in May. Data thus collected should be submitted to MOEF and CPCB quarterly within one month of monitoring.	Regular monitoring of ground water level and quality is being done. Construction bore well and installation of piezometers and automatic flow meters has been done. Water quality and ground water level data is being monitored and same is being submitted to SPCB, CPCB and MoEFCC. Monitoring Report enclosed as <b>Annexure 2</b> .
(xvii)	The Company shall put of artificial ground water recharge measures or augmentation of ground water resource. The project authority shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.	Soil Moisture Conservation Plan for buffer zone of the mines area has been submitted to MoEFCC and implementation cost of Rs. 10.88 Cr. already been deposited in Odisha CAMPA account. We are also providing water to nearby villagers for their daily needs. Apart from this, rain water harvesting structure will be installed after construction of office buildings and residential colony.
(xviii)	ETP also be provided for workshop and CHP waste water	Construction of ETP for treatment of waste water is under progress.
(xix)	A program for conservation of the endangered species found in the study area, if any, shall be formulated and implemented in consultation with the concerned Department in the State Government. Separate funds, shall be earmarked for implementation of the various activities thereunder and the status thereof shall be regularly reported to this Ministry and its Regional Office, Bhubaneswar.	Noted. No endangered species is found in the study area. However, if any endangered species is found in study area then program for conservation of the endangered species will be formulated and implemented in consultation with the concerned Department in the State Government. Separate funds will be earmarked for implementation of the various activities thereunder and the status thereof will be regularly reported to MOEFCC and its Regional Office at Bhubaneswar.
(xx)	Digital processing of the entire lease area using remote sensing techniques should be done regularly once in 3 years for monitoring land use pattern and reports submitted to MOEF and its Regional Office at Bhubaneswar.	Mining activities started on date 09.11.2022. Digital processing of the entire lease area using remote sensing techniques will be done for monitoring land use pattern and reports will be submitted to MOEF & CC and its Regional Office at Bhubaneswar.

S. No	Conditions	Compliance Status / Remark
(xxi)	Besides carrying out regular periodic health checkup of their workers, 10% of workers identified from work force engaged in active mining operations shall be subject to health checkup for occupational diseases, and hearing impairment, if any, through an agency such as NIOH, Ahmadabad with in period of one year and the results reported to his ministry ad to DGMS.	Occupational health surveillance is being carried out for all employees in respective time interval at Utkal Polyclinic Bhubaneswar. ( <b>Annexure 3</b> )
(xxii)	R&R of village Dhobamalia basti shall be completed within the specified time schedule and the R&R package shall not be less than that of the National R&R policy.	R&R compensation as per the policy of Govt. of Odisha and consultation with the PAVs and PDFs in RPDAC already been approved and disbursed to the affected families.
(xxiii)	A final mine closure plan along with details of Corpus fund should be submitted to Ministry of Environment and Forest 5 years in advance of final mine closure for approval.	Noted. Not applicable as of now. Final mine closure plan along with details of Corpus fund will be submitted to the MOEFCC 5 years in advance before the mine closure for approval.
(xxiv)	Consent to operate shall be obtained before start of Mining operation.	The Consent to Operate has been obtained from State Pollution Control Board, Odisha vide Letter No.-14903/IND-I-CON-6762 dated 19.08.2022 before start of the mine.
<b>B. General Conditions</b>		
(i)	No change in Mining Technology and scope of working should be made without prior approval of the MOEF	There is no change in Mining Technology and scope of working. Prior approval of MOEF & CC will be taken incase of any change in Mining Technology and scope of working.
(ii)	No change in calendar plan including excavation, quantum of mineral coal and waste should be made.	No change in calendar plan including excavation, quantum of mineral coal and waste. As of now mining operation is going on as per the approved mining plan.
(iii)	Four Ambient Air Quality Monitoring station should be established in the core zone as well as in the buffer zone for SPM, RPM, SO <sub>2</sub> and NO <sub>x</sub> monitoring location of the station should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation of the SPCB	Four Ambient Air Quality Monitoring stations are established in the core zone as well as in the buffer zone for monitoring of SPM, RPM, SO <sub>2</sub> and NO <sub>x</sub> . Monitoring locations of the station are decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation of the SPCB. NABL accredited laboratory is carrying out the monitoring work. Monitoring report enclosed as <b>Annexure 2</b> .
(iv)	Data on ambient air quality (SPM, RPM, SO <sub>2</sub> and NO <sub>x</sub> ) should be	Data on ambient air quality (SPM, RPM, SO <sub>2</sub> and NO <sub>x</sub> ) are regularly monitored by NABL accredited



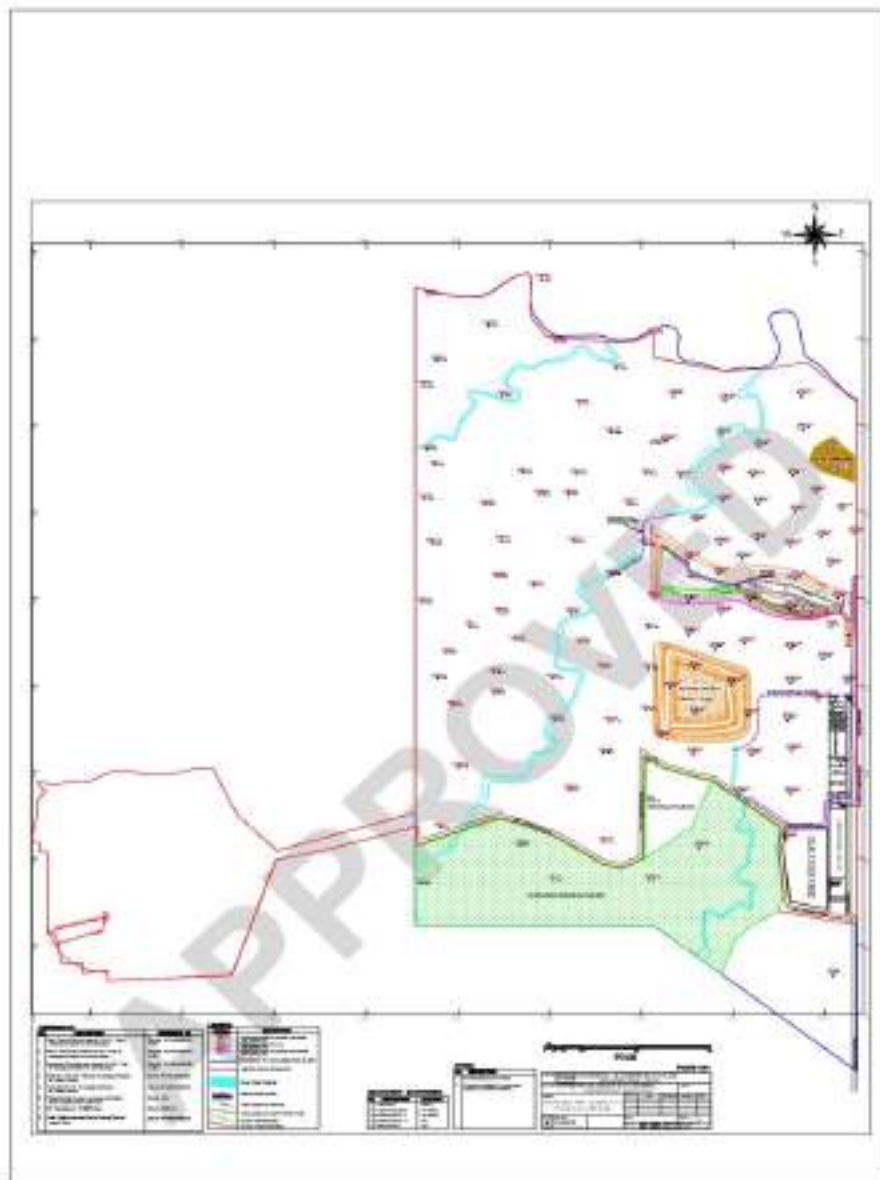
S. No	Conditions	Compliance Status / Remark
	regularly submitted to the MOEF including its Regional Office , BBSR and to SPCB and CPCB once in six months	laboratory and submitted to MOEF&CC New Delhi, MOEFCC Bhubaneswar, SPCB and CPCB along with Half yearly compliance report. Monitoring report enclosed as <b>Annexure 2</b> .
(v)	Fugitive dust emission (SPM and RPM) from all source should be control regularly monitored and data recorded properly. Water spraying arrangements on haul roads, wagon loading, dump trucks (Loading and unloading) points should be provided and properly maintained.	<p>Fugitive dust emission (SPM and RPM) from all sources are monitored regularly and data are recorded properly. This is being submitted to the MOEFCC New Delhi, MOEFCC Bhubaneswar, SPCB and CPCB along with Half yearly compliance report.</p> <p>Water spraying arrangements are available for control of fugitive dust on haul roads, dumping area, stock yard, trucks loading and unloading points. 4 nos of water sprinkling tankers of capacity 18 KL each, 02 nos mist cannon of capacity 12 KL each and 20 nos of rain guns are used for controlling the fugitive dust inside the mines area.</p> 
(vi)	Adequate measures should be taken for control of noise levels below 85 dB(A) in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM etc should be provided with ear plugs/Muffs	Adequate measures are taken to control the noise levels below 85 dB(A) in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM etc are provided with ear plugs/muffs. New machineries are being used in mines. A well experience mechanic team with mobile maintenance van is engaged for maintenance of mining equipment and timely maintenance is being done to reduce noise from vehicles.
(vii)	Industrial waste water (workshop and waste water from mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19 <sup>th</sup> May, 1993 and 31 <sup>st</sup> December, 1993 as amended from time to time before discharge. Oil and grease trap should be installed before discharge of workshop effluents.	Waste water collected from mines area is being collected in de-silting pond for treatment. This water is being used for various mining activities such as sprinkling on road, dust suppression, plantation etc. During monsoon season excess collected water is being discharge to nearby nallah after proper treatment as per the standards prescribed under GSR 422 (E) dated 19 <sup>th</sup> May, 1993 and 31 <sup>st</sup> December, 1993 as amended from time to time. Establishment of Oil and grease trap inceptor is in progress.
(viii)	Vehicular emissions should be kept under control and regularly	Regular maintenance of mining equipment are being done to control the vehicular emissions.

S. No	Conditions	Compliance Status / Remark
	monitored Vehicles used for transportation the mineral should be covered with tarpaulin and optimally loaded.	Truck/dumpers used for transportation of coal are being monitored regularly by PUC certificate. At present coal is being transported through trucks/dumper which is loaded optimally and covered with tarpaulin.
(ix)	Environmental laboratory should be established with adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board.	NALCO is in the process of establishing Environmental laboratory. Pollution monitoring and laboratory equipment will be purchased in consultation with State Pollution Control Board.
(x)	Personnel working in dusty areas should wear protective respiration devices and they should also be provided with adequate training and information on safety and health aspects. Occupational health surveillance programme of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.	PPE's are provided to all employees of mine to protect them from dust and noise. Prior training is being imparted to all working employees on job, safety and health aspects. Periodic re-fresher training are also being done for employees working inside the mine. Periodically medical examinations is being carried out for all employees of mines to detect any contractions due to exposure to dust and noise and to take corrective measures, if required. The latest Health Check-up report carried out in Oct'23 is attached as <b>Annexure 3</b> .
(xi)	A separate environmental management cell with suitable qualified personnel should be set up under the control of a Senior Executive, who will report directly to the Head of the company.	A separate environmental management cell will be setup with suitable qualified personnel under the control of a Senior Executive, who will report directly to the Head of the company.
(xii)	The funds earmarked for environmental protection should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to this Ministry and its Regional Office at BBSR.	The funds earmarked for environmental protection has been kept in separate and will not diverted for any other purpose. Year wise expenditure will be reported to Ministry and its Regional Office at Bhubaneswar.
(xiii)	The Regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the stipulated conditions. The Project Authorities shall extend full cooperation to the officers(s) of the Regional Office by furnishing the requisite data/information/monitoring reports.	Full cooperation will be provided to the officers(s) of the Regional Office by furnishing the requisite data/information/monitoring reports as and when required.
(xiv)	A copy of the environmental clearance letter shall be marked to	Environment Clearance of Utkal D Coal block was granted to M/s OMC Ltd on 19.01.2007. Coal block

S. No	Conditions	Compliance Status / Remark
	concerned Panchayat/Local NGO, if any, from whom any suggestion/representation has been received while processing the proposal.	was deallocated as per the order of Hon'ble Supreme Court of India vide their Judgment dated 25.08.2014. Further coal block was allocated by Ministry of Coal to M/s NALCO Ltd under the Coal Mines (Special Provision) Act 2015 vide allotment order no. F.No. 103/34/2015-NA dated 02.05.2016. Same Environment Clearance was transferred from the M/s MC to NALCO.
(xv)	State Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industry center and Collector's Office/Tehsildar's Office for 30 days.	Not applicable
(xvi)	The Project Authorities should advertise at least in two local newspaper widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance and a copy of the clearance letter is available with the state pollution control Board and may also be seen at the website of the MOEF at <a href="http://envfor.nic.in">http://envfor.nic.in</a>	Environment Clearance of Utkal D Coal block was granted to M/s OMC Ltd on 19.01.2007. Coal block was deallocated as per the order of Hon'ble Supreme Court of India vide their judgment dated 25.08.2014. Further coal block was allocated by Ministry of Coal to M/s NALCO Ltd under the Coal Mines (Special Provision) Act 2015 vide allotment order no. F.No. 103/34/2015-NA dated 02.05.2016. Same Environment Clearance was transferred from the M/s MC to NALCO.

Location of Top Soil

Plan / Plate 21C





APR 23 - Bl/1



MY WORLD CONSULTANCY SERVICES PRIVATE LIMITED  
(TESTING LABORATORY)  
GST NO: 21AADCT4043N1ZE  
CIN: U72501OR2010PTCO11651



WCS/LQR/57

**TEST REPORT**

Report No. : WCS230405B Issue Date : 17.04.2023  
NABL ULR No. : TC1122523000000045F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Colony area  
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 06.04.2023  
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0423A12  
Environmental Condition : Clear Weather Date of Receiving : 08.04.2023  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
Date of Testing : 08.04.2023 to 10.04.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	270	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter ( $\text{PM}_{10}$ )	$\mu\text{g}/\text{m}^3$	88.98	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide ( $\text{SO}_2$ )	$\mu\text{g}/\text{m}^3$	< 4.0	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides ( $\text{NO}_x$ )	$\mu\text{g}/\text{m}^3$	14.2	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter ( $\text{PM}_{2.5}$ )	$\mu\text{g}/\text{m}^3$	47.75	--	IS-5182 (Part-24) 2019

*Chahataray*  
Reviewed by  
(Mr. Bijaya Kumar Chahataray)

*Pradeep Mohapatra*  
Authorized Signatory  
(Mr. Pradeep Mohapatra)

- N.B.:
- ① The results relate to the sample received in respect to the Parameters tested.
  - ② Liability for return of sample ceases after 7 days from the date of Test certificate.
  - ③ The report cannot be reproduced either in full or in part, without prior written consent of Director.
  - ④ In case of any complaint, please mail us [bijaya@theworld.co.in](mailto:bijaya@theworld.co.in)
- END OF REPORT-



Page 2 of 4

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[www.worldconsultancyservices.in](http://www.worldconsultancyservices.in)



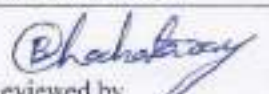


WCS/LQR/57

## TEST REPORT

Report No.	: WCS230405A	Issue Date	: 17.04.2023
NABL ULR No.	: TC1122523000000045F		
Name of the Client	: <b>National Aluminium Company Limited</b>		
Address	: Smelter & Power (S&P) Complex Angul-759145, Odisha		
Sampling Location	: <b>Gopiballapur Village</b>		
Sample Description	: Ambient Air Quality Monitoring	Date of Sampling	: 06.04.2023
Sampling Plan & Method	: WCS/QSP/SAMP (AIR)	Sample ID No	: WCS0423A11
Environmental Condition	: Clear Weather	Date of Receiving	: 08.04.2023
Sample Collected by	: WCS Laboratory	Quantity of Sample	: 1 No.
Date of Testing	: 08.04.2023 to 10.04.2023	Sample Condition	: Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	205	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter ( $\text{PM}_{10}$ )	$\mu\text{g}/\text{m}^3$	84.02	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide ( $\text{SO}_2$ )	$\mu\text{g}/\text{m}^3$	5.3	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides ( $\text{NO}_x$ )	$\mu\text{g}/\text{m}^3$	15.3	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter ( $\text{PM}_{2.5}$ )	$\mu\text{g}/\text{m}^3$	45.88	--	IS-5182 (Part-24) 2019

  
Reviewed by  
(Mr. Bijaya Kumar Chahatray)

  
Authorized Signatory  
(Mr. Pradeep Mohapatra)

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-END OF REPORT-



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Cuttack, Odisha - 754001

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[wcs@theworld.co.in](mailto:wcs@theworld.co.in)  
[www.worldconsultancy.com](http://www.worldconsultancy.com)



WCS/LQR/57

## TEST REPORT

Report No.	: WCS230405C	Issue Date	: 17.04.2023
NABL ULR No.	: TC1122523000000045F		
Name of the Client	: National Aluminium Company Limited		
Address	: Smelter & Power (S&P) Complex Angul-759145, Odisha		
Sampling Location	: Near weigh Bridge		
Sample Description	: Ambient Air Quality Monitoring	Date of Sampling	: 05.04.2023
Sampling Plan & Method	: WCS/QSP/SAMP (AIR)	Sample ID No	: WCS0423A13
Environmental Condition	: Clear Weather	Date of Receiving	: 08.04.2023
Sample Collected by	: WCS Laboratory	Quantity of Sample	: 1 No.
Date of Testing	: 08.04.2023 to 10.04.2023	Sample Condition	: Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	325	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter ( $\text{PM}_{10}$ )	$\mu\text{g}/\text{m}^3$	92.03	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide ( $\text{SO}_2$ )	$\mu\text{g}/\text{m}^3$	7.8	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides ( $\text{NO}_2$ )	$\mu\text{g}/\text{m}^3$	24.5	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter ( $\text{PM}_{2.5}$ )	$\mu\text{g}/\text{m}^3$	53.18	--	IS-5182 (Part-24) 2019

*Chahataray*  
Reviewed by  
(Mr. Bijaya Kumar Chahataray)

*Pradcept Mohapatra*  
Authorized Signatory  
(Mr. Pradcept Mohapatra)

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## TEST REPORT

Report No. : WCS230405D Issue Date : 17.04.2023  
NABL ULR No. : TC1122523000000045F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Near settling Pond  
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 05.04.2023  
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0423A14  
Environmental Condition : Clear Weather Date of Receiving : 08.04.2023  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
Date of Testing : 08.04.2023 to 10.04.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	370	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter ( $\text{PM}_{10}$ )	$\mu\text{g}/\text{m}^3$	96.99	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide ( $\text{SO}_2$ )	$\mu\text{g}/\text{m}^3$	6.3	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides ( $\text{NO}_x$ )	$\mu\text{g}/\text{m}^3$	20.8	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter ( $\text{PM}_{2.5}$ )	$\mu\text{g}/\text{m}^3$	57.00	--	IS-5182 (Part-24) 2019

  
Reviewed by  
(Mr. Bijaya Kumar Chahataray)

  
Authorized Signatory  
(Mr. Pradeep Mohapatra)

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**TEST REPORT**

Report No. : WCS230414B Issue Date : 26.04.2023  
NABL ULR No. : TC1122523000000054F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Colony area  
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 21.04.2023  
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0423A26  
Environmental Condition : Clear Weather Date of Receiving : 24.04.2023  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
Date of Testing : 24.04.2023 to 26.04.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	210	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter ( $\text{PM}_{10}$ )	$\mu\text{g}/\text{m}^3$	81.6	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide ( $\text{SO}_2$ )	$\mu\text{g}/\text{m}^3$	4.2	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides ( $\text{NO}_x$ )	$\mu\text{g}/\text{m}^3$	13.4	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter ( $\text{PM}_{2.5}$ )	$\mu\text{g}/\text{m}^3$	46.9	--	IS-5182 (Part-24) 2019

  
Reviewed by  
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Authorized Signatory  
(Mr. Pradeep Mohapatra)

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## TEST REPORT

Report No.	: WCS230414A	Issue Date	: 26.04.2023
NABL ULR No.	: TC1122523000000054F		
Name of the Client	: <b>National Aluminium Company Limited</b>		
Address	: Smelter & Power (S&P) Complex Angul-759145, Odisha		
Sampling Location	: <b>Gopibahalpur Village</b>		
Sample Description	: Ambient Air Quality Monitoring	Date of Sampling	: 21.04.2023
Sampling Plan & Method	: WCS/QSP/SAMP (AIR)	Sample ID No	: WCS0423A25
Environmental Condition	: Clear Weather	Date of Receiving	: 24.04.2023
Sample Collected by	: WCS Laboratory	Quantity of Sample	: 1 No.
Date of Testing	: 24.04.2023 to 26.04.2023	Sample Condition	: Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	µg/m <sup>3</sup>	186	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter (PM <sub>10</sub> )	µg/m <sup>3</sup>	80.4	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	5.1	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides (NO <sub>x</sub> )	µg/m <sup>3</sup>	16.4	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter (PM <sub>2.5</sub> )	µg/m <sup>3</sup>	44.4	--	IS-5182 (Part-24) 2019

*Chahaturay*  
Reviewed by  
(Mr. Bijaya Kumar Chahaturay)

*Pradeep Mohapatra*  
Authorized Signatory  
(Mr. Pradeep Mohapatra)

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**TEST REPORT**

Report No.	: WCS230414C	Issue Date	: 26.04.2023
NABL ULR No.	: TC1122523000000054F		
Name of the Client	: National Aluminium Company Limited		
Address	: Smelter & Power (S&P) Complex Angul-759145, Odisha		
Sampling Location	: Near weigh Bridge		
Sample Description	: Ambient Air Quality Monitoring	Date of Sampling	: 20.04.2023
Sampling Plan & Method	: WCS/QSP/SAMP (AIR)	Sample ID No	: WCS0423A27
Environmental Condition	: Clear Weather	Date of Receiving	: 24.04.2023
Sample Collected by	: WCS Laboratory	Quantity of Sample	: 1 No.
Date of Testing	: 24.04.2023 to 26.04.2023	Sample Condition	: Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	µg/m <sup>3</sup>	312	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter (PM <sub>10</sub> )	µg/m <sup>3</sup>	84.5	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	7.4	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides (NO <sub>2</sub> )	µg/m <sup>3</sup>	22.8	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter (PM <sub>2.5</sub> )	µg/m <sup>3</sup>	50.5	--	IS-5182 (Part-24) 2019

*Chahataray*  
 Reviewed by  
 (Mr. Bijaya Kumar Chahataray)

*Pradeep Mohapatra*  
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## TEST REPORT

Report No.	: WCS230414D	Issue Date	: 26.04.2023
NABL ULR No.	: TC1122523000000054F		
Name of the Client	: National Aluminium Company Limited		
Address	: Smelter & Power (S&P) Complex Angul-759145, Odisha		
Sampling Location	: Near settling Pond		
Sample Description	: Ambient Air Quality Monitoring	Date of Sampling	: 20.04.2023
Sampling Plan & Method	: WCS/QSP/SAMP (AIR)	Sample ID No	: WCS0423A28
Environmental Condition	: Clear Weather	Date of Receiving	: 24.04.2023
Sample Collected by	: WCS Laboratory	Quantity of Sample	: 1 No.
Date of Testing	: 24.04.2023 to 26.04.2023	Sample Condition	: Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	µg/m <sup>3</sup>	336	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter (PM <sub>10</sub> )	µg/m <sup>3</sup>	89.7	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	6.1	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides (NO <sub>x</sub> )	µg/m <sup>3</sup>	18.4	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter (PM <sub>2.5</sub> )	µg/m <sup>3</sup>	54.1	--	IS-5182 (Part-24) 2019

  
Reviewed by  
(Mr. Bijaya Kumar Chahatray)

  
Authorized Signatory  
(Mr. Pradeep Mohapatra)

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TC-11225

WCS/LQR/57

**TEST REPORT**

Report No. : WCS230522B Issue Date : 10.05.2023  
 NABL ULR No. : TC1122523000000061F  
 Name of the Client : National Aluminium Company Limited  
 Address : Smelter & Power (S&P) Complex  
 Angul-759145, Odisha  
 Sampling Location : Colony Area  
 Sample Description : Ambient Air Quality Monitoring Date of Sampling : 04.05.2023  
 Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0523A12  
 Environmental Condition : Clear Weather Date of Receiving : 08.05.2023  
 Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
 Date of Testing : 09.05.2023 to 10.05.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	202	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter ( $\text{PM}_{10}$ )	$\mu\text{g}/\text{m}^3$	79.4	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide ( $\text{SO}_2$ )	$\mu\text{g}/\text{m}^3$	4.68	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides ( $\text{NO}_2$ )	$\mu\text{g}/\text{m}^3$	13.91	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter ( $\text{PM}_{2.5}$ )	$\mu\text{g}/\text{m}^3$	44.82	--	IS-5182 (Part-24) 2019

*Bhahataray*  
 Reviewed by  
 (Mr. Bijaya Kumar Chahataray)

*Pradept Mohapatra*  
 Authorized Signatory  
 (Mr. Pradept Mohapatra)

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WCS/LQR/57

## TEST REPORT

Report No.	: WCS230522A	Issue Date	: 10.05.2023
NABL ULR No.	: TC1122523000000061F		
Name of the Client	: National Aluminium Company Limited		
Address	: Smelter & Power (S&P) Complex Angul-759145, Odisha		
Sampling Location	: Gopiballavpur Village		
Sample Description	: Ambient Air Quality Monitoring	Date of Sampling	: 05.05.2023
Sampling Plan & Method	: WCS/QSP/SAMP (AIR)	Sample ID No.	: WCS0523A11
Environmental Condition	: Clear Weather	Date of Receiving	: 08.05.2023
Sample Collected by	: WCS Laboratory	Quantity of Sample	: 1 No.
Date of Testing	: 09.05.2023 to 10.05.2023	Sample Condition	: Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	180	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter ( $\text{PM}_{10}$ )	$\mu\text{g}/\text{m}^3$	73.2	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide ( $\text{SO}_2$ )	$\mu\text{g}/\text{m}^3$	5.5	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides ( $\text{NO}_2$ )	$\mu\text{g}/\text{m}^3$	16.63	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter ( $\text{PM}_{2.5}$ )	$\mu\text{g}/\text{m}^3$	42.65	--	IS-5182 (Part-24) 2019

*Phakhaty*  
Reviewed by  
(Mr. Bijaya Kumar Chahutaray)

*Pradeep Mohapatra*  
Authorized Signatory  
(Mr. Pradeep Mohapatra)

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WCS/LQR/57

## TEST REPORT

Report No. : WCS230522C Issue Date : 10.05.2023  
NABL ULR No. : TC112252300000061F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Near Weigh Bridge  
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 05.05.2023  
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0523A13  
Environmental Condition : Clear Weather Date of Receiving : 08.05.2023  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
Date of Testing : 09.05.2023 to 10.05.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	309	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter ( $\text{PM}_{10}$ )	$\mu\text{g}/\text{m}^3$	92.03	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide ( $\text{SO}_2$ )	$\mu\text{g}/\text{m}^3$	7.18	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides ( $\text{NO}_2$ )	$\mu\text{g}/\text{m}^3$	21.87	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter ( $\text{PM}_{2.5}$ )	$\mu\text{g}/\text{m}^3$	50.75	--	IS-5182 (Part-24) 2019

  
Reviewed by  
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Authorized Signatory  
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WCS/LQR/57

**TEST REPORT**

Report No.	: WCS230522D	Issue Date	: 10.05.2023
NABL ULR No.	: TC112252300000061F		
Name of the Client	: <b>National Aluminium Company Limited</b>		
Address	: Smelter & Power (S&P) Complex Angul-759145, Odisha		
Sampling Location	: <b>Near settling Pond</b>		
Sample Description	: <b>Ambient Air Quality Monitoring</b>	Date of Sampling	: 04.05.2023
Sampling Plan & Method	: WCS/QSP/SAMP (AIR)	Sample ID No	: WCS0523A14
Environmental Condition	: Clear Weather	Date of Receiving	: 08.05.2023
Sample Collected by	: WCS Laboratory	Quantity of Sample	: 1 No.
Date of Testing	: 09.05.2023 to 10.05.2023	Sample Condition	: Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	327	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter ( $\text{PM}_{10}$ )	$\mu\text{g}/\text{m}^3$	90.4	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide ( $\text{SO}_2$ )	$\mu\text{g}/\text{m}^3$	6.29	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides ( $\text{NO}_2$ )	$\mu\text{g}/\text{m}^3$	18.9	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter ( $\text{PM}_{2.5}$ )	$\mu\text{g}/\text{m}^3$	53.36	--	IS-5182 (Part-24) 2019

*Chahataray*  
 Reviewed by  
 (Mr. Bijaya Kumar Chahataray)

*Pradeep Mohapatra*  
 Authorized Signatory  
 (Mr. Pradeep Mohapatra)

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WCS/LQR/37

## TEST REPORT

Report No.	: WCS230518B	Issue Date	: 27.05.2023
NABL ULR No.	: TC1122523000000076F		
Name of the Client	: National Aluminium Company Limited		
Address	: Smelter & Power (S&P) Complex Angul-759145, Odisha		
Sampling Location	: Colony Area		
Sample Description	: Ambient Air Quality Monitoring	Date of Sampling	: 23.05.2023
Sampling Plan & Method	: WCS/QSP/SAMP (AIR)	Sample ID No	: WCS0523A29
Environmental Condition	: Clear Weather	Date of Receiving	: 25.05.2023
Sample Collected by	: WCS Laboratory	Quantity of Sample	: 1 No.
Date of Testing	: 25.05.2023 to 27.05.2023	Sample Condition	: Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	µg/m <sup>3</sup>	202	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter (PM <sub>10</sub> )	µg/m <sup>3</sup>	78.6	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	5.13	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides (NO <sub>x</sub> )	µg/m <sup>3</sup>	12.73	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter (PM <sub>2.5</sub> )	µg/m <sup>3</sup>	42.23	--	IS-5182 (Part-24) 2019

  
Reviewed by  
(Mr. Bijaya Kumar Chahatray)

  
Authorized Signatory  
(Mr. Pradeep Mohapatra)

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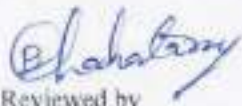


WCS/LQR/57

**TEST REPORT**

Report No. : WCS230518A Issue Date : 27.05.2023  
NABL ULR No. : TC1122523000000076F  
Name of the Client : **National Aluminium Company Limited**  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : **Gopiballavpur Village**  
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 23.05.2023  
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0523A28  
Environmental Condition : Clear Weather Date of Receiving : 25.05.2023  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
Date of Testing : 25.05.2023 to 27.05.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	182	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter ( $\text{PM}_{10}$ )	$\mu\text{g}/\text{m}^3$	72.8	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide ( $\text{SO}_2$ )	$\mu\text{g}/\text{m}^3$	5.70	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides ( $\text{NO}_x$ )	$\mu\text{g}/\text{m}^3$	17.19	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter ( $\text{PM}_{2.5}$ )	$\mu\text{g}/\text{m}^3$	40.04	--	IS-5182 (Part-24) 2019

  
Reviewed by  
(Mr. Bijaya Kumar Chahataray)

  
Authorized Signatory  
(Mr. Pradeep Mohapatra)

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WCS/LQR/57

## TEST REPORT

Report No.	: WCS230518C	Issue Date	: 27.05.2023
NABL ULR No.	: TC1122523000000076F		
Name of the Client	: <b>National Aluminium Company Limited</b>		
Address	: Smelter & Power (S&P) Complex Angul-759145, Odisha		
Sampling Location	: <b>Near Weigh Bridge</b>		
Sample Description	: Ambient Air Quality Monitoring	Date of Sampling	: 22.05.2023
Sampling Plan & Method	: WCS/QSP/SAMP (AIR)	Sample ID No	: WCS0523A30
Environmental Condition	: Clear Weather	Date of Receiving	: 25.05.2023
Sample Collected by	: WCS Laboratory	Quantity of Sample	: 1 No.
Date of Testing	: 25.05.2023 to 27.05.2023	Sample Condition	: Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	310	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter ( $\text{PM}_{10}$ )	$\mu\text{g}/\text{m}^3$	91.93	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide ( $\text{SO}_2$ )	$\mu\text{g}/\text{m}^3$	6.65	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides ( $\text{NO}_2$ )	$\mu\text{g}/\text{m}^3$	21.98	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter ( $\text{PM}_{2.5}$ )	$\mu\text{g}/\text{m}^3$	48.66	--	IS-5182 (Part-24) 2019

*Chahataray*  
Reviewed by  
(Mr. Bijaya Kumar Chahataray)

*Pradeept Mohapatra*  
Authorized Signatory  
(Mr. Pradeept Mohapatra)

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WCS/LQR/57

## TEST REPORT

Report No.	: WCS230518D	Issue Date	: 27.05.2023
NABL ULR No.	: TC1122523000000076F		
Name of the Client	: National Aluminium Company Limited		
Address	: Smelter & Power (S&P) Complex Angul-759145, Odisha		
Sampling Location	: Near settling Pond		
Sample Description	: Ambient Air Quality Monitoring	Date of Sampling	: 22.05.2023
Sampling Plan & Method	: WCS/QSP/SAMP (AIR)	Sample ID No	: WCS0523A31
Environmental Condition	: Clear Weather	Date of Receiving	: 25.05.2023
Sample Collected by	: WCS Laboratory	Quantity of Sample	: 1 No.
Date of Testing	: 25.05.2023 to 27.05.2023	Sample Condition	: Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	330	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter ( $\text{PM}_{10}$ )	$\mu\text{g}/\text{m}^3$	88.1	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide ( $\text{SO}_2$ )	$\mu\text{g}/\text{m}^3$	5.97	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides ( $\text{NO}_2$ )	$\mu\text{g}/\text{m}^3$	16.65	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter ( $\text{PM}_{2.5}$ )	$\mu\text{g}/\text{m}^3$	52.73	--	IS-5182 (Part-24) 2019

*Bhahataray*  
Reviewed by  
(Mr. Bijaya Kumar Chahataray)

*Pradeept Mohapatra*  
Authorized Signatory  
(Mr. Pradeept Mohapatra)

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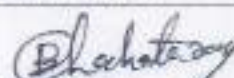


WCS/LQR/57

## TEST REPORT

Report No. : WCS230610B Issue Date : 24.06.2023  
NA BL ULR No. : TC1122523000000084F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Colony Area  
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 05.06.2023  
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0623A18B  
Environmental Condition : Clear Weather Date of Receiving : 08.06.2023  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
Date of Testing : 08.06.2023 to 10.06.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	210	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter ( $\text{PM}_{10}$ )	$\mu\text{g}/\text{m}^3$	80.2	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide ( $\text{SO}_2$ )	$\mu\text{g}/\text{m}^3$	6.9	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides ( $\text{NO}_x$ )	$\mu\text{g}/\text{m}^3$	14.2	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter ( $\text{PM}_{2.5}$ )	$\mu\text{g}/\text{m}^3$	44.9	--	IS-5182 (Part-24) 2019

  
Reviewed by  
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Authorized Signatory  
(Mr. Pradeept Mohapatra)

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## TEST REPORT

Report No. : WCS230610A Issue Date : 24.06.2023  
NA EL ULR No. : TC1122523000000084F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Gopiballavpur Village  
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 06.06.2023  
Sampling Plan & Method : WCS-QSP/SAMP (AIR) Sample ID No : WCS0623A18A  
Environmental Condition : Clear Weather Date of Receiving : 08.06.2023  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
Date of Testing : 08.06.2023 to 10.06.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	166	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter ( $\text{PM}_{10}$ )	$\mu\text{g}/\text{m}^3$	74	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide ( $\text{SO}_2$ )	$\mu\text{g}/\text{m}^3$	5.8	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides ( $\text{NO}_x$ )	$\mu\text{g}/\text{m}^3$	17.6	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter ( $\text{PM}_{2.5}$ )	$\mu\text{g}/\text{m}^3$	43.3	--	IS-5182 (Part-24) 2019

  
Reviewed by  
(Mr. Bijaya Kumar Chahatary)

  
Authorized Signatory  
(Mr. Pradeep Mohapatra)

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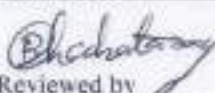


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**TEST REPORT**

Report No. : WCS230612C Issue Date : 24.06.2023  
 NABL ULR No. : TC1122523000000086F  
 Name of the Client : National Aluminium Company Limited  
 Address : Smelter & Power (S&P) Complex  
 Angul-759145, Odisha  
 Sampling Location : Near Weigh Bridge  
 Sample Description : Ambient Air Quality Monitoring Date of Sampling : 20.06.2023  
 Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0623A31  
 Environmental Condition : Clear Weather Date of Receiving : 22.06.2023  
 Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
 Date of Testing : 22.06.2023 to 24.06.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	302	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter ( $\text{PM}_{10}$ )	$\mu\text{g}/\text{m}^3$	90	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide ( $\text{SO}_2$ )	$\mu\text{g}/\text{m}^3$	6.3	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides ( $\text{NO}_x$ )	$\mu\text{g}/\text{m}^3$	20.1	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter ( $\text{PM}_{2.5}$ )	$\mu\text{g}/\text{m}^3$	47.5	—	IS-5182 (Part-24) 2019

  
 Reviewed by  
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 Authorized Signatory  
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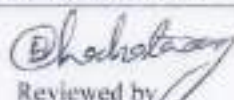



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**TEST REPORT**

Report No. : WCS230610D Issue Date : 24.06.2023  
NA BL ULR No. : TC1122523000000084F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Near settling Pond  
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 05.06.2023  
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0623A18D  
Environmental Condition : Clear Weather Date of Receiving : 08.06.2023  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
Date of Testing : 08.06.2023 to 10.06.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	315	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter ( $\text{PM}_{10}$ )	$\mu\text{g}/\text{m}^3$	91.2	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide ( $\text{SO}_2$ )	$\mu\text{g}/\text{m}^3$	7.2	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides ( $\text{NO}_x$ )	$\mu\text{g}/\text{m}^3$	19.7	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter ( $\text{PM}_{2.5}$ )	$\mu\text{g}/\text{m}^3$	53.9	--	IS-5182 (Part-24) 2019

  
Reviewed by  
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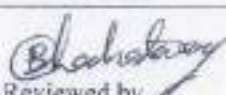


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## TEST REPORT

Report No. : WCS230612B Issue Date : 24.06.2023  
NABL ULR No. : TC1122523000000086F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Colony Area  
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 19.06.2023  
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0623A30  
Environmental Condition : Clear Weather Date of Receiving : 22.06.2023  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
Date of Testing : 22.06.2023 to 24.06.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	196	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter (PM <sub>10</sub> )	$\mu\text{g}/\text{m}^3$	79.2	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	5	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides (NO <sub>x</sub> )	$\mu\text{g}/\text{m}^3$	13	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter (PM <sub>2.5</sub> )	$\mu\text{g}/\text{m}^3$	43.2	--	IS-5182 (Part-24) 2019

  
Reviewed by  
(Mr. Bijaya Kumar Chahatary)

  
Authorized Signatory  
(Mr. Pradeep Mohapatra)

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## TEST REPORT

Report No. : WCS230612A Issue Date : 24.06.2023  
NAEIL ULR No. : TC1122523000000086F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Gopiballavpur Village  
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 20.06.2023  
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0623A29  
Environmental Condition : Clear Weather Date of Receiving : 22.06.2023  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
Date of Testing : 22.06.2023 to 24.06.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	175	500	IS-5182 (Part-4) 1990 RA 2019
Respirable Suspended Particulate Matter (PM <sub>10</sub> )	$\mu\text{g}/\text{m}^3$	73.1	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	5.8	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides (NO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	18.7	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter (PM <sub>2.5</sub> )	$\mu\text{g}/\text{m}^3$	42.4	--	IS-5182 (Part-24) 2019

*Chahataray*  
Reviewed by  
(Mr. Bijaya Kumar Chahataray)

*Pradeep Mohapatra*  
Authorized Signatory  
(Mr. Pradeep Mohapatra)

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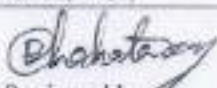



WCS/LQR/57

**TEST REPORT**

Report No. : WCS230610C Issue Date : 24.06.2023  
NA BL ULR No. : TC1122523000000084F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Near Weigh Bridge  
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 06.06.2023  
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0623A18C  
Environmental Condition : Clear Weather Date of Receiving : 08.06.2023  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
Date of Testing : 08.06.2023 to 10.06.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	298	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter (PM <sub>10</sub> )	$\mu\text{g}/\text{m}^3$	93	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	7.4	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides (NO <sub>x</sub> )	$\mu\text{g}/\text{m}^3$	22.5	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter (PM <sub>2.5</sub> )	$\mu\text{g}/\text{m}^3$	51.2	--	IS-5182 (Part-24) 2019

  
Reviewed by  
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Authorized Signatory  
(Mr. Pradeep Mohapatra)

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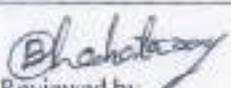


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## TEST REPORT

Report No. : WCS230612D Issue Date : 24.06.2023  
NAEIL ULR No. : TC112252300000086F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Near settling Pond  
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 19.06.2023  
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0623A32  
Environmental Condition : Clear Weather Date of Receiving : 22.06.2023  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
Date of Testing : 22.06.2023 to 24.06.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	325	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter ( $\text{PM}_{10}$ )	$\mu\text{g}/\text{m}^3$	86.9	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide ( $\text{SO}_2$ )	$\mu\text{g}/\text{m}^3$	6.9	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides ( $\text{NO}_2$ )	$\mu\text{g}/\text{m}^3$	16.1	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter ( $\text{PM}_{2.5}$ )	$\mu\text{g}/\text{m}^3$	51.5	--	IS-5182 (Part-24) 2019

  
Reviewed by  
(Mr. Bijaya Kumar Chahatray)

  
Authorized Signatory  
(Mr. Pradeep Mohapatra)

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WC/LQR/57

## TEST REPORT

Report No. : WCS230704B Issue Date : 08.07.2023  
NAEL ULR No. : TC1122523000000109F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : **Colony Area**  
Sample Description : **Ambient Air Quality Monitoring**  
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Date of Sampling : **08.07.2023**  
Environmental Condition : Clear Weather Sample ID No : WCS0723A12  
Sample Collected by : WCS Laboratory Date of Receiving : 07.07.2023  
Date of Testing : 07.07.2023 to 08.07.2023 Quantity of Sample : 1 No.  
Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	305	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter ( $\text{PM}_{10}$ )	$\mu\text{g}/\text{m}^3$	82.1	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide ( $\text{SO}_2$ )	$\mu\text{g}/\text{m}^3$	5.8	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides ( $\text{NO}_x$ )	$\mu\text{g}/\text{m}^3$	17.5	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter ( $\text{PM}_{2.5}$ )	$\mu\text{g}/\text{m}^3$	46.1	--	IS-5182 (Part-24) 2019

  
Reviewed by  
(Mr. Bijaya Kumar Chahataray)

  
Authorized Signatory  
(Mr. Pradeep Mohapatra)

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WCS LQR/57

**TEST REPORT**

Report No. : WCS230704A Issue Date : 08.07.2023  
NA BL ULR No. : TC1122523000000109F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : **Gopiballavpur Village**  
Sample Description : **Ambient Air Quality Monitoring** Date of Sampling : **05.07.2023**  
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0723A11  
Environmental Condition : Clear Weather Date of Receiving : 07.07.2023  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
Date of Testing : 07.07.2023 to 08.07.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	210	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter ( $\text{PM}_{10}$ )	$\mu\text{g}/\text{m}^3$	76.4	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide ( $\text{SO}_2$ )	$\mu\text{g}/\text{m}^3$	5.6	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides ( $\text{NO}_2$ )	$\mu\text{g}/\text{m}^3$	16	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter ( $\text{PM}_{2.5}$ )	$\mu\text{g}/\text{m}^3$	41.6	--	IS-5182 (Part-24) 2019

  
Reviewed by  
(Mr. Bijaya Kumar Chahatray)

  
Authorized Signatory  
(Mr. Pradeept Mohapatra)

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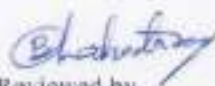


WCS/LQR/37

**TEST REPORT**

Report No. : WCS230704C Issue Date : 08.07.2023  
NAEL ULR No. : TC1122523000000109F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Near Weigh Bridge  
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 04.07.2023  
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0723A13  
Environmental Condition : Clear Weather Date of Receiving : 07.07.2023  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
Date of Testing : 07.07.2023 to 08.07.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	315	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter ( $\text{PM}_{10}$ )	$\mu\text{g}/\text{m}^3$	94.6	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide ( $\text{SO}_2$ )	$\mu\text{g}/\text{m}^3$	7.1	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides ( $\text{NO}_x$ )	$\mu\text{g}/\text{m}^3$	18.8	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter ( $\text{PM}_{2.5}$ )	$\mu\text{g}/\text{m}^3$	45.7	--	IS-5182 (Part-24) 2019

  
Reviewed by  
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Authorized Signatory  
(Mr. Pradeept Mohapatra)

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WCS/LQR/37

**TEST REPORT**

Report No. : WCS230704D Issue Date : 08.07.2023  
 NA EL ULR No. : TC1122523000000109F  
 Name of the Client : National Aluminium Company Limited  
 Address : Smelter & Power (S&P) Complex  
 Angul-759145, Odisha  
 Sampling Location : **Near settling Pond**  
 Sample Description : **Ambient Air Quality Monitoring** Date of Sampling : **04.07.2023**  
 Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0723A14  
 Environmental Condition : Clear Weather Date of Receiving : 07.07.2023  
 Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
 Date of Testing : 07.07.2023 to 08.07.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	318	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter ( $\text{PM}_{10}$ )	$\mu\text{g}/\text{m}^3$	89.2	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide ( $\text{SO}_2$ )	$\mu\text{g}/\text{m}^3$	7.1	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides ( $\text{NO}_2$ )	$\mu\text{g}/\text{m}^3$	17.4	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter ( $\text{PM}_{2.5}$ )	$\mu\text{g}/\text{m}^3$	54.2	--	IS-5182 (Part-24) 2019

Reviewed by  
 (Mr. Bijaya Kumar Chahataray)

Authorized Signatory  
 (Mr. Pradeep Mohapatra)

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WCS/LQR/57

## TEST REPORT

Report No. : WCS230716B Issue Date : 22.07.2023  
NABL ULR No. : TC1122523000000121F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Colony Area  
Sample Description : Ambient Air Quality Monitoring  
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Date of Sampling : 17.07.2023  
Environmental Condition : Medium rain Sample ID No : WCS0723A26  
Sample Collected by : WCS Laboratory Date of Receiving : 20.07.2023  
Date of Testing : 21.07.2023 to 22.07.2023 Quantity of Sample : 1 No.  
Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	135.0	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter ( $\text{PM}_{10}$ )	$\mu\text{g}/\text{m}^3$	42.3	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide ( $\text{SO}_2$ )	$\mu\text{g}/\text{m}^3$	5.6	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides ( $\text{NO}_x$ )	$\mu\text{g}/\text{m}^3$	16.1	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter ( $\text{PM}_{2.5}$ )	$\mu\text{g}/\text{m}^3$	26.4	--	IS-5182 (Part-24) 2019

  
Reviewed by  
(Mr. Bijaya Kumar Chahataray)

  
Authorized Signatory  
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## TEST REPORT

Report No. : WCS230716A Issue Date : 22.07.2023  
NABL ULR No. : TC1122523000000121F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : **Gopiballavpur Village**  
Sample Description : **Ambient Air Quality Monitoring** Date of Sampling : **15.07.2023**  
Sampling Plan & Method : WCS-QSP/SAMP (AIR) Sample ID No : WCS0723A25  
Environmental Condition : Medium rain Date of Receiving : 20.07.2023  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
Date of Testing : 21.07.2023 to 22.07.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	120.0	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter ( $\text{PM}_{10}$ )	$\mu\text{g}/\text{m}^3$	40.2	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide ( $\text{SO}_2$ )	$\mu\text{g}/\text{m}^3$	5.5	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides ( $\text{NO}_2$ )	$\mu\text{g}/\text{m}^3$	15.4	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter ( $\text{PM}_{2.5}$ )	$\mu\text{g}/\text{m}^3$	20.0	--	IS-5182 (Part-24) 2019

  
Reviewed by  
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## TEST REPORT

Report No. : WCS230716C Issue Date : 22.07.2023  
NABL ULR No. : TC1122523000000121F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Near Weigh Bridge  
Sample Description : Ambient Air Quality Monitoring  
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Date of Sampling : 18.07.2023  
Environmental Condition : Medium rain Sample ID No : WCS0723A27  
Sample Collected by : WCS Laboratory Date of Receiving : 20.07.2023  
Date of Testing : 21.07.2023 to 22.07.2023 Quantity of Sample : 1 No.  
Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	µg/m <sup>3</sup>	142.0	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter (PM <sub>10</sub> )	µg/m <sup>3</sup>	48.6	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	6.2	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides (NO <sub>x</sub> )	µg/m <sup>3</sup>	15.9	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter (PM <sub>2.5</sub> )	µg/m <sup>3</sup>	32.3	--	IS-5182 (Part-24) 2019

  
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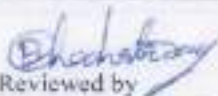


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## TEST REPORT

Report No. : WCS230716D Issue Date : 22.07.2023  
NABL ULR No. : TC1122523000000121F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : **Near Settling Pond**  
Sample Description : **Ambient Air Quality Monitoring** Date of Sampling : **7.07.2023**  
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0723A28  
Environmental Condition : Medium rain Date of Receiving : 20.07.2023  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
Date of Testing : 21.07.2023 to 22.07.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	µg/m <sup>3</sup>	145	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter (PM <sub>10</sub> )	µg/m <sup>3</sup>	54.0	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	6.3	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides (NO <sub>x</sub> )	µg/m <sup>3</sup>	16.2	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter (PM <sub>2.5</sub> )	µg/m <sup>3</sup>	36.0	--	IS-5182 (Part-24) 2019

  
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**TEST REPORT**

Report No. : WCS230809B Issue Date : 16.08.2023  
NABL ULR No. : TC1122523000000131F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Colony Area  
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 07.08.2023  
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0823A12  
Environmental Condition : Medium rain Date of Receiving : 10.08.2023  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
Date of Testing : 11.08.2023 to 12.08.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	146.0	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter ( $\text{PM}_{10}$ )	$\mu\text{g}/\text{m}^3$	44.5	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide ( $\text{SO}_2$ )	$\mu\text{g}/\text{m}^3$	5.7	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides ( $\text{NO}_2$ )	$\mu\text{g}/\text{m}^3$	15.7	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter ( $\text{PM}_{2.5}$ )	$\mu\text{g}/\text{m}^3$	27.3	--	IS-5182 (Part-24) 2019

  
Reviewed by  
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Authorized Signatory  
(Mr. Pradeept Mohapatra)

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WCS/LQR/37

**TEST REPORT**

Report No.	: WCS230809A	Issue Date	: 16.08.2023
NABL ULR No.	: TC1122523000000131F		
Name of the Client	: National Aluminium Company Limited		
Address	: Smelter & Power (S&P) Complex Angul-759145, Odisha		
Sampling Location	: Gopiballavpur Village		
Sample Description	: Ambient Air Quality Monitoring	Date of Sampling	: 08.08.2023
Sampling Plan & Method	: WCS/QSP/SAMP (AIR)	Sample ID No	: WCS0823A11
Environmental Condition	: Medium rain	Date of Receiving	: 10.08.2023
Sample Collected by	: WCS Laboratory	Quantity of Sample	: 1 No.
Date of Testing	: 11.08.2023 to 12.08.2023	Sample Condition	: Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	µg/m <sup>3</sup>	132.0	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter (PM <sub>10</sub> )	µg/m <sup>3</sup>	45.2	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	5.4	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides (NO <sub>x</sub> )	µg/m <sup>3</sup>	14.9	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter (PM <sub>2.5</sub> )	µg/m <sup>3</sup>	21.3	--	IS-5182 (Part-24) 2019

*B. Chhataray*  
Reviewed by  
(Mr. Bijaya Kumar Chhataray)

*Pradeep Mohapatra*  
Authorized Signatory  
(Mr. Pradeep Mohapatra)

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**TEST REPORT**

Report No. : WCS230809C Issue Date : 16.08.2023  
NABL ULR No. : TC1122323000000131F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Near Weigh Bridge  
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 07.08.2023  
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0823A13  
Environmental Condition : Medium rain Date of Receiving : 10.08.2023  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
Date of Testing : 11.08.2023 to 12.08.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	154.0	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter (PM <sub>10</sub> )	$\mu\text{g}/\text{m}^3$	51.2	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	6.4	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides (NO <sub>x</sub> )	$\mu\text{g}/\text{m}^3$	16.4	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter (PM <sub>2.5</sub> )	$\mu\text{g}/\text{m}^3$	34.1	--	IS-5182 (Part-24) 2019

*Chahatary*  
Reviewed by  
(Mr. Bijaya Kumar Chahatary)

*Pradeep Mohapatra*  
Authorized Signatory  
(Mr. Pradeep Mohapatra)

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## TEST REPORT

Report No.	: WCS230809D	Issue Date	: 16.08.2023
NABL ULR No.	: TC1122523000000131F		
Name of the Client	: National Aluminium Company Limited		
Address	: Smelter & Power (S&P) Complex Angal-759145, Odisha		
Sampling Location	: Near Settling Pond		
Sample Description	: Ambient Air Quality Monitoring	Date of Sampling	: 08.08.2023
Sampling Plan & Method	: WCS/QSP/SAMP (AIR)	Sample ID No	: WCS0823A14
Environmental Condition	: Medium rain	Date of Receiving	: 10.08.2023
Sample Collected by	: WCS Laboratory	Quantity of Sample	: 1 No.
Date of Testing	: 11.08.2023 to 12.08.2023	Sample Condition	: Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	µg/m <sup>3</sup>	162.0	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter (PM <sub>10</sub> )	µg/m <sup>3</sup>	59.3	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	6.8	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides (NO <sub>x</sub> )	µg/m <sup>3</sup>	17.2	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter (PM <sub>2.5</sub> )	µg/m <sup>3</sup>	38.2	--	IS-5182 (Part-24) 2019

*Bhahataray*  
Reviewed by  
(Mr. Bijaya Kumar Chahataray)

*Pradcept Mohapatra*  
Authorized Signatory  
(Mr. Pradcept Mohapatra)

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Report No. : WCS230816B Issue Date : 24.08.2023  
NAAL ULR No. : TC112252300000136F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Colony Area  
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 17.08.2023  
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0823A26  
Environmental Condition : Medium rain Date of Receiving : 21.08.2023  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
Date of Testing : 21.08.2023 to 22.08.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	132.0	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter (PM <sub>10</sub> )	$\mu\text{g}/\text{m}^3$	41.6	150	IS-5182 (Part-23) 2006 RA 2017
Sulfur Dioxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	5.0	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides (NO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	15.0	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter (PM <sub>2.5</sub> )	$\mu\text{g}/\text{m}^3$	25.2	--	IS-5182 (Part-24) 2019

*Bhahataray*  
Reviewed by  
(Mr. Bijaya Kumar Chahataray)

*Pradeep Mohapatra*  
Authorized Signatory  
(Mr. Pradeep Mohapatra)



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WCS/LQR/57

**TEST REPORT**

Ref No. : WCS230816A Issue Date : 24.08.2023  
NAL, ULR No. : TC112252300000136F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Gopiballavpur Village  
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 18.08.2023  
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0823A25  
Environmental Condition : Medium rain Date of Receiving : 21.08.2023  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
Date of Testing : 21.08.2023 to 22.08.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	µg/m <sup>3</sup>	126.0	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter (PM <sub>10</sub> )	µg/m <sup>3</sup>	39.8	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	5.2	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides (NO <sub>x</sub> )	µg/m <sup>3</sup>	14.8	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter (PM <sub>2.5</sub> )	µg/m <sup>3</sup>	22.0	--	IS-5182 (Part-24) 2019

  
Reviewed by  
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Authorized Signatory  
(Mr. Pradeep Mohapatra)



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WCS/LQR/57

**TEST REPORT**

Report No. : WCS230816C Issue Date : 24.08.2023  
NABL ULR No. : TC1122523000000136F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Near Weigh Bridge  
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 18.08.2023  
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0823A27  
Environmental Condition : Medium rain Date of Receiving : 21.08.2023  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
Date of Testing : 21.08.2023 to 22.08.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	µg/m <sup>3</sup>	165.0	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter (PM <sub>10</sub> )	µg/m <sup>3</sup>	53.4	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	5.8	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides (NO <sub>x</sub> )	µg/m <sup>3</sup>	16.2	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter (PM <sub>2.5</sub> )	µg/m <sup>3</sup>	36.5	--	IS-5182 (Part-24) 2019

  
Reviewed by  
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Authorized Signatory  
(Mr. Pradeep Mohapatra)



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Report No. : WCS230816D Issue Date : 24.08.2023  
NABL ULR No. : TC1122523000000136F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Near Settling Pond  
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 17.08.2023  
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0823A28  
Environmental Condition : Medium rain Date of Receiving : 21.08.2023  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
Date of Testing : 21.08.2023 to 22.08.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	µg/m <sup>3</sup>	156.0	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter (PM <sub>10</sub> )	µg/m <sup>3</sup>	53.4	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	6.1	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides (NO <sub>2</sub> )	µg/m <sup>3</sup>	17.0	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter (PM <sub>2.5</sub> )	µg/m <sup>3</sup>	37.8	—	IS-5182 (Part-24) 2019

*Chahatary*  
Reviewed by  
(Mr. Bijaya Kumar Chahatary)

*Pradeep Mohapatra*  
Authorized Signatory  
(Mr. Pradeep Mohapatra)



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WCS/LQR/57

**TEST REPORT**

Report No. : WCS20915B Issue Date : 15.09.2023  
NABL ULR No. : TC1122525000001541  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex,  
Angul-759145, Odisha  
Sampling Location : Colony Area  
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 07.09.2023  
Sampling Plan & Method : WCS/QSP-SAMP (AIR) Sample ID No : WCS0923A12  
Environmental Condition : Medium rain Date of Receiving : 09.09.2023  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
Date of Testing : 11.09.2023 to 13.09.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CIO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	128.0	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter (PM <sub>10</sub> )	$\mu\text{g}/\text{m}^3$	43.8	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	5.2	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides (NO <sub>x</sub> )	$\mu\text{g}/\text{m}^3$	14.6	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter (PM <sub>2.5</sub> )	$\mu\text{g}/\text{m}^3$	28.1	--	IS-5182 (Part-24) 2019

*Bijaya Kumar Chaharany*  
Reviewed by  
(Mr. Bijaya Kumar Chaharany)

*Pradeep Mohapatra*  
Authorized Signatory  
(Mr. Pradeep Mohapatra)

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WCS-LQR-57

**TEST REPORT**

Report No.	: WCS230915A	Issue Date	: 15.09.2023
NABL ULR No.	: TC1122523000000154F		
Name of the Client	: National Aluminium Company Limited		
Address	: Smelter & Power (S&P) Complex Angul-759145, Odisha		
Sampling Location	: Gopiballavpur Village		
Sample Description	: Ambient Air Quality Monitoring	Date of Sampling	: 08.09.2023
Sampling Plan & Method	: WCS/QSP/SAMP (AIR)	Sample ID No	: WCS0923A11
Environmental Condition	: Medium rain	Date of Receiving	: 09.09.2023
Sample Collected by	: WCS Laboratory	Quantity of Sample	: 1 No.
Date of Testing	: 11.09.2023 to 13.09.2023	Sample Condition	: Good

Parameter	Unit	Result	Standard as per CIO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	124.0	500	IS-5182 (Part-1) 1999 RA 2019
Respirable Suspended Particulate Matter (PM <sub>10</sub> )	$\mu\text{g}/\text{m}^3$	41.0	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	5.0	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides (NO <sub>x</sub> )	$\mu\text{g}/\text{m}^3$	15.0	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter (PM <sub>2.5</sub> )	$\mu\text{g}/\text{m}^3$	24.9	—	IS-5182 (Part-24) 2019

*Bhahatary*  
Reviewed by  
(Mr. Bijaya Kumar Chahatary)

*Pradeep Mohapatra*  
Authorized Signatory  
(Mr. Pradeep Mohapatra)



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**TEST REPORT**

Report No. : WCS230915C Issue Date : 15.09.2023  
NABL ULR No. : TC112252300000154F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Near Weigh Bridge  
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 08.09.2023  
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0923A13  
Environmental Condition : Medium rain Date of Receiving : 09.09.2023  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
Date of Testing : 11.09.2023 to 13.09.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	178.0	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter ( $\text{PM}_{10}$ )	$\mu\text{g}/\text{m}^3$	55.8	150	IS-5182 (Part-25) 2006 RA 2017
Sulphur Dioxide ( $\text{SO}_2$ )	$\mu\text{g}/\text{m}^3$	5.4	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides ( $\text{NO}_2$ )	$\mu\text{g}/\text{m}^3$	14.8	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter ( $\text{PM}_{2.5}$ )	$\mu\text{g}/\text{m}^3$	38.2	—	IS-5182 (Part-24) 2019

*Bijaya Kumar Chahatary*  
Reviewed by  
(Mr. Bijaya Kumar Chahatary)

*Pradeep Mohapatra*  
Authorized Signatory  
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WCS LQR/57

**TEST REPORT**

Report No. : WCS230915D Issue Date : 15.09.2023  
NABL ULR No. : TC1122523000000154F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Near Settling Pond  
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 07.09.2023  
Sampling Plan & Method : WCS QSP/SAMP (AIR) Sample ID No : WCS0923A14  
Environmental Condition : Medium rain Date of Receiving : 09.09.2023  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
Date of Testing : 11.09.2023 to 13.09.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	151.0	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter (PM <sub>10</sub> )	$\mu\text{g}/\text{m}^3$	52.0	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	5.8	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides (NO <sub>x</sub> )	$\mu\text{g}/\text{m}^3$	16.6	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter (PM <sub>2.5</sub> )	$\mu\text{g}/\text{m}^3$	38.7	—	IS-5182 (Part-24) 2019

*Chaturaray*  
Reviewed by  
(Mr. Bijaya Kumar Chaturaray)

*Pradeept Mohapatra*  
Authorized Signatory  
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**TEST REPORT**

Report No. : WCS230925B Issue Date : 27.09.2023  
NABL ULR No. : TC112252300000164F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Colony Area  
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 22.09.2023  
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0923A16  
Environmental Condition : Medium rain Date of Receiving : 25.09.2023  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
Date of Testing : 25.09.2023 to 27.09.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	142.6	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter (PM <sub>10</sub> )	$\mu\text{g}/\text{m}^3$	42.4	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	5.4	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides (NO <sub>x</sub> )	$\mu\text{g}/\text{m}^3$	14.4	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter (PM <sub>2.5</sub> )	$\mu\text{g}/\text{m}^3$	28.9	--	IS-5182 (Part-24) 2019

  
Reviewed by

(Mr. Bijaya Kumar Chahaturay)

  
Authorized Signatory

(Mr. Diganta Krishna Ray)

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WCS/LQR/57

**TEST REPORT**

Report No. : WCS230925A Issue Date : 27.09.2023  
NABL ULR No. : TC1122523000000164F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Gopiballavpur Village  
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 22.09.2023  
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0923A15  
Environmental Condition : Medium rain Date of Receiving : 25.09.2023  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
Date of Testing : 25.09.2023 to 27.09.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	µg/m <sup>3</sup>	130.0	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter (PM <sub>10</sub> )	µg/m <sup>3</sup>	40.0	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	5.6	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides (NO <sub>x</sub> )	µg/m <sup>3</sup>	15.2	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter (PM <sub>2.5</sub> )	µg/m <sup>3</sup>	22.9	--	IS-5182 (Part-24) 2019

*Chahataray*  
Reviewed by

(Mr. Bijaya Kumar Chahataray)

*Ray*  
Authorized Signatory  
(Mr. Diganta Krishna Ray)

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WCS/LOR/37

**TEST REPORT**

Report No. : WCS230925C Issue Date : 27.09.2023  
NABL ULR No. : TC1122523000000164F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha.  
Sampling Location : Near Weigh Bridge  
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 21.09.2023  
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0923A17  
Environmental Condition : Medium rain Date of Receiving : 25.09.2023  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
Date of Testing : 25.09.2023 to 27.09.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	$\mu\text{g}/\text{m}^3$	176.0	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter (PM <sub>10</sub> )	$\mu\text{g}/\text{m}^3$	56.8	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	5.6	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides (NO <sub>x</sub> )	$\mu\text{g}/\text{m}^3$	15.6	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter (PM <sub>2.5</sub> )	$\mu\text{g}/\text{m}^3$	37.3	—	IS-5182 (Part-24) 2019

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Reviewed by  
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*Diganta Krishna Ray*  
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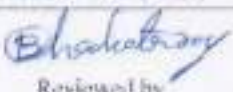


WCS/LQR/57

**TEST REPORT**

Report No. : WCS230925D Issue Date : 27.09.2023  
NABL ULR No. : TC1122523000000164F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Near Settling Pond  
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 21.09.2023  
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0923A18  
Environmental Condition : Medium rain Date of Receiving : 25.09.2023  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.  
Date of Testing : 25.09.2023 to 27.09.2023 Sample Condition : Good

Parameter	Unit	Result	Standard as per CTO No-2938	Test Method
Suspended Particulate Matter (SPM)	µg/m <sup>3</sup>	149.0	500	IS-5182 (Part-4) 1999 RA 2019
Respirable Suspended Particulate Matter (PM <sub>10</sub> )	µg/m <sup>3</sup>	52.6	150	IS-5182 (Part-23) 2006 RA 2017
Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	6.0	120	IS-5182 (Part-2) 2001 RA 2017
Nitrogen Oxides (NO <sub>x</sub> )	µg/m <sup>3</sup>	16.4	120	IS-5182 (Part-6) 2006 RA 2017
Fine Particulate Matter (PM <sub>2.5</sub> )	µg/m <sup>3</sup>	38.5	—	IS-5182 (Part-24) 2019

  
Reviewed by  
(Mr. Bijaya Kumar Chahatary)

  
Authorized Signatory  
(Mr. Diganta Krishna Ray)

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WCS/LQR/60

## TEST REPORT

Report No. : WCS230403 Issue Date : 17.04.2023  
NABL ULR No. : TC1122523000000043F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Coal Mining North Side Seepage Water  
Sample Description : Surface Water Date of Sampling : 07.04.2023  
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 08.04.2023  
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS0423W04  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr  
Date of Testing : 10.04.2023 to 15.04.2023 Sample Condition : Good

Sl. No.	Parameter	Unit	Result	Test Methods
1	Odour	--	Agreeable	IS 3025 ( Part-5): 2018
2	Colour	Hazen	< 5	IS 3025 ( Part-4): 2021
3	pH Value	--	7.835	IS 3025 ( Part-11): 2022
4	Specific Conductivity	µs/cm	794.1	IS 3025 ( Part-14): 2013
5	Dissolve Oxygen as DO	mg/l	6.1	IS 3025 ( Part-38): 1989
6	Biochemical Oxygen Demand as BOD	mg/l	< 2	IS 3025 ( Part-44): 1993
7	Total Suspended Solid as TSS	mg/l	< 5	IS 3025 ( Part-17): 2022
8	Oil & Grease	mg/l	< 4	APHA 23 <sup>rd</sup> Ed. ( 5520-B): 2017
9	Total Hardness as CaCO <sub>3</sub>	mg/l	256	APHA 23 <sup>rd</sup> Ed. ( 2340-C): 2017
10	Chloride as Cl	mg/l	65.98	IS 3025( Part-32): 1988 RA 2019
11	Sulphate as SO <sub>4</sub>	mg/l	45.93	IS 3025 ( Part-24, Sec-1): 2022
12	Nitrate as NO <sub>3</sub>	mg/l	< 1	APHA 23 <sup>rd</sup> Ed. ( 4500-NO <sub>3</sub> -B): 2017
13	Fluoride as F	mg/l	< 0.02	APHA 23 <sup>rd</sup> Ed. ( 4500-F-D): 2017
14	Calcium as Ca	mg/l	33.67	APHA 23 <sup>rd</sup> Ed. (3500-Ca-B): 2017
15	Magnesium as Mg	mg/l	41.8	APHA 23 <sup>rd</sup> Ed. (3500-Mg-B): 2017
16	Iron as Fe	mg/l	0.03	IS 3025 ( Part-53): 2003
17	Hexavalent Chromium as Cr <sup>6+</sup>	mg/l	< 0.01	IS 3025 ( Part-52): 2003
18	Sodium as Na	mg/l	4.9	IS 3025 ( Part-45): 1993
19	Potassium as K	mg/l	7.2	IS 3025 ( Part-45): 1993



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20	Alkalinity as CaCO <sub>3</sub>	mg/l	230	IS 3025 (Part-23): 1986
21	Chemical Oxygen Demand as COD	mg/l	2.4	IS 3025 (Part-58): 2006
22	Total Dissolved Solid as TDS	mg/l	373	IS 3025 (Part-16): 1984
23	Turbidity	NTU	1	IS 3025 (Part-10): 1984
24	E.Coli	MPN/100 m	<1	IS 1622 : 1981
25	Faecal Coliform	MPN/100 m	<1	IS 1622 : 1981
26	Total Coliform	MPN/100 ml	3	IS 1622 : 1981

*Bhattacharya*

Reviewed by  
(Mr. Bijaya Kumar Chaitarary)

*Manaswini Rout*  
Authorized Signatory for Microbiology  
(Mrs. Manaswini Rout)

*Pradeep Mohapatra*  
Authorized Signatory for Chemical  
(Mr. Pradeep Mohapatra)

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**TEST REPORT**

Report No. : WCS230601A Issue Date : 02.06.2023  
NABL ULR No. : TC112252300000077F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Settling Pond Near Coal Cutting Area (Site-1)  
Sample Description : Surface Water Date of Sampling : 29.05.2023  
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 30.05.2023  
Environmental Condition : Temperature 30°C, Clear Weather Sample ID No : WCS0523W15  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr  
Date of Testing : 30.05.2023 to 02.06.2023 Sample Condition : Good

Sl. No.	Parameter	Unit	Result	Permissible Limit as per Consent Order No-5059/IND-E-CON-6762 Dt:28.03.2023	Test Methods
1	pH Value	—	8.02	5.5-9.0	IS 3025 (Part-11): 2022
2	Total suspended Solid	mg/l	10	100	IS 3025 (Part-17):1984 RA 2012
3	Oil & Grease	mg/l	<4	10	APHA 23rd Ed. (5520-B): 2017
4	Biochemical Oxygen Demand as BOD	mg/l	3.7	—	IS 3025 (Part-44): 1993
5	Chemical Oxygen Demand as COD	mg/l	6.4	250	APHA 23rd Ed. (5220-D): 2017
6	Colour	Hazen	2	—	IS 3025 (Part-4): 2021
7	Specific Conductivity	µs/cm	676.4	—	IS 3025 (Part-14): 2013
8	Turbidity	NTU	<1	—	IS 3025 (Part-10): 1984 RA 2017
9	Dissolved Oxygen as DO	mg/l	8.5	—	IS 3025 (Part-38): 1989
10	Total Hardness as CaCO <sub>3</sub>	mg/l	214	—	APHA 23rd Ed. (2340-C): 2017
11	Chloride as Cl	mg/l	53.98	—	IS 3025 (Part-32): 1988
12	Sulphate as SO <sub>4</sub>	mg/l	77.48	—	IS 3025 (Part-24, Sec-1): 2022
13	Nitrate as NO <sub>3</sub>	mg/l	1.88	—	APHA 23rd Ed. (4500-NO <sub>3</sub> -B): 2017
14	Calcium as Ca	mg/l	46.49	—	APHA 23rd Ed. (3500-Ca-B): 2017
15	Magnesium as Mg	mg/l	23.81	—	APHA 23rd Ed. (3500-Mg-B): 2017
16	Total Dissolved Solid as TDS	mg/l	369	—	IS 3025 (Part-16): 1984
17	Total Alkalinity as CaCO <sub>3</sub>	mg/l	160	—	IS 3025 (Part-23): 1986 RA 2019
18	Potassium as K	mg/l	30.2	—	IS 3025 (Part-45): 1993 RA 2019
19	Sodium as Na	mg/l	47.3	—	IS 3025 (Part-45): 1993 RA 2019

Reviewed by  
(Mr. Bijaya Kumar Chahataray)

Authorized Signatory  
(Mr. Pradeep Chahataray)



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## TEST REPORT

Report No. : WCS230601B Issue Date : 02.06.2023  
NABL ULR No. : TC1122523000000077F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : **Settling Pond Near Coal Cutting Area (Site-2)**  
Sample Description : Surface Water Date of Sampling : 29.05.2023  
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 30.05.2023  
Environmental Condition : Temperature 30°C, Clear Weather Sample ID No : WCS0523W16  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr  
Date of Testing : 30.05.2023 to 02.06.2023 Sample Condition : Good

Sl. No.	Parameter	Unit	Result	Permissible Limit as per Consent Order No-5059/IND-I-CON-6762 Dt:28.03.2023	Test Methods
1	pH Value	--	8.04	5.5-9.0	IS 3025 (Part-11): 2022
2	Total suspended Solid	mg/l	10	100	IS 3025 (Part-17): 1984 RA 2012
3	Oil & Grease	mg/l	<4	10	APHA 23rd Ed. (5520-B): 2017
4	Biochemical Oxygen Demand as BOD	mg/l	5.6	--	IS 3025 (Part-44): 1993
5	Chemical Oxygen Demand as COD	mg/l	9.6	250	APHA 23rd Ed. (5220-D): 2017
6	Colour	Hazen	2	--	IS 3025 (Part-4): 2021
7	Specific Conductivity	µs/cm	722.9	--	IS 3025 (Part-14): 2013
8	Turbidity	NTU	<1	--	IS 3025 (Part-10): 1984 RA 2017
9	Dissolve Oxygen as DO	mg/l	6.2	--	IS 3025 (Part-38): 1989
10	Total Hardness as CaCO <sub>3</sub>	mg/l	218	--	APHA 23rd Ed. (2340-C): 2017
11	Chloride as Cl	mg/l	37.98	--	IS 3025 (Part-32): 1988
12	Sulphate as SO <sub>4</sub>	mg/l	79.44	--	IS 3025 (Part-24, Sec-1): 2022
13	Nitrate as NO <sub>3</sub>	mg/l	1.97	--	APHA 23rd Ed. (4500-NO <sub>3</sub> -B): 2017
14	Calcium as Ca	mg/l	44.89	--	APHA 23rd Ed. (3500-Ca-B): 2017
15	Magnesium as Mg	mg/l	25.76	--	APHA 23rd Ed. (3500-Mg-B): 2017
16	Total Dissolved Solid as TDS	mg/l	373	--	IS 3025 (Part-16): 1984
17	Total Alkalinity as CaCO <sub>3</sub>	mg/l	160	--	IS 3025 (Part-23): 1986 RA 2019
18	Potassium as K	mg/l	30.4	--	IS 3025 (Part-45): 1993 RA 2019
19	Sodium as Na	mg/l	49.1	--	IS 3025 (Part-45): 1993 RA 2019

*Bhahataray*  
Reviewed by  
(Mr. Bijaya Kumar Chahataray)

*Pradeep Mohapatra*  
Authorized Signatory for Client  
(Mr. Pradeep Mohapatra)  




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Report No.

NABL ULR No.

Name of the Client

Address

Sampling Location

Sample Description

Sampling Plan & Method

Environmental Condition

Sample Collected by

Date of Testing

## TEST REPORT

: WCS2308W03

: TC1122523000000129F

: National Aluminium Company Limited

: Smelter & Power (S&P) Complex

: Angul-759145, Odisha

: Mines Discharge Water

: Surface Water

: WCS/QSP/SAMP (WATER)

: Temperature 29 °C, Clear Weather

: WCS Laboratory

: 10.08.2023 to 16.08.2023

Issue Date

: 16.08.2023

Date of Sampling : 09.08.2023

Date of Receiving : 10.08.2023

Sample ID No : WCS0823W11

Quantity of Sample : 1 Ltr

Sample Condition : Good

Sl. No.	Parameter	Unit	Result	Permissible Limit as per Consent Order No-5059/TND-I-CON-6762 Dt: 28.03.2023	Test Methods
1	pH Value	--	6.958	5.5-9.0	IS 3025 (Part-11): 2022
2	Total suspended Solid	mg/l	15	100	IS 3025 (Part-17): 1984 RA 2012
3	Oil & Grease	mg/l	<4	10	APHA 23rd Ed. (5520-B): 2017
4	Biochemical Oxygen Demand as BOD	mg/l	3.5	--	IS 3025 (Part-44): 1993
5	Chemical Oxygen Demand as COD	mg/l	5.6	250	APHA 23rd Ed. (5220-D): 2017
6	Colour	Hazen	25	--	IS 3025 (Part-4): 2021
7	Specific Conductivity	µs/cm	480	--	IS 3025 (Part-14): 2013
8	Turbidity	NTU	99.9	--	IS 3025 (Part-10): 1984 RA 2017
9	Dissolve Oxygen as DO	mg/l	6.4	--	IS 3025 (Part-38): 1989
10	Total Hardness as CaCO <sub>3</sub>	mg/l	88	--	APHA 23rd Ed. (2340-C): 2017
11	Chloride as Cl	mg/l	47.49	--	IS 3025 (Part-32): 1988
12	Sulphate as SO <sub>4</sub>	mg/l	72.6	--	IS 3025 (Part-24, Sec-1): 2022
13	Nitrate as NO <sub>3</sub>	mg/l	1.62	--	APHA 23rd Ed. (4500-NO <sub>3</sub> -B): 2017
14	Calcium as Ca	mg/l	19.24	--	APHA 23rd Ed. (3500-Ca-B): 2017
15	Magnesium as Mg	mg/l	9.72	--	APHA 23rd Ed. (3500-Mg-B): 2017
16	Total Dissolved Solid as TDS	mg/l	288	--	IS 3025 (Part-16): 1984
17	Total Alkalinity as CaCO <sub>3</sub>	mg/l	145	--	IS 3025 (Part-23): 1986 RA 2019
18	Potassium as K	mg/l	27.6	--	IS 3025 (Part-45): 1993 RA 2019
19	Sodium as Na	mg/l	42.5	--	IS 3025 (Part-45): 1993 RA 2019

*Bhahatary*  
Reviewed by

(Mr. Bijaya Kumar Chahatary)

*Pradeept Mohapatra*  
Authorized Signatory for Chemical  
(Mr. Pradeept Mohapatra)



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## TEST REPORT

Report No. : WCS2308W04 Issue Date : 16.08.2023  
NABL ULR No. : TC1122523000000129F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Seepage Water  
Sample Description : Surface Water Date of Sampling : 09.08.2023  
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 10.08.2023  
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS0823W12  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr  
Date of Testing : 10.08.2023 to 16.08.2023 Sample Condition : Good

Sl. No.	Parameter	Unit	Result	Permissible Limit as per Consent Order No-5059/IND-I-CON-4762 Dt:28.03.2023	Test Methods
1	pH Value	—	6.999	5.5-9.0	IS 3025 (Part-11): 2022
2	Total suspended Solid	mg/l	25	100	IS 3025 (Part-17):1984 RA 2012
3	Oil & Grease	mg/l	<4	10	APHA 23rd Ed. (5520-B): 2017
4	Biochemical Oxygen Demand as BOD	mg/l	<2	—	IS 3025 (Part-44): 1993
5	Chemical Oxygen Demand as COD	mg/l	3.2	250	APHA 23rd Ed. (5220-D): 2017
6	Colour	Hazen	20	—	IS 3025 (Part-4): 2021
7	Specific Conductivity	µs/cm	158	—	IS 3025 (Part-14): 2013
8	Turbidity	NTU	61.8	—	IS 3025 (Part-10): 1984 RA 2017
9	Dissolve Oxygen as DO	mg/l	5.7	—	IS 3025 (Part-38): 1989
10	Total Hardness as CaCO <sub>3</sub>	mg/l	84	—	APHA 23rd Ed. (2340-C): 2017
11	Chloride as Cl	mg/l	54.98	—	IS 3025 (Part-32): 1988
12	Sulphate as SO <sub>4</sub>	mg/l	42.70	—	IS 3025 (Part-24, Sec-I): 2022
13	Nitrate as NO <sub>3</sub>	mg/l	<1	—	APHA 23rd Ed. (4500-NO <sub>3</sub> -B): 2017
14	Calcium as Ca	mg/l	22.44	—	APHA 23rd Ed. (3500-Ca-B): 2017
15	Magnesium as Mg	mg/l	6.80	—	APHA 23rd Ed. (3500-Mg-B): 2017
16	Total Dissolved Solid as TDS	mg/l	275	—	IS 3025 (Part-16): 1984
17	Total Alkalinity as CaCO <sub>3</sub>	mg/l	185	—	IS 3025 (Part-23): 1986 RA 2019
18	Potassium as K	mg/l	6.9	—	IS 3025 (Part-45): 1993 RA 2019
19	Sodium as Na	mg/l	4.7	—	IS 3025 (Part-45): 1993 RA 2019

*Chahataray*  
Reviewed by

(Mr. Bijaya Kumar Chahataray)

Authorized Signatory for Chemical  
(Mr. Pradeep Mohapatra)



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**TEST REPORT**

Report No. : WCS230402B Issue Date : 17.04.2023  
NABL ULR No. : TC112252300000042F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : **Near Colony Township (Bore Well)**  
Sample Description : Ground Water Date of Sampling : 07.04.2023  
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 08.04.2023  
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS0423W02  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr  
Date of Testing : 10.04.2023 to 15.04.2023 Sample Condition : Good

Sl. No.	Parameter	Unit	Result	Requirement as per IS 10500:2012 Reaffirmed 2018	Test Methods
1	Colour	Hazen	2	Max, 5	IS 3025 ( Part-4): 2021
2	Odour	--	Agreeable	Agreeable	IS 3025 ( Part-5): 2018
3	pH Value	--	5.854	6.5-8.5	IS 3025 ( Part-11): 2022
4	Taste Threshold	--	Agreeable	Agreeable	IS 3025 ( Part-7): 2017
5	Turbidity	NTU	0.3	1	IS 3025 ( Part-10 ): 1984 RA 2017
6	Total Dissolved Solid as TDS	mg/l	84	500	IS 3025 ( Part-16): 1984 RA 2017
7	Ammonia as Total ammonia-N	mg/l	0.09	0.5	IS 3025 ( Part-34): 1988 RA 2019
8	Calcium as Ca	mg/l	6.41	75	IS 3025 ( Part-40): 1991 RA 2019
9	Chloride as Cl	mg/l	19.99	250	IS 3025( Part-32): 1988 RA 2019
10	Fluoride as F	mg/l	< 0.02	1.0	APHA 23 <sup>rd</sup> Ed. (4500-F-D): 2017
11	Iron as Fe	mg/l	0.11	1.0	IS 3025 (Part -53): 2003 RA 2019
12	Magnesium as Mg	mg/l	1.458	30	APHA 23 <sup>rd</sup> Ed. (3500-Mg-B): 2017
13	Nitrate as NO <sub>3</sub>	mg/l	11.30	45	APHA 23 <sup>rd</sup> Ed. (4500-NO <sub>3</sub> -B): 2017
14	Sulphate as SO <sub>4</sub>	mg/l	0.61	200	IS 3025 ( Part-24 Sec I):2022
15	Total Alkalinity as CaCO <sub>3</sub>	mg/l	10	200	IS 3025 ( Part-23): 1986 RA 2019
16	Total Hardness as CaCO <sub>3</sub>	mg/l	22	200	IS 3025 ( Part-21): 2009 RA 2019
17	Total Chromium as Cr	mg/l	< 0.02	0.05	IS 3025 ( Part-52) : 2003 RA 2019
18	Potassium as K	mg/l	4.6	--	IS 3025 ( Part-45): 1993 RA 2019



Report No. : WCS230402B

19	Sodium as Na	mg/l	6.2	--	IS 3025 ( Part-45) : 1993 RA 2019
20	Total Suspended Solid as TSS	mg/l	<5	--	IS 3025 ( Part-17): 2022
21	E.Coli	MPN/ 100 ml	<1	Shall not be detectable in any 100 ml sample	IS 1622 : 1981 RA 2019
22	Faecal Coliform	MPN/ 100 ml	<1	--	IS 1622 : 1981 RA 2019
23	Total Coliform	MPN/ 100 ml	2	Shall not be detectable in any 100 ml sample	IS 1622 : 1981 RA 2019

*Bhahataray*

Reviewed by  
(Mr. Bijaya Kumar Chahataray)

*Manaswini Rout*

Authorized Signatory for Microbiology  
(Mrs. Manaswini Rout)

*Pradept Mohapatra*

Authorized Signatory for Chemical  
(Mr. Pradept Mohapatra)

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## TEST REPORT

Report No. : WCS230402B Issue Date : 17.04.2023  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Near Colony Township (Bore Well)  
Sample Description : Ground Water Date of Sampling : 07.04.2023  
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 08.04.2023  
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS0423W02  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr  
Date of Testing : 10.04.2023 to 15.04.2023 Sample Condition : Good

Sl. No.	Parameter	Unit	Result	Requirement as per IS 10500:2012 Reaffirmed 2018	Test Methods
24	Aluminium as Al	mg/l	<0.02	0.03	IS 3025 (Part 55): 2003 RA 2019
25	Anionic detergents as MBAS	mg/l	<0.02	0.2	Annex K of IS 13428
26	Barium as Ba	mg/l	<0.1	0.7	Annex F of IS 13428* or IS 15302
27	Boron as B	mg/l	<0.1	0.5	IS 3025 (Part 57): 2021
28	Chloramines as Cl <sub>2</sub>	mg/l	<0.02	4.0	IS 3025 (Part 26): 2021* or APHA 4500-Cl G
29	Copper as Cu	mg/l	<0.01	0.05	IS 3025 (Part 42): 1992 RA 2019
30	Manganese as Mn	mg/l	<0.05	0.1	IS 3025 (Part 59): 2006 RA 2017
31	Mineral oil	mg/l	<0.5	1.0	Clause 6 of IS 3025 (Part 39): 2021
32	Phenolic compounds as C <sub>6</sub> H <sub>5</sub> OH	mg/l	<0.001	0.001	IS 3025 (Part 43): 1992 RA 2019
33	Selenium as Se	mg/l	<0.001	0.01	IS 3025 (Part 36): 2003 RA 2019 or IS 15303*
34	Silver as Ag	mg/l	<0.02	0.1	Annex J of IS 13428
35	Sulphide as H <sub>2</sub> S	mg/l	<0.05	0.05	IS 3025 (Part 29): 1986 RA 2019
36	Zinc as Zn	mg/l	<0.05	5	IS 3025 (Part 49): 1994 RA 2019
37	Cadmium as Cd	mg/l	<0.001	0.003	IS 3025 (Part 41): 1992 RA 2019
38	Cyanide as CN	mg/l	<0.01	0.05	IS 3025 (Part 27): 1986 RAA 2019
39	Lead as Pb	mg/l	<0.001	0.01	IS 3025 (Part 47): 1994 RA 2019
40	Mercury as Hg	mg/l	<0.001	0.001	IS 3025 (Part 48): 1994 RA 2019
41	Molybdenum as Mo	mg/l	<0.02	0.07	IS 3025 (Part 2)



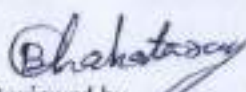
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Report No. : WCS230402B

42	Nickel as Ni	mg/l	<0.01	0.02	IS 3025 (Part 54): 2003 RA 2019
43	Polynuclear aromatic hydrocarbons as PAH	mg/l	<0.0001	0.0001	APHA 6440
44	Total arsenic as As	mg/l	<0.001	0.01	IS 3025 (Part 37):2022



Reviewed by

(Mr. Bijaya Kumar Chahataray)



Authorized Signatory

(Mr. Pradeept Mohapatra)

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WCS/LQR/60

## TEST REPORT

Report No. : WCS230402C Issue Date : 17.04.2023  
NABL ULR No. : TC112252300000042F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Gopiballavpur Village (Tube Well)  
Sample Description : Ground Water Date of Sampling : 07.04.2023  
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 08.04.2023  
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS0423W03  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr  
Date of Testing : 10.04.2023 to 15.04.2023 Sample Condition : Good

Sl. No.	Parameter	Unit	Result	Requirement as per IS 10500:2012 Reaffirmed 2018	Test Methods
1	Colour	Hazen	10	Max. 5	IS 3025 (Part-4): 2021
2	Odour	--	Agreeable	Agreeable	IS 3025 (Part-5): 2018
3	pH Value	--	6.874	5.5-8.5	IS 3025 (Part-11): 2022
4	Taste Threshold	--	Agreeable	Agreeable	IS 3025 (Part-7): 2017
5	Turbidity	NTU	1	1	IS 3025 (Part-10): 1984 RA 2017
6	Total Dissolved Solid as TDS	mg/l	130	500	IS 3025 (Part-16): 1984 RA 2017
7	Ammonia as Total ammonia-N	mg/l	0.22	0.5	IS 3025 (Part-34): 1988 RA 2019
8	Calcium as Ca	mg/l	14.43	75	IS 3025 (Part-40): 1991 RA 2019
9	Chloride as Cl	mg/l	57.98	250	IS 3025 (Part-32): 1988 RA 2019
10	Fluoride as F	mg/l	< 0.02	1.0	APHA 23 <sup>rd</sup> Ed. (4500-F-D): 2017
11	Iron as Fe	mg/l	0.39	1.0	IS 3025 (Part-53): 2003 RA 2019
12	Magnesium as Mg	mg/l	12.64	30	APHA 23 <sup>rd</sup> Ed. (3500-Mg-B): 2017
13	Nitrate as NO <sub>3</sub>	mg/l	< 0.01	45	APHA 23 <sup>rd</sup> Ed. (4500-NO <sub>3</sub> -B): 2017
14	Sulphate as SO <sub>4</sub>	mg/l	< 1	200	IS 3025 (Part-24 Sec 1): 2022
15	Total Alkalinity as CaCO <sub>3</sub>	mg/l	120	200	IS 3025 (Part-23): 1986 RA 2019
16	Total Hardness as CaCO <sub>3</sub>	mg/l	88	200	IS 3025 (Part-21): 2009 RA 2019
17	Total Chromium as Cr	mg/l	< 0.02	0.05	IS 3025 (Part-52): 2003 RA 2019
18	Potassium as K	mg/l	4.5	--	IS 3025 (Part-45): 1993 RA 2019



Report No. : WCS230402C

19	Sodium as Na	mg/l	6.9	--	IS 3025 (Part-45) : 1993 RA 2019
20	Total Suspended Solid as TSS	mg/l	<5	--	IS 3025 (Part-17) : 2022
21	E.Coli	MPN/ 100 ml	<1	Shall not be detectable in any 100 ml sample	IS 1622 : 1981 RA 2019
22	Faecal Coliform	MPN/ 100 ml	<1	--	IS 1622 : 1981 RA 2019
23	Total Coliform	MPN/ 100 ml	<1	Shall not be detectable in any 100 ml sample	IS 1622 : 1981 RA 2019

*Bhahataray*  
Reviewed by

(Mr. Bijaya Kumar Chahataray)

*Manaswini Rout*  
Authorized Signatory for Microbiology  
(Mrs. Manaswini Rout)

*Pradeep Mohapatra*  
Authorized Signatory for Chemical  
(Mr. Pradeep Mohapatra)

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WCS/LQR/60

## TEST REPORT

Report No. : WCS230402C Issue Date : 17.04.2023  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Gopiballavpur Village (Tube Well)  
Sample Description : Ground Water Date of Sampling : 07.04.2023  
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 08.04.2023  
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS0423W03  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr  
Date of Testing : 10.04.2023 to 15.04.2023 Sample Condition : Good

Sl. No.	Parameter	Unit	Result	Requirement as per IS 10500:2012 Reaffirmed 2018	Test Methods
25	Aluminium as Al	mg/l	<0.02	0.03	IS 3025 (Part 55): 2003 RA 2019
26	Anionic detergents as MBAS	mg/l	<0.02	0.2	Annex K of IS 13428
27	Barium as Ba	mg/l	<0.1	0.7	Annex F of IS 13428* or IS 15302
28	Boron as B	mg/l	<0.1	0.5	IS 3025 (Part 57):2021
29	Chloramines as Cl <sub>2</sub>	mg/l	<0.02	4.0	IS 3025 (Part 26): 2021* or APHA 4500-Cl G
30	Copper as Cu	mg/l	<0.01	0.05	IS 3025 (Part 42): 1992 RA 2019
31	Manganese as Mn	mg/l	<0.05	0.1	IS 3025 (Part 59):2006 RA 2017
32	Mineral oil	mg/l	<0.5	1.0	Clause 6 of IS 3025 (Part 39):2021
33	Phenolic compounds as C <sub>6</sub> H <sub>5</sub> OH	mg/l	<0.001	0.001	IS 3025 (Part 43): 1992 RA 2019
34	Selenium as Se	mg/l	<0.001	0.01	IS 3025 (Part 56):2003 RA 2019 or IS 15303*
35	Silver as Ag	mg/l	<0.02	0.1	Annex J of IS 13428
36	Sulphide as H <sub>2</sub> S	mg/l	<0.05	0.05	IS 3025 (Part 29):1986 RA 2019
37	Zinc as Zn	mg/l	<0.05	5	IS 3025 (Part 49):1994 RA 2019
38	Cadmium as Cd	mg/l	<0.001	0.003	IS 3025 (Part 41):1992 RA 2019
39	Cyanide as CN	mg/l	<0.01	0.05	IS 3025 (Part 27):1986 RAA 2019
40	Lead as Pb	mg/l	<0.001	0.01	IS 3025 (Part 47):1994 RA 2019
41	Mercury as Hg	mg/l	<0.001	0.001	IS 3025 (Part 48):1994 RA 2019
42	Molybdenum as Mo	mg/l	<0.02	0.07	IS 3025 (Part 2)



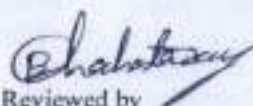
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Report No. : WCS230402C

43	Nickel as Ni	mg/l	<0.01	0.02	IS 3025 (Part 54): 2003 RA 2019
44	Polynuclear aromatic hydrocarbons as PAH	mg/l	<0.0001	0.0001	APHA 6440
45	Total arsenic as As	mg/l	<0.001	0.01	IS 3025 (Part 37):2022



Reviewed by

(Mr. Bijaya Kumar Chahataray)



Authorized Signatory

(Mr. Pradeept Mohapatra)

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WCS/LQR/60

## TEST REPORT

Report No. : WCS230402A Issue Date : 17.04.2023  
NABL ULR No. : TC1122523000000042F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Near Settling Pond (Bore Well)  
Sample Description : Ground Water Date of Sampling : 07.04.2023  
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 08.04.2023  
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS0423W01  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr  
Date of Testing : 10.04.2023 to 15.04.2023 Sample Condition : Good

Sl. No.	Parameter	Unit	Result	Requirement as per IS 10500:2012 Reaffirmed 2018	Test Methods
1	Colour	Hazen	2	Max, 5	IS 3025 ( Part-4): 2021
2	Odour	--	Agreeable	Agreeable	IS 3025 ( Part-5): 2018
3	pH Value	--	6.716	6.5-8.5	IS 3025 ( Part-11): 2022
4	Taste Threshold	--	Agreeable	Agreeable	IS 3025 ( Part-7): 2017
5	Turbidity	NTU	0.4	1	IS 3025 ( Part-10 ): 1984 RA 2017
6	Total Dissolved Solid as TDS	mg/l	264	500	IS 3025 ( Part-16): 1984 RA 2017
7	Ammonia as Total ammonia-N	mg/l	0.17	0.5	IS 3025 ( Part-34): 1988 RA 2019
8	Calcium as Ca	mg/l	33.67	75	IS 3025 ( Part-40): 1991 RA 2019
9	Chloride as Cl	mg/l	43.98	250	IS 3025( Part-32): 1988 RA 2019
10	Fluoride as F	mg/l	< 0.02	1.0	APHA 23 <sup>rd</sup> Ed. (4500-F-D): 2017
11	Iron as Fe	mg/l	0.06	1.0	IS 3025 (Part -53): 2003 RA 2019
12	Magnesium as Mg	mg/l	16.04	30	APHA 23 <sup>rd</sup> Ed. (3500-Mg-B): 2017
13	Nitrate as NO <sub>3</sub>	mg/l	24.03	45	APHA 23 <sup>rd</sup> Ed. (4500-NO <sub>3</sub> -B): 2017
14	Sulphate as SO <sub>4</sub>	mg/l	10.44	200	IS 3025 ( Part-24 Sec 1):2022
15	Total Alkalinity as CaCO <sub>3</sub>	mg/l	125	200	IS 3025 ( Part-23): 1986 RA 2019
16	Total Hardness as CaCO <sub>3</sub>	mg/l	150	200	IS 3025 ( Part-21): 2009 RA 2019
17	Total Chromium as Cr	mg/l	< 0.02	0.05	IS 3025 ( Part-52): 2003 RA 2019
18	Potassium as K	mg/l	4.7	--	IS 3025 ( Part-45): 1993 RA 2019



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Report No. : WCS230402A

19	Sodium as Na	mg/l	6.8	--	IS 3025 ( Part-45) : 1993 RA 2019
20	Total Suspended Solid as TSS	mg/l	<5	--	IS 3025 ( Part-17): 2022
21	E.Coli	MPN/ 100 ml	<1	Shall not be detectable in any 100 ml sample	IS 1622 : 1981 RA 2019
22	Faecal Coliform	MPN/ 100 ml	<1	--	IS 1622 : 1981 RA 2019
23	Total Coliform	MPN/ 100 ml	7	Shall not be detectable in any 100 ml sample	IS 1622 : 1981 RA 2019

*Chahatray*

Reviewed by  
(Mr. Bijaya Kumar Chahatray)

*Manaswini Rout*  
Authorized Signatory for Microbiology  
(Mrs. Manaswini Rout)

*Pradeep Mohapatra*  
Authorized Signatory for Chemical  
(Mr. Pradeep Mohapatra)

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WCS/LQR/60

## TEST REPORT

Report No. : WCS230402A Issue Date : 17.04.2023  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Near Settling Pond (Bore Well)  
Sample Description : Ground Water Date of Sampling : 07.04.2023  
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 08.04.2023  
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS0423W01  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr  
Date of Testing : 10.04.2023 to 15.04.2023 Sample Condition : Good

Sl. No.	Parameter	Unit	Result	Requirement as per IS 10500:2012 Reaffirmed 2018	Test Methods
24	Aluminium as Al	mg/l	<0.02	0.03	IS 3025 (Part 55): 2003 RA 2019
25	Anionic detergents as MBAS	mg/l	<0.02	0.2	Annex K of IS 13428
26	Barium as Ba	mg/l	<0.1	0.7	Annex F of IS 13428* or IS 15302
27	Boron as B	mg/l	<0.1	0.5	IS 3025 (Part 57):2021
28	Chloramines as Cl <sub>2</sub>	mg/l	<0.02	4.0	IS 3025 (Part 26): 2021* or APHA 4500-Cl C
29	Copper as Cu	mg/l	<0.01	0.05	IS 3025 (Part 42):1992 RA 2019
30	Manganese as Mn	mg/l	<0.05	0.1	IS 3025 (Part 59):2006 RA 2017
31	Mineral oil	mg/l	<0.5	1.0	Clause 6 of IS 3025 (Part 39):2021
32	Phenolic compounds as C <sub>6</sub> H <sub>5</sub> OH	mg/l	<0.001	0.001	IS 3025 (Part 43): 1992 RA 2019
33	Selenium as Se	mg/l	<0.001	0.01	IS 3025 (Part 56):2003 RA 2019 or IS 15303*
34	Silver as Ag	mg/l	<0.02	0.1	Annex J of IS 13428
35	Sulphide as H <sub>2</sub> S	mg/l	<0.05	0.05	IS 3025 (Part 29):1986 RA 2019
36	Zinc as Zn	mg/l	<0.05	5	IS 3025 (Part 49):1994 RA 2019
37	Cadmium as Cd	mg/l	<0.001	0.003	IS 3025 (Part 41):1992 RA 2019
38	Cyanide as CN	mg/l	<0.01	0.05	IS 3025 (Part 27):1986 RAA 2019
39	Lead as Pb	mg/l	<0.001	0.01	IS 3025 (Part 47):1994 RA 2019
40	Mercury as Hg	mg/l	<0.001	0.001	IS 3025 (Part 48):1994 RA 2019
41	Molybdenum as Mo	mg/l	<0.02	0.07	IS 3025 (Part 2)



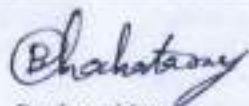
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Report No. : WCS230402A

42	Nickel as Ni	mg/l	<0.01	0.02	IS 3025 (Part 54): 2003 RA 2019
43	Polynuclear aromatic hydrocarbons as PAH	mg/l	<0.0001	0.0001	APHA 6440
44	Total arsenic as As	mg/l	<0.001	0.01	IS 3025 (Part 37):2022



Reviewed by

(Mr. Bijaya Kumar Chahataray)



Authorized Signatory

(Mr. Pradeept Mohapatra)

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## TEST REPORT

Report No. : WCS2308W05 Issue Date : 16.08.2023  
NABL ULR No. : TC1122523000000130F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Colony Area Bore Well No-MAFMT6  
Sample Description : Ground Water Date of Sampling : 09.08.2023  
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 10.08.2023  
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS0823W13  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr  
Date of Testing : 10.08.2023 to 16.08.2023 Sample Condition : Good

Sl. No.	Parameter	Unit	Result	Requirement as per IS 10500:2012 Reaffirmed 2018	Test Methods
1	Colour	Hazen	4	Max. 5	IS 3025 (Part-4): 2021
2	Odour	--	Agreeable	Agreeable	IS 3025 (Part-5): 2018
3	pH Value	--	5.728	6.5-8.5	IS 3025 (Part-11): 2022
4	Taste Threshold	--	Agreeable	Agreeable	IS 3025 (Part-7): 2017
5	Turbidity	NTU	0.4	1	IS 3025 (Part-10): 1984 RA 2017
6	Total Dissolved Solid as TDS	mg/l	142	500	IS 3025 (Part-16): 1984 RA 2017
7	Ammonia as Total ammonia-N	mg/l	0.08	0.5	IS 3025 (Part-34): 1988 RA 2019
8	Calcium as Ca	mg/l	4.81	75	IS 3025 (Part-40): 1991 RA 2019
9	Chloride as Cl	mg/l	19.99	250	IS 3025 (Part-32): 1988 RA 2019
10	Fluoride as F	mg/l	0.01	1.0	APHA 23 <sup>rd</sup> Ed. (4500-F-D): 2017
11	Iron as Fe	mg/l	0.13	1.0	IS 3025 (Part-53): 2003 RA 2019
12	Magnesium as Mg	mg/l	2.92	30	APHA 23 <sup>rd</sup> Ed. (3500-Mg-B): 2017
13	Nitrate as NO <sub>3</sub>	mg/l	11.0	45	APHA 23 <sup>rd</sup> Ed. (4500-NO <sub>3</sub> -B): 2017
14	Sulphate as SO <sub>4</sub>	mg/l	0.60	200	IS 3025 (Part-24 Sec I): 2022
15	Total Alkalinity as CaCO <sub>3</sub>	mg/l	15	200	IS 3025 (Part-23): 1986 RA 2019
16	Total Hardness as CaCO <sub>3</sub>	mg/l	24	200	IS 3025 (Part-21): 2009 RA 2019
17	Total Chromium as Cr	mg/l	<0.02	0.05	IS 3025 (Part-52): 2003 RA 2019
18	Potassium as K	mg/l	4.5	--	IS 3025 (Part-45): 1993 RA 2019





Report No.: WCS2308W05

19	Sodium as Na	mg/l	5.9	--	IS 3025 ( Part-45) : 1993 RA 2019
20	Total Suspended Solid as TSS	mg/l	<5	--	IS 3025 ( Part-17): 2022
21	E.Coli	MPN/ 100 ml	<1	Shall not be detectable in any 100 ml sample	IS 1622 : 1981 RA 2019
22	Faecal Coliform	MPN/ 100 ml	<1	--	IS 1622 : 1981 RA 2019
23	Total Coliform	MPN/ 100 ml	2	Shall not be detectable in any 100 ml sample	IS 1622 : 1981 RA 2019

*Bhahataray*

Reviewed by  
(Mr. Bijaya Kumar Chahataray)

*Manaswini Rout*

Authorized Signatory for Microbiology  
(Mrs. Manaswini Rout)

*Pradeep Mohapatra*

Authorized Signatory for Chemical  
(Mr. Pradeep Mohapatra)

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**TEST REPORT**

Report No. : WCS2308W05 Issue Date : 16.08.2023  
 Name of the Client : National Aluminium Company Limited  
 Address : Smelter & Power (S&P) Complex  
 Angul-750145, Odisha  
 Sampling Location : Colony Area Bore Well No-MAFMT6  
 Sample Description : Ground Water Date of Sampling : 09.08.2023  
 Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 10.08.2023  
 Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS0823W13  
 Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr  
 Date of Testing : 10.08.2023 to 16.08.2023 Sample Condition : Good

Sl. No.	Parameter	Unit	Result	Requirement as per IS 10500:2012 Reaffirmed 2018	Test Methods
24	Aluminium as Al	mg/l	<0.02	0.03	IS 3025 (Part 55): 2003 RA 2019
25	Anionic detergents as MBAS	mg/l	<0.02	0.2	Annex K of IS 13428
26	Barium as Ba	mg/l	<0.1	0.7	Annex F of IS 13428* or IS 15302
27	Boron as B	mg/l	<0.1	0.5	IS 3025 (Part 57): 2021
28	Chloramines as Cl <sub>2</sub>	mg/l	<0.02	4.0	IS 3025 (Part 26): 2021* or APHA 4500-Cl G
29	Copper as Cu	mg/l	<0.01	0.05	IS 3025 (Part 42): 1992 RA 2019
30	Manganese as Mn	mg/l	<0.05	0.1	IS 3025 (Part 59): 2006 RA 2017
31	Mineral oil	mg/l	<0.5	1.0	Clause 6 of IS 3025 (Part 39): 2021
32	Phenolic compounds as C <sub>6</sub> H <sub>5</sub> OH	mg/l	<0.001	0.001	IS 3025 (Part 43): 1992 RA 2019
33	Selenium as Se	mg/l	<0.001	0.01	IS 3025 (Part 56): 2003 RA 2019 or IS 15303*
34	Silver as Ag	mg/l	<0.02	0.1	Annex J of IS 13428
35	Sulphide as H <sub>2</sub> S	mg/l	<0.05	0.05	IS 3025 (Part 29): 1986 RA 2019
36	Zinc as Zn	mg/l	<0.05	5	IS 3025 (Part 49): 1994 RA 2019
37	Cadmium as Cd	mg/l	<0.001	0.003	IS 3025 (Part 41): 1992 RA 2019
38	Cyanide as CN	mg/l	<0.01	0.05	IS 3025 (Part 27): 1986 RAA 2019
39	Lead as Pb	mg/l	<0.001	0.01	IS 3025 (Part 47): 1994 RA 2019
40	Mercury as Hg	mg/l	<0.001	0.001	IS 3025 (Part 48): 1994 RA 2019
41	Molybdenum as Mo	mg/l	<0.02	0.07	IS 3025 (Part 2)



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Report No. : WCS2308W05

42	Nickel as Ni	mg/l	<0.01	0.02	IS 3025 (Part 54): 2003 RA 2019
43	Polynuclear aromatic hydrocarbons as PAH	mg/l	<0.0001	0.0001	APHA 6440
44	Total arsenic as As	mg/l	<0.001	0.01	IS 3025 (Part 37): 2022

*Chahatary*  
Reviewed by

(Mr. Bijaya Kumar Chahatary)

*Pradeept Mohapatra*  
Authorized Signatory

(Mr. Pradeept Mohapatra)

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WCS/LQR/60

## TEST REPORT

Report No. : WCS2308W06 Issue Date : 16.08.2023  
NABL ULR No. : TC1122523000000130F  
Name of the Client : National Aluminium Company Limited  
Address : Smelter & Power (S&P) Complex  
Angul-759145, Odisha  
Sampling Location : Colony Area Bore Well No-MAFMT7  
Sample Description : Ground Water Date of Sampling : 09.08.2023  
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 10.08.2023  
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS0823W14  
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr  
Date of Testing : 10.08.2023 to 16.08.2023 Sample Condition : Good

Sl. No.	Parameter	Unit	Result	Requirement as per IS 10500:2012 Reaffirmed 2018	Test Methods
1	Colour	Hazen	3	Max, 5	IS 3025 ( Part-4): 2021
2	Odour	--	Agreeable	Agreeable	IS 3025 ( Part-5): 2018
3	pH Value	--	5.923	6.5-8.5	IS 3025 ( Part-11): 2022
4	Taste Threshold	--	Agreeable	Agreeable	IS 3025 ( Part-7): 2017
5	Turbidity	NTU	12.8	1	IS 3025 ( Part-10 ): 1984 RA 2017
6	Total Dissolved Solid as TDS	mg/l	134	500	IS 3025 ( Part-16): 1984 RA 2017
7	Ammonia as Total ammonia-N	mg/l	0.08	0.5	IS 3025 ( Part-34): 1988 RA 2019
8	Calcium as Ca	mg/l	5.61	75	IS 3025 ( Part-40): 1991 RA 2019
9	Chloride as Cl	mg/l	19.99	250	IS 3025 ( Part-32): 1988 RA 2019
10	Fluoride as F	mg/l	<0.2	1.0	APHA 23 <sup>rd</sup> Ed. (4500-F-D): 2017
11	Iron as Fe	mg/l	0.12	1.0	IS 3025 (Part -53): 2003 RA 2019
12	Magnesium as Mg	mg/l	1.94	30	APHA 23 <sup>rd</sup> Ed. (3500-Mg-B): 2017
13	Nitrate as NO <sub>3</sub>	mg/l	11	45	APHA 23 <sup>rd</sup> Ed. (4500-NO <sub>3</sub> -B): 2017
14	Sulphate as SO <sub>4</sub>	mg/l	0.6	200	IS 3025 ( Part-24 Sec 1):2022
15	Total Alkalinity as CaCO <sub>3</sub>	mg/l	20	200	IS 3025 ( Part-23): 1986 RA 2019
16	Total Hardness as CaCO <sub>3</sub>	mg/l	22	200	IS 3025 ( Part-21): 2009 RA 2019
17	Total Chromium as Cr	mg/l	<0.02	0.05	IS 3025 ( Part-52): 2003 RA 2019
18	Potassium as K	mg/l	4.7	--	IS 3025 ( Part-45): 1993 RA 2019





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19	Sodium as Na	mg/l	6.1	--	IS 3025 ( Part-45) : 1993 RA 2019
20	Total Suspended Solid as TSS	mg/l	5	--	IS 3025 ( Part-17) : 2022
21	E.Coli	MPN/ 100 ml	<1	Shall not be detectable in any 100 ml sample	IS 1622 : 1981 RA 2019
22	Faecal Coliform	MPN/ 100 ml	<1	--	IS 1622 : 1981 RA 2019
23	Total Coliform	MPN/ 100 ml	2	Shall not be detectable in any 100 ml sample	IS 1622 : 1981 RA 2019

*Bijaya Kumar*

Reviewed by

(Mr. Bijaya Kumar Chahataray)

*Manaswini Rout*

Authorized Signatory for Microbiology

(Mrs. Manaswini Rout)

*Pradeep Mohapatra*

Authorized Signatory for Chemical

(Mr. Pradeep Mohapatra)

N.B.:

- The results relate to the sample received in respect to the Parameters tested.
- Liability for return of sample ceases after 7 days from the date of Test certificate.
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-END OF REPORT-



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WCS/LQR/60

**TEST REPORT**

Report No. : WCS2308W06 Issue Date : 16.08.2023  
Name of the Client : **National Aluminium Company Limited**  
Address : **Smelter & Power (S&P) Complex**  
**Angul-759145, Odisha**  
Sampling Location : **Colony Area Bore Well No-MAFMT7**  
Sample Description : **Ground Water** Date of Sampling : **09.08.2023**  
Sampling Plan & Method : **WCS/QSP/SAMP (WATER)** Date of Receiving : **10.08.2023**  
Environmental Condition : **Temperature 29 °C, Clear Weather** Sample ID No : **WCS0823W14**  
Sample Collected by : **WCS Laboratory** Quantity of Sample : **1 Ltr**  
Date of Testing : **10.08.2023 to 16.08.2023** Sample Condition : **Good**

Sl. No.	Parameter	Unit	Result	Requirement as per IS 10500:2012 Reaffirmed 2018	Test Methods
24	Aluminium as Al	mg/l	<0.02	0.03	IS 3025 (Part 55): 2003 RA 2019
25	Anionic detergents as MBAS	mg/l	<0.02	0.2	Annex K of IS 13428
26	Barium as Ba	mg/l	<0.1	0.7	Annex F of IS 13428* or IS 15302
27	Boron as B	mg/l	<0.1	0.5	IS 3025 (Part 57): 2021
28	Chloramines as Cl <sub>2</sub>	mg/l	<0.02	4.0	IS 3025 (Part 26): 2021* or APHA 4500-Cl G
29	Copper as Cu	mg/l	<0.01	0.05	IS 3025 (Part 42): 1992 RA 2019
30	Manganese as Mn	mg/l	<0.05	0.1	IS 3025 (Part 59): 2006 RA 2017
31	Mineral oil	mg/l	<0.5	1.0	Clause 6 of IS 3025 (Part 39): 2021
32	Phenolic compounds as C <sub>6</sub> H <sub>5</sub> OH	mg/l	<0.001	0.001	IS 3025 (Part 43): 1992 RA 2019
33	Selenium as Se	mg/l	<0.001	0.01	IS 3025 (Part 56): 2003 RA 2019 or IS 15303*
34	Silver as Ag	mg/l	<0.02	0.1	Annex J of IS 13428
35	Sulphide as H <sub>2</sub> S	mg/l	<0.05	0.05	IS 3025 (Part 29): 1986 RA 2019
36	Zinc as Zn	mg/l	<0.05	5	IS 3025 (Part 49): 1994 RA 2019
37	Cadmium as Cd	mg/l	<0.001	0.003	IS 3025 (Part 41): 1992 RA 2019
38	Cyanide as CN	mg/l	<0.01	0.05	IS 3025 (Part 27): 1986 RAA 2019
39	Lead as Pb	mg/l	<0.001	0.01	IS 3025 (Part 47): 1994 RA 2019
40	Mercury as Hg	mg/l	<0.001	0.001	IS 3025 (Part 48): 1994 RA 2019
41	Molybdenum as Mo	mg/l	<0.02	0.07	IS 3025 (Part 2)



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Report No. : WCS2308W06

42	Nickel as Ni	mg/l	<0.01	0.01	IS 3025 (Part 54): 2003 RA 2019
43	Polynuclear aromatic hydrocarbons as PAH	mg/l	<0.0001	0.0001	APHA 6440
44	Total arsenic as As	mg/l	<0.001	0.01	IS 3025 (Part 37):2022

*Chahataray*

Reviewed by

(Mr. Bijaya Kumar Chahataray)

*Pradeep Mohapatra*

Authorized Signatory

(Mr. Pradeep Mohapatra)

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ANNEXURE 3

HEALTH CHECK REPORT

**UTKAL POLYCLINIC**  
CENTRE FOR ENVIRONMENT & OCCUPATIONAL HEALTH

Registered under the Orissa Clinical Establishment Control and Regulation Act, 1990 & Rules 1994 (Regd. No.: 35/1998)  
C-19, PALASPALLI, AERODROME AREA, BHUBANESWAR, ODISHA, PIN - 751020. PHONE : 0674-2593456  
[ AN ISO 9001 : 2015 CERTIFIED ORGANISATION ]

LIST OF EMPLOYEES UNDERGONE IME/PME  
HELD DURING OCTOBER 2023

UTKAL D & E COAL MINES, UCMPL MDO OF NALCO LTD.

C. NO.	NAME	DESIGNATION	SEX	AGE	A. R. NO.	IME/PME	REMARKS
DL-0054	ALOK PALAI	DET. RECORD KEEPER	M	24	*	IME	FIT FOR EMPLOYMENT
DL-0055	MD AZHARUDDIN	ASST. SURVEYOR	M	31	*	IME	FIT FOR EMPLOYMENT
DL-0056	YERRANNA PADISETTI	MESS SUPERVISOR	M	40	*	IME	FIT FOR EMPLOYMENT
DL-0057	MADAN LAL MAHANTA	COOK	M	48	45	IME	FIT FOR EMPLOYMENT
DL-0058	GHASHI KUMAR MAHTO	SURVEY HELPER	M	43	31	IME	FIT FOR EMPLOYMENT
DL-0059	SAROU KUMAR SARANGI	SR. CHEMIST	M	31	38	IME	FIT FOR EMPLOYMENT
DL-0060	T S SAMRAT KESHARI PATRA	JR. CHEMIST	M	36	32	IME	FIT FOR EMPLOYMENT
DL-0061	KALANDI PRADHAN	SURVEY HELPER	M	32	31	IME	FIT FOR EMPLOYMENT
DL-0062	PARTHA SAURI	SUPERVISOR(CIVIL)	M	21	30	IME	FIT FOR EMPLOYMENT
DL-0063	SRIDHAR MANTRI	SURVEY HELPER	M	36	24	IME	FIT FOR EMPLOYMENT
DL-0064	RAMESH KUMAR PRADHAN	SUPERVISOR(TRANSPORT)	M	24	24	IME	FIT FOR EMPLOYMENT
DL-0065	JAGANNATH DAS	OFFICE BOY	M	24	18	IME	FIT FOR EMPLOYMENT
DL-0066	DOOPATHI PARTHA SARATHI SATYA	2ND CLASS MINES MANAGER	M	38	25	IME	FIT FOR EMPLOYMENT
DL-0067	MD JALALUDDIN	DOZER OPERATOR	M	36	64	IME	FIT FOR EMPLOYMENT
DL-0068	GHEKANTA MAYAK	DOZER OPERATOR	M	54	32	IME	FIT FOR EMPLOYMENT
DL-0069	ASHOK DOPE	LHM MECHANIC	M	32	34	IME	FIT FOR EMPLOYMENT
DL-0070	MIRANJAN PANDA	LOADER OPERATOR	M	34	34	IME	FIT FOR EMPLOYMENT
DL-0071	LAXMIDHAR JENA	ASST. COOK	M	34	65	IME	FIT FOR EMPLOYMENT
DL-0072	SRUKANTA JENA	JR. ENGINEER	M	35	29	IME	FIT FOR EMPLOYMENT
DL-0073	RAKESH KUMAR SAHOO	OVERMAN	M	29	23	IME	FIT FOR EMPLOYMENT
DL-0074	GANESHWAR DEHURY	COOK	M	25	43	IME	FIT FOR EMPLOYMENT
DL-0075	SAGUDESA BISWAL	STORE ASST.	M	49	31	IME	FIT FOR EMPLOYMENT
DL-0076	DEEPAK KUMAR JENA	PLUMBER	M	21	26	IME	FIT FOR EMPLOYMENT
DL-0077	LOKENDRA SINGH	SUPERVISOR(HORTICULTURE)	M	28	33	IME	FIT FOR EMPLOYMENT
DL-0078	KESHORE BABU SEELA	HEAD (ELECT.)	M	33	46	IME	FIT FOR EMPLOYMENT
DL-0079	SHIV RAM JHA	AGRICULT.	M	40	55	IME	FIT FOR EMPLOYMENT
DL-0080	PRIJ SATYANARAYANA	STORE INCHARGE	M	25	33	IME	FIT FOR EMPLOYMENT
DL-0081	BABAL NAYAK	DOZER OPERATOR	M	33	32	IME	FIT FOR EMPLOYMENT
DL-0082	SAMA ADINARAYANA	STORE EXECUTIVE	M	27	44	IME	FIT FOR EMPLOYMENT
DL-0083	SUKASH DAS	GET(ELECT.)	M	44	23	IME	FIT FOR EMPLOYMENT
DL-0084	AMANDA CHANDRA SAROU	COOK	M	23	43	IME	FIT FOR EMPLOYMENT
DL-0085	TALARI MADHU	SR. ENGINEER(CIVIL)	M	45	39	IME	FIT FOR EMPLOYMENT
DL-0086	BRUSTI CHANDAN SARAU	DEPUTY MANAGER	M	23	35	IME	FIT FOR EMPLOYMENT
DL-0087	SURRAT KUMAR PAL	PHARMACIST	M	35	47	IME	FIT FOR EMPLOYMENT
DL-0088	GODITHURI PRASAD	DIESEL TANKER DRIVER	M	47	18	IME	FIT FOR EMPLOYMENT
DL-0089	SUKALA SAMYASI NAIDU	DIESEL SUPERVISOR	M	39	11	IME	FIT FOR EMPLOYMENT
DL-0090	RAJESH KUMAR PATRA	STORE ASST.	M	31	27	IME	FIT FOR EMPLOYMENT
DL-0091	MOKA SRINIVASA RAO	SR. ENGINEER(CIVIL)	M	27	31	IME	FIT FOR EMPLOYMENT
DL-0092	CHITRELA NANALI	DIESEL TANKER DRIVER	M	31	35	IME	FIT FOR EMPLOYMENT
DL-0093	KALIA GOUDA	PUMP OPERATOR	M	55	26	IME	FIT FOR EMPLOYMENT
DL-0094	BURLA KALYANA PRASAD NAIDU	DIESEL SUPERVISOR	M	26	22	IME	FIT FOR EMPLOYMENT
DL-0095	BATISH SHARMA	ASST. MANAGER(MIS)	M	23	32	IME	FIT FOR EMPLOYMENT
DL-0096	SANKARAN KESHARI PANDA	MANAGER (LAND)	M	37	52	IME	FIT FOR EMPLOYMENT
DL-0097	SRUKANTA KUMAR SWAIN	DEO(LAND)	M	50	35	IME	FIT FOR EMPLOYMENT
DL-0098	L R VENKATA SWA RAM REDDY	INCHARGE(SUM)	M	35	53	IME	FIT FOR EMPLOYMENT
DL-0099	WANGCHALA MAHANTY	SUPERVISOR(MINING)	M	53	25	IME	FIT FOR EMPLOYMENT
DL-0400	DEBAS SH SWAIN	SUPERVISOR(TRANSPORT)	M	25	23	IME	FIT FOR EMPLOYMENT
DL-0401	SAHDEV KUMAR	SUPERVISOR(TRANSPORT)	M	29	27	IME	FIT FOR EMPLOYMENT
DL-0402	JAGANNATH MALEK	SUPERVISOR(TRANSPORT)	M	27	34	IME	FIT FOR EMPLOYMENT

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DL-0403	SAHAYA KUMAR DEHERA	SUPERVISOR(TRANSPORT)	24	25	+	ME	FIT FOR EMPLOYMENT
DL-0404	CHHOTI BABU PATHE	SUPERVISOR(TRANSPORT)	26	30	+	ME	FIT FOR EMPLOYMENT
DL-0405	SHIVRANGSHU CHETWAR SAHU	OVERMAN(MINING)	30	30	+	ME	FIT FOR EMPLOYMENT
DL-0406	PRASADASHAN SAHOO	ASST. MANAGER(MINING)	30	34	+	ME	FIT FOR EMPLOYMENT
DL-0407	GOPAL KRISHNA MOHANTA	MESS SUPERVISOR	25	23	+	ME	FIT FOR EMPLOYMENT
DL-0408	CHAITANYA GOSWAMI	COOK	23	13	+	ME	FIT FOR EMPLOYMENT
DL-0409	SRINWASA RAO	MANAGER (PROJECT)	33	41	+	ME	FIT FOR EMPLOYMENT
DL-0410	SISHIR KANAR	ASST. COOK	41	26	+	ME	FIT FOR EMPLOYMENT
DL-0411	PRAVESH KUMAR	BOILER OPERATOR	08	37	+	ME	FIT FOR EMPLOYMENT
DL-0412	SANDEEP KUMAR SAHU	OVERMAN(MINING)	27	27	+	ME	FIT FOR EMPLOYMENT
DL-0413	TAPAS KARMAR	INDICATOR(TRANSPORT)	27	23	+	ME	FIT FOR EMPLOYMENT
DL-0414	BRAGABAN BISWAL	SUPERVISOR(TRANSPORT)	30	41	+	ME	FIT FOR EMPLOYMENT
DL-0415	ANIL KUMAR	HR EXECUTIVE(ADMIN.)	41	45	+	ME	FIT FOR EMPLOYMENT
DL-0416	S RAMAN	STORE EXECUTIVE	48	24	+	ME	FIT FOR EMPLOYMENT
DL-0417	KORAI THIRUNOHAM	MANAGER (PROJECT)	34	32	+	ME	FIT FOR EMPLOYMENT
DL-0418	MADHUS CHANDRA MALIK	TRIPPER DRIVER	32	30	+	ME	FIT FOR EMPLOYMENT
DL-0419	SURESH NAYAK	ASST. COOK	35	29	+	ME	FIT FOR EMPLOYMENT
DL-0420	BALAJESUSHMA MALIK	DRIVER	25	32	+	ME	FIT FOR EMPLOYMENT
DL-0421	SUNIL SAHU	ST. MANAGER(EO & CO)	40	41	+	ME	FIT FOR EMPLOYMENT
DL-0422	SURESHAN DEBI	LMT DRIVER	41	34	+	ME	FIT FOR EMPLOYMENT
DL-0423	SASANTA KUMAR MALIK	VOLVO DRIVER	33	25	+	ME	FIT FOR EMPLOYMENT
DL-0424	YOGENDRA KUMAR CHANDRA	SUPERVISOR(MTU)	24	25	+	ME	FIT FOR EMPLOYMENT
DL-0425	SHAKTIPRASHU SAHOO	COOK	24	34	+	ME	FIT FOR EMPLOYMENT
DL-0426	RUPESH MOHAPATRA	EXECUTIVE(PURCHASE)	35	29	+	ME	FIT FOR EMPLOYMENT
DL-0427	SARAJ PADH	EXECUTIVE(ME)	20	25	+	ME	FIT FOR EMPLOYMENT
DL-0428	KONDURU DEVA RAMARAO	MANAGER (SURVEY)	36	31	+	ME	FIT FOR EMPLOYMENT
DL-0429	SUDHAR KUMAR MOHAPATRA	HR. HR EXECUTIVE(ADMIN.)	31	32	+	ME	FIT FOR EMPLOYMENT
DL-0430	DEVARA SARWAN JENA	SUPERVISOR(TRANSPORT)	32	30	+	ME	FIT FOR EMPLOYMENT
DL-0431	SHIBA PRASANNA SWAIN	SUPERVISOR(TRANSPORT)	33	25	+	ME	FIT FOR EMPLOYMENT
DL-0432	SUDIPUDI RATNABABU	ASST. MANAGER(ACCOUNTS)	25	30	+	ME	FIT FOR EMPLOYMENT
DL-0433	JITENDRA KUMAR MALLIK	VOLVO DRIVER	30	12	+	ME	FIT FOR EMPLOYMENT
DL-0434	SURESWAN MALLIK	VOLVO DRIVER	33	32	+	ME	FIT FOR EMPLOYMENT
DL-0435	PRADIPATI SATYANARAYANA	INCHARGE(TRANSPORT)	18	30	+	ME	FIT FOR EMPLOYMENT
DL-0436	JAYA SAJI SHI	HELPER(OPP)	24	30	+	ME	FIT FOR EMPLOYMENT
DL-0437	KARANAM CHANDRASEKHAR	SUPERVISOR(ORP)	20	39	+	ME	FIT FOR EMPLOYMENT
DL-0438	LAKSHODAR MOHAMTA	BLASTING HELPER	39	37	+	ME	FIT FOR EMPLOYMENT
DL-0439	RAJESH KUMAR MALLICK	BLASTING HELPER	37	37	+	ME	FIT FOR EMPLOYMENT
DL-0440	BRABAI PATRA	BLASTING HELPER	37	33	+	ME	FIT FOR EMPLOYMENT
DL-0441	RAJESH MOHANTA	BLASTING HELPER	30	31	+	ME	FIT FOR EMPLOYMENT
DL-0442	UMAKRISHNETTI VENKATA PULLAIAH	MINING MATE(MINING)	31	43	+	ME	FIT FOR EMPLOYMENT
DL-0443	DEEPA KUMAR PRADHAN	INCHARGE(TRANSPORT)	42	45	+	ME	FIT FOR EMPLOYMENT

checked  
25/10/2023  
  




PHOTOGRAPH OF UTKAL-D COAL MINES  
GARLAND DRAIN



TOP SOIL DUMP



OB DUMP





WATER SPRINKLING



DRILL MACHINE WITH WATER SPRINKLER



SURFACE MINER







WATER SPRINKLING ON COAL STOCK YARD





MIST CANON







SETTLING POND





DIVERSION OF NALLAH







NALLAH EMBANKMENT



VEHICLE WHEEL WASHING STATION



PLANTATION

