नालको NALCO
NATIONAL ALUMINIUM COMPANY LIMITED
(A Government of India Enterprise)
PANCHPATMALI BAUXITE MINE
Mines & Refinery Complex
D A M A N J O D I – 763008
Dist. KORAPUT (ODISHA)
Ph-06853-268001, Fax-06853-268002/268003

Ref-NAL/MIN/CGM(Mines)/2025/82 Date: 29.10.2025

To,

The Deputy Director General of Forests (C),
Ministry of Environment, Forest and Climate Change, Regional Office,
A/3, Chandrasekaharpur, Bhubaneshwar-751023

Sub:- Submission of Six monthly compliance status report on Environmental Clearance conditions for the period 1st April 2025 to 30th September 2025 in respect of Panchpatmali South Block Bauxite Mine ,NALCO.

Ref- (1) Env. Clearance Letter no. No. J-11015/78/2010-1A. II (M) Dt. 28-02-2011 from MoEF & CC, GOI.
(2) Env Clearance no. J-11015/78/2010-1A.II (M) Dt.26-10-2018 from MoEF &CC, GOI

Dear Madam/Sir,

Please find enclosed herewith the six monthly compliance reports against the condition of above referred Environmental Clearances for the period 1st April 2025 to 30th Sept 2025 in respect of Panchpatmali South block Bauxite Mine, NALCO. This is for your kind information and perusal please

Thanking you,

Yours faithfully,

29/10/25

(P Mohanta)
Chief General Manager(Mines)

PURUSOTTAM MOHANTA
Chief General Manager (Mines)
Panchpatmali Bauxite Mines
NALCO, Damanjodi-763008

Encl- As above

Copy-

-Additional Secretery (IA) –for kind information
Ministry of Environment & Forests & Climate Change
Govt of India, Indira Paryavaran Bhawan, Aliganj,
Jorbagh Road, New Delhi-110 003.

-The Member Secretery, (Central) – for kind information
State pollution Control Board, Odisha
A/118, Nilakantha nagar,
Bhubaneswar-751012

-The D.F.O. -for kind information
Koraput Division, Koraput

STATUS OF COMPLIANCE TO THE CONDITIONS STIPULATED IN ENV. CLEARANCE FOR BAUXITE PRODUCTION @ 3.15 MTPY WITH RESPECT TO PANCHPATMALI SOUTH BLOCK BAUXITE MINE ,NALCO

(Ministry Letter No. J-11015/78/2010-IA. II(M) Dt. 28-02-2011)

<table>
<tr><th>Sl.No.</th><th>A. Special Conditions</th><th>Status of Compliance as on 30.09.2025</th></tr>
<tr><td>I</td><td>All the conditions stipulated by State Pollution Control Board Odisha in their Consent to Establish shall be effectively implemented.</td><td>The consent to establish for 3.15 MTPY production capacity for South Block was obtained from SPCB, Odisha vide letter no. 16733/Ind-II-NOC-6041, DTD. 21-11-2016. The operation project (South Block) has started operation from 22.5.2017. All the conditions prescribed by SPCB, Odisha are being effectively implemented.</td></tr>
<tr><td>II</td><td>The project proponent shall obtain Consent to Operate from the State Pollution Control Board and effectively implement all the conditions stipulated therein.</td><td>The consent to operate from State Pollution Control Board ,Odisha for operation of South Block has been obtained vide SPCB order No.-. 4822 /IND-I-CON-6387 ,Dtd. 30-03-2024/ CONSENT ORDER NO. 2837, which is valid till 31.3.2026. All the conditions stipulated therein are being implemented.</td></tr>
<tr><td>III</td><td>The environmental clearance is subject to grant of forestry clearance. Necessary forestry clearance under the Forest (Conservation) Act,1980 for an area of 189.552 ha forest land involved in the project shall be obtained before starting mining operation in that area. No mining shall be undertaken in the forest area without obtaining requisite prior forest clearance.</td><td>Stage-II Forest clearance over 110.3 ha and 79.252 ha of forest land for South Block has already been accorded by MOEF&CC vide Letter No. 8-330/1983-FC (Pt-I) dated 20th July 2011 and No FE-DIV-FLD-0091-2021-1640/FE&CC, Bhubaneswar, dated 25th January 2024 10F(Cons) 178/2015) respectively.</td></tr>
<tr><td>IV</td><td>The project proponent shall ensure that no natural watercourse and / or water resources are obstructed due to any mining operations. Adequate measures shall be taken while diverting seasonal channels emanating from the mine lease, during the course of mining operation.</td><td>No Natural water course exists on hilltop/ plateau top. Mining operation is confined to hill top shall in no way obstruct natural water course. No rain water from the mining area is allowed to flow down below the valley by making provisions for peripheral barriers.</td></tr>
<tr><td>V</td><td>The mining operations shall be confined to the hill tops only and restricted to above ground water table and it should not intersect the groundwater table. In case of working below the ground water table, prior approval of the Ministry of Environment and Forests and the Central Ground Water Authority shall be obtained, for which a detailed hydro-geological study shall be carried out</td><td>It is revealed from a study by RAMKY (in Year 2010) that the ground water table exists below 80 mtr. from the plateau top. As the Mining activities would be limited to only 35 Mtrs from the surface, there will be no impact of Mining operation on the ground water / aquifers.</td></tr>
<tr><td>VI</td><td>The top soil shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation.</td><td>Initially top soil was being removed and was being stored temporarily to be used for concurrent land reclamation and rehabilitation. However these have been started to be reused concurrently from 2020-21.
The top soil generated and stored for reclamation are as follows.
<table>
<tr><th>Year</th><th>Top soil generated (MT)</th><th>Top soil utilized (MT)</th><th>Top soil stored/Closing Balance (MT)</th></tr>
<tr><td>2019-20</td><td>14050</td><td>14050</td><td>Nil</td></tr>
<tr><td>2020-21</td><td>41,600</td><td>41,600</td><td>Nil</td></tr>
<tr><td>2021-22</td><td>Nil</td><td>Nil</td><td>Nil</td></tr>
<tr><td>2022-23</td><td>Nil</td><td>Nil</td><td>Nil</td></tr>
<tr><td>2023-24</td><td>Nil</td><td>Nil</td><td>Nil</td></tr>
<tr><td>2024-25</td><td>Nil</td><td>Nil</td><td>Nil</td></tr>
</table></td></tr>
</table>

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		2025-26 as on 30.09.2025	Nil	Nil	Nil
VII	The overburden (OB) generated shall be temporarily stacked in the identified sites for backfilling. Backfilling shall start from 2021-22 and there shall be no external over burden dumps. The entire excavated area shall be progressively reclaimed by backfilling and afforested. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment and Forest and its Regional Office located at Bhubaneswar on six monthly basis.	In the initial stages of excavation for the first three years i.e till 2019-20, overburden (Top soil + Laterite) was being excavated and was stacked at designated places, which has started to be rehandled for backfilling of the mined out area from 2020-21. The entire excavated is progressively reclaimed by backfilling and is rehabilitated with afforestation. The plantation in the rehabilitated area will be maintained till the vegetation becomes self-sustaining. Compliance status is being submitted to MOEF every six months. The OB generated (including top soil) and stored for reclamation are as follows.			
		Year	OB generated (MT)	OB utilized (MT)	OB stored/Closing Balance (MT)
		2019-20	119950	Nil	321000
		2020-21	158500	57600	421900
		2021-22	1,65,000	1,65,000	Nil
		2022-23	153390	153390	Nil
		2023-24	150060	150060	Nil
		2024-25	150250	150250	Nil
		2025-26 as on 30.09.2025	55000	55000	Nil
viii	Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, soil and mineral dumps to prevent run off of water and flow of sediments directly into the water bodies. The water so collected shall be utilized for watering the mine area, roads, green belt development etc. the drains shall be regularly desilted, particularly after the monsoon, and maintained properly. Garland drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed around the mine pit, topsoil dumps and the mineral dumps to prevent run off of water and flow of sediments directly into the water bodies and sump capacity shall be designed keeping 50 % safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity shall also provide adequate retention period to allow proper settling of silt material. Sedimentation pits shall be constructed at the corners of the garland drains and desilted at regular intervals.	Siltation ponds of adequate size has been provided to collect sediments from the mineral stock pile area during rain through drains. Rain water accumulated in the sedimentation ponds cannot go out due to peripheral barrier and percolates down through porous mined out surface. Peripheral barriers have been provided on the sides which will prevent any rain water carrying mud and silt from going outside. Inside the mine, sedimentation pits of adequate size are being kept which collect water through drains with natural gradient. Due to porous nature of the mined out surface, the rain water percolates down to recharge the ground water. There will be no waste dumps or OB dumps as concurrent reclamation method has been adopted. The sedimentation pits will be cleaned periodically to maintain the sump capacity to hold water.			
Ix	Dimension of the retaining wall at the OB benches within the mine to check run-off and siltation should be based on the rainfall data.	No retaining wall is required as the height of initial OB dump would not be more than 4 mtr & all OB excavated are being used for concurrent backfilling and reclamation.			
X	The project proponent shall develop a 7.5 m wide green belt in the safety zone all around the mining lease. In addition, plantation shall be raised in the backfilled	A green belt having minimum width of 7.5 mtr is being developed all around the Mined out area in the safety zone from 2017-18 as per scheme developed in consultation with DFO, Koraput. In addition to			

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<table>
<tr><td></td><td>and the reclaimed area, around void roads etc. by planting the native species in consultation with the local DFO / Agriculture Department. The density of the trees should be around 2500 plants per ha. Green belt shall be developed all around the mining lease area in a phased manner and shall be within first five years.</td><td>that plantation is also carried out in the backfilled/reclaimed area. Native species like Silver Oak, Jamun, Rose Apple, Guava, Mangos, Jackfruit,Tamarind , Karani, etc are being planted @ 2500 plants /ha for development of the green belt in consultation with DFO. Further the CPCB guideline for green belt development is also taken into account.

At present plantation is going on for South Block. As on 30.9.2025 the plantation carried out in different areas are as follows.
(i) Mined out area : 27,567
(ii) Other areas like Safety zone and other barren land(Hill slope area/Conveyor Corrider/Access Road /KV Line Area): 635004

Total trees planted in South Block as on 30.9.2025 is 6,62,565.
In addition to the above plantation, as on date Miyawaki plantation also carried out in Panchpatmali South Block with an area of 0.75 Ha with 7000 Nos of saplings.</td></tr>
<tr><td>Xi</td><td>Effective safeguard measures such as Regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as around loading and unloading point and all transfer point. Extensive water sprinkling shall be carried out on haul roads. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.</td><td>Regular water sprinkling is being done using self-propelled mobile water tankers.

Provision of PLC controlled Auto sprinkling system installed over Permanent haul roads (4 km).

From January 2017, AAQ monitoring for South Block has been started at 5 locations. These are A11 (View Point,South Block), A12 (Putraghati Village), A13(Bhitara Bhejaput Village), A14(Lachumani Village) and A15(Mundagahrati Village). The AAQ monitoring results conform to the norms prescribed by CPCB.

The latest results of ambient air analysis are given at Annexure-I.</td></tr>
<tr><td>Xii</td><td>The project authority shall implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.</td><td>The plateau top, where the mining operation is confined, stands out about 300 mtr above the surrounding valley areas. The permanent ground water table exists at a depth of below 80 mtr.

At present, 2 nos. of rain water harvesting reservoirs have been developed atop the mines. The capacity of the two nos of ponds are as follows.

<table>
<tr><th>Sl No.</th><th>Decription</th><th>Capacity of storage in cum.</th></tr>
<tr><td>1</td><td>Pond-no-1</td><td>6156</td></tr>
<tr><td>2</td><td>Pond no-2</td><td>6300</td></tr>
<tr><td>3</td><td>Pond no-3</td><td>3200</td></tr>
</table>

Also, rooftop rainwater harvesting structures for the Administration Building, Mine Manager's Building and MVT centre have been provided to augment ground water recharging.

Further, the method of Mining & the peripheral barrier all around will not allow the storm water from within the mining area to go outside valley areas. The water thus trapped, will percolate down & recharge the ground water.

Further as per advice of CGWB, Bhubaneswar, a suitable agency (M/s Geoenvitech Research & Services Pvt Ltd, Bhubaneswar) was appointed for carrying out a hydro-geological study for suggesting measures for rain water harvesting and augmentation of ground water resources. The report has been prepared and recommendations are implemented.</td></tr>
</table>

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<table>
<tr><td>xiii</td><td>Regular monitoring of ground water level and quality shall be carried out in and around the mine lease by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring shall be carried out four times in a year, pre-monsoon (April-May) , monsoon (August), Post-monsoon (November) and winter (January) and the data thus collected may be sent regularly to the Ministry of Environment and Forest and its Regional Office, Bhubaneswar, the Central Ground Water Authority and the Regional Director, Central Ground Water Board. If at any stage, it is observed that the ground water table is getting depleted due to the mining activity, necessary corrective measures shall be carried out.</td><td>The ground water level was monitored by M/s RAMKY (in Yr 2010) by construction of borewells. It was found that the ground water table exists at a great depth i.e. below 80 mtr. from the plateau top.
The ground water quality monitoring is done during April, August, November and January every year. The monitoring locations are (15 nos) MetingiVillage,Chhatamba Village, Jharhiapadar Village, Tentulipadar Village, Ichhapur Village, Mundagarhati Village, Bijaghati Village, Putraghati Village, Putraghati Village, Chararha Village, Kapsiput Village, Jambagurha Village, Shriguda Village, KakirigumaVillage,and Sorishapadar Village below the hills.These villages come in the impact zone of both Central and North Block as well as in the South Block. For 2025-26 as on 30.09.2025, the results are given at annexure-II.

The parameters mostly conform to the permissible values as per IS 10500:2012. (drinking water standard). No adverse impact on the water resources of tube wells have been observed.

One no of piezometer has been constructed for monitoring of ground water level.</td></tr>
<tr><td>xiv</td><td>The project authorities shall practice suitable rainwater harvesting measures on long term basis and shall work out a detailed scheme in consultation with the Regional Director, Central Ground Water Board</td><td>The plateau top , where the mining operation is confined, stands out about 300 mtr above the surrounding valley areas. The permanent ground water table exists at a depth of below 80 mtr.

At present, 3 nos. of rain water harvesting reservoirs have been developed atop the mines. The capacity of the three nos of ponds are as follows.

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Further as per advice of CGWB, Bhubaneswar , a suitable agency (M/s Geoenvitech Research & Services Pvt Ltd , Bhubaneswar) was appointed for carrying out a hydro-geological study for suggesting measures for rain water harvesting and augmentation of ground water resources. The report has been prepared and recommendations are implemented.</td></tr>
<tr><td>xv</td><td>The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water (surface water and ground water) required for the project</td><td>Permission for 0.22 MGD for South Block has been received from State Water Resources Dept Govt of Odisha vide order No. 28682/WR Dtd. 11/12/2019 for drawal of water from Jholaguda Stream.</td></tr>
<tr><td>xvi</td><td>Vehicular emissions shall be kept under control and regularly monitored and checked. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of</td><td>At present monitoring of exhaust emission of all the vehicles operating at mine is conducted once in six months through an outside agency authorized by SPCB, Odisha.</td></tr>
</table>

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	mineral. The mineral transportation within the mine lease shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.	Measures are being taken for maintenance of vehicles used in mining operations and in transportation of mineral. The vehicles carrying the mineral are not overloaded.
xvii	Blasting operation shall be carried out only during the daytime. Controlled blasting shall be practiced. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented.	Blasting has not yet started. In future in case , blasting will be done during shift change over between 1.15PM to 2PM .No blasting will be done beyond day light hours .Further, controlled blasting will be practiced with use of NONELs for sequential blasting to reduce fly rocks, boulders & ground vibration. However there is a plan not to carry out any blasting in future.
xviii	Drills shall either be operated with dust extractors or equipped with water injection system	Drill are being operated with vaccum dust extraction system with provision of water injection for dust suppression.
xix	Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.	Crushing & Conveying system is provided with dry fog system. Loading and unloading areas including all the transfer points have efficient dust control arrangements. These are properly maintained and operated. The conveyor to Alumina Refinery is completely covered.
xx	Sewage treatment plant shall be installed for the colony. ETP shall also be provided for the workshop and wastewater generated during the mining operation	The Mine & Refinery combined township exists 20KM away at Damanjodi where sewerage treatment plant is provided whereas the mine is operating a zero discharge system for effluents where all the waste water is treated,analysed and reused for sprinkling on the haul road for dust suppression and plantation. Effluents from the Mechanical Workshop area is being channelized through well-designed oil-water separation tank where oil is collected and the clear water is collected in zero discharge sump. There is a canteen waste water disposal system (biological treatment unit) designed, constructed and maintained to treat the canteen waste water. All the treated waste water from canteen and HEMM workshop is used for horticulture & dust suppression.
xxi	Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and following accordingly.	Pre-placement medical examination and periodic medical examination is being done for all employees of South Block. For all eligible employees of South Block , periodical medical examinations are done & records thereof maintained. During April 2025-Sept 2025, 9 nos of employees have undergone periodical medical testing. No occupational diseases have been detected so far.
xxii	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. the housing may be in the form of temporary structures to be removed after the completion of the project.	All construction laborers /workers come from nearby villages and hence no housing is required.
xxiii	The project proponent shall take all precautionary measure during mining operation for conservation and protection of endangered flora and fauna found in the study area. Action plan for conservation of flora and fauna shall be prepared and implemented in consultation with the State Forest and Wildlife Department. Necessary allocation of funds for implementation of the conservation plan shall be made and the fund so allocated	Site specific wild life conservation plan has been approved by PCCF (Wild life), Bhubaneswar vide letter no.FWL-C-SSP-273/2010/9639 dated 09-11-2010 with a financial implication of Rs 10.43 Cores. The aforesaid amount has already been deposited in Adhoc- CAMPA by NALCO, for implementation of the plan. (Rs 8.15 Crore on 03.12.2010 and Rs 2.28 Crore on 30.3.2011, paid through DD & RTGS, respectively. The conservation measures suggested are under process of implementation. The copy of action plan has been submitted to MoEF&CC vide letter No. NAL/MIN/GM(Mines)2017/630, Dtd.

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	shall be included in the project cost. A copy of action plan shall be submitted to the Ministry of Environment and Forest and its Regional Office, Bhubaneswar.	12.9.2017. The status of implementation of conservation measures are given in **Annexure-III**.
xxiv	Digital processing of the entire lease area using remote sensing technique shall be carried out regularly once in three years for monitoring land use pattern and report submitted to Ministry of Environment and Forests and its Regional Office, Bhubaneswar	A digital land-use map (shape file) as on 31.3.2024 has been submitted to MoEF&CC, Bhubaneswar on 18th November 2024 vide mail.
xxv	The critical parameters such as RSPM (particulate matter with particle size less than 10 µm i.e PM10) and Nox in the ambient air within the impact zone, peak particle velocity at 300 m distance or within the nearest habitation, whichever is closer shall be monitored periodically. Further the quality of discharge water shall also be monitored.[TDS, DO,pH, and Total suspended solids (TSS)]. The monitored data shall be uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the company in the public domain. The circular No.- J-20012/1/2006-IA.II(M) dtd. 27.5.2009 issued by the Ministry of Environment & Forests , which is available on the website of the Ministry www.envfor.nic.in shall also be referred in this regard for its compliance.	The ambient air quality in and around the Panchpatmali South Block Bauxite Mine is measured at 5 locations every month for RSPM, Nox and SO_2. The treated waste water from canteen and oil water separator are analysed as per general waste discharge standards every month. The results are well within the prescribed parameters. The data is being uploaded in company website www.nalcoindia.com along with half yearly status of environmental clearance.
xxvi	A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.	These shall be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.
B	GENERAL CONDITIONS	
i	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests	The user agency (NALCO) undertakes that there shall be no change in technology and scope of work without prior approval from MoEF&CC.
ii	No change in the calendar plan including excavation, quantum of mineral bauxite and waste should be made.	The user agency (NALCO) undertakes that there shall be no change in calendar plan including excavation, quantum of Bauxite, Waste/OB generation of work without prior approval from competent authority.
iii	At least four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RSPM(particulate matter with particle size less than 10 µm i.e PM10)&Nox monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecological sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.	The ambient air quality in and around the Panchpatmali South Block Bauxite Mine is measured at 5 locations every month for PM2.5, PM10, Nox and SO_2 and CO.
iv	Data on ambient air quality [RSPM (particulate matter with particle size less than 10 µm i.e PM10)&Nox] should be	Data on air quality for the present mining operations is being collected once in every month. Records submitted to statutory authorities once in six months.

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	regularly submitted to the Ministry of Environment and Forests including its Regional office located at Bhubaneswar and the State Pollution Control Board / Central Pollution Control Board once in six month.	From January 2017, AAQ monitoring for South Block has been started at 5 locations. These are A11 (View Point,South Block), A12 (Putraghati Village), A13(Bhitara Bhejaput Village), A14(Lachumani Village) and A15(Mundagahrati Village). The AAQ monitoring results conform to the norms prescribed by CPCB. The latest results of ambient air analysis are given at **Annexure-I.**
v	Fugitive dust emissions from all the sources should be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points should be provided and properly maintained.	Water spraying on haul road is being carried out with mobile sprinklers and fixed sprinklers. Loading points of crusher house is provided with dry fog system. Transportation of Bauxite ore is being carried out through a cable belt conveyor provided with hood all along. One fog cannon has been deployed near stockpile for suppression of dust.
vi	Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs / muffs.	Noise monitoring in the present work environment is taken up once every year in the existing work areas. The results are within prescribed norm. Workers are provided with ear plugs /muffs. Besides ambient noise level is also measured at 13 locations. Ambient Noise level monitoring for 2025-26 is available at **annexure-IV.**
vii	Industrial waste water (workshop and waste water from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 Є dated 19th May, 1993 and 31st December 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.	The Mine is operating a zero discharge system for effluents where all the waste water is treated, analysed and reused for sprinkling on the haul road for dust suppression and plantation. Effluents from the Mechanical Workshop area is being channelized through well-designed oil-water separation tank where oil is collected and the clear water is collected in zero discharge sump. There is a canteen waste water disposal system (biological treatment unit) designed, constructed and maintained to treat the canteen waste water. All the treated waste water from canteen and HEMM workshop is used for horticulture & dust suppression. The treated waste water from canteen and HEMM workshop area are analysed before being reused. The analysis results for 2025-26 are available at **Annexure-V**. The above treated water is completely reused without discharging outside.
viii	Personnel working in dusty areas should wear protective respiratory 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	For South Block mine, all employees and contract workers are provided with protective devices. Regular training programmes are held in MVT Center on health and safety aspects for contract workers as well as employees. Pre-placement medical examination and periodic medical examination is being done for all employees of South Block. For all eligible employees of South Block, periodical medical examinations are done & records thereof maintained. During April 2025-Sept 25, 9 nos of employees have undergone periodical medical testing. No occupational diseases have been detected so far.
ix	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 Organization.	A Separate Environmental Management Cell being headed by SM(Geo)-Env, who is reporting directly to CGM(Mines), exists for management of environment.
x	The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry of Environment and Forests and its Regional Office located at Bhubaneswar	Being a public sector, the system does not allow for creating a separate account for environmental protection measures. However adequate fund is provided under the budget of executing departments for installation and maintaining various pollution control measures. The fund earmarked for environmental protection measures is never diverted for any other purpose. Adequate fund is always allocated to meet the capital & recurring expenses to implement the environmental control measures inclusive of plantation. Many expenditures for Central and North Block and South Block on environment are carried

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<table>
<tr><td></td><td></td><td>out through common contracts. The capital expenditure till date and the recurring expenditure for protection of environment at Panchpatmali Bauxite Mine for the last three years are as follows
a. Capital Cost for Environmental Pollution control incurred during 2025-26 as on 30.09.2025 - Rs.3.43 Crore
b. Recurring cost
<table>
<tr><th>S. No</th><th>Activity</th><th>2023-24 (Rs)</th><th>2024-25</th><th>2025-26 as on 30.09.2025</th></tr>
<tr><td>1.</td><td>Backfilling and land reclamation*</td><td>111,15,237.33</td><td>11,253,744.00</td><td>3,462,212.00</td></tr>
<tr><td>2.</td><td>Environmental Pollution Control</td><td>11,61,866.83</td><td>13,25,229.00</td><td>1,155,883.00</td></tr>
<tr><td>3.</td><td>Plantation and Horticulture</td><td>15,43,866.00</td><td>23,33,572.00</td><td>1,167,284.00</td></tr>
<tr><td>4</td><td>Operation and maintenance of Water Sprinkling system & zero discharge system</td><td>1,70,009.09</td><td>6,00,973.00</td><td>426,429.00</td></tr>
<tr><td></td><td>Total</td><td>1,39,90,979.75</td><td>1,55,13,519.00</td><td>6,211,808.00</td></tr>
</table>
Note- Backfilling and land reclamation cost is calculated based on the proportionate cost for diesel incurred in handling of overburden material as compared to the total excavation.</td></tr>
<tr><td>xi</td><td>The project authorities should inform to the Regional Office located at Bhubaneswar regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.</td><td>The MoEF&CC Regional Office shall be kept informed as required.</td></tr>
<tr><td>xii</td><td>The Regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports</td><td>NALCO undertakes that all co-operations will be extended to the officers of the Regional Office of the Ministry located at Bhubaneswar by furnishing requisite data, information/ monitoring reports.</td></tr>
<tr><td>xiii</td><td>The project proponent shall submit six monthly report on the status of compliance of the stipulated environmental clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the Ministry of Environment and Forests, its Regional Office Bhubaneswar, the respective zonal office of Central Pollution Control Board and State Pollution Control Board. The proponent shall upload the status of compliance of the environmental clearance conditions , including results of monitored data on their website and update the same periodically. It shall simultaneously be sent to the Regional Office of the Ministry of Environment & Forests, Bhubaneswar , the respective zonal office of the Central Pollution Control Board and the State Pollution Control Board.</td><td>Six monthly report on the status of the implementation of the stipulated environmental safeguards for present mining operations of South Block is submitted to MoEF, Govt. of India and State Pollution Control Board. The same is uploaded in the website of NALCO (www.nalcoindia.com) as directed.

Samir ranjan Pattnaik
Sr. Manager (Geology)-Environmen
Panchpatmali Bauxite Mine
NALCO, Damanjodi-763008</td></tr>
</table>

xiv	A copy of clearance letter shall be marked to concerned Panchyat /ZilaParishad/ Municipal corporation , Urban local body and the Local NGO, if any, from whom suggestion / representation has been received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.	No such suggestions / representation have been received from the Panchayat / local NGO, while processing the clearance proposal. The EC has been displayed in the website of NALCO. (www.nalcoindia.com).
xv	The State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and the Collector's office / Tahsildar's Office for 30 days	Complied.
xvi	The environmental statement for each financial year ending 31st March in Form-V is mandated to be submitted by project proponent to the concerned State Pollution Control Board as prescribed under Environment Protection Act, 1986 ,as amended subsequently, shall also be put on the website of the company along with status of compliance of environment clearance conditions and shall also be sent to the respective Regional Office of Ministry of Environment & Forests , Bhubaneswar by e-mail.	The environment statement for South Block was sent for the year 2024-25 to State Pollution Control Board, Odisha on 3rd September 2025 and is also displayed in NALCO's website.
xvii	The project authorities should advertise at least in two local newspapers of the district or state in which the project is located and widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment and Forest at http://envfor.nic.in and a copy of the same should be forwarded to the Regional Office of the Ministry located at Bhubaneswar.	Complied.
xviii	Plantation of saplings shall be carried out in the earmarked 33% greenbelt area as a part of the tree plantation campaign "Ek Ped Maa Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in)	Nalco has been registered under National Meri Life portal and the Tree plantation status has been uploaded along with Observation of World Environment day as Mission life action report.

(P Mohanta)
Chief General Manager(Mines)

PURUSOTTAM MOHANTA
Chief General Manager (Mines)
Panchpatmali Bauxite Mines
NALCO, Damanjodi-763008

STATUS OF COMPLIANCE TO THE CONDITIONS STIPULATED INAMENDED ENV. CLEARANCE FOR INSTALLATION OF OVERLAND CONVEYOR FOR TRANSPORTATION OF BAUXITE PRODUCTION AND CHANGE IN MINING EQUIPMENT/MACHINERIES FOR SIZING IN PANCHPATMALI SOUTH BLOCK BAUXITE MINE, NALCO

(Ministry Letter No. J-11015/78/2010-IA. II(M) Dt. 26-10-2018)

Sl.No.	Additional Conditions	Status of Compliance as on 31.09.2025
i	Amendment of Environmental Clearance will not be operational till such time the Project Proponent complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated the 2nd August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Ors..	Noted.
ii	The Department of Mining & Geology, State Government shall ensure that mining operation shall not commence till the entire compensation levied, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of judgment of Hon'ble Supreme Court dated the 2nd August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Ors.	Noted. No compensation has been levied on Panchaptmali South Block Bauxite Mine for illegal mining.
iii	The Project Proponent shall install online Ambient Air Quality Monitoring System and there should be system for display of digital AAQ data within 03 months at least at three locations as per wind direction. Online provisions of pH and turbidity meters at discharge points of STP and ETP and also at water storage ponds in the mining area may be made. Project Proponent should display the result digitally in front of the main Gate of the mine site.	Three nos of online ambient air quality monitoring station have been procured and installed in the core zone and buffer zone of the mine. The waste water from canteens and vehicle wash areas are treated and reused for dust suppression purpose inside Mines and are not discharged outside. Hence installation of online pH and turbidity meters are not applicable in our case.
iv	Proponent shall appoint an Occupational Health Specialist for Regular and Periodical medical examination of the workers engaged in the Project and maintain records accordingly; also, Occupational health check-ups for workers having some ailments like BP, diabetes, habitual smoking, etc. shall be undertaken once in six months and necessary remedial/preventive measures taken accordingly. The Recommendations of National Institute for Mine workers shall be implemented; The prevention measure for burns, malaria and provision of anti-snake venom including all other paramedical safeguards may be ensured before initiating the mining activities.	The PME of all employees for specified diseases is carried out regularly. For all eligible employees of South Block, periodical medical examinations are done & records thereof maintained. During April 2025-Sept 2025, 9 no's of employees have undergone periodical medical testing. No occupational diseases have been detected so far.
v	Project Proponent shall run an awareness campaign on sanitation for women and utilization of Sanitary Napkin and also to distribute the Sanitary Napkin/pads to the women and provide the training for proper disposal.	Regular awareness is carried out in surrounding villages including women regarding good sanitation practices under Swachh Bharat Mission. Sanitary kits/napkins are being disbursed periodically.

(P Mohanta)
Chief General Manager(Mines)

PURUSOTTAM MOHANTA
Chief General Manager (Mines)
Panchpatmali Bauxite Mines
NALCO, Damanjodi-763008

ANNEXURE-I
AMBIENT AIR QUALITY ANALYSIS AT PANCHPATMALI SOUTH BLOCK BAUXITE MINE NALCO
(2025-26)

Sl. No.	Monitoring station	Parameter	Norm	Apr'25	May'25	Jun'25	Jul'25	Aug'25	Sep'25	Oct'25	Nov'25	Dec'25	Jan'26	Feb'26	Mar'26	Avg
1	A11 (View point South Block)	RPM (µg / m3)														
		PM 2.5(60µg / m3)	60	29.4	26.79	34.05	30.05	22.67	28.33							28.55
		PM10(100µg / m3)	100	52.3	61.09	57.51	51.01	51.51	45.42							53.14
		NRPM (µg /m3)		56.3	32.38	40.51	40.86	36.61	36.76							40.57
		SPM(µg /m3)		108.6	93.46	98.03	98.87	88.12	82.18							94.88
		SO_2 (80 µg /m3)	80	11.4	7.65	7.65	8.99	6.35	6.95							8.17
		NO_X (80µg /m3)	80	19.2	12.52	14.72	14.85	11.64	10.43							13.89
		CO (2 mg /m3)	2	0.7	0.61	0.57	0.51	0.51	0.45							0.56
2	A12 (Putraghati village)	RPM (µg / m3)														
		PM 2.5(60µg / m3)	60	24.3	35.56	25.98	26.67	24.11	26.61							27.21
		PM10(100µg / m3)	100	44.5	74.38	52.65	57.72	49.9	41.52							53.45
		NRPM (µg /m3)		48.6	52.39	27.9	32.23	32.38	29.88							37.23
		SPM(µg /m3)		93.1	126.77	80.55	93.05	82.28	71.4							91.19
		SO_2 (80 µg /m3)	80	8.4	9.31	9.31	7.62	5.95	7.76							8.06
		NO_X (80µg /m3)	80	14.6	15.38	12.14	12.47	10.44	10.03							12.51
		CO (2 mg /m3)	2	0.49	0.74	0.52	0.57	0.49	0.41							0.54
3	A13 (Bhitara Bhejaput village)	RPM (µg / m3)														
		PM 2.5(60µg / m3)	60	26.3	27.92	25.64	26.79	23.73	26.18							26.09
		PM10(100µg / m3)	100	48.2	0.49	45.63	45.9	49.67	57							41.15
		NRPM (µg /m3)		51.7	38.97	35.8	36.02	38.97	37.39							39.81
		SPM(µg /m3)		99.4	88.64	81.43	81.92	88.64	94.39							89.07
		SO_2 (80 µg /m3)	80	9.5	6.64	6.64	6.38	5.76	5.31							6.71
		NO_X (80µg /m3)	80	16.4	11.74	10.79	11.27	10	9.23							11.57
		CO (2 mg /m3)	2	0.56	0.49	0.45	0.45	0.45	0.57							0.50
4	A14 (Lachumani village)	RPM (µg / m3)														
		PM 2.5(60µg / m3)	60	25.6	31.4	30.18	32.57	23.77	25.33							28.14
		PM10(100µg / m3)	100	47.2	53.07	53.05	57.25	43.21	42.13							49.32
		NRPM (µg /m3)		50.2	45.17	45.15	48.73	40.99	37.72							44.66
		SPM(µg /m3)		97.4	98.24	98.2	105.98	84.19	79.85							93.98
		SO_2 (80 µg /m3)	80	9.1	5.98	5.98	6.2	6.4	6.13							6.63
		NO_X (80µg /m3)	80	15.3	11.32	10.88	11.74	10.06	9.63							11.49
		CO (2 mg /m3)	2	0.54	0.53	0.53	0.57	0.43	0.42							0.50
5	A15 (Mundagahrati Village)	RPM (µg / m3)														
		PM 2.5(60µg / m3)	60	24.5	27.54	25.54	26.91	22.08	25.96							25.42
		PM10(100µg / m3)	100	45.6	52.75	46.97	50.04	41.88	50.46							47.95
		NRPM (µg /m3)		48.5	46.68	41.56	46.98	20.13	20.61							37.41
		SPM(µg /m3)		94.1	99.43	88.53	110.02	62.01	71.07							87.53
		SO_2 (80 µg /m3)	80	8.2	7.86	7.86	7.69	5.77	5.67							7.18
		NO_X (80µg /m3)	80	15.4	12.01	11.14	10.48	10.93	9.95							11.65
		CO (2 mg /m3)	2	0.5	0.52	0.46	0.5	0.41	0.5							0.48

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ANNEXURE-II

GROUND WATER QUALITY ANALYSIS AROUND PANCHPATMALI SOUTH BLOCK BAUXITE MINE (2025-26)

For April 2025

Sl. No	Name of Tests	Permissible Limits	GW-1 Metingi Village	GW-2 Chhatamba Village	GW-3 Panasaput	GW-4 Jhariapadar	GW-5 Tentulipadar	GW-6 Ichhapur	GW-7 Mundagadati	GW-8 Bijaghati Village	GW-9 Putraghati Village	GW-10 Chararha Village	GW-11 Kapsiput Village	GW-12 Jambagurha Village	GW-13 Shriguda Village	GW-14 Kakirigumа Village	GW-15 Sorishapadar Village
1	pH at 30°C	6.5-8.5	6.9	6.9	6.8	6.8	6.8	6.8	6.9	6.8	6.8	6.8	6.9	6.9	6.9	6.8	6.8
2	D.O. (mg/l)	-	3.5	3.6	3.7	3.8	3.7	3.8	3.5	3.6	3.8	3.8	3.9	3.9	3.5	3.6	3.5
3	T.D.S (mg/l)	2000	2.98	6.9	9.4	6.55	8.2	9.12	3.73	7.93	9.14	7.45	8.22	7.7	1.89	6	1.85
4	Total Hardness. as $CaCo_3$	600	84	38	48	11	48	44	120	128	40	40	48	36	88	60	88
5	Total Alkalinity (as $CaCo_3$) (mg/l)	600	40	52	44	44	64	60	84	32	56	56	56	36	68	56	20
6	B.O.D.	30	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
7	Nitrate as No_3 (mg/l)	45	3.2	2.6	2.5	53.9	4.8	4.2	2.5	2.8	0.96	0.54	9.6	16.8	2.5	2.8	4.6
8	Chlorides as Cl (mg/l)	1000	44	12	16	84	12	4	92	108	4	4	4	4	56	4	60
9	Sulphate as SO_4 (mg/l)	400	15	3	2	40	<1.0	3	27	30	<1.0	<1.0	<1.0	<1.0	2	1	2
10	Calcium as Ca (mg/l)	200	22	14	1	32	18	14	30	40	14	14	14	11	29	11	27
11	Magnesium as Mg (mg/l)	100	7	6	9	8	7	2	17	7	6	1	8	2	14	8	5
12	Turbidity (NTU)	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.2	15	<1.0	<1.0	<0.1	<0.1	<0.1
13	Fluoride as F (mg/l)	1.5	0.132	0.08	0.144	0.116	0.106	0.06	0.09	0.08	0.157	0.116	0.184	0.172	0.09	0.105	0.113
14	Phenlic compounds as C_6H_5OH (mg/l)	0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
15	Arsenic as As (mg/l)	0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
16	Mercury as Hg (mg/l)	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
17	Lead as Pb (mg/l)	0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
18	Cadmium as Cd (mg/l)	0.01	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
19	Chromium Cr^{+6} (mg/l)	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
20	Copper as Cu (mg/l)	1.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
21	Zinc as Zn (mg/l)	15	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
22	Iron as Fe (mg/l)	1	0.243	0.226	0.293	0.302	0.358	0.367	0.552	0.326	0.262	0.842	0.282	0.386	0.422	0.23	0.305
23	Temperature in 0°	-	33°C	33°C	34°C	34°C	32°C	32°C	34°C	34°C	34°C	33°C	30°C	30°C	32°C	32°C	32°C
24	Coliform (MPN)	ND in 100ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent

Norm as per IS 10500:2012

Samir Ranjan Pattnaik
Sr. Manager (Geology)-Environment
Panchpatmali Bauxite Mine
NALCO, Damanjodi-763008

For August 2025

Sl. No	Name of Tests	Permissible Limits	GW-1 Metingi Village	GW-2 Chhatamba Village	GW-3 Panasaput	GW-4 Jhariapadar	GW-5 Tentulipadar	GW-6 Ichhapur	GW-7 Mundagadati	GW-8 Bijaghati Village	GW-9 Putraghati Village	GW-10 Chararha Village	GW-11 Kapsiput Village	GW-12 Jambagurha Village	GW-13 Shriguda Village	GW-14 Kakirigumsa Village	GW-15 Sorishapadar Village
1	pH at 30°C	6.5-8.5	7.25	6.83	6.75	6.74	8.23	7.13	6.99	7.01	6.95	5.96	6.96	6.74	7.04	6.9	6.91
2	D.O. (mg/l)	-	4	4.2	4.3	4.2	4.3	4.4	4	4.2	3.6	4.4	4.6	4.1	4.3	4.2	4.6
3	T.D.S (mg/l)	2000	60	172	162	166	20	154	166	156	204	216	120	140	98	140	280
4	Total Hardness. as $CaCo_3$	600	52	124	128	120	16	92	104	104	104	108	48	44	28	112	128
5	Total Alkalinity (as $CaCo_3$) (mg/l)	600	33	110	103.4	107.8	11	94.6	94.6	103.4	24.2	35.2	52	26.4	48	84	81
6	B.O.D.	30	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
7	Nitrate as No_3 (mg/l)	45	0.34	0.09	0.2	<0.05	<0.05	0.27	0.39	0.09	44.5	43.8	0.21	0.7	0.9	0.41	0.42
8	Chlorides as Cl (mg/l)	1000	4	6	8	4	4	10.01	12.01	8	54.05	54.05	16.01	24.02	32.03	8	10.01
9	Sulphate as SO_4 (mg/l)	400	19.4	4.2	2.4	4.4	<1.0	12.4	10.9	12.4	18.4	8.1	10.9	2.4	4.4	2.4	2.8
10	Calcium as Ca (mg/l)	200	9.6	27.2	20.8	22.4	3.2	20.8	17.6	16	17.6	19.2	12.8	9.6	8	17.6	20.8
11	Magnesium as Mg (mg/l)	100	6.8	13.6	18.4	15.5	1.9	0.8	14.5	15.5	14.5	14.5	3.88	4.86	1.94	16.52	18.46
12	Turbidity (NTU)	10	<0.1	<0.1	<0.1	<0.1	<0.1	0.8	<0.1	0.4	0.9	5	<0.1	1.8	<0.1	3	3
13	Fluoride as F (mg/l)	1.5	0.1	0.14	0.12	0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
14	Phenlic compounds as C_6H_5OH (mg/l)	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
15	Arsenic as As (mg/l)	0.01	0.001	0.002	0.004	0.001	0.003	0.006	0.002	0.005	0.005	0.006	<0.001	<0.001	<0.001	<0.001	<0.001
16	Mercury as Hg (mg/l)	0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
17	Lead as Pb (mg/l)	0.05	<0.005	<0.005	<0.005	0.005	<0.005	<0.005	0.006	<0.005	<0.005	0.009	<0.005	<0.005	<0.005	<0.005	<0.005
18	Cadmium as Cd (mg/l)	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
19	Chromium Cr^{+6} (mg/l)	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
20	Copper as Cu (mg/l)	1.5	<0.02	0.048	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
21	Zinc as Zn (mg/l)	15	0.377	0.24	<0.05	0.38	<0.05	0.18	0.21	0.34	1.06	1.03	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
22	Iron as Fe (mg/l)	1	0.07	0.12	0.24	<0.05	<0.05	0.17	0.98	0.9	0.3	0.17	0.24	<0.05	0.9	0.6	0.58
23	Temperature in 0°	-	24.8	24.8	24.2	24.2	24.2	24.8	24.8	24.6	24.2	24.8	24.8	24.8	24.8	24.8	23.8
24	Coliform (MPN)	ND in 100ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent

Norm as per IS 10500:2012

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ANNEXURE-III

STATUS OF ACTION PLAN FOR WILD LIFE MANAGEMENT IN THE CORE ZONE OF THE PANCHPATMALI SOUTH BLOCK BAUXITE MINE

(Taken up by NALCO,the user agency)

SL.NO.	Action plan	Status
1	Plantation 80 ha with stone wall fencing	Mining activities have started at South Block in May 2017. Development of haul roads, peripheral barriers, etc have started in South Block in order to enable excavation of bauxite. Backfilling and plantation of mined out area has started from year 2021-22.
2	Provision of Van Sahayaks (two nos) to watch plantation	Already 7 no of watch and ward is provided to look after plantation done in south block along access roads, conveyor corridor, slopes, etc.
3	Noise pollution control	At present blasting has not started in South Block. All noise pollution control measures like use of NONEL in blasting,etc will be undertaken when blasting is adopted. At present other control measures like maintenance of vehicles, plantation of trees in mine periphery, provision of ear plug and ear muff to workers, etc. are being taken.
4	Dust pollution control	Use of mobile sprinklers is undertaken for suppression of dust in haul roads and stockpile areas. Provision of PLC controlled Auto sprinkling system installed over Permanent haul roads (4 km). Dry fog system has been adopted in crushers. One fog cannon has been installed for dust suppression in stockpile area. Plantation along periphery,etc. is being taken up to prevent propagation of dust.
5	Water pollution control	All water pollution control measures like diversion of runoff to pit to prevent discharge of rain water down below the valley, treatment of vehicle wash water & canteen waste water , recycling of treated waste water, etc have been undertaken. 15 nos of check dams have already been constructed down below the valley to retain washout if any.
6	Contour trench staged to prevent soil loss and promote growth of grass	After reclamation and rehabilitation, the surface will become almost flat. Wherever required contour trenches will be provided.
7	Grass seeding to prevent soil erosion	There will be no soil loss from the mined out area as it will be surrounded by a in-situ peripheral barrier all around. However grass turfing with native grass species are being provided to prevent soil erosion wherever there will be slopes in the mined out area. Grass turfing carried out during 2025-26 is 3000 sqr.mtr.
8	Water harvesting structure for wild life	Three nos of rain water harvesting structure already provided in South block. More nos will be provided as the mining progresses.
9	Barbed wire fencing to prevent falling of animal into the pit.	The mined out area will be almost flat after reclamation and rehabilitation for any animal to fall down into the pit. However wherever any such situation arises barbed wire fencing will be provided.
10	Fire line 12 km	Every year fire lines 5.5 km long on the western side and 3.6 km long on the eastern side of South Block are being provided depending upon the requirement to prevent spread of fire to the access road plantation and slope plantation during summer.
11	Fire watchers 2 nos	Fire watchers (7 nos) are provided throughout the year to report on fire incidence to fire brigade and also to fight minor fires.
12	Light pollution	High mast light is provided only along the haul road and stockpile area for safe working. It will not have any effect on other areas.
13	Signage	Signage have been put at strategic locations highlighting importance of maintaining environment.

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14	Garbage management	Non-biodegradable waste is collected and dumped in mined out area. Biodegradable waste like canteen waste, etc. are collected and treated in 3 no's of biogas plants located in the Mines.
15	Awareness	Awareness among the employees and workers being created by organizing mass plantation drives during celebration of World Environment Day, Vana Mahotsav Week, EMAP program, MEMC Week, etc. Besides villagers in the surrounding area are being distributed fruit bearing trees every year to create awareness about importance of tree plantation and they are also explained about having compassion towards wildlife for maintaining a healthy ecosystem in the region.

(P Mohanta)
Chief General Manager(Mines)

PURUSOTTAM MOHANTA
Chief General Manager (Mines)
Panchpatmali Bauxite Mines
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ANNEXURE-IV

AMBIENT NOISE LEVEL MEASUREMENT IN AND AROUND PANCHPATMALI SOUTH BLOCK BAUXITE MINE FOR 2025-26

Sl. No.	Monitoring station code & its direction	Category	Date	Noise level dB(A)		Date	Noise level dB(A)		Date	Noise level dB(A)		Date	Noise level dB(A)	
				Day	Night		Day	Night		Day	Night		Day	Night
1	N11 SB Stock Pile-S	A	21.04.25	55.1	42.6	06.08.25	67.6	59.9						
2	N12 Putraghati Village- SW	C	21.04.25	46	48.1	06.08.25	53.6	43.9						
3	N13 Bhitara Bhejaput Village-NW	C	22.04.25	46.2	39.1	06.08.25	49.1	45						
4	N14 Lachumani Village- SW	C	22.04.25	48	42.3	06.08.25	48.3	37.8						
5	N15 Mundagahrati Village- NE	C	22.04.25	53.2	34.6	06.08.25	48.6	40.8						
6	N16 Near bridge 01 of cable belt conveyor	A	22.04.25	56.8	36.6	06.08.25	69.5	63.7						
7	N17 Below bridge 02 of cable belt conveyor	A	22.04.25	59.1	38.2	06.08.25	70.4	61.6						
8	N18 Near bridge 03 of cable belt conveyor	A	22.04.25	56.2	41.3	06.08.25	70.8	62.2						
9	N19 Near bridge 04 of cable belt conveyor	A	22.04.25	59.1	37.3	06.08.25	71.1	64.3						
10	N20 Below bridge 05 of cable belt conveyor	A	22.04.25	57.2	39.4	06.08.25	71	63.7						
11	N21 At kardiguda village Near bridge 04 of cable belt conveyor	C	22.04.25	57.6	42.6	06.08.25	68.9	61.3						
12	N22 Near bridge 06 of cable belt conveyor	A	22.04.25	55.7	42.5	06.08.25	69.2	60.8						
13	N23 Discharge gantry bridge	A	22.04.25	59.1	40.1	06.08.25	64.7	58.3						

Norm			
Category of area/zone		Limits in dB(A) Leq	
		Day time	Night time
(A)	Industrial area	75	70
(B)	Commercial area	65	55
(C)	Residential area	55	45
(D)	Silence zone	50	40

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ANNEXURE-V

WASTE WATER ANALYSIS AT PANCHPATMALI SOUTH BLOCK BAUXITE MINE (2025-26)

Sl. No.	Parameter	NORM	WW1												WW2												Average	
			Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26	WW1	WW2
1	Temperature (ºC)	-	32	24.2	24.2	24.3	24.9	24.8							32	24.2	24.1	24.2	24.9	24.9							25.733	25.717
2	pH Value	5.5-9.0	7	5.02	5.6	5.62	5.62	5.7							7	6.26	6.3	6.7	7	7							5.760	6.710
3	Dissolve Oxygen, mg/l	-	4	6.6	5.8	6.6	6.6	6.6							3.8	6.6	6.6	6.7	6.4	6.4							6.033	6.083
4	Total Dissolved Solids, mg/l	-	143	68	80	68	90	110							114	90	94	90	84	68							93.167	90.000
5	Total Hardness (as $CaCO_3$), mg/l	-	64	25	52	25	34	16							56	43	44	45	28	28							36.000	40.667
6	Suspended Solids mg/l	100	< 1.0	8	<2.5	8	10	12							<1.0	8	6.2	8.5	8.4	10							9.500	8.220
7	B.O.D mg/l 3 days at 27°C	30	28	15	12	15	12	18							<3.0	<1.0	<1.0	<1.0	4	5							16.667	4.5
8	C.O.D mg/l	250	154	61	52	61	72	57.6							13	<5.0	<5.0	<5.0	9.6	14.6							76.267	12.400
9	Nitrate (as NO3), mg/l	-	2.13	4.27	5.2	4.27	2.2	2.4							0.96	5.85	6.2	5.6	0.8	0.21							3.412	3.270
10	Chloride as Cl – mg/l	-	40	18.01	18	18	1.1	22							36	14.01	14	14	<1.0	8							19.522	17.210
11	Sulphate (as SO4), mg/l	-	4	8	8.2	8.8	3.2	1.8							1	19	18	19	4.8	<1.0							5.667	12.360
12	Calcium (as Ca), mg/l	-	18	4.3	12.8	4.5	1.94	3.2							16	14.4	12.8	14.4	2.91	4.8							7.457	10.885
13	Magnesium (as Mg), mg/l	-	5	3.45	4.86	3.55	0.21	1.94							4	1.7	2.91	1.7	<0.1	3.88							3.168	2.838
14	Fluoride as F, mg/l	2	0.37	<0.1	<0.1	<0.1	<0.5	0.22							0.244	0.140	0.2	0.14	<0.5	<0.1							0.296	0.181
15	Phenolic Compounds,	1	<0.01	<0.5	<0.5	<0.5	0.004	<0.5							<0.01	<0.5	<0.5	<0.5	0.01	<0.5							0.004	0.007
16	Arsenic (as As), mg/l	0.2	<0.05	<0.001	<0.001	<0.001	<0.0005	<0.001							<0.05	<0.001	<0.001	<0.001	<0.00005	<0.001							0.009	0.009
17	Mercury (as Hg), mg/l	0.01	<0.01	<0.00005	<0.00005	<0.0005	<0.005	<0.00005							<0.01	<0.00005	<0.00005	<0.0005	<0.0005	<0.00005							0.003	0.003
18	Lead (as Pb), mg/l	0.1	<0.01	<0.005	<0.005	<0.05	<0.001	<0.005							<0.01	<0.005	<0.005	<0.05	<0.001	<0.005							0.005	0.005
19	Cadmium (as Cd), mg/l	2	<0.01	<0.001	<0.001	<0.001	<0.01	<0.001							<0.01	<0.001	<0.001	<0.001	<0.01	<0.001							0.004	0.004
20	Chromium (as Cr^{+6}), mg/l	0.1	<0.05	<0.01	<0.01	<0.01	<0.02	<0.01							<0.05	<0.01	<0.01	<0.01	<0.02	<0.01							0.018	0.018
21	Copper (as Cu), mg/l	3	<0.05	<0.02	<0.02	<0.02	0.06	<0.02							<0.05	<0.02	<0.02	<0.02	0.06	<0.02							0.03	0.03
22	Zinc (as Zn) mg/l	5	<0.05	<0.05	<0.05	<0.05	0.71	<0.05							<0.05	<0.05	<0.05	<0.05	5.71	<0.05							0.15	0.98
23	Iron (as Fe), mg/l	3	0.46	0.9	0.9	0.9	<1.0	0.8							0.385	0.6	0.6	0.6	<1.0	5.82							0.7924	1.601
24	Oil and grease	10	0.9	<1.0	<1.0	<1.0	5.62	<1.0							1.000	<1.0	<1.0	<1.0	7	<1.0							1.75	2.000

WW1-treated water from Canteen

WW2-treated water from HEMM area

HEMM area

* Parameters are within permissible norms

NT- Not traceable

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