ADITYA BIRLA
UTKAL ALUMINA

UAIL-MINES/ENV/ 029 /2022

31st May 2022

To

The Addl. Principal Chief Conservator of Forest
Ministry of Environment Forests & Climate Changes
Govt. of India
Eastern Regional office, A/3, Chandrasekharpur
Bhubaneswar – 751023

Sub: Six-monthly Compliance status of conditions stipulated in Environment Clearance with respect to our Baphlimali Bauxite Mine of M/s Utkal Alumina International Limited, Rayagada, Odisha with production capacity of 8.5 MTPA.

Ref: Environment Clearance No. J-11015/650/2007-IA.II (M) dated 19.02.2009.

Dear Sir,

As a part of the compliance to the EC granted with respect to our 8.5 MTPA Baphlimali Bauxite Mine of M/s Utkal Alumina International Ltd. vide Ministry's letter no. J-11015/650/2007-IA.II (M) dated 19.02.2009, we are enclosing herewith six monthly compliance status for the period from 1st October 2021 to 31st March 2022 for your kind perusal.

Thanking you,

Yours faithfully,
For Utkal Alumina International Limited

MKJha 31/05/22

Mukesh Kumar Jha
Head- Mines
Baphlimali Bauxite Mine

Encl: As above

Copy to:

1. The Member Secretary, State Pollution Control Board,Paribesh Bhawan A/118 Nilakantha Nagar Unit-VIII, Bhubaneswar -751012.
2. Regional Office, CPCB, Kolkata
3. Regional Office, OSPCB, Rayagada.
4. The Regional Director,Central Ground Water Board,South Eastern Region, Bhujal Bhawan, Khandagiri, BHUBANESHWAR, PIN- 751030
5. roez.bsr-mef@nic.in, mef.or@nic.in, paribesh1@ospcboard.org,rospcb.rayagada@ospcboard.org
6. rdser-cgwb@nic.in

Name of the Project : **Baphlimali Bauxite Mine, M/s Utkal Alumina International Ltd.**

Environment Clearance No. & date : **J-11015/650/2007-IA.II (M), DTD.19.02.2009.**

Period of compliance Report : **From 1st October 2021 to 31st March 2022.**

Sl. No.	Conditions	Compliance Status
A. Specific Condition		
i.	All the conditions stipulated by the State Pollution Control Board, Orissa in their consent to establish shall be effectively implemented.	All the conditions stipulated in the Consent to Establish (CTE) issued by SPCB, Odisha have been implemented effectively.
ii.	The project proponent shall effectively address the concerns raised by the locals in the public hearing as well as during consideration of the project while implementing the project.	All the concerns raised in the public hearing are being implemented. The details of points raised and their compliance is attached as **Annexure-1**.
iii.	The project proponent shall develop fodder plots in the non-mineralized area in lieu of use of grazing land.	However, plantation of fodder species in 3 Ha land has been taken into consideration at the extreme south of mining lease area. The said area has been demarcated and spreading of grass seeds is being carried out. Gradually the fodder plot to be developed in the back filled area after mining of the ore.
iv.	The mining operations shall be restricted to above ground water table and it should not intersect groundwater table. In case of working below 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.	Our Mining operation is restricted above the ground water table. The lowest working depth of our existing mine pit has gone up to 1004 m RL ,whereas the presence of ground water table has been estimated to be about 150 to 200 mtrs below/from the surface (800-850 m RL). In addition to, the mined out area has been backfilled for restoration. Therefore, there is no possibility of any Ground Water Intersection thereby.
v.	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.	No natural watercourse or water resources are obstructed due to mining operations. Necessary care has been taken during monsoon to divert /channelize run off water to the excavated pits, so that it does not carry any sediment to obstruct / affect the water bodies at the foot hill.
vi.	The project proponent shall take adequate environmental safeguard measures for control of rolling down of silt and sediments and protection of the catchment area of upper Indrāvati Reservoir during the course of mining operation.	In addition to as stated in Sl. No. v, to check flow of any silt and sediments, numbers of check dams/siltation ponds have been constructed and ensured by regular cleaning and maintenance. There are also pumps installed in siltation pond to pump out the collected water to the open and non-working pit

		area for ground water recharge. The same is being also continued concurrently with the running of the mines. Details of Check Dams, garland drains & Siltation pit attached as **Annexure- 2** & **Photo 1, 2, 3** respectively. Siltation pits are being cleaned before monsoon and the photo is attached as **Photo 4.** After measures listed in annexure-2, the run-off confluence with the nearby seasonal nallah & ultimately to River Indrāvati after moving a distance around 9 Km, thus not affecting the quality of Indrāvati.
vii.	A 3 km stretch on the upstream and 3 Km in the downstream of the river passing through the project area should be taken up by the project authorities for plantation to arrest river bank erosion and sediment flow into the river.	There is no such perennial river/nallah exists at the mining lease. However there are small natural depressions, may called as gullies, develops preferably in the rainy days during inflow/outflow of rain water at the slope of the mining lease, which is a part of project area, are being provided with check dam & plantations of indigenous species to arrest the erosion & sediment flow into the perennial nallah available at the bottom of the mining lease.
viii.	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.	Presently there is no top soil stack exist. The old top soil stack was used and already been consumed in rehabilitation purpose. However, the top-soil scrapped during on-going mining is being utilized for plantation in backfilled area.
ix.	The over burden (OB) generated during the initial years of the mining operation shall be temporarily stacked at the earmarked dump site(s) only for backfilling. Backfilling shall start from the 4th year onwards of the mining operation and the entire quantity of the waste to be generated shall be backfilled. There shall be no external over burden dumps after the 8th year of the mining operation. The entire backfilled area shall be 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 & Forests and its Regional Office located at Bhubaneswar on six monthly basis.	The overburden of initial years of mining is stacked as per the approved mining scheme and within the earmarked area. Since 1.04.2016 backfilling has been started by utilizing entire quantity of overburden in the voids of the mined out area concurrently as per the proposal given in the Review of Mining Plan. Till march 2022, 103.96 ha area has been backfilled & 60.47 Ha has been afforested in this backfilled area. Both the activities are under continuous progress. Monitoring and management is being carried out. Compliance status is being submitted to the Ministry of Environment & Forests and its Regional Office located at Bhubaneswar on six monthly basis. Photo of backfilled area with plantation is attached as **photo- 5.**

x.	Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, mineral and temporary OB dumps to prevent run off of water and flow of sediments directly into the Kandabindha Nallah, the San River, the Indravati River and other 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 dump, temporary over burden dumps and mineral dumps to prevent run off of water and flow of sediments directly into the Kandabindha Nallah, the San River, the Indravati River and other 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.	Details of the measures asked in the enlisted in **Annexure-2** & photos attached as **Photo 1 to 4**. The runoff storage capacity has been designed keeping 50% safety margin over and above peak sudden rainfall. Sump capacity is having adequate retention period to allow proper settling of silt material. However, during rain the run-off water is continuously pumped out from settling ponds to excavated pits which increases the capacity of the ponds. The settling ponds & garland drains are being de-silted and maintained at regular intervals. Majority of the rain water of the broken up area has been channelized & collected in the mine pits during monsoon is not pumped out. Rather, it is allowed to be collected at the lowest level to augment the ground water resources. In addition to above, a scientific study was carried out on surface runoff management by deputing NIT, Rourkela and the recommendations of the study report have been implemented and verified. The Verification report of the recommendations is attached as **Annexure-3.**
xi.	Dimension of the retaining wall at the toe of temporary OB dump(s) and the over burden benches within the mine to check run-off and siltation shall be based on the rain fall data	Dimension of the retaining wall at the toe of temporary OB dump(s) within the mine to check run-off & siltation are as follows:- • height 1.00 mtr • width 0.80 mtr • length 1300.00 mtrs These dimensions are designed basing on the highest rainfall data. As per our proposal in the approved Review of Mining Plan, Dump-II has already been re-handled and Dump-I is in re-handling stage.
xii.	Plantation shall be raised in an area of 680ha including a 7.5m wide green belt in the safety zone around the mining lease, backfilled and 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.	The mining was commenced during 2012-13 and as per the approved Scheme of Mining, backfilling of mined out voids has been started from 1.04.2016. Rehabilitation over reclaimed area has been started from 2017-18. Till the end of March'202,, an area 103.96 ha is backfilled/reclaimed. In this backfilled area 60.47 ha has been afforested/ rehabilitated. However plantation is being taken up in the Mine slope including a 7.5 meter safety zone since 2012-13. This year (2021-22) till March'2022, we have planted around 1,02,788 Nos. saplings which includes safety zone around the mining lease, backfilled area, 15 mtr peripheral barrier of plateau

		boundary, mining lease slope area, around void, roads, avenue plantation etc. The remaining area will be covered progressively in phase wise manner as per the Review of Mining Plan. Different native saplings are procured from Forest department in consultation with the local DFO/Agriculture Department. In addition to this nursery has been developed to germinate, preserve and cater the seedlings during the course of plantation period. Photos of plantation & nursery are attached as **Photo- 6 & 7**.
xiii.	The void left unfilled in an area of 250ha shall be converted into the water body. The higher benches of the excavated void/mine pit shall be terraced and plantation done to stabilize the slopes. The slopes of higher benches shall be made gentler for easy accessibility by the local people to use the water body. Peripheral fencing shall be carried out all along the excavated area.	We will be abide by this condition. It will be followed according to the conceptual plan.
xiv.	Regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of SPM and RSPM such as around crushing and screening plant, loading and unloading point and all transfer points. 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.	Regular water sprinkling is done on haul roads, loading & unloading areas and material transfer points by deploying two dedicated water tankers of capacity 28 KL. Fixed water sprinkling arrangement has been provided on both sides of the arterial road and around the stock pile of 3.1 Km length. Dry fog arrangement has been provided in Crushing and screening plant. Photos of water sprinkling arrangements are attached as **Photo 8 & 9**. Regular ambient air quality monitoring is being done in the Core Zone and buffer zone comprising of four locations each. The result of the monitored air quality data (October'2021 to March'2022) shows that all parameters are well within the prescribed limit. The result of monitored data for the period of October'2021 to March'2022of core and buffer zone are attached as **Annexure– 4 & 5**.
xv.	Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintained.	The flow rate of the small perennial nallahs, which is flowing near the Baphlimali hillock close to the lease boundary, is being monitored regularly and the records are maintained. The flow rate monitoring data during October'2021 to March'2022 are attached as **Annexure 6.**
xvi.	Regular monitoring of water quality upstream and downstream of the Khandabindha Nallah shall be carried out and record of monitored data should be maintained and submitted to the	Regular monitoring of water quality upstream and downstream of the Khandabindha Nallah is being carried out and recorded. The results of surface water quality are enclosed in **Annexure-7**. The same is

	Ministry of Environment and Forests, its Regional Office, Bhubaneswar, the Central Groundwater Authority, the Regional Director, Central Ground Water Board, the State Pollution Control Board and the Central Pollution Control Board.	also being submitted to the Central Groundwater Authority, the Regional Director, Central Ground Water Board, the State Pollution Control Board and the Central Pollution Control Board with six monthly compliance report.
xvii.	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.	The following Conservation measures have been taken to augment ground water resources:- i. Rainwater harvesting is being carried out by collecting the precipitated water through a network of drainage system into the exhaust mining pit for storage and ground recharge. ii. Movement of mine faces is being carried out systematically as per mine plan following the contour lines such that the faces have self-draining slopes. Precipitated water of the adjacent area is being collected within the mined out area. iii. Concreted Weir has been constructed to arrest rain water resulting ground water recharge. Also the Surface water flow near the pit has been diverted towards the pit and this accumulation influences to recharge ground water table. Attached as **Photo-1**. iv. Arrangement has been made that the mining method and the peripheral barrier all around mining area does not allow the storm water to go outside valley areas. The water thus trapped, percolates down and recharges the ground water.
xviii.	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 Forests 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 is depleted due to mining activity, necessary corrective measures shall be carried out.	Regular monitoring of ground water level and quality is being carried out in each season of the open wells/ dug wells located around the nearby villages and the data is being submitted to Regional Office, MoEF and SPCB, Bhubaneswar once in every six month with this six monthly compliance report. Two peizometric wells have been constructed inside lease area and one outside lease to monitor the level of ground water. However another three piezometers will be installed around the lease area by August 2022. The monitoring results of Ground water quality & level for post monsoon and winter season are enclosed as **Annexure – 8 & 9** respectively. Photograph of piezometer isattached as **Photo-10**.

xix.	Appropriate mitigative measures shall be taken to prevent pollution of the San River and the Indravati River in consultation with the State Pollution Control Board.	San River & Indrāvati are flowing at a distant location 12 Kms & 9 Kms respectively. The following measures are being implemented and maintained. 1. Garland drains are constructed to check erratic flow of precipitated water. 2. Check dams are constructed around the slopes of valley to arrest silts and sediments if any. 3. Retaining wall of height 1.5 meter has been constructed at the edge of the valley. The naked areas of the valley slopes have been covered by mass afforestation and the same will be continued till full cover.
xx.	The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water (surface water and ground water, if any) required for the project.	There is no proposal to withdraw ground water for the project and surface water is being used for mining purpose. To this effect, an agreement was made between M/s Utkal Alumina Int. Ltd & Water Resource Dept. Govt. of Odisha for drawl of 9.0 cusec or 777600 cft/day of water from Govt. water source/ from San River upstream of Indrāvati River. The copy of agreement is attached as **Annexure-10.**
xxi.	Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.	As a step towards rain water harvesting, the following measures have been implemented - ❖ Rainwater harvesting is being carried out by collecting the precipitated water through a network of drainage system into the exhaust mining pit for storage, it is not used for the mining purpose. Rather, it is allowed to be collected in the lowest level to augment the ground water resources gradually. ❖ Rain water from the high elevation area is collected through network of pipes and used for domestic purpose. ❖ Movement of mine faces is being carried out systematically as per mine plan following the contour lines such that the faces have self-draining slopes. Precipitated water of the adjacent area is being collected within the mined out area. ❖ In addition to this adequate numbers of Concreted Weir have been constructed to arrest rain water resulting ground water recharge. Also the Surface water flow near the pit has been diverted towards the pit and

		this accumulation influences to recharge ground water table.
xxii.	Vehicular emissions shall be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral within the mine lease. 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.	Pollution testing certificate of all machinery is being verified regularly to check vehicular emission. Further emission level is kept under control by rigorous maintenance of all engines and changing of lubricants as per the recommendation of the manufacturer. A full fledge workshop is in place for maintenance of vehicles used in mining operation.
xxiii.	No blasting shall be carried out after the sunset. 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 is being carried out only during daytime. Controlled blasting is being practiced to reduce ground vibrations and to arrest fly rocks and boulders.
xxiv.	Drills shall either be operated with dust extractors or equipped with water injection system.	Drilling machine with in-built vacuum cyclone dust collector & equipped with water spraying system is being used. Photo of drilling is attached as **Photo-11.**
xxv.	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.	Stock pile area is surrounded by fixed water sprinkling arrangement (**Photo 12**). Further water sprinkling by mobile water tankers is being carried out for effective dust suppression. Metal hoods are provided at transfer points in Crushing and Conveying System to restrict the dispersion of dust (**Photo 13**). Dry fog system is installed for suppression of dust at ROM hopper and Transfer points (**Photo 14**).
xxvi.	Consent to operate shall be obtained from the State Pollution Control Board, Orissa prior to start of production from the mine.	Consent to Operate has obtained from the State Pollution Control Board, Odisha prior to start of production from the mine. Presently we have obtained the CTO vide letter no. 19935/IND-I-CON - 5450 dated 14.12.2021 with consent order No. 2765 which is valid up to 31.03.2023. Attached as **Annexure 11**.
xxvii.	Sewage treatment plant shall be installed for the colony. ETP shall also be provided for the workshop and wastewater generated during the mining operation.	Modular STP of 75 KLD has been installed. Effluent generated from workshop has been treated in oil and grease trap system. For advanced separation of oil and grease from the effluent one ETP of 15 KLD capacity has been installed. The photo of STP & ETP is attached as **Photo- 15 & Photo-16.**
xxviii.	The project authorities shall undertake sample survey to generate data on pre-project community health status within a radius of 1 km from proposed mine.	Complied.

xxix.	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 followed accordingly.	Pre-placement medical examination and periodical medical examination of the workers engaged in the project are carried out regularly. Annual Schedule of PME is being made for all eligible employees as per DGMS requirement and necessary PME is carried out.
xxx.	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.	Work shed have been provided to the workers at the mine site having all facilities such as fuel for cooking, permanent toilets followed with septic tanks & soak pits drinking water, medical health care. Since the mining operation has already been commenced, the regular employees & executives are coming from the integrated town ship adjacent to the alumina refinery. Domestic effluents generated are being treated in the sewage treatment plant (STP) of 75 KLD located at mines as well as discharged soak pit via septic tank constructed.
xxxi.	The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna namely; python, panther, sloth bear, wild dog etc. spotted 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 funds so allocated shall be included in the project cost. All the safeguard measures brought out in the Wildlife Conservation Plan so prepared specific to the project site shall be effectively implemented. A copy of action plan shall be submitted to the Ministry of Environment and Forests and its Regional Office, Bhubaneswar.	The Action Plan for conservation of wildlife i.e. Site Specific Wildlife Conservation Plan exclusively for Mining lease has been approved by PCCF (WL) & Chief wildlife Warden, Odisha vide letter No. 5608/1WL-SSP-80/2016 dated 27.06.2017 with financial forecast of Rs.670.451 Lakhs and an amount of Rs.535.715 Lakhs has been deposited in CAMPA FUND for implementation of the same. Further, as per the demand notice from the Divisional Forest Officer, Rayagada vide letter No. 4168 dated. 04.08.2017, an amount of Rs. 8,05,46,920/- has been deposited in CAMPA FUND for implementation of Regional Wildlife Management Plan. The copy of action taken to implement the Regional Wildlife management Plan is attached as **Annexure 12** & copy of approval letter as **Annexure 13**. In addition to that a biodiversity study is being carried out by IUCN.
xxxii.	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.	Digital processing of the entire lease area using the remote sensing technique by the authorized agency from Odisha Space Application Center (ORSAC), Bhubaneswar has been carried out for monitoring the land use pattern. The report has been submitted vide letter no UAIL-MINES/ENV/150/2020 dated 15.11.2020 to Ministry of Environment and Forests and its Regional Office, Bhubaneswar. The copy of the submission letter is attached as **Annexure- 14.**
xxxiii	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 closure for approval.	The same will be submitted to the Ministry of Environment & Forests. The final mine closure plan will be submitted 2 years in advance as per MCDR 2017.

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.	No change in mining technology and scope of working will be made without prior approval of the Ministry of Environment & Forests.
ii.	No change in the calendar plan including excavation, quantum of mineral bauxite and waste should be made.	There shall be no change in the calendar plan including excavation, quantum of mineral bauxite and 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, SPM, SO2 &NOx monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.	Four ambient air quality monitoring stations each have been established in both Core & Buffer Zone in consultation with the State Pollution Control Board, Odisha. Monitoring reports are attached as **Annexure –4 & 5**.
iv.	Data on ambient air quality (RSPM, SPM, SO_2 & NOx) should be 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 months.	The monitored AAQ data is being submitted to the concerned authorities along with the half yearly compliance report once in six month.
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 roads is being practiced through water tankers. for which, provision is made to deploy 2 nos. of 28 KL capacity tankers to spray water at dust generating points such as haul roads, loading & unloading areas and material transfer points. Fixed water sprinkling arrangements has been provided on the side of the arterial road. The haulage roads are being maintained to avoid rut and pot holes.

vi.	Measures should be taken for control of noise levels below 85 dB (A) in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs / muffs.	The following measures are taken to control noise levels below 85 dB (A) in the work environment. • Maintenance of all machines including checking of silencers regularly, • Controlled blasting using delay detonators, installing immovable machinery on foundations and in closed rooms • Provision of earplugs/muffs to workers engaged in noise prone areas. • The HEMM operators are provided with AC close cabinets which itself is acoustic in nature. The monitored report of noise level is attached as **Annexure- 15**.
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 (E) 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.	A full-fledged workshop is in place with the facility of Oil & grease trap arrangement. All the repair & maintenance activities are taken up in the existing facility, however major maintenances like engine overhauling etc are being taken up outside. All the used water during repair & maintenance are properly collected & treated thru oil & grease trap & reused. There is no outside discharge of workshop effluents.
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 program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.	Personal protective equipment are being provided to all workers respective to the nature of the job. Initial and periodical awareness training is being imparted to all workers in the Company's Vocational Training Center located within the lease area on Safety and Health Aspects. Pre-placement medical examination and periodical medical examination as per DGMS guideline of the workers engaged in the project is being carried out and records maintained for corrective measures.
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 with suitable qualified personnel has been set up under the control of the Agent of Mines, who reports the Head of the Organization directly. The organization structure is attached **Annexure- 17**.
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	Separate fund provision has been earmarked for environmental protection measures and it is not diverted for any other purpose. The expenditure incurred during the year 2021-22 is attached as **Annexure-18.**

	Forests and its Regional Office located at Bhubaneswar.	
xi.	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.	Complied.
xii.	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.	We are abide by the condition and shall extend full cooperation to the officer(s) of regional office by furnishing the requisite data / information/monitoring reports during their monitoring of compliance of the stipulated conditions.
xiii.	The project proponent shall submit six monthly report on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Office, Bhubaneswar, Central Pollution Control Board and State Pollution Control Board. The proponent shall upload the status of compliance on their website and shall update the same periodically.	Six monthly compliance report is being submitted on the status of compliance of the stipulated environmental clearance conditions including results of monitored data to the Ministry of Environment and Forests, its Regional Office Bhubaneswar, the respective Zonal Office of Central Pollution Control Board and the State Pollution Control Board. The status of compliance of the environmental clearance conditions, including results of monitored data is uploaded on company website periodically. The screenshot of the same is attached as **Annexure- 16**.
xiv.	A copy of clearance letter shall be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing the proposal.	Complied
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/ Tehsildar`s Office for 30 days.	Complied.
xvi.	The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7days 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 Forests at http://envfor.nic.in and a copy of the same should be forwarded to the Regional Office of this Ministry located at Bhubaneswar.	Complied.

PHOTOS

PHOTO 1: Showing Check dam

PHOTO 2: Showing Retaining wall & garland Drain along the Dump Slope

PHOTO 3: Showing Settling Ponds

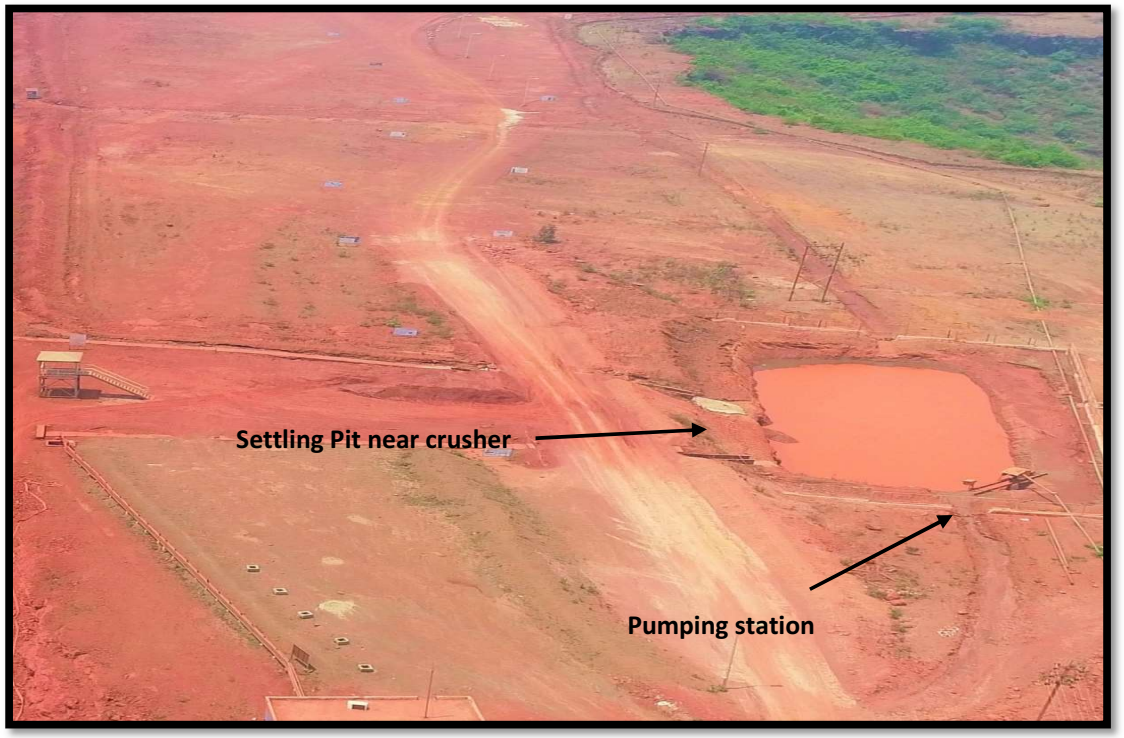


PHOTO 4: Showing Settling Pond Desilting

PHOTO 5: Showing Plantation in Backfilled area

PHOTO 6: Showing Plantation in Mine Lease

PHOTO 7: Showing Nursery inside Mine Lease

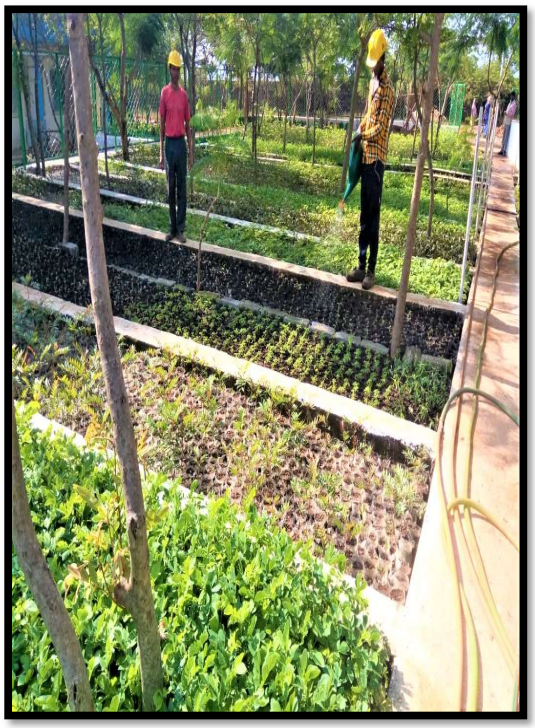


PHOTO 8: Showing 28KL Mobile sprinkler

PHOTO 9: Showing Fixed Sprinklers

PHOTO 10: Showing Peizometers inside lease

PHOTO 11: Showing drilling machine with dust Extractor

PHOTO 12: Showing Fixed sprinklers in stock pile area

PHOTO 13: Showing Covered Long distance Conveyor

PHOTO 13: Showing Dry fog system in Fixed Crushing plant

PHOTO 15: Showing 75 KLD STP

PHOTO 16: Showing 15 KLD Effluent Treatment plant

Annexure-1:

Compliance Status of the issues raised during Public Hearing

Annexure-1

Compliance Status of the issues raised during Public Hearing

Status of the issues raised in Public Hearing of the Environmental Assessment for expansion of Baphilimali Bauxite Mines of M/s. Utkal Alumina International Ltd., from 3.0 MTPY to 8.5 MTPY over an area of 1338.74 Ha at Baphlimali hill of kashipur Block in the district of Rayagada

Sl.No.	Issues Raised in Public Hearing	Compliance Status
1	The company shall abide by all rules and regulations of State Pollution Control Board/ central Pollution Control Board, Forest and Environment Department, Government of Orissa or under Environment (protection) Rules to safe guard the environment and safety norms and shall not violate the commitments made in the EIA/EMP report.	We will be abide by this condition.
2	Employment shall be made to the local people on priority and the local youths shall be imparted training to suit its requirement. This	Employment has been given to the local peoples on priority according to the skill levels.

	facility may be given to others only if suitable technical man power on the higher grade is not locally available. First preference for employment will be given to the victims of the project, Displaced persons & land losers.	
3	The project proponent should take sufficient care for improvement of health and education of local villagers and communication network of the areas and provide drinking water facility within its 20 km radius.	Utkal Alumina has been striving hard to create and improve healthy environment to enrich the quality of life of the community particularly the underprivileged in the vicinity by sustainable initiatives as follows : **Health Care :** ❖ During covid-19 pandemic situation/announcement has been carried out in 68 peripheral villages in order to create awareness among the villagers. During public announcement, villagers were distributed with leaflets carrying awareness massages. More than one lakhs face masks were supplied to the villagers of 45 peripheral villages including govt. officials and hospitals. To create awareness on frequent hand wash, 1030 soaps were distributed to the villagers. To ensure periphery hygienic, sodium hypochlorite solution was sprayed in public places of Rayagada, Kashipur, Tikiri, Nuapada, Dongasil, Kodipari, Gorakhpur, Sanamtikona and other villages. Fumigation has been carried out in 35 villages to ensure disinfection of the area. Around 900 migrated labor were supplied with grocery items for ten days. Awareness meetings were organized in different villages from time to time. ❖ Functioning of one full-fledged round the clock Health Centre with laboratory facility at Nuapada with regular Doctors & Paramedical Staffs. ❖ Functioning of Utkal Hospital at Osapada with specialist Doctors, IPD, Operation Theatre, ICU and well equipped modern equipment.

		❖ Engagement of one Mobile Health Care Unit (MHU) extending services to 44 remote villages from 10 strategic locations ❖ Round the clock services extended by four Ambulances for referral Patients ❖ Extending financial support for maintenance of one Ambulance donated to CHC, Kashipur. ❖ Extending financial assistance to the poor and needy people of peripheral villages for medical treatment. ❖ Organizing Multispecialty Health Camps at Cluster level. ❖ Creation of Health Awareness through rallies, awareness camps competitions, sanitation drives, and street plays etc. ❖ Disinfection of drains, tube well platforms and water logging areas to guard against the spread of disease. ❖ Organizing Blood Donation Camps in collaboration with Dist. Red Cross Society ❖ Extended Comprehensive eye care services including cataract surgery to 135 patients ❖ Facilitated construction of 854 toilets in 16 villages in collaboration with Swachha Bharat Mission ❖ No. of COVID Awareness Camps / Masks/ Sanitizer/COVID Remedy mini kits to be included ❖ In the context of COVID, setting up of 70 beded COVID Care Centers, 50 beded Quarantine Center,2 ICU, treatment of 446 COVID Patients, Donation of one ALS to DHH, one Ambulance with 20 ltr Oxygen Capacity to Dist. Jail Authority, Distribution of 98878 face masks along with 7940 hand sanitizers and 3000 covid Mini Kits have been done ❖ District Administration of Rayagada and Kalahandi were supplied with 30,000 and 20,000 face masks respectively. ❖ SDPO Rayagada was handed over with 1000 face masks and 160 bottles of hand sanitizer & mini remedy kits etc. ❖ District Headquarter Hospital, Rayagada was donated with 30 nos of Medical Oxygen Cylinders and 30 nos of Oxygen Concentrators along

		with 80 nos. of Pulse Oxymeter, 8 nos. of Thermal Scanner and 100 nos. of Digital Thermometer for serving the critical patients of the district **Promotion of Quality Education :** ❖ Running Aditya Birla Public School (English Medium) to provide access to good quality education. ❖ Extending financial assistance to the land loser and economically backward families and meritorious students for Higher Education under Utkal Scholarship. ❖ Extending financial support to Kucheipadar High School. ❖ Organized special Awareness drives in organizing Prabesh Utshabs for increasing school enrolment. ❖ Conducting Parents Counselling Meets to reduce school dropouts. ❖ Conducted computer literacy project in collaboration with Odisha Knowledge Corporation Ltd. ❖ Spoken English Classes were conducted for 350 students of class X,XI & XII of Govt. Girls High School, Dongasil in order to improve the communication skill in English. ❖ Construction of hostel building with drinking water facility, toilet, drainage & field leveling etc at certain schools. ❖ Construction of Boundary walls, Class rooms, CC Roads and provision of drinking water through installation of tube wells inside school campus etc. ❖ Repairing and Painting of school Buildings ❖ Donation of land for construction of Hadiguda High School Building ❖ Supply of study and sports materials and financial support for school functions ❖ Establishment of two mini science centers at Kashipur & Maikanch High Schools of Kashipur Block. ❖ Initiated remedial coaching classes at Paikakupakhal village by taking the students of class I to V.

		❖ Supplied study and teaching learning materials to the students of Remedial coaching classes. ❖ Supplied school furniture i.e. Desks & Benches (50 Sets) to Up Graded. High School, Chandragiri, and (30 sets each) to PUP School Andiakanch and Paikakupakhal ❖ One Cement Concrete road was constructed in side school campus of Maikanch Upper Primary School in order to ensure smooth movements of the school students. **Provision of drinking water :** ❖ Installation of one Bore well at Tikirapada village to provide drinking water supply for the villagers. ❖ Setting up of four solar based water supply system at Dwimundi, Dongasil & Jogiparitunda villages for drinking water supply. ❖ Installation of Twenty four tube wells in its peripheral villages in order to ensure supply of safe drinking water to the villagers. ❖ Repairing of defunct tube wells from time to time as per the request of villagers ❖ Construction of Swajaldhara (Gravity flow) for supply of water in six different villages. (Dwimundi, Pandakapadar, Dhadpas, Badlijharan, Ghatiguda & Tikirapada) ❖ Repairing of twelve defunct tube wells were carried out in Paikakupakhal, Andirakanch, Karanjkupakhal, Kanchuguma villages in order to ensure regular supply of safe drinking water to the villagers. ❖ Six nos. of tube well platforms and Six nos. of water stand posts were repaired in Karanjakupakhal Village in order to ensure smooth supply and collection of drinking water by the villagers ❖ One tube well was installed at Maligaon village to ensure supply of drinking water to the villagers

		❖ One Swajaladhara (Gravity Flow) was constructed at Barjakhal Village in order to address the availability of water for domestic use
4	Rehabilitation & resettlement package if applicable shall be strictly adhered in accordance to the decision of Government.	There is no displacement in Mines lease area.
5	The mine shall not disturb the streams originating from the hill slopes and foothills and also no mining discharge shall be made to them.	No natural watercourse or water resources are obstructed due to mining operations. Necessary care has been taken during monsoon to divert /channelize run off water to the excavated pits, so that it does not carry any sediment to obstruct / affect the water bodies at the foot hill. There is no such perennial river/nallah exists at the ML especially in the surface plateau. However there are small natural depressions, may called as gullies, develops preferably in the rainy days during inflow/outflow of rain water at the slope of the ML, which is a part of project area, are being provided with check dam & plantations of indigenous species to arrest the erosion & sediment flow into the perennial nallah available at the bottom of the ML.
6	The timing of blasting shall be intimated to the villagers in its immediate vicinity through its representatives stationed in the villages.	Blasting is only carried out in day time only. Necessary information has been given by sirens and physical guarding through security department during blasting. Notice also has been displayed at the main entrance gate regarding the timing of blasting.
7	The Mines shall intensify development activity in the villages lying on the foothills of the	Various development activities in the field of Education, Health Care, Sustainable Livelihoods, Village Infrastructure development and Social interventions has been undertaken intensively in the villages lying on the

	project and in its immediate vicinity i.e. 10 km radius.	foothills of the project and it's immediate vicinity. Activities undertaken are as follows : **Education :** ❖ Extending financial assistance to the land loser and economically backward families and meritorious students for Higher Education under Utkal Scholarship. ❖ Organised Awareness Rallies and Prabesh Utshabs for increasing school enrolment. ❖ Conducted Parents Counselling Meets to reduce school dropouts. ❖ Strengthening School Management Committees ❖ Construction of Boundary walls, additional class rooms and CC Roads inside the school campus. ❖ Repairing and Painting of school Buildings ❖ Supply of Uniforms, text books, School bags, and sports materials to the peripheral schools ❖ Supply of uniforms to the childern of Anganwadi Centers. ❖ Supply of furnitures, first-aid boxes & solar home lights to the schools ❖ Creating Education Awareness through street plays, wall writings. ❖ Supply of 50 sets of School furniture i.e. Desks & Benches to the Upgraded High School Chandragiri, and 30 sets each to PUP school, Andirakanch and Paikakupakhal ❖ Establishment of two mini science centers at Kashipur & Maikanch High Schools of Kashipur Block. ❖ Initiated remedial coaching classes at Paikakupakhal village by taking the students of class I to V. ❖ Supplied study and teaching learning materials to the students of Remedial coaching classes.

		❖ One Cement Concrete road was constructed in side school campus of Maikanch Upper Primary School in order to ensure smooth movements of the school students. **Health Care :** ❖ During covid-19 pandemic situation/announcement has been carried out in 20 peripheral villages in order to create awareness among the villagers. During public announcement, villagers were distributed with leaflets carrying awareness massages. More than ten thousand face masks were supplied to the villagers of 15 peripheral villages including govt. officials and hospitals. Fumigation has been carried out in five villages to ensure disinfection of the area. Awareness meetings were organized in different villages from time to time ❖ Extending treatment services to the villagers of villages lying on the foot hills of the project through First Aid center set up at Mines top. ❖ Engagement of one Mobile Health Care Unit (MHU) extending services to 30 remote villages from 8 strategic locations ❖ Round the clock services extended by one Ambulance for referral Patients ❖ Extending financial support for maintenance of one Ambulance donated to CHC,Kashipur ❖ Installation of seventeen tube wells and two solar based water supply of safe drinking water to the villagers. ❖ Repairing of fifteen defunct tube wells in five different villages. ❖ Nine dustbins were constructed in different location of Dhuturapas & Peringini villages to facilitate cleanliness of the village ❖ Construction of Masonary drains in Chandragiri & Paikakupakhal villages ❖ Extending financial assistance to poor and needy people for medical treatment. ❖ Organizing Multispecialty Health Camp at Cluster level.

		❖ Creating health awareness through rallies, awareness camps competitions, sanitation drives, and street plays etc. ❖ Disinfection of drains, tube well platforms and water logging areas to guard against the spread of disease. ❖ Conducted eye cataract surgery of 17 persons from four different villages ❖ Facilitated construction of 93 toilets in five villages in collaboration with Swachha Bharat Mission ❖ Five masonry drains were constructed in Paikakupakhal, Chandragiri and Dumerpadar villages to ensure smooth drainage of waste water. ❖ Organized one Eye screening camp at Paikakupakhal. ❖ Launched one Nirogsala (Village Dispensary) at Paikakupakhal village to provide treatment services to the villagers at their doorstep. **Sustainable Livelihoods :** ❖ Supply of improved varieties of vegetable seeds, pesticides, micronutrients and other inputs like sprayer machines to the farmers of sixteen peripheral villages during kharif and rabi season every year in order to increase their income through commercial vegetable cultivation. ❖ 180 farm families of six different villages have been supported for orchard development and 12 land less families for Goat Rearing under Project WADI in collaboration with NABARD. ❖ Imparted tailoring and applique training to 140 girls/women of mines peripheral villages. Now Applique training at Nuagaon is under progress by taking 15 trainees of three different villages ❖ Provided Irrigation facilities by construction of check dams, irrigation channels & Water Storage Tanks. Farmers Committees were provided with Diesel Pump Sets, HDPE Pipes with Sprinklers and installation of river lift irrigation, micro lift irrigation and deep borewells in our peripheral villages. ❖ Capacity Building of farmers through different trainings, exposure visits and extending hand holding supports to the members of different farmers

		clubs, pani panchayats, udyan vikash samitis etc.promoted in our periphery. ❖ Livestock vaccination cum health camps have been organized in different mines peripheral villages at a regular interval of time. ❖ Under Project Sambhab, during the year 21 farmers of two villages were supported for orchard development in 10 acres of land taking which total 85 farmers of six villages were supported for fruit orchard development in 27.68 acres of land with saplings, fertilisers, pesticides, fencing, agri implements and irrigation facilities. ❖ One bore well along with water storage tank was constructed at Naringjodi village for irrigating the fruit plants. ❖ Promoted lemon grass cultivation in 47 acres of land with 27 farmers of three different villages during the year. Taking this total 166 acres of land have been covered under lemon grass cultivation with 113 farmers of six villages. Three lemon grass Oil extraction unit has been installed at Jogiparitunda, Sorisapadar and Nuagaon villages. ❖ Under plantation activity total 3200 mango saplings and 1368 Cashew Graftings were supplied to 60 farmers of four different villages. ❖ Support has been extended to Maa Brundabati SHG of Phulpindha, Andirakanch for Turmeric Powder Processing activity ❖ Facilitated installation of Nine River Lift Irrigation Projects of OLIC under Jalanidhi –II schemes in Chandragiri, Peringini, Odiaguda, Lundrukana, Maikanch, Nuagaon-2, Maligaon, Hatikhaman villages with the support of OLIC ❖ Under Project Kaushalya, 18 nos of tailoring trainees of Jogiparitunda, Dandamunda and Hatikhaman villages were supported with individual Sewing machines by Utkal Alumina. They have produced 46615 nos. of face masks during COVID Pandemic Situation and there by earned Rs. 186460/-.

		❖ Two irrigation channels were constructed at Jhodia Sahi and near school building of Jogiparitunda village to reach the water to the agriculture land. ❖ Two Check dam was constructed at Randabasa of Jogiparitunda and Chandragiri villages. **Village Infrastructure development :** ❖ In order to enhance the quality of life of villagers, we have undertaken village infrastructure development jobs like Construction of Cement Concrete Roads, Causeways, Steps to river, Rest house, Boundary Walls, Culverts, Bridges, Community Centers, Street lighting, drains, bus stops and Protection Walls etc in different peripheral villages. **Social Interventions :** ❖ Organizing Block level rural volley ball tournament by taking youths of sixteen different villages. ❖ Extending financial support to organize Panchayat , Block as well as District level tournaments ❖ Supply of sports materials to the youths of peripheral villages ❖ Extending financial support for observing different puja and festivals in the villages ❖ Organizing Various social functions such as Raja Utshab, Diwali etc in villages ❖ Promoting local folk dance Dhimsa by enabling the village youths to take part in different competitions.
8	The project proponent should provide garland drains around the mining pit to prevent entry of rainy water. Adequate check dams	Necessary care has been taken during monsoon to divert /channelize run off water to the excavated pits, so that it does not carry any sediment to obstruct / affect the water bodies at the foot hill. To check flow of any silt and sediments, numbers of check dams/siltation ponds have been constructed and ensured by

	shall be provided to prevent the wash out of soils etc. from mines and solid waste dumping sites to surrounding fields.	regular cleaning and maintenance. There are also pumps installed in siltation pond to pump out the collected water to the open and non-working pit area for ground water recharge. The same is being also continued concurrently with the running of the mines. Details of Check Dams and garland drains attached as **Annexure- 2** & **Photo 1, 2 & 3.**
9	After the mining operation is over the project proponent should reclaim the mined out area with overburden, top soil followed by plantation.	From 4th year onwards i.e since 1.04.2016 backfilling has been started by utilizing entire quantity of overburden in the voids of the mined out area as per the proposal given in the Scheme of Mining. The top-soil scrapped during on-going mining is being utilized in the course of concurrent back-filling & plantation activities. Till March 2022, 60.47 ha area has been rehabilitated out of 103.96 ha backfilled area. Both the activities are under progress & shall meet by 100% as per the proposal within scheme period. After the mining operation is over the whole area will be reclaimed as per the conceptual plan of mining scheme.
10	The mine shall obtain necessary clearances such as Forest clearance, wild life clearance, clearance from water resources department, etc. from the appropriate authorities	Necessary clearances such as Forest clearance, wild life clearance, clearance from water resources department, etc. has been obtained from the appropriate authorities. Details of the letter no and date of approval is enlisted below. Forest Stage 2 Clearance: 8-18/2016-FC/02.02.2018 Wildlife clearance: 5608/IWL-SSP-80/2016/27.06.2017

		Water Resource Department: Form K as per Rule 23-A (2) (e) & Rule 26/12.12.2018 Environment Clearance: J-11015/650/2007-IA-II(M)/19.02.2009 Consent to Establish: 14388/Ind-II-NOC-4432/16.08.2007
11	The project proponent shall provide alternate gazing field for the cattle in consultation with the District Administration	

Status of the issues raised in Public Hearing of the Environmental Assessment for M/s. Utkal Alumina Intem.uional Ltd., for Baphilimali Bauxite Mines for expansion of productionupto 8.5 MTPA ot Bauxite over an area of 492.82 Ha at BaphiJimali in the district of Kalahandi

Sl.No.	Issues raised in Public Hearing	Compliance Status
1	Allocation of funds for peripheral development	❖ We are allocating funds every year for the peripheral development of the area. This allocated amount is spent in the sectors like Education, Health Care, Sustainable Livelihoods, Village Infrastructure development and Social Interventions as per the Govt. Guidelines.

2	Electricity	❖ Road side electrification is being done in different villages at the mine proximity with consultation with government dept..
3	Water Supply	❖ Six tube wells have been installed in peripheral villages like Kendumundi, Kanarpas & Durmusi of Th.Rampur block of Kalahandi district. Apart from this, five Solar based drinking water projects were installed at Kendumundi, Kanarpas,Durmusi and Suryagarh villages to provide safe drinking water to the villagers as well as to reduce women drudgery in fetching drinking water. In addition to this, defunct tube wells have also been repaired from time to time with the support of Self Employed Mechanic of RWSS deptt.
4	Health	❖ During COVID-19 Pandemic Situation, Public announcement has been carried out along with leaflet distribution and fixation of banners in 30 villages of three GPs in order to create awareness on COVID. Besides, 15000 face masks & 3500 soaps have been supplied to the villagers including Govt. officials, fumigation carried out in four villages. Extended financial support to Th.Rampur block for production and distribution of 60000 masks through Women Self Help Groups of this area. ❖ 15 Oxygen Cylinders, 12 Oxygen Concentrators, 50 Pulse Oximeters, 50 Thermometers and 10 thermal guns were provided to the District Head Quarter Hospital of Kalahandi. ❖ District Administration of Kalahandi were supplied with 20,000 face masks respectively. ❖ First-Aid Center established at Mines top is extending treatment services to the villagers of mines adjacent villages. ❖ One MHU Vehicle is engaged by our company to extend treatment services to 34 remote villages of Th. Rampur block.

		❖ Apart from treatment services, this MHU is also conducting health awareness camps, home visits and chlorination of water sources as well as disinfection of water logging areas. ❖ Facilitated construction of 40 individual toilets in Durmusi with the support of RWSS deptt. ❖ Facilitated immunization programme in 26 villages in convergence with health deptt. Under Indradhanush programme. ❖ In order to ensure smooth drainage of rain water masonry drains have been constructed in the villages. ❖ Financial assistance has been given to the poor and needy persons for medical treatment.
5	Employment	❖ Total engagement/employment 341 out of which 18 from buffer zone.
6	Protection of religious places	❖ Protection of Janadurga temple has been taken care of. No mining has been carried out in the vicinity till now and will not be done in future. Notice has also been displayed on the site.
7	Improvement of Roads	❖ Construction of Cement Concrete Roads, Causeways, Culvert, Earthen Bridges etc have been carried out in the villages like Bhismagiri, Kendumundi, Kanarpas, Chirika, Durmusi, Suryagarh, Brahmanichanchara and Adri (Gunjamali pada as well as harijan pada) as per the request of the villagers.
8	Education	❖ In order to increase school enrolment we are organizing awareness rally and prabesh utshabs in our peripheral schools every year and supplying school bags, study materials etc. during these occasion. Similarly to reduce school drop outs parents counseling meets were organized every

		year. Efforts have been given for strengthening school management committees. Schools were supplied with sports materials for attracting the students towards schools. School furniture has been supplied to one of the private high school of Karlapat GP. Awareness on Education has been created among the villagers through street plays and wall writings. ❖ Constructed one boundary wall at Upper Primary school of Dumerpadar ❖ Established one Mini Science Center at Adri High School.
9	Alternate Grazing Field	❖ Plantation of fodder species in 3 Ha land out of 5 Ha available land at the extreme south of ML area is being taken up. The said area has been demarcated and plantation of different species of grasses are being done after loosening of hard laterite and spreading of top soil.
10	Plantation	❖ Plantation is being taken up in the backfilling area, Mine slope including a 7.5 meter safety zone. In FY 2022, we have planted around 97188 numbers of saplings in an area of approx. 38 Ha. The remaining area will be covered progressively in phase wise manner as per the Scheme of Mining. ❖ Villagers of Chirika, Durmusi and Kanarpas were supplied with 2185 mango saplings for promotion of fruit orchards in their respective villages.

11	Compensation for the displaced	❖ There is no displacement due to the project.
12	Local Office and Grievance Cell	❖ A Grievance cell has been formed by the company by taking representative from Plant & Mines CSR & Admn., dept. They are mostly handling all the issues relating to employment and peripheral development.
13	Protection of environment	❖ Suitable environment plan has been formulated and continuously upgraded to mitigate the impact of different components of the Environment such as air, water, soil. Conditions in different authorizations obtained from statutory authorities have been complied to restoration and betterment of environment.
14	Other Peripheral Development	❖ Under Farm based livelihood activities,160 HHs were supported for improved paddy cultivation, 30 HHs for improved pulses cultivation ,57 HHs for Promotion of Nutrition Gardens ,25 HHs for Integrated vegetable cultivation , 20 HHs for orchard development, 20 HHs for Goat rearing, and 50 HHs for Poultry rearing in the villages of Kendumundi, Kanarpas, Chirika, Durmusi & Suryagarh . ❖ Nine Ponds were de-silted in the villages like Gopinathpur, Phatkimahul, Chingdiphas, Musajhal, Adri, Kendumundi and Rajamunda of Th.Rampur block. ❖ Promoted lemongrass cultivation in 55 acres of land with 35 farmers of 4 villages

Annexure-2

DETAILS OF GARLAND DRAIN, RETAINING WALL, SETTLING POND AND CHECK DAM

Sl. No	Type of works	Particulars		
		Length	Width (avg)	Height (avg)
01	Wall around back side of OB dump	1300 mts	0.8 mtrs	1 mtr
02	Drain work at the back side of OB dump	1922 mtrs	2.8 mtrs	1 mtr
03	Drain work at ore stack yard	353 mtrs	2.7 mtrs	1 mtr
04	Drain work at haul road towards OB dump	1000 mtrs	2 mtrs	0.6 mtr
05	Wall beside the cave	385 mtrs	0.8 mtr	1 mtr
06	Three settling pond on back side of OB dump	40 mtrs	8 mtrs	2.2 mtrs
07	Parapet wall between service center facility to mine entrance	1501 mtrs	0.8 mtr	1 mtr
08	Check dam between crusher, ramp and haul road	76 mtrs	0.8 mtrs	1 mtr
09	Check dam across the slope from previous topsoil area towards mining pit (2 nos)	47 mtrs	0.8 mtr	1 mtr
10	Check dam across the slope near mine entrance	35 mtrs	0.8 mtr	1 mtr
11	Drain work around the crusher	426 mtr	2 mtr	1 mtr
12	Hume pipe culvert in the natural stream flowing nearby Kalahandi Pit	5 mtrs	15 mtrs	
13	Concrete drain near fixed crusher	50 mtrs	1.5 mtrs	1 mtr
14	Earthen drain near fixed crusher	520 mtrs	1.5 mtrs	1 mtr
15	Settling pond connected to concrete drain near fixed crusher	44 mtrs	20 mtrs	4 mtrs
16	Parapet wall around the safety zone area of Kalahandi Pit	600 mtrs	1.5 mtrs	2 mtrs
17	Three nos. concreted weir across the natural seasonal nallah	135 mtrs	1.2 mtrs	2.5 mtrs
19	Implementation of gabion along OB dump	60 mtrs	1 mtr	1 mtr
20	Settling pond near mine entrance	40 mtrs	21 mtrs	4 mtrs
21	Settling pond near MRSS building	38 mtrs	20 mtrs	4 mtrs
22	Two Concrete drain near MRSS	290 mtrs	1.5 mtrs	1.5 mtrs
23	Settling pond near Rayagada OB dump	46 mtrs	28 mtrs	4 mtrs
24	Check Dam over slope area North East Side (48 Nos.)	30 mtrs	2 mtrs	2 mtrs

Annexure: 3: Verification report on implementation of recommendations suggested in scientific study of surface & ground water management at Baphlimali Bauxite Mine, studied by NIT, Rourkela

ADITYA BIRLA

UTKAL ALUMINA

Ref: UAIL-Mines/BBM/28/2020

14th January 2020

To

The Member secretary
State Pollution Control Board, Odisha
Parivesh Bhawan, A/118
Nilakanthanagar, unit- VIII
Bhubaneswar- 751012

Sub: submission of verification report of NIT, Rourkela pertaining to the special condition no. 13 of CTO

Ref: (i) Consent Letter No. 2608/IND-I-CON/5450 Dt.14.03.2019, Consent Order No. 2765

(ii) Our CTO renewal online Application No. 2354845 Dt.19.12.2018

Dear Sir,

With reference to the special condition no. 13 of CTO and clarification raised against our CTO for renewal, we are submitting herewith the verification report of NIT, Rourkela, regarding implementation status of recommendation suggested in the technical study of surface and ground water management of our mines by NIT, Rourkela.

This is for your information and kind perusal.

Yours faithfully,

For Utkal Alumina International Limited

(Dr Rama Chandra Rout)
Asst. Vice President- Corporate Affairs, Bhubaneswar

Copy to: Regional Office, OSPCB, Rayagada.

Encl: As Above

राष्ट्रीय प्रौद्योगिकी संस्थान
NATIONAL INSTITUTE OF TECHNOLOGY
राउरकेला ROURKELA - 769008, ओडिशा ODISHA

RIGHT TO INFORMATION

NITR/MN/HBS/2020/L/0023 Date: January 13, 2020

Dr. H. B. Sahu
Associate Professor
Department of Mining Engineering
NIT, Rourkela – 769 008
& Principal Investigator

Subject: Verification of Implementation of the recommendation of the Scientific study of Surface and Ground Water Management at Baphlimali Bauxite Mine of M/s Utkal Alumina International Limited

Dear Sir,

Attached please find the report of the verification of *implementation of the recommendations of the Scientific study of Surface and Ground Water Management at Baphlimali Bauxite Mine* which was submitted in December 2016.

Thanking you and with regards.

Yours Sincerely.

13.01.2020

Dr. H. B. Sahu

To,
Mr. Mukesh Kumar Jha
General Manager (Mines)
Baphlimali Bauxite Mines, UAIL
At: Doraguda
Post : Kucheipadar- 765 015
Dist.: Rayagada

फोन Phone : (0661) 2476773, फैक्स Fax : (0661) 2462022, वेबसाइट Website : www.nitrkl.ac.in

Verification Report on the Implementation of the Scientific Study of Surface and Ground Water Management at Baphlimali Bauxite Mine, UAIL

DEPARTMENT OF MINING ENGINEERING
NATIONAL INSTITUTE OF TECHNOLOGY
ROURKELA – 769 008

January 2020

Verification Report on the Implementation of the Scientific Study of Surface and Ground Water Management at Baphlimali Bauxite Mine, UAIL

1. Background

The technical study of surface and ground water management at Baphlimali bauxite mine, UAIL; was carried out during 2015-16.As per the requirement of Consent to Operate, stipulated by State Pollution Control Board, Bhubaneswar; the verification of the implementation of the recommendation of the scientific study is required to be carried out. In light of the above, a team comprising of Prof. H. B. Sahu, Department of Mining Engineering; and Prof. Sk Md Equeeouedin, Associate Professor, Department of Earth and Atmospheric Sciences; carried out the physical verification taking into account the plans and sections, site visit and discussion with the mine officials.

2. OBJECTIVES OF THE PROJECT

Verification of status of implementation of the Scientific study on Surface and Ground Water Management at Bhphlimali Bauxite Mine, UAIL with reference

3. RECOMMENDATIONS

Observation 1:

It is seen that the active mining area occupies a very small space at the moment. The runoff generated from the active mining area (6.21 Lakh m^3) is very insignificant compared to that of total leasehold area during the monsoon, which is 90.07 lakh m^3.

Observation 2:

The maximum runoff likely to be generated in a single month th the monsoon is likely to be 25.51 Lakh m^3 consideding the rainfall intenelty to be 349mm, which is the maxithum everage rainfall in this area over 12 year perled.

Recommendation 1:

The maximum runoff likely to be generated in R1 region per hour during the monsoon is 3403m^3 considering a maximum rainfall of 40mm per hour. The existing settling pit near the crusherof 12 m x 8m size with a depth of 4m is inadequate to handle the runoff likely to be generated. Its size is required to be enhanced to (42m x 20m x 4m) to accommodate the expected runoff. A garland drain of 277m x 1m x 1m is to be provided in the eastern boundary to channelize the runoff to the sump. The water from the sump is to be pumped to quarry 1 after settling.

Current Status: Implemented.

The dimensions of the existing settling pit has been enhanced to 44mx20mx4m (Fig.1) to accommodate the expected runoff during monsoon. One 50hp pump have been installed to pump out the water to quarry 1 after settling. A garland drain of 520m length has been constructed along the eastern boundary to channelize the runoff to the sump.

Figure 1: View of settling pit and pumps near the crusher

Recommendation 2:

The maximum runoff likely to be generated in R2 region during monsoon is 6680 m^3/hr. This runoff is likely to be contaminated by loading and ancillary activities. It is proposed to have two settling ponds near the mine entrance of 1800m^3 capacity each (30m x 15m x 4m) to handle the runoff.Garland drains of 545m x 1m x 1m is required to be constructed to channelize the runoff to the settling ponds. The water after settling may be allowed to flow outside since it has been found that there is no significant contamination of the water bodies downstream.

Current Status: Implemented

The existing settling pit near the mine entrance has been enhanced to 40m x 21m x 4m to accommodate 3360 m^3 of runoff (Fig.2). A new settling pit of 38m x 20m x 4m depth has been constructed to accommodate 3040 m^3 of runoff (Fig.3). Two 75hp pumps have been installed in the 2nd settling pit to pump the runoff to Quarry 1.Two concrete garland drains of an aggregate length of 290m and earthen garland drains of 600m have been constructed in this region to channelize the runoff to these settling pits (Fig.4).

Figure 2: View of the reconstructed settling pit near the mine entrance

Figure 3: View of the newly constructed 2nd settling pit near the mine entrance

Figure 4: View of garland drains constructed in the R2 region

Recommendation 3:

The expected runoff in R3 region is 8444 m^3 per hour. A drain of 1170m having width and depth of of 4m and 2m respectively is proposed to be constructed in R3 region on the western side parallel to the existing of conveyor belt to arrest the surface runoff generated within this region and channelize it to quarry 1. As the flow of runoff is towards the bauxite storage, crusher and conveyor belt, therefore there is maximum possibility of intermixing of surface runoff with that of bauxite ore. The bauxite storage site, and crusher plant and ancillary facilities are covering very small portions of the total area of R3 region. Culverts/hume pipes are required to be provided where the drain crosses the road.

Current Status: Implemented

Garland drains of adequate dimensions have been constructed in this region (Fig.5). Earthern retaining wall and garland drain has been provided around the bauxite storage area to prevent the intermixing of the runoff. Hume pipe has been provided at the locations where the drains cross the road.

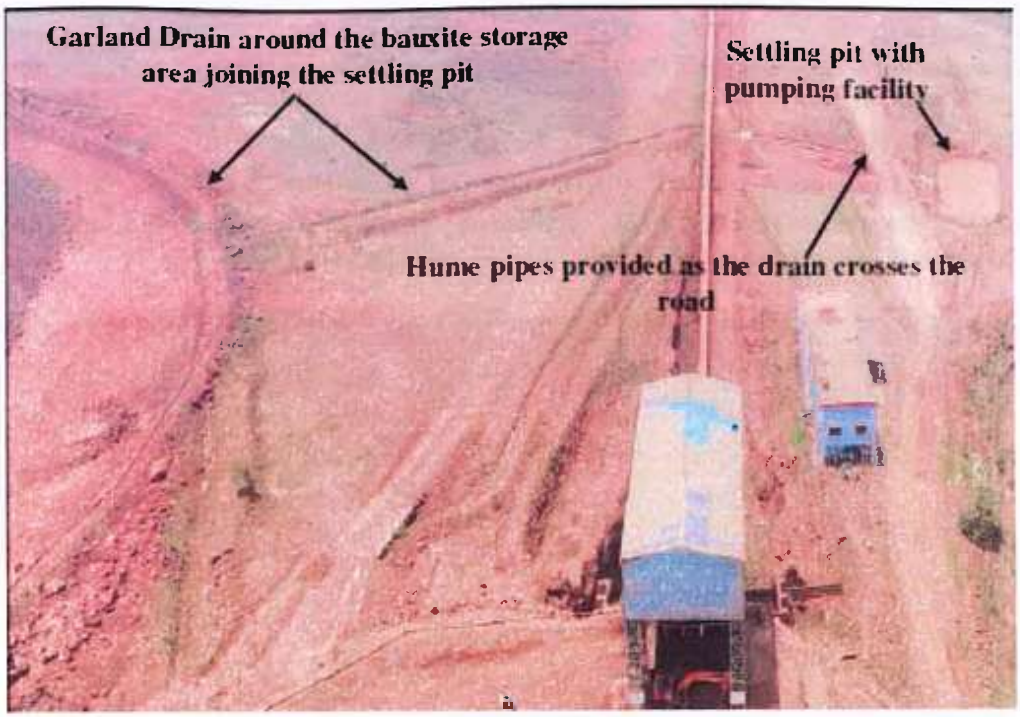


Figure 5: View of earthen retaining wall and garland drains near the bauxite storage area and crusher

Recommendation 4:

The regions R4, R5 and R6 regions are in virgin state. The runoff from these regions may be allowed to follow the natural topography. There are some small seasonal nallahs that are created during the monsoon, which carries the surface runoff to the nearby valleys.

Current Status: There is no change in this region.

Recommendation 5:

Most part of R8 is in a virgin state. The runoff from this region is channelized to the valley after the settlement of suspended solids in small settling pits constructed near the boundary. A sewage treatment plant (STP) of 75KLD capacity is under construction to handle the waste water from the domestic and office areas which is adequate.

Current Status: The runoff from this region is settled in the settling pits. The construction of STP near the administrative building has been completed. Meanwhile, more plantations have been carried out in this region along with the establishment of a nursery. The area is now greener than before.

Recommendations 6:

A retaining wall has been provided below the Rayagada dump (Dump I). However, it is damaged in different locations, allowing the mixing of runoff from the virgin areas of R8 before flowing to the valley. Since the quality of runoff from virgin areas is relatively uncontaminated, it should be allowed to flow without mixing with the runoff from the dump. It

is suggested that the retaining wall around the periphery of the dump should be properly maintained to avoid the direct mixing of the runoff with that of the virgin areas.

Current Status: Implemented.

The retaining walls have been properly maintaining with reconstruction of the damaged portions (Fig. 6). The natural runoff from the virgin areas do not mix with the runoff from the dump and flows to the valley after being settled in the renovated settling pits (Fig.7).

Figure 6: Photographic view of reconstriction of the retaining wall

Figure 7: Renovated settling pits

Recommendation 7:

A part of the runoff from this dump is flowing to the quarry. However, nearly 4500 m^3 of runoff per hour is expected to flow outside during peak monsoon period. Therefore, a sedimentation pond of 45m x 25m x 4m is proposed to be constructed below the dump. Zigzag flow pattern may be followed in the garland drains below the dumps to arrest the suspended solids before it reaches the settling pond, which will enhance the capacity of the settling pit.

Current Status: Implemented.

An additional settling pit of 46m x 28m x 4m has been constructed as per the recommendation (Fig. 8). The runoff from the dump is being channelized to the settling pit.

Figure 8: Settling pond near Rayagada dump.

Recommendation 8:

The runoff from Kalahandi Dump (Dump II) is being channelized to Kalahandi Quarry (Quarry II). The total runoff from the quarry and the dump in monsoon is likely to be 1.34 Lakh m^3. The quarry sump has the capacity to accommodate 1.54 Lakh m^3 of runoff during the monsoon (120m x 80 m x 16m). It was noticed that most of the water in the mine sump percolates downward, and there is very small amount of water present in the mine even during the monsoon.

Current Status:

The Kalahandi quarry sump has adequate capacity to store the runoff generated during the monsoon.

Recommendation 9:

There is a seasonal nallah in R7 region. It was noted that the nallah is seasonal one and exists only during the monsoon. Three check dams have been constructed on this nalla. The dimension of the check dams varies between 50 to 60 m in length, 2m width and 1 to 1.5m in

height (Fig. 3). However, during mine visits, it was noticed that there are cracks in the bottom parts of the dams which is allowing seepage of the water to the downstream. These may be properly constructed so that they will work as permanent storage reservoirs. These have the capability to store 75,000 m^3 to 1,35,000 m^3 of runoff. To meet part of the mine water demand the height of the check dams may be enhanced to 4m so that it can store upto 3,60,000 m^3 of runoff during monsoon.

Current Status: Implemented

The existing check dams in this region have been reconstructed with repairing of the cracks that were existing the bottom part of these dams. The heights of these dams have been enhanced to 4m to accommodate the runoff likely to be generated during the monsoon. A view of the check dams before and after reconstruction has been presented in Figure 9a and 9b respectively.

Figure 9a: Photographic view of damged check dam during 2016

Figure 9b: Photographic view of the reconstructed check dam

Recommendation 10:

Retaining walls are required to be provided in the top soils storage and crushed bauxite storage sites, so that the natural runoff coming from the topmost part of the mine does not mix with it.

Current status: Implemented. Top soil dump has already been re-handled and utilized for the plantation purpose.

Recommendation 11:

All the existing mine sumps, garland drains, sedimentation ponds created on thesurface should be de-silted before monsoon and a record of the same should bemaintained in the respective mine office. Wherever possible, the sumps may bedeepened to accommodate more surface runoff quantity.

Status: Implemented

All the existing mine sumps, garland drains, sedimentation ponds created on the surfaceis being de-silted before monsoon and a record of the same being maintained.

Recommendation 12:

In order to avoid accidental entry of any person or cattle into the sedimentationponds, roper fencing should be carried out. Warning signs should also bedisplayed near the water bodies along with their depth.

Status: Implemented

The sedimentation ponds have been properly fenced to prevent accidental entry of anyperson or cattle with a depth measurement scale in the middle of the pond (Fig. 10).

Figure 10: Fencing around the settling pit

Recommendation 13:

Plantation, grassing and soil water conservation measures like contour trenches(2ft wide x 2ft depth x continuous or staggered 2ft wide x 2ft depth x 2m length at 6m slope interval) and bund (2 ft high), agave plantation, silt arrestors, check dametc should be carried out in all the external o/b dumps slopes to minimize siltationduring monsoon, otherwise the capacity of garland drain to carry the surfacerunoff will decrease and will lead to flooding and discharged to nearby areasinstead of being channelled to the sump. Proper retaining wall or gabion wall orcatch drain (1.5m x 1.5m cross section) should be provided at the toe of the OBdumps to arrest the siltation during heavy rains and these catch drains should be cleaned before onset of monsoon each year.

Status: Implemented

Garland drains, settling tanks and check dams of appropriate size, gradient and lengthhas been constructed both around the mine pit and the over burden dump to preventun off of water and flow of sediments directly into the natural nallah and other water bodies. The garland drains are being desilted regularly before onset of monsoon.

Additional Observations:

During site visit the following additional observations were made:

Concrete drains of 160m length, 1.5m width and 1m depth has been provided on the side of approach road to the mine entrance.

A network of pumps and pipelines has been provided to channelize the runoff from the settling pits to the Quarries.

Vast amount of plantation has been carried out on the backfilled areas of the mine (Fig. 11).

Figure 11: Photographic view of the plantation in the backfilled areas of the mine

12.07.2020

Dr. H. B. Sahu
Associate Professor and Head
Department of Mining Engineering
Principal Investigator

13-01-2020

Dr. Sk. Md. Equeenuddin
Associate Professor
Dept of Earth and Atmospheric Sciences
Co-Principal Investigator

ANNEXURE: 4

Ambient Air Quality Monitoring Report (Core Zone)

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Envlab/21/R-6661 Date: 02.11.2021

TEST REPORT

Customer Name & Address : Baphlimali Miues, M/s Utkal Alumiua Iuternatioual Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S1: Mining Pit	Sampled by	VCSPL'S Representative
Sample Deseription	Ambient Air	Sampling Proeedure	IS 5182
Sample Souree	Baphlimali Mines, UAIL	Sample Received on	06.10.2021, 08.10.2021, 13.10.2021, 16.10.2021, 20.10.2021, 22.10.2021, 26.10.2021, 28.10.2021
Sample Condition	Gaseons Sample Solntion Refrigerated	Latitude : N19°20.773′ Longitnde : E82°58.332′ Altitnde : 974.45 m.	
Sampling Date	05.10.2021, 07.10.2021, 12.10.2021, 14.10.2021, 19.10.2021, 21.10.2021, 25.10.2021, 27.10.2021	Test Completed on	11.10.2021 to 01.11.2021

Sl. No.	Sampling Date	Parameters											
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphar Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)	O_3 ($\mu g/m^3$)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)
1	05.10.2021	59.0	33.8	8.6	17.3	0.51	6.1	BDL	BDL	BDL	BDL	BDL	BDL
2	07.10.2021	54.0	31.0	7.7	15.4	0.46	4.8	BDL	BDL	BDL	BDL	BDL	BDL
3	12.10.2021	62.0	35.7	8.2	19.1	0.39	5.3	BDL	BDL	BDL	BDL	BDL	BDL
4	14.10.2021	58.0	33.6	9.3	18.5	0.44	5.7	BDL	BDL	BDL	BDL	BDL	BDL
5	19.10.2021	53.0	29.8	7.8	16.2	0.53	6.4	BDL	BDL	BDL	BDL	BDL	BDL
6	21.10.2021	61.0	35.2	10.6	21.2	0.48	7.3	BDL	BDL	BDL	BDL	BDL	BDL
7	25.10.2021	66.0	37.7	11.2	20.7	0.57	6.8	BDL	BDL	BDL	BDL	BDL	BDL
8	27.10.2021	56.0	32.6	11.6	18.6	0.53	6.1	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average		58.6	33.7	9.4	18.4	0.49	6.1	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Staudard		100	60	80	80	4	100	400	05	01	20	1.0	06
Testing Method		IS 5182: Part 23	CPCB Mannal	IS 5182 (Part-2) RA2017	IS 5182 (Part-6) RA2017	IS 5182 (Part-10):1999	Chemical Method	Indo Phenoi Blue Method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling on EPM 2000 or Eqnivalent filter Paper		

BDL Values: SO_2< 4 $\mu g/m^3$, NO_X< 9 $\mu g/m^3$, O_3<4 $\mu g/m^3$, NH_3<20 $\mu g/m^3$, Ni<0.01 ug/m^3, As < 0.001 ng/m^3, C_6H_6<0.001 $\mu g/m^3$, BaP<0.002 ug/m^3, Pb<0.001 $\mu g/m^3$, CO-<0.1 mg/m^3

Remarks: (All the values of PM-10, PM-2.5, SO_2, NOx & CO, O_3 etc presented in row no 1-8 are **Time Weighted Average.**

Visiontek Consultancy Services Pvt. Ltd. BBSR *Reviewed by*

Visiontek Consultancy Services Pvt. Ltd. *Approved by*

Plot No.- M-22 & 23, Chandaka Industrial Estate, Patia, Bbubaneswar, Khurda, Odisha-751024, India Tel.: 0674-3511721
E-mail: visiontek@vcspl.org, visiontekin@gmail.com
Visit us at: www.vcspl.org

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Envlab/21/R-6662 Date: 02.11.2021

TEST REPORT

Customer Name & Address : Baphlimali Miues, M/s Utkal Alumina Interuatioual Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S2: Near Crusher	Sampled by	VCSPL'S Representative
Sample Deseription	Ambient Air	Sampling Procednre	IS 5182
Sample Source	Baphlimali Miues, UAIL	Sample Received on	06.10.2021, 08.10.2021, 13.10.2021, 16.10.2021, 20.10.2021, 22.10.2021, 26.10.2021, 28.10.2021
Sample Condition	Gaseous Sample Solution Refrigerated	Latitnde : N19°20.915′ Longitnde : E82°58.543′ Altitude : 999.74 m.	
Sampling Date	05.10.2021, 07.10.2021, 12.10.2021, 14.10.2021, 19.10.2021, 21.10.2021, 25.10.2021, 27.10.2021	Test Completed on	11.10.2021 to 01.11.2021

Sl. No.	Sampling Date	Parameters											
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Snlphnr Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)	O_3 ($\mu g/m^3$)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)
1	05.10.2021	52.0	29.4	7.7	16.3	0.39	4.7	BDL	BDL	BDL	BDL	BDL	BDL
2	07.10.2021	47.0	26.6	5.9	13.5	0.42	6.1	BDL	BDL	BDL	BDL	BDL	BDL
3	12.10.2021	54.0	30.7	7.1	15.8	0.45	5.3	BDL	BDL	BDL	BDL	BDL	BDL
4	14.10.2021	59.0	33.2	10.3	19.2	0.51	6.0	BDL	BDL	BDL	BDL	BDL	BDL
5	19.10.2021	56.0	31.8	7.8	16.1	0.48	5.6	BDL	BDL	BDL	BDL	BDL	BDL
6	21.10.2021	60.0	34.1	9.2	18.6	0.43	5.2	BDL	BDL	BDL	BDL	BDL	BDL
7	25.10.2021	57.0	31.7	7.3	15.4	0.36	4.9	BDL	BDL	BDL	BDL	BDL	BDL
8	27.10.2021	51.0	28.3	8.2	18.1	0.47	5.7	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average		54.5	30.7	7.9	16.6	0.44	5.4	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard		100	60	80	80	4	100	400	05	01	20	1.0	06
Testing Method		IS 5182: Part 23	CPCB Manual	IS 5182 (Part-2) RA2017	IS 5182 (Part-6) RA2017	IS 5182 (Part-10):1999	Chemical Method	Indo Phenol Blue Method	Absorption & Desorption followed hy GC analysis	Solvent extraction followed hy Gas Chromatography analysis	AAS method after sampling on EPM 2000 or Equivalent filter Paper		

BDL Values: SO_2< 4 $\mu g/m^3$, NO_X< 9 $\mu g/m^3$, O_3<4 $\mu g/m^3$, NH_3<20 $\mu g/m^3$, Ni<0.01 ng/m^3, As < 0.001 ng/m^3, C_6H_6<0.001 $\mu g/m^3$, BaP<0.002 ng/m^3, Pb<0.001 $\mu g/m^3$, CO-<0.1 mg/m^3

Remarks: (All the values of PM-10, PM-2.5, SO_2, NOx & CO, O_3 etc presented in row no 1-8 are **Time Weighted Average.**

Visiontek Consultancy Services Pvt. Ltd. BBSR Reviewed by

Visiontek Consultancy Services Pvt. Ltd. BBSR Approved by

Plot No.- M-22 & 23, Chandaka Industrial Estate, Patia, Bhubaneswar, Khurda, Odisha-751024, India Tel.: 0674-3511721
E-mail: visiontek@vcspl.org, visiontekin@gmail.com
Visit ns at: www.vcspl.org

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Iufrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Euergy
- Agricnltural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Envlab/21/R-6663

Date: 02.11.2021

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alumina Internatioual Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Locatlon & Code	S3: Near Weigh Bridge	Sampled by	VCSPL'S Repcsentative
Sample Description	Amhient Air	Sampling Procedure	IS 5182
Sample Sonrce	Baphlimali Miues, UAIL	Sample Received on	06.10.2021, 08.10.2021, 13.10.2021, 16.10.2021, 20.10.2021, 22.10.2021, 26.10.2021, 28.10.2021
Sample Condition	Gaseous Sample Solution Refrigerated	Latitnde : N19°21.079' Longitude : E82°58.775' Altitnde : 993.95 m'	
Sampling Date	05.10.2021, 07.10.2021, 12.10.2021, 14.10.2021, 19.10.2021, 21.10.2021, 25.10.2021, 27.10.2021	Test Compieted on	11.10.2021 to 01.11.2021

Sl. No.	Sampling Date	Parameters											
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Partienlate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Snlphnr Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)	O_3 ($\mu g/m^3$)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP ($\mu g/m^3$)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As ($\mu g/m^3$)
1	05.10.2021	61.0	35.2	10.7	19.7	0.54	6.6	BDL	BDL	BDL	BDL	BDL	BDL
2	07.10.2021	53.0	30.7	8.7	16.3	0.48	7.1	BDL	BDL	BDL	BDL	BDL	BDL
3	12.10.2021	58.0	33.6	8.3	17.7	0.44	6.3	BDL	BDL	BDL	BDL	BDL	BDL
4	14.10.2021	64.0	36.3	11.6	20.4	0.47	6.7	BDL	BDL	BDL	BDL	BDL	BDL
5	19.10.2021	56.0	32.0	9.5	19.5	0.53	5.9	BDL	BDL	BDL	BDL	BDL	BDL
6	21.10.2021	67.0	38.7	10.7	18.6	0.58	5.2	BDL	BDL	BDL	BDL	BDL	BDL
7	25.10.2021	59.0	33.1	8.8	17.5	0.62	7.3	BDL	BDL	BDL	BDL	BDL	BDL
8	27.10.2021	65.0	37.6	11.6	22.2	0.55	7.0	BDL	BDL	BDL	BDL	BDL	BDL
Mouthly Average		60.4	34.7	10.0	19.0	0.53	6.5	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Staudard		100	60	80	80	4	100	400	05	01	20	1.0	06
Testing Method		IS 5182: Part 23	CPCB Manual	IS 5182 (Part-2) RA2017	IS 5182 (Part-6) RA2017	IS 5182 (Part-10):1999	Chemical Method	Indo Phenol Blue Method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling on EPM 2000 or Equivalent filter Paper		

BDL Values: SO_2< 4 $\mu g/m^3$, NO_X< 9 $\mu g/m^3$, O_3<4 $\mu g/m^3$, NH_3<20 $\mu g/m^3$, Ni<0.01 ng/m^3, As < 0.001 ng/m^3, C_6H_6<0.001 $\mu g/m^3$, BaP<0.002 ug/m^3, Pb<0.001 $\mu g/m^3$, CO-<0.1 mg/m^3

Remarks: (All the values of PM-10, PM-2.5, SO_2, NOx & CO, O_3 etc presented in row no 1-8 are **Time Weighted Average.**

Visiontek Consultancy Services Pvt. Ltd. BBSR *Reviewed by*

Visiontek Consultancy Services Pvt. Ltd. BBSR *Approved by*

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigatiou
- Quaiity Control & Project Managcment
- Renewable Energy
- Agricultural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No Envlab/21/R-6664 Date: 02.11.2021

TEST REPORT

Customer Name & Address : Baphlimali Miues, M/s Utkal Alumiua Iuteruational Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S4: Near Office	Sampled by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procednre	IS 5182
Sample Source	Baphlimali Mines, UAIL	Sample Reeeived on	06.10.2021, 08.10.2021, 13.10.2021, 16.10.2021, 20.10.2021, 22.10.2021, 26.10.2021, 28.10.2021
Sample Condition	Gaseous Sample Solution Refrlgerated	Latitude : N19°20.366′ Longitude : E82°58.874′ Altitnde : 955.24 m.	
Sampling Date	05.10.2021, 07.10.2021, 12.10.2021, 14.10.2021, 19.10.2021, 21.10.2021, 25.10.2021, 27.10.2021	Test Completed on	11.10.2021 to 01.11.2021

Sl. No.	Sampling Date	Parameters											
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particnlate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Snlpbur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)	O_3 ($\mu g/m^3$)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni ($\mu g/m^3$)	Pb ($\mu g/m^3$)	As (ng/m^3)
1	05.10.2021	43.0	23.6	5.6	14.8	0.29	5.1	BDL	BDL	BDL	BDL	BDL	BDL
2	07.10.2021	50.0	27.1	6.8	16.1	0.32	4.6	BDL	BDL	BDL	BDL	BDL	BDL
3	12.10.2021	46.0	24.8	5.2	15.3	0.35	5.7	BDL	BDL	BDL	BDL	BDL	BDL
4	14.10.2021	52.0	28.4	7.7	16.6	0.43	5.1	BDL	BDL	BDL	BDL	BDL	BDL
5	19.10.2021	49.0	26.6	8.5	18.3	0.37	6.0	BDL	BDL	BDL	BDL	BDL	BDL
6	21.10.2021	54.0	29.7	6.6	14.7	0.29	5.5	BDL	BDL	BDL	BDL	BDL	BDL
7	25.10.2021	58.0	31.7	5.9	14.2	0.35	6.7	BDL	BDL	BDL	BDL	BDL	BDL
8	27.10.2021	51.0	27.2	7.3	16.4	0.44	5.8	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average		50.4	27.4	6.7	15.8	0.36	5.6	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Staudard		100	60	80	80	4	100	400	05	01	20	1.0	06
Testing Method		IS 5182: Part 23	CPCB Manual	IS 5182 (Part-2) RA2017	IS 5182 (Part-6) RA2017	IS 5182 (Part-10):1999	Chemical Method	Indo Phenol Blue Method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling on EPM 2000 or Equivalent filter Paper		

BDL Values: SO_2< 4 $\mu g/m^3$, NO_X< 9 $\mu g/m^3$, O_3<4 $\mu g/m^3$, NH_3<20 $\mu g/m^3$, Ni<0.01 ng/m^3, As < 0.001 ng/m^3, C_6H_6<0.001 $\mu g/m^3$, BaP<0.002 ng/m^3, Pb<0.001 $\mu g/m^3$, CO-<0.1 mg/m^3

Remarks: (All the values of PM-10, PM-2.5, SO_2, NOx & CO, O_3 etc presented in row no 1-8 are **Time Weighted Average.**

Visiontek Consultancy Services Pvt. Ltd. BBSR *Reviewed by*

Visiontek Consultancy Services Pvt. Ltd. BBSR *Approved by*

Test Report No: Envlab/21/R-9132 Date: 04.12.2021

TEST REPORT

Cnstomer Name & Address : Baphiimaii Mines, M/s Utkal Aiumina International Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S1: Mining Pit	Sampled by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	Baphlimali Mines, UA1L	Sample Received on	02.11.2021, 05.11.2021, 09.11.2021, 11.11.2021, 16.11.2021, 20.11.2021, 23.11.2021, 25.11.2021
Sample Conditiou	Gaseous Sampie Solution Refrigerated	Latitude : N19°20.773′ Longitude : E82°58.332′ Altitude : 974.45 m.	
Sampliug Date	01.11.2021, 03.11.2021, 08.11.2021, 10.11.2021, 15.11.2021, 19.11.2021, 22.11.2021, 24.11.2021	Test Completed on	06.11.2021 to 30.11.2021

Sl. No.	Sampling Date	Parameters											
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulpbur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)	O_3 ($\mu g/m^3$)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)
1	01.11.2021	68.0	35.3	9.1	16.6	0.49	4.9	BDL	BDL	BDL	BDL	BDL	BDL
2	03.11.2021	63.0	36.0	10.4	18.3	0.54	5.4	BDL	BDL	BDL	BDL	BDL	BDL
3	08.11.2021	59.0	33.5	8.8	15.7	0.61	6.1	BDL	BDL	BDL	BDL	BDL	BDL
4	10.11.2021	67.0	38.3	12.2	21.5	0.58	5.9	BDL	BDL	BDL	BDL	BDL	BDL
5	15.11.2021	73.0	39.5	10.7	18.6	0.64	5.6	BDL	BDL	BDL	BDL	BDL	BDL
6	19.11.2021	69.0	39.5	11.4	22.3	0.49	6.7	BDL	BDL	BDL	BDL	BDL	BDL
7	22.11.2021	72.0	41.2	9.8	17.5	0.55	6.3	BDL	BDL	BDL	BDL	BDL	BDL
8	24.11.2021	76.0	43.8	10.6	21.2	0.58	6.5	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average		68.4	38.4	10.4	19.0	0.56	5.9	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard		100	60	80	80	4	100	400	05	01	20	1.0	06
Testing Metbod		IS 5182: Part 23	CPCB Manual	IS 5182 (Part-2) RA2017	IS 5182 (Part-6) RA2017	IS 5182 (Part-10):1999	Chemieal Method	Iudo Phenol Blue Metbod	Absorption & Desorption followed by GC aualysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling on EPM 2000 or Equivalent filter Paper		

BDL Values: SO_2< 4 $\mu g/m^3$, NO_X< 9 $\mu g/m^3$, O_3<4 $\mu g/m^3$, NH_3<20 $\mu g/m^3$, Ni<0.01 ng/m^3, As < 0.001 ng/m^3, C_6H_6<0.001 $\mu g/m^3$, BaP<0.002 ng/m^3, Pb<0.001 $\mu g/m^3$, CO-<0.1 mg/m^3

Remarks: (All the values of PM-10, PM-2.5, SO_2, NOx & CO, O_3 etc presented in row no 1-8 are **Time Weighted Average.**

Visiontek Consultancy Services Pvt. Ltd. BBSR Reviewed by

Visiontek Consultancy Services Pvt. Ltd. BBSR Approved by

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigation
- Quality Control & Project Mauagement
- Renewable Energy
- Agricultural Development
- Informatiou Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Expioration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Envlab/21/R-9133 Date: 04.12.2021

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alumina International Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S2: Near Crusher	Sampled by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Proeedure	IS 5182
Sample Sonrce	Baphlimali Mines, UAIL	Sample Received on	02.11.2021, 05.11.2021, 09.11.2021, 11.11.2021, 16.11.2021, 20.11.2021, 23.11.2021, 25.11.2021
Sample Condition	Gaseous Sample Solution Refrigerated	Latitude : N19°20.915′ Longitude : E82°58.543′ Altitude : 999.74 m.	
Sampling Date	01.11.2021, 03.11.2021, 08.11.2021, 10.11.2021, 15.11.2021, 19.11.2021, 22.11.2021, 24.11.2021	Test Completed ou	06.11.2021 to 30.11.2021

Sl. No.	Sampling Date	Parameters											
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulpbur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)	O_3 ($\mu g/m^3$)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ug/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)
1	01.11.2021	58.0	32.7	8.5	15.7	0.41	5.4	BDL	BDL	BDL	BDL	BDL	BDL
2	03.11.2021	63.0	35.4	10.1	18.3	0.35	5.8	BDL	BDL	BDL	BDL	BDL	BDL
3	08.11.2021	56.0	31.8	7.7	16.1	0.46	4.6	BDL	BDL	BDL	BDL	BDL	BDL
4	10.11.2021	64.0	36.3	9.6	20.7	0.47	5.1	BDL	BDL	BDL	BDL	BDL	BDL
5	15.11.2021	59.0	33.7	8.1	16.5	0.39	4.5	BDL	BDL	BDL	BDL	BDL	BDL
6	19.11.2021	66.0	37.3	10.2	19.1	0.42	4.3	BDL	BDL	BDL	BDL	BDL	BDL
7	22.11.2021	61.0	34.0	11.5	19.7	0.44	5.2	BDL	BDL	BDL	BDL	BDL	BDL
8	24.11.2021	64.0	36.6	9.4	17.8	0.48	5.6	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average		61.4	34.7	9.4	18.0	0.43	5.1	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard		100	60	80	80	4	100	400	05	01	20	1.0	06
Testing Mctbod		IS 5182: Part 23	CPCB Manual	IS 5182 (Part-2) RA2017	IS 5182 (Part-6) RA2017	IS 5182 (Part-10):1999	Chemical Method	Indo Phenol Blue Mcthod	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling on EPM 2000 or Eqoivalent filter Paper		

BDL Values: SO_2< 4 µg/m³, NO_X< 9 µg/m³, O_3<4 µg/m³, NH_3<20 µg/m³, Ni<0.01 ng/m³, As < 0.001 ng/m³, C_6H_6<0.001 µg/m³, BaP<0.002 ng/m³, Pb<0.001 µg/m³, CO-<0.1 mg/m³

Remarks: (All the values of PM-10, PM-2.5, SO_2, NOx & CO, O_3 etc presented in row no 1-8 are **Time Weighted Average.**

Visiontek Consultancy Services Pvt. BBSR Reviewed by

Visiontek Consultancy Services Pvt. BBSR Approved by

Plot No.- M-22 & 23, Chandaka Industrial Estate, Patia, Bhuhaneswar, Khurda, Odisha-751024, India Tel.: .0674-3511721
E-mail: visiontek@vcspl.org, visiontekin@gmail.com
Visit us at: www.vcspl.org

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- infrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface investigation
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Envlab/21/R-9134 Date: 04.12.2021

TEST REPORT

Cnstomer Name & Address : Baphlimali Mines, M/s Utkai Aiumiua Iuternational Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S3: Near Weigh Bridge	Sampled by	VCSPL'S Representative
Sample Description	Ambieut Air	Sampling Proeedure	IS 5182
Sample Source	Baphlimali Mines, UA1L	Sample Reeeived on	02.11.2021, 05.11.2021, 09.11.2021, 11.11.2021, 16.11.2021, 20.11.2021, 23.11.2021, 25.11.2021
Sample Condition	Gaseons Sample Solution Refrigerated	Latitude : N19°21.079' Longitude : E82°58.775' Altitude : 993.95 m'	
Sampling Date	01.11.2021, 03.11.2021, 08.11.2021, 10.11.2021, 15.11.2021, 19.11.2021, 22.11.2021, 24.11.2021	Test Completed on	06.11.2021 to 30.11.2021

Sl. No.	Sampling Date	Parameters											
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particnlate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulpbur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)	O_3 ($\mu g/m^3$)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (og/m^3)
1	01.11.2021	73.0	41.8	12.5	21.6	0.51	5.7	BDL	BDL	BDL	BDL	BDL	BDL
2	03.11.2021	69.0	39.7	10.3	18.8	0.56	6.2	BDL	BDL	BDL	BDL	BDL	BDL
3	08.11.2021	77.0	44.0	11.8	20.4	0.64	4.9	BDL	BDL	BDL	BDL	BDL	BDL
4	10.11.2021	71.0	40.6	13.2	22.7	0.59	5.8	BDL	BDL	BDL	BDL	BDL	BDL
5	15.11.2021	68.0	38.3	10.7	21.1	0.62	5.4	BDL	BDL	BDL	BDL	BDL	BDL
6	19.11.2021	72.0	41.4	12.7	23.4	0.51	6.1	BDL	BDL	BDL	BDL	BDL	BDL
7	22.11.2021	67.0	37.8	12.2	20.8	0.57	6.6	BDL	BDL	BDL	BDL	BDL	BDL
8	24.11.2021	75.0	42.6	13.6	22.6	0.53	5.7	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average		71.5	40.8	12.1	21.4	0.57	5.8	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Staudard		100	60	80	80	4	100	400	05	01	20	1.0	06
Testing Method		IS 5182: Part 23	CPCB Manual	IS 5182 (Part-2) RA2017	IS 5182 (Part-6) RA2017	IS 5182 (Part-10):1999	Chemical Method	Indo Phenol Blue Method	Absorption & Desorption followed by GC analysis	Solvent extraetion followed by Gas Chromatography analysis	AAS method after sampling on EPM 2000 or Equivalent filter Paper		

BDL Values: SO_2< 4 µg/m³, NO_X< 9 µg/m³, O_3<4 µg/m³, NH_3<20 µg/m³, Ni<0.01 ng/m³, As < 0.001 ng/m³, C_6H_6<0.001 µg/m³, BaP<0.002 ng/m³, Pb<0.001 µg/m³, CO-<0.1 mg/m³

Remarks: (All the values of PM-10, PM-2.5, SO_2, NOx & CO, O_3 etc presented in row no 1-8 are **Time Weighted Average.**

Visiontek Consultancy Services Pvt. Ltd. BBSR

Reviewed by

Visiontek Consultancy Services Pvt. Ltd. BBSR

Approved by

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Iufrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Informatiou Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No Envlab/21/R-9135 Date: 04.12.2021

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alnmina Internatioual Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S4: Near Offiee	Sampled by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procedure	1S 5182
Sample Sonrce	Baphlimali Mines, UAiL	Sample Received on	02.11.2021, 05.11.2021, 09.11.2021, 11.11.2021, 16.11.2021, 20.11.2021, 23.11.2021, 25.11.2021
Sample Condition	Gaseous Sample Solntion Refrigerated	Latitude : N19°20.366′ Longitude : E82°58.874′ Altitude : 955.24 m.	
Sampling Date	01.11.2021, 03.11.2021, 08.11.2021, 10.11.2021, 15.11.2021, 19.11.2021, 22.11.2021, 24.11.2021	Test Completed on	06.11.2021 to 30.11.2021

Sl. No.	Sampliug Date	Parameters											
		Particnlate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulpbur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)	O_3 ($\mu g/m^3$)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)
1	01.11.2021	54.0	30.4	7.1	15.3	0.35	4.7	BDL	BDL	BDL	BDL	BDL	BDL
2	03.11.2021	49.0	27.7	6.2	14.6	0.31	5.2	BDL	BDL	BDL	BDL	BDL	BDL
3	08.11.2021	57.0	32.2	6.7	14.1	0.42	5.6	BDL	BDL	BDL	BDL	BDL	BDL
4	10.11.2021	61.0	34.6	9.4	17.3	0.38	4.8	BDL	BDL	BDL	BDL	BDL	BDL
5	15.11.2021	52.0	29.5	7.3	16.4	0.33	4.3	BDL	BDL	BDL	BDL	BDL	BDL
6	19.11.2021	59.0	33.3	8.1	18.2	0.36	5.1	BDL	BDL	BDL	BDL	BDL	BDL
7	22.11.2021	63.0	35.7	6.6	17.5	0.41	4.4	BDL	BDL	BDL	BDL	BDL	BDL
8	24.11.2021	66.0	37.2	7.4	18.8	0.46	5.3	BDL	BDL	BDL	BDL	BDL	BDL
Mouthly Average		57.6	32.6	7.4	16.5	0.38	4.9	BDL	BDL	BDL	BBL	BDL	BDL
NAAQ Standard		100	60	80	80	4	100	400	05	01	20	1.0	06
Testiug Metbod		IS 5182: Part 23	CPCB Manual	IS 5182 (Part-2) RA2017	IS 5182 (Part-6) RA2017	IS 5182 (Part-10):1999	Chemical Method	Indo Phenol Blue Method	Absorption & Desorption foilowed by GC analysis	Solvent extraetion followed by Gas Chromatography analysis	AAS method after sampling on EPM 2000 or Equivalent filter Paper		

BDL Values: SO_2< 4 $\mu g/m^3$, NO_X< 9 $\mu g/m^3$, O_3<4 $\mu g/m^3$, NH_3<20 $\mu g/m^3$, Ni<0.01 ng/m^3, As < 0.001 ng/m^3, C_6H_6<0.001 $\mu g/m^3$, BaP<0.002 ng/m^3, Pb<0.001 $\mu g/m^3$, CO-<0.1 mg/m^3

Remarks: (All the values of PM-10, PM-2.5, SO_2, NOx & CO, O_3 etc presented in row no 1-8 are **Time Weighted Average.**

Visiontek Consultancy Services Pvt. Ltd. BBSR Reviewed by

Visiontek Consultancy Services Pvt. Ltd. BBSR Approved by

Plot No.- M-22 & 23, Chandaka Indnstrial Estate, Patia, Bhnbaneswar, Khurda, Odisha-751024, India Tel.: 0674-3511721
E-mail: visiontek@vcspl.org, visiontekin@gmail.com
Visit us at: www.vcspl.org

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Iuvestigation
- Quality Control & Project Mauagement
- Renewable Energy
- Agricnltural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Envlab/21/R-9982 **Date: 04.01.2022**

TEST REPORT

Customer Name & Address : **Baphlimali Mines, M/s Utkal Alumiua Iuteruational Ltd, Tikiri, Rayagada, Odisha**

SAMPLE DETAILS

Sample Loeation & Code	**S1: Mining Pit**	**Sampled by**	**VCSPL'S Representative**
Sample Description	**Ambient Air**	**Sampling Proccdure**	**IS 5182**
Sample Sonree	**Baphlimali Mines, UAIL**	**Sample Received on**	**02.12.2021, 04.12.2021, 07.12.2021, 10.12.2021, 14.12.2021, 16.12.2021, 22.12.2021, 25.12.2021, 30.12.2021**
Sample Condition	**Gaseous Sample Solution Refrigerated**	**Latitude : N19°20.773′ Longitude : E82°58.332′ Altitude : 974.45 m.**	
Sampling Date	**01.12.2021, 03.12.2021, 06.12.2021, 09.12.2021, 13.12.2021, 15.12.2021, 21.12.2021, 24.12.2021, 29.12.2021**	**Test Completed on**	**07.12.2021 to 03.01.2022**

Sl. No.	Sampling Date	Parameters											
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)	O_3 ($\mu g/m^3$)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ug/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)
1	01.12.2021	69.7	38.8	10.6	19.7	0.53	5.1	BDL	BDL	BDL	BDL	BDL	BDL
2	03.12.2021	71.2	40.7	11.5	20.5	0.48	5.8	BDL	BDL	BDL	BDL	BDL	BDL
3	06.12.2021	67.6	37.3	9.8	18.8	0.55	5.3	BDL	BDL	BDL	BDL	BDL	BDL
4	09.12.2021	64.3	36.0	9.2	19.3	0.61	5.7	BDL	BDL	BDL	BDL	BDL	BDL
5	13.12.2021	70.7	41.2	11.3	21.2	0.57	4.8	BDL	BDL	BDL	BDL	BDL	BDL
6	15.12.2021	74.4	42.8	12.7	21.7	0.52	5.5	BDL	BDL	BDL	BDL	BDL	BDL
7	21.12.2021	68.7	38.4	10.8	19.6	0.60	6.2	BDL	BDL	BDL	BDL	BDL	BDL
8	24.12.2021	72.6	41.8	11.4	20.3	0.62	5.9	BDL	BDL	BDL	BDL	BDL	BDL
9	29.12.2021	75.4	43.2	11.7	21.5	0.56	6.8	BDL	BDL	BDL	BDL	BDL	BDL
Mouthly Average		70.5	40.0	11.0	20.3	0.56	5.7	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Staudard		100	60	80	80	4	100	400	05	01	20	1.0	06
Testing Method		IS 5182: Part 23	CPCB Manual	IS 5182 (Part-2) RA2017	IS 5182 (Part-6) RA2017	IS 5182 (Part-10):1999	Chemical Method	Indo Phenoi Blue Method	Absorption & Desorption foiiowed by GC anaiysis	Solvent extraction followed by Gas Cbromatography analysis	AAS method after sampling on EPM 2000 or Equivalent filter Paper		

BDL Values: SO_2< 4 $\mu g/m^3$, NO_X< 9 $\mu g/m^3$, O_3<4 $\mu g/m^3$, NH_3<20 $\mu g/m^3$, Ni<2.5 ng/m^3, As < 1 ng/m^3, C_6H_6<4 $\mu g/m^3$, BaP<0.5 ng/m^3, Pb<0.02 $\mu g/m^3$, CO-<0.1 mg/m^3

Remarks: (All the values of PM-10, PM-2.5, SO_2, NOx & CO, O_3 etc presented in row no 1-9 are **Time Weighted Average.**

Visiontek Consultancy Services Pvt. Ltd. BBSR

Reviewed by

Visiontek Consultancy Services Pvt. Ltd. BBSR

Approved by

Plot No.- M-22 & 23, Chandaka Indnstrial Estate, Patia, Bhnhaneswar, Khurda, Odisha-751024, India Tel.: 0674-3511721
E-mail: visiontek@vcspl.org, visiontekin@gmail.com
Visit us at: www.vcspl.org

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Snrface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Techuology
- Public Health Engineering
- Mine Planning & Design
- Miueral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Materiai Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Envlab/21/R-9983 Date: 04.01.2022

TEST REPORT

Customer Name & Address : Baphiimali Miues, M/s Utkal Alumiua Iuternationai Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S2: Near Crnsher	Sampled hy	VCSPL'S Representative
Sampie Deseription	Ambient Air	Sampling Procedure	IS 5182
Sample Source	Bapblimali Mines, UAIL	Sample Received on	02.12.2021, 04.12.2021, 07.12.2021, 10.I2.2021, 14.12.2021, 16.12.2021, 22.12.202I, 25.12.2021, 30.12.2021
Sample Condition	Gascous Sample Solution Refrigerated	Latitude : NI9°20.915′ Longitudc : E82°58.543′ Altitude : 999.74 m.	
Sampling Date	0I.I2.202I, 03.12.2021, 06.12.2021, 09.I2.202I, 13.12.2021, 15.12.2021, 21.12.2021, 24.12.2021, 29.12.2021	Test Completed on	07.12.202I to 03.01.2022

Sl. No.	Sampling Date	Parameters											
		Partieulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)	O_3 ($\mu g/m^3$)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ug/m^3)	Ni (ug/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)
1	01.12.202I	61.8	35.2	9.4	17.5	0.44	5.3	BDL	BDL	BDL	BDL	BDL	BDL
2	03.12.2021	66.2	37.3	9.8	18.5	0.52	6.2	BDL	BDL	BDL	BDL	BDL	BDL
3	06.12.2021	59.5	33.8	8.6	I6.8	0.46	5.7	BDL	BDL	BDL	BDL	BDL	BDL
4	09.I2.2021	62.7	35.4	I0.3	I9.2	0.49	5.3	BDL	BDL	BDL	BDL	BDL	BDL
5	13.I2.202I	65.3	36.6	I0.7	19.5	0.52	4.8	BDL	BDL	BDL	BDL	BDL	BDL
6	15.12.202I	70.4	39.7	11.6	22.3	0.47	6.1	BDL	BDL	BDL	BDL	BDL	BDL
7	21.12.2021	67.3	38.0	I0.8	19.6	0.55	5.4	BDL	BDL	BDL	BDL	BDL	BDL
8	24.12.2021	72.6	40.5	I1.2	21.7	0.58	5.7	BDL	BDL	BDL	BDL	BDL	BDL
9	29.12.2021	69.2	38.7	9.7	20.3	0.51	5.2	BDL	BDL	BDL	BDL	BDL	BDL
Mouthly Average		66.1	37.2	I0.2	19.5	0.50	5.5	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Staudard		100	60	80	80	4	100	400	05	0I	20	1.0	06
Testiug Method		IS 5182: Part 23	CPCB Mannai	IS 5182 (Part-2) RA2017	IS 5182 (Part-6) RA2017	IS 5182 (Part-10):1999	Chemicai Metbod	Indo Phenol Biue Method	Absorption & Desorption followed by GC anaiysis	Solvent extraction followed by Gas Chromatography analysis	AAS metbod after sampling on EPM 2000 or Equivaient filter Paper		

BDL Values: SO_2< 4 $\mu g/m^3$, NO_X< 9 $\mu g/m^3$, O_3<4 $\mu g/m^3$, NH_3<20 $\mu g/m^3$, Ni<2.5 ug/m^3, As < 1 ng/m^3, C_6H_6<4 $\mu g/m^3$, BaP<0.5 ug/m^3, Pb<0.02 $\mu g/m^3$, CO-<0.1 mg/m^3

Remarks: (All the values of PM-10, PM-2.5, SO_2, NOx & CO, O_3 etc presented in row no 1-9 are **Time Weighted Average.**

Visiontek Consultancy Services Pvt. Ltd. BBSR *Reviewed By*

Visiontek Consultancy Services Pvt. Ltd. BBSR *Approved By*

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Euginering
- Water Resource Management
- Environmental & Social Study
- Surface & Snb-Surface Investigatiou
- Quality Coutrul & Project Management
- Renewable Energy
- Agricnltural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Suil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Envlab/21/R-9984 Date: 04.01.2022

TEST REPORT

Customer Name & Address : **Baphlimali Mines, M/s Utkai Alumina Interuatioual Ltd, Tikiri, Rayagada, Odisha**

SAMPLE DETAILS

Sample Location & Code	S3: Near Weigh Bridge	Sampled hy	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	Baphlimali Mines, UAIL	Sample Received on	02.12.2021, 04.12.2021, 07.12.2021, I0.12.2021, 14.12.2021, I6.12.2021, 22.12.2021, 25.12.2021, 30.12.2021
Sample Condition	Gaseous Sample Solution Refrigerated	Latitude : N19°21.079' Longitndc : E82°58.775' Altitude : 993.95 m'	
Sampling Date	01.12.2021, 03.I2.2021, 06.12.2021, 09.12.202I, 13.12.2021, 15.12.2021, 21.12.2021, 24.12.2021, 29.12.2021	Test Completed on	07.12.2021 to 03.0I.2022

Sl. No.	Sampling Date	Parameters											
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)	O_3 ($\mu g/m^3$)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ug/m^3)
1	01.I2.202I	74.6	43.6	11.8	21.7	0.58	6.7	BDL	BDL	BDL	BDL	BDL	BDL
2	03.I2.202I	78.3	45.2	14.2	23.6	0.62	6.1	BDL	BDL	BDL	BDL	BDL	BDL
3	06.12.2021	72.7	42.7	12.5	2I.8	0.55	5.7	BDL	BDL	BDL	BDL	BDL	BDL
4	09.12.2021	80.3	46.8	12.7	22.7	0.63	6.4	BDL	BDL	BDL	BDL	BDL	BDL
5	13.I2.202I	76.5	44.7	11.3	21.2	0.59	7.3	BDL	BDL	BDL	BDL	BDL	BDL
6	15.12.2021	82.2	48.0	13.4	22.8	0.57	6.5	BDL	BDL	BDL	BDL	BDL	BDL
7	21.12.2021	77.3	45.0	14.6	24.7	0.64	6.8	BDL	BDL	BDL	BDL	BDL	BDL
8	24.12.2021	8I.5	48.3	15.3	25.4	0.6I	7.5	BDL	BDL	BDL	BDL	BDL	BDL
9	29.I2.202I	79.7	46.4	13.7	24.2	0.69	6.2	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average		78.1	45.6	13.3	23.1	0.61	6.6	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard		100	60	80	80	4	100	400	05	01	20	1.0	06
Testing Method		IS 5182: Part 23	CPCB Manual	IS 5182 (Part-2) RA2017	IS 5182 (Part-6) RA2017	IS 5182 (Part-10):1999	Chemical Method	Indo Phenoi Blue Metbod	Absorptiou & Desorptiou foiiowed by GC analysis	Solvent extraction foiiowed by Gas Chromatography analysis	AAS metbod after sampiing on EPM 2000 or Equivalent filter Paper		

BDL Values: SO_2< 4 $\mu g/m^3$, NO_X< 9 $\mu g/m^3$, O_3<4 $\mu g/m^3$, NH_3<20 $\mu g/m^3$, Ni<2.5 ng/m^3, As < 1 ng/m^3, C_6H_6<4 $\mu g/m^3$, BaP<0.5 ug/m^3, Pb<0.02 $\mu g/m^3$, CO-<0.1 mg/m^3

Remarks: (All the values of PM-i0, PM-2.5, SO_2, NOx & CO, O_3 etc presented in row no 1-9 are **Time Wcigbted Averagc.**

Visiontek Consultancy Services Pvt. Ltd. BBSR *Reviewed by*

Visiontek Consultancy Services Pvt. Ltd. BBSR *Approved by*

Plot No.- M-22 & 23, Chandaka Indnstrial Estate, Patia, Bhubaneswar, Khurda, Odisha-751024, India Tel.: 0674-3511721
E-mail: visiontek@vcspl.org, visiontekin@gmail.com
Visit ns at: www.vcspl.org

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Engineering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No Envlah/21/R-9985 Date: 04.01.2022

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alnmina International Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S4: Near Office	Sampled by	VCSPL'S Representative
Sampie Description	Ambient Air	Sampling Procedure	IS 5182
Sample Souree	Baphlimali Mines, UAIL	Sample Received on	02.12.202I, 04.12.2021, 07.12.2021, I0.I2.2021, 14.I2.2021, 16.12.2021, 22.12.202I, 25.12.2021, 30.12.2021
Sample Condition	Gascous Sampie Solution Refrigerated	Latitude : N19°20.366´ Longitude : E82°58.874´ Altitude : 955.24 m.	
Sampling Date	01.I2.2021, 03.12.2021, 06.12.2021, 09.12.202I, 13.12.2021, 15.I2.2021, 2I.12.202I, 24.12.2021, 29.12.2021	Test Completed on	07.12.2021 to 03.0I.2022

Sl. No.	Sampling Date	Parameters											
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)	O_3 ($\mu g/m^3$)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ug/m^3)	Ni (ug/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)
1	01.12.2021	57.8	32.5	8.6	17.5	0.43	5.8	BDL	BDL	BDL	BDL	BDL	BDL
2	03.12.2021	52.6	29.7	7.4	15.8	0.36	4.3	BDL	BDL	BDL	BDL	BDL	BDL
3	06.12.2021	59.3	33.3	6.8	16.2	0.48	4.9	BDL	BDL	BDL	BDL	BDL	BDL
4	09.12.2021	64.2	36.1	8.5	17.3	0.44	5.2	BDL	BDL	BDL	BDL	BDL	BDL
5	13.12.2021	67.5	38.0	9.7	19.2	0.51	4.7	BDL	BDL	BDL	BDL	BDL	BDL
6	15.12.2021	61.8	35.2	9.2	18.5	0.47	5.4	BDL	BDL	BDL	BDL	BDL	BDL
7	21.I2.2021	58.3	32.7	8.3	17.6	0.54	5.0	BDL	BDL	BDL	BDL	BDL	BDL
8	24.I2.2021	60.7	34.2	7.7	15.7	0.42	4.6	BDL	BDL	BDL	BDL	BDL	BDL
9	29.12.2021	63.6	35.8	8.4	16.6	0.45	4.4	BDL	BDL	BDL	BDL	BDL	BDL
Monthiy Average		60.6	34.2	8.3	17.2	0.46	4.9	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Staudard		100	60	80	80	4	I00	400	05	01	20	1.0	06
Testiug Method		IS 5182: Part 23	CPCB Manual	IS 5182 (Part-2) RA2017	IS 5182 (Part-6) RA2017	IS 5182 (Part-10):1999	Cbemieai Method	Indo Pbenol Blue Method	Absorption & Desorption followed by GC analysis	Solvent extraction foiiowed by Gas Chromatography analysis	AAS method after sampling on EPM 2000 or Equivaleut filter Paper		

BDL Valaes: SO_2< 4 $\mu g/m^3$, NO_X< 9 $\mu g/m^3$, O_3<4 $\mu g/m^3$, NH_3<20 $\mu g/m^3$, Ni<2.5 ng/m^3, As < 1 ng/m^3, C_6H_6<4 $\mu g/m^3$, BaP<0.5 ng/m^3, Pb<0.02 $\mu g/m^3$, CO-<0.1 mg/m^3

Remarks: (All the values of PM-10, PM-2.5, SO_2, NOx & CO, O_3 etc presented in row no 1-9 are **Time Weighted Average.**

Visiontek Consultancy Services Pvt. Ltd. BBSR

Reviewed by

Visiontek Consultancy Services Pvt. Ltd. BBSR

Approved by

Plot No.- M-22 & 23, Chandaka Indnstrial Estate, Patia, Bhnbaneswar, Khurda, Odisha-751024, India Tel.: 0674-3511721
E-mail: visiontek@vcspl.org, visiontekin@gmail.com
Visit us at: www.vcspl.org

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Miueral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Envlab/21/R-1572 **Date: 05.02.2022**

TEST REPORT

Customer Name & Address : **Baphlimali Miues, M/s Utkai Alumina Internatiouai Ltd, Tikiri, Rayagada, Odisha**

SAMPLE DETAILS

Sample Loeation & Code	S1: Mining Pit	Sampled hy	VCSPL'S Represeutative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	Baphlimali Mines, UAIL	Sample Received on	04.01.2022, 06.01.2022, 12.01.2022, 14.01.2022
Sample Condition	Gaseous Sample Solution Refrigerated	Latitude : NI9°20.773′ Longitude : E82°58.332′ Altitude : 974.45 m.	
Sampling Date	03.01.2022, 05.01.2022, II.01.2022, 13.01.2022	Test Completed on	08.01.2022 to 19.01.2022

Sl. No.	Sampliog Date	Parameters											
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particnlate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogcn as NOx ($\mu g/m^3$)	CO (mg/m^3)	O_3 ($\mu g/m^3$)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)
1	03.01.2022	72.6	40.4	11.5	21.4	0.56	4.7	BDL	BDL	BDL	BDL	BDL	BDL
2	05.01.2022	66.3	36.2	I0.2	18.6	0.41	5.5	BDL	BDL	BDL	BDL	BDL	BDL
3	11.01.2022	70.5	38.8	12.1	20.7	0.47	6.1	BDL	BDL	BDL	BDL	BDL	BDL
4	13.01.2022	64.7	34.7	9.5	I6.5	0.54	5.8	BDL	BDL	BDL	BDL	BDL	BDL
Mouthly Average		68.5	37.5	10.8	19.3	0.50	5.5	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Staudard		I00	60	80	80	4	100	400	05	01	20	1.0	06
Testing Mcthod		IS 5182: Part 23	CPCB Maoual	IS 5182 (Part-2) RA2017	IS 5182 (Part-6) RA2017	IS 5182 (Part-10):1999	Chemical Method	Indo Pheuol Blue Method	Absorption & Desorption foiiowed by GC anaiysis	Solvent extraction foliowed by Gas Cbromatography analysis	AAS method after sampiing on EPM 2000 or Equivaient filter Paper		

BDL Values: SO_2< 4 µg/m³, NO_X< 9 µg/m³, O_3<4 µg/m³, NH_3<20 µg/m³, Ni<2.5 ng/m³, As < 1 ng/m³, C_6H_6<4 µg/m³, BaP<0.5 ng/m³, Pb<0.02 µg/m³, CO-<0.1 mg/m³

Remarks: (All the values of PM-10, PM-2.5, SO_2, NOx & CO, O_3 etc presented in row no 1-4 are **Time Weighted Average.**

Visiontek Consultancy Services Pvt. Ltd. BBSR
Reviewed by

Visiontek Consultancy Services Pvt. Ltd. BBSR
Approved by

Plot No.- M-22 & 23, Chandaka Industriai Estate, Patia, Bhubaneswar, Kbnrda, Odisha-751024, India Tei.: 0674-3511721
E-mail: visiontek@vcspl.org, visiontekin@gmail.com
Visit us at: www.vcspl.org

Test Report No: Envlab/21/R-1573 Date: 05.02.2022

TEST REPORT

Customer Name & Address : **Baphlimali Miues, M/s Utkai Alumina Interuational Ltd, Tikiri, Rayagada, Odisha**

SAMPLE DETAILS

Sample Location & Code	S2: Near Crnsher	Sampled by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	Baphlimali Mines, UAIL	Sample Rceeived on	04.01.2022, 06.01.2022, 12.01.2022, 14.01.2022
Sample Condition	Gaseons Sample Solution Refrigerated	Latitude : N19°20.915′ Longitude : E82°58.543′ Altitude : 999.74 m.	
Sampling Date	03.01.2022, 05.01.2022, 11.01.2022, 13.01.2022	Test Completed on	08.01.2022 to 19.01.2022

Sl. No.	Sampling Date	Parameters											
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulpbur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)	O_3 ($\mu g/m^3$)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)
1	03.01.2022	65.8	36.7	10.8	19.4	0.52	5.2	BDL	BDL	BDL	BDL	BDL	BDL
2	05.01.2022	59.3	32.3	8.7	16.5	0.48	4.6	BDL	BDL	BDL	BDL	BDL	BDL
3	11.01.2022	62.4	34.8	9.1	17.3	0.44	5.7	BDL	BBL	BDL	BDL	BDL	BDL
4	13.01.2022	67.2	37.5	9.6	16.8	0.49	5.3	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average		63.7	35.3	9.6	17.5	0.48	5.2	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard		100	60	80	80	4	100	400	05	01	20	1.0	06
Testing Method		IS 5182: Part 23	CPCB Manual	IS 5182 (Part-2) RA2017	IS 5182 (Part-6) RA2017	IS 5182 (Part-10):1999	Chemicat Mcthod	Indo Phenol Bine Method	Absorption & Desorption foilowed by GC analysis	Solvent extraction foilowed by Gas Chromatography analysis	AAS method after sampling on EPM 2000 or Equivalent filter Paper		

BDL Values: SO_2< 4 µg/m³, NO_X< 9 µg/m³, O_3<4 µg/m³, NH_3<20 µg/m³, Ni<2.5 ng/m³, As < 1 ng/m³, C_6H_6<4 µg/m³, BaP<0.5 ng/m³, Pb<0.02 µg/m³, CO-<0.1 mg/m³

Remarks: (All the values of PM-10, PM-2.5, SO_2, NOx & CO, O_3 etc presented in row no 1-4 are **Time Weighted Average.**

Visiontek Consultancy Services Pvt. Ltd. — *Reviewed by*

Visiontek Consultancy Services Pvt. Ltd. — *Approved by*

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Iufrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface investigation
- Quality Control & Project Management
- Renewable Energy
- Agricnltural Development
- Information Technoiogy
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microhiology Lab

Test Report No: Envlab/21/R- 1574

Date: 05.02.2022

TEST REPORT

Customer Name & Address : **Baphlimali Mines, M/s Utkal Alumina Interuational Ltd, Tikiri, Rayagada, Odisha**

SAMPLE DETAILS

Sample Location & Code	S3: Ncar Weigh Bridge	Sampled by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	Baphlimali Mines, UAIL	Sample Received on	04.01.2022, 06.01.2022, 12.01.2022, 14.01.2022
Sample Condition	Gaseous Sample Solution Refrigerated	Latitude : N19°21.079' Longitude : E82°58.775' Altitnde : 993.95 m'	
Sampling Date	03.01.2022, 05.01.2022, 11.01.2022, 13.01.2022	Test Completed on	08.01.2022 to 19.01.2022

Sl. No.	Sampling Date	Parameters											
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)	O_3 ($\mu g/m^3$)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)
1	03.01.2022	73.1	41.4	14.4	22.6	0.54	7.1	BDL	BDL	BDL	BDL	BDL	BDL
2	05.01.2022	68.7	37.5	11.5	21.2	0.65	6.4	BDL	BDL	BDL	BDL	BDL	BDL
3	11.01.2022	75.8	43.7	12.8	23.5	0.57	6.6	BDL	BDL	BDL	BDL	BDL	BDL
4	13.01.2022	70.2	39.8	11.6	19.8	0.52	5.9	BDL	BDL	BDL	BDL	BDL	BDL
Mouthly Average		72.0	40.6	12.6	21.8	0.57	6.5	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard		100	60	80	80	4	100	400	05	01	20	1.0	06
Testing Method		IS 5182: Part 23	CPCB Manual	IS 5182 (Part-2) RA2017	IS 5182 (Part-6) RA2017	IS 5182 (Part-10):1999	Chemical Method	Indo Phenol Biue Method	Absorption & Desorption foiiowed by GC anaiysis	Solvent extraction followed by Gas Cbromatography analysis	AAS method after sampling on EPM 2000 or Eqnivalent filter Paper		

BDL Values: SO_2< 4 $\mu g/m^3$, NO_X< 9 $\mu g/m^3$, O_3<4 $\mu g/m^3$, NH_3<20 $\mu g/m^3$, Ni<2.5 ng/m^3, As < 1 ng/m^3, C_6H_6<4 $\mu g/m^3$, BaP<0.5 ng/m^3, Pb<0.02 $\mu g/m^3$, CO-<0.1 mg/m^3

Remarks: (All the values of PM-10, PM-2.5, SO_2, NOx & CO, O_3 etc presented in row no 1-4 are **Time Weighted Average.**

Visiontek Consultancy Services Pvt. Ltd. BBSR

Reviewed by

Visiontek Consultancy Services Pvt. Ltd. BBSR

Approved by

Visiontek Cousultaucy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Iufrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Materiai Lab
Soil Lab
Mineral Lab
&
Microhiology Lab

Test Report No Envlab/21/R-1575

Date: 05.02.2022

TEST REPORT

Customer Name & Address : **Baphlimali Mines, M/s Utkal Alumina International Ltd, Tikiri, Rayagada, Odisha**

SAMPLE DETAILS

Sample Location & Code	S4: Near Offiee	Sampled by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	Bapblimali Mines, UAIL	Sample Receivcd on	04.01.2022, 06.01.2022, 12.01.2022, 14.01.2022
Sample Condition	Gaseous Sample Solution Refrigerated	Latitude : N19°20.366′ Longitnde : E82°58.874′ Altitnde : 955.24 m.	
Sampling Date	03.01.2022, 05.01.2022, 11.01.2022, 13.01.2022	Test Completed on	08.01.2022 to 19.01.2022

Sl. No.	Sampling Date	Parameters											
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)	O_3 ($\mu g/m^3$)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)
1	03.01.2022	61.6	33.6	8.8	16.3	0.45	5.5	BDL	BDL	BDL	BDL	BDL	BDL
2	05.01.2022	54.8	29.8	7.3	14.6	0.31	4.7	BDL	BDL	BDL	BDL	BDL	BDL
3	11.01.2022	57.3	32.4	6.4	15.2	0.35	5.1	BDL	BDL	BDL	BDL	BDL	BDL
4	13.01.2022	51.5	28.7	7.5	16.8	0.42	4.5	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average		56.3	31.1	7.5	15.7	0.38	5.0	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard		100	60	80	80	4	100	400	05	01	20	1.0	06
Testing Method		IS 5182: Part 23	CPCB Manual	IS 5182 (Part-2) RA2017	IS 5182 (Part-6) RA2017	IS 5182 (Part-10):1999	Chemical Method	Indo Phenol Blue Method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling on EPM 2000 or Equivalent filter Paper		

BDL Values: SO_2< 4 µg/m³, NO_X< 9 µg/m³, O_3<4 µg/m³, NH_3<20 µg/m³, Ni<2.5 ng/m³, As < 1 ng/m³, C_6H_6<4 µg/m³, BaP<0.5 ng/m³, Pb<0.02 µg/m³, CO<0.1 mg/m³

Remarks: (All the values of PM-10, PM-2.5, SO_2, NOx & CO, O_3 etc presented in row no 1-4 are **Time Weightcd Average.**

Reviewed by

Approved by

Plot No.- M-22 & 23, Chandaka Industrial Estate, Patia, Bbubaneswar, Khurda, Odisha-751024, India Tel.: 0674-3511721

E-mail: visiontek@vcspl.org, visiontekin@gmail.com

Visit us at: www.vcspl.org

Test Report No: Enviab/21/R-3090 Date: 09.03.2022

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alumiua Iuternational Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S1: Mining Pit	Sampled by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	Baphlimali Mines, UAIL	Sample Received on	26.02.2022, 28.02.2022
Sample Condition	Gaseous Sample Solution Refrigerated	Latitude : N19°20.773′ Longitude : E82°58.332′ Altitude : 974.45 m.	
Sampling Date	25.02.2022, 27.02.2022	Test Completed on	03.03.2022, 05.03.2022

Sl. No.	Sampling Date	Parameters											
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)	O_3 ($\mu g/m^3$)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (og/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)
1	25.02.2022	61.8	34.3	9.8	17.5	0.51	5.3	BDL	BDL	BDL	BDL	BDL	BDL
2	27.02.2022	73.4	41.0	11.6	19.3	0.64	4.8	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average		67.6	37.7	10.7	18.4	0.58	5.1	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard		100	60	80	80	4	100	400	05	01	20	1.0	06
Testing Method		IS 5182: Part 23	CPCB Manual	IS 5182 (Part-2) RA2017	IS 5182 (Part-6) RA2017	IS 5182 (Part-10):1999	Chemical Method	Indo Phenol Blue Method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling on EPM 2000 or Equivalent filter Paper		

BDL Values: SO_2< 4 $\mu g/m^3$, NO_X< 9 $\mu g/m^3$, O_3<4 $\mu g/m^3$, NH_3<20 $\mu g/m^3$, Ni<2.5 ng/m^3, As < 1 ng/m^3, C_6H_6<4 $\mu g/m^3$, BaP<0.5 ng/m^3, Pb<0.02 $\mu g/m^3$, CO-<0.1 mg/m^3

Remarks: (All the values of PM-10, PM-2.5, SO_2, NOx & CO, O_3 etc presented in row no 1-2 are **Time Weighted Average.**

Visiontek Consultancy Services Pvt. Ltd. Reviewed by BPSR

Visiontek Consultancy Services Pvt. Ltd. Approved by

Test Report No: Envlab/21/R-3091 Date: 09.03.2022

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alumina Interuational Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S2: Near Crusher	Sampled by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	Baphlimali Mines, UAIL	Sample Received on	26.02.2022, 28.02.2022
Sample Condition	Gaseous Sample Solution Refrigerated	Latitude : N19°20.915′ Longitude : E82°58.543′ Altitude : 999.74 m.	
Sampling Date	25.02.2022, 27.02.2022	Test Completed on	03.03.2022, 05.03.2022

Sl. No.	Sampling Date	Parameters											
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)	O_3 ($\mu g/m^3$)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)
1	25.02.2022	63.6	35.3	9.5	16.6	0.57	5.8	BDL	BDL	BDL	BDL	BDL	BDL
2	27.02.2022	55.8	30.4	7.6	14.8	0.51	5.2	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average		59.7	32.9	8.6	15.7	0.54	5.5	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard		100	60	80	80	4	100	400	05	01	20	1.0	06
Testing Method		IS 5182: Part 23	CPCB Manual	IS 5182 (Part-2) RA2017	IS 5182 (Part-6) RA2017	IS 5182 (Part-10):1999	Chemical Method	Indo Phenol Blue Method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling on EPM 2000 or Equivalent filter Paper		

BDL Values: SO_2< 4 $\mu g/m^3$, NO_X< 9 $\mu g/m^3$, O_3<4 $\mu g/m^3$, NH_3<20 $\mu g/m^3$, Ni<2.5 ng/m^3, As < 1 ng/m^3, C_6H_6<4 $\mu g/m^3$, BaP<0.5 ng/m^3, Pb<0.02 $\mu g/m^3$, CO-<0.1 mg/m^3

Remarks: (All the values of PM-10, PM-2.5, SO_2, NOx & CO, O_3 etc presented in row no 1-2 are **Time Weighted Average.**

Visiontek Consultancy Services Pvt. Ltd. — *Reviewed by*

Visiontek Consultancy Services Pvt. Ltd. — *Approved by*

Test Report No: Envlab/21/R-3092 Date: 09.03.2022

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alumina International Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S3: Near Weigh Bridge	Sampled by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	Baphlimali Mines, UAIL	Sample Received on	26.02.2022, 28.02.2022
Sample Condition	Gaseous Sample Solution Refrigerated	Latitude : N19°21.079' Longitude : E82°58.775' Altitude : 993.95 m'	
Sampling Date	25.02.2022, 27.02.2022	Test Completed on	03.03.2022, 05.03.2022

Sl. No.	Sampling Date	Parameters											
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)	O_3 ($\mu g/m^3$)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)
1	25.02.2022	69.4	38.5	12.7	19.5	0.62	5.3	BDL	BDL	BDL	BDL	BDL	BDL
2	27.02.2022	64.7	35.1	10.5	17.7	0.67	5.7	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average		67.1	36.8	11.6	18.6	0.65	5.5	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard		100	60	80	80	4	100	400	05	01	20	1.0	06
Testing Metbod		IS 5182: Part 23	CPCB Manual	IS 5182 (Part-2) RA2017	IS 5182 (Part-6) RA2017	IS 5182 (Part-10):1999	Chemical Method	Indo Phenol Blue Method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling on EPM 2000 or Equivalent filter Paper		

BDL Values: SO_2< 4 $\mu g/m^3$, NO_X< 9 $\mu g/m^3$, O_3<4 $\mu g/m^3$, NH_3<20 $\mu g/m^3$, Ni<2.5 ng/m^3, As < 1 ng/m^3, C_6H_6<4 $\mu g/m^3$, BaP<0.5 ng/m^3, Pb<0.02 $\mu g/m^3$, CO-<0.1 mg/m^3

Remarks: (All the values of PM-10, PM-2.5, SO_2, NOx & CO, O_3 etc presented in row no 1-2 are **Time Weighted Average.**

Reviewed by

Approved by

Test Report No Envlab/21/R-3093 Date: 09.03.2022

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alumina International Ltd, Tikiri, Rayagada, Odisna

SAMPLE DETAILS

Sample Location & Code	S4: Near Office	Sampled by	VCSPL'S Representative
Sample Description	Amhient Air	Sampling Procedure	IS 5182
Sample Source	Baphlimali Mines, UAIL	Sample Received on	26.02.2022, 28.02.2022
Sample Condition	Gaseous Sample Solution Refrigerated	Latitude : N19°20.366′ Longitude : E82°58.874′ Altitude : 955.24 m.	
Sampling Date	25.02.2022, 27.02.2022	Test Completed on	03.03.2022, 05.03.2022

Sl. No.	Sampling Date	Parameters											
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)	O_3 ($\mu g/m^3$)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)
1	25.02.2022	59.3	31.7	7.4	15.5	0.52	4.9	BDL	BDL	BDL	BDL	BDL	BDL
2	27.02.2022	55.7	29.8	6.5	13.8	0.46	5.3	BDL	BDL	BDL	BDL	BDL	BDL
Mouthly Average		57.5	30.8	7.0	14.7	0.49	5.1	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard		100	60	80	80	4	100	400	05	01	20	1.0	06
Testing Method		IS 5182: Part 23	CPCB Manual	IS 5182 (Part-2) RA2017	IS 5182 (Part-6) RA2017	IS 5182 (Part-10):1999	Chemical Method	Indo Phenol Blue Method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling on EPM 2000 or Equivalent filter Paper		

BDL Values: SO_2< 4 $\mu g/m^3$, NO_X< 9 $\mu g/m^3$, O_3<4 $\mu g/m^3$, NH_3<20 $\mu g/m^3$, Ni<2.5 ng/m^3, As < 1 ng/m^3, C_6H_6<4 $\mu g/m^3$, BaP<0.5 ng/m^3, Pb<0.02 $\mu g/m^3$, CO-<0.1 mg/m^3

Remarks: (All the values of PM-10, PM-2.5, SO_2, NOx & CO, O_3 etc presented in row no 1-2 are **Time Weighted Average.**

Visiontek Consultancy Services Pvt. Ltd. BBSR *Reviewed by*

Visiontek Consultancy Services Pvt. Ltd. BBSR *Approved by*

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Envlab/22/R-0798 Date: 05.04.2022

TEST REPORT

Customer Name & Address : **Baphlimali Miues, M/s Utkal Alumina Interuational Ltd, Tikiri, Rayagada, Odisha**

SAMPLE DETAILS

Sample Location & Code	S1: Mining Pit	Sampled by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	Baphlimali Mines, UAIL	Sample Received on	03.03.2022, 05.03.2022, 10.03.2022, 12.03.2022, 16.03.2022, 18.03.2022, 24.03.2022, 26.03.2022, 29.03.2022
Sample Condition	Gaseons Sample Solution Refrigerated	Latitude : N19°20.773′ Longitude : E82°58.332′ Altitude : 974.45 m.	
Sampling Date	02.03.2022, 04.03.2022, 09.03.2022, 11.03.2022, 15.03.2022, 17.03.2022, 23.03.2022, 25.03.2022, 28.03.2022	Test Completed on	07.03.2022 to 02.04.2022

Sl. No.	Sampling Date	Parameters											
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)	O_3 ($\mu g/m^3$)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)
1	02.03.2022	67.2	37.5	10.4	17.2	0.56	5.6	BDL	BDL	BDL	BDL	BDL	BDL
2	04.03.2022	63.6	33.8	8.7	14.6	0.53	6.3	BDL	BDL	BDL	BDL	BDL	BDL
3	09.03.2022	68.2	36.0	9.4	15.8	0.61	5.2	BDL	BDL	BDL	BDL	BDL	BDL
4	11.03.2022	61.7	33.5	7.6	14.3	0.55	6.1	BDL	BDL	BDL	BDL	BDL	BDL
5	15.03.2022	66.3	35.7	10.2	19.1	0.49	6.6	BDL	BDL	BDL	BDL	BDL	BDL
6	17.03.2022	70.4	37.8	8.3	17.4	0.63	5.7	BDL	BDL	BDL	BDL	BDL	BDL
7	23.03.2022	65.7	34.6	8.8	15.8	0.57	5.4	BDL	BDL	BDL	BDL	BDL	BDL
8	25.03.2022	59.4	31.3	7.7	15.2	0.54	6.0	BDL	BDL	BDL	BDL	BDL	BDL
9	28.03.2022	62.0	32.6	9.6	17.6	0.58	5.8	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average		64.9	34.8	9.0	16.3	0.56	5.9	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard		100	60	80	80	4	100	400	05	01	20	1.0	06
Testing Method		IS 5182: Part 23	CPCB Mannai	IS 5182 (Part-2) RA2017	IS 5182 (Part-6) RA2017	IS 5182 (Part-10):1999	Chemical Method	Indo Phenol Blue Method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling on EPM 2000 or Equivalent filter Paper		

BDL Values: SO_2< 4 $\mu g/m^3$, NO_X< 9 $\mu g/m^3$, O_3<4 $\mu g/m^3$, NH_3<20 $\mu g/m^3$, Ni<2.5 ng/m^3, As < 1 ng/m^3, C_6H_6<4 $\mu g/m^3$, BaP<0.5 ng/m^3, Pb<0.02 $\mu g/m^3$, CO-<0.1 mg/m^3

Remarks: (All the values of PM-10, PM-2.5, SO_2, NOx & CO, O_3 etc presented in row no 1-9 are **Time Weighted Average.**

Reviewed by

Approved by

Plot No.- M-22 & 23, Cbandaka Industrial Estate, Patia, Bhubaneswar, Khurda, Odisha-751024, India Tel.: 0674-3511721
E-mail: visiontek@vcspl.org, visiontekin@gmail.com
Visit us at: www.vcspl.org

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastrncture Enginering
- Water Resnurce Management
- Environmental & Social Study
- Surface & Sub-Surface Investigatiou
- Quality Control & Project Management
- Renewable Energy
- Agricnltural Development
- Information Technology
- Public Health Engioeering
- Mine Planning & Design
- Mineral/Sub-Soil Expinration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Envlab/22/R-0799 Date: 05.04.2022

TEST REPORT

Customer Name & Address : Baphlimali Miues, M/s Utkal Alumina International Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S2: Near Crusher	Sampled by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Souree	Baphlimali Mines, UAIL	Sample Received on	03.03.2022, 05.03.2022, 10.03.2022, 12.03.2022, 16.03.2022, 18.03.2022, 24.03.2022, 26.03.2022, 29.03.2022
Sample Conditlon	Gaseous Sample Solution Refrigerated	Latitude : NI9°20.915′ Longitude : E82°58.543′ Altitude : 999.74 m.	
Sampling Date	02.03.2022, 04.03.2022, 09.03.2022, I1.03.2022, I5.03.2022, I7.03.2022, 23.03.2022, 25.03.2022, 28.03.2022	Test Completed on	07.03.2022 to 02.04.2022

St. No.	Sampling Date	Parameters											
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)	O_3 ($\mu g/m^3$)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)
1	02.03.2022	66.8	36.8	10.3	18.3	0.48	4.6	BDL	BDL	BDL	BDL	BDL	BDL
2	04.03.2022	60.4	33.5	9.8	18.7	0.46	4.9	BDL	BDL	BDL	BDL	BDL	BDL
3	09.03.2022	57.3	29.6	8.6	15.8	0.52	5.2	BDL	BDL	BDL	BDL	BDL	BDL
4	11.03.2022	61.7	32.0	9.1	17.2	0.49	5.6	BDL	BDL	BDL	BDL	BDL	BDL
5	15.03.2022	55.8	28.7	10.4	19.0	0.55	6.1	BDL	BDL	BDL	BDL	BDL	BDL
6	17.03.2022	58.2	30.3	8.4	15.7	0.51	5.5	BDL	BDL	BDL	BDL	BDL	BDL
7	23.03.2022	64.1	32.8	11.2	18.8	0.47	5.2	BDL	BDL	BDL	BDL	BDL	BDL
8	25.03.2022	62.6	31.5	10.6	17.6	0.53	4.7	BDL	BDL	BDL	BDL	BDL	BDL
9	28.03.2022	65.2	34.3	9.5	15.6	0.58	5.3	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average		61.3	32.2	9.8	17.4	0.51	5.2	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard		100	60	80	80	4	100	400	05	01	20	I.0	06
Testing Metbod		IS 5182: Part 23	CPCB Manual	IS 5182 (Part-2) RA2017	IS 5182 (Part-6) RA2017	IS 5182 (Part-10):1999	Chemical Method	Indo Phenol Blue Method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling on EPM 2000 or Eqnivalent filter Paper		

BDL Values: SO_2< 4 µg/m³, NO_X< 9 µg/m³, O_3<4 µg/m³, NH_3<20 µg/m³, Ni<2.5 ng/m³, As < 1 ng/m³, C_6H_6<4 µg/m³, BaP<0.5 ng/m³, Pb<0.02 µg/m³, CO<0.1 mg/m³

Remarks: (All the values of PM-10, PM-2.5, SO_2, NOx & CO, O_3 etc presented in row no 1-9 are **Time Weighted Average.**

Visiontek Consultancy Services Pvt. Ltd. — *Reviewed by*

Visiontek Consultancy Services Pvt. Ltd. — *Approved by*

Plot No.- M-22 & 23, Chandaka Industrial Estate, Patia, Bhubaneswar, Khnrda, Odisha-751024, India Tei.: 0674-3511721
E-mail: visiontek@vcspi.org, visiontekin@gmail.com
Visit us at: www.vcspi.org

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Snb-Surface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Informatinn Techoology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Snb-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Envlab/22/R-0800

Date: 05.04.2022

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alnmina International Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Locatiou & Code	S3: Near Weigh Bridge	Sampled by	VCSPL'S Represeutative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	Baphlimali Mines, UAIL	Sample Received on	03.03.2022, 05.03.2022, 10.03.2022, 12.03.2022, 16.03.2022, 18.03.2022, 24.03.2022, 26.03.2022, 29.03.2022
Sample Condition	Gaseous Sample Solutiou Refrlgerated	Latitude : N19°21.079' Longitude : E82°58.775' Altitude : 993.95 m'	
Sampling Date	02.03.2022, 04.03.2022, 09.03.2022, 11.03.2022, 15.03.2022, 17.03.2022, 23.03.2022, 25.03.2022, 28.03.2022	Test Completed on	07.03.2022 to 02.04.2022

Sl. No.	Sampling Date	Parameters											
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)	O_3 ($\mu g/m^3$)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)
1	02.03.2022	71.3	39.7	13.2	20.3	0.53	6.1	BDL	BDL	BDL	BDL	BDL	BDL
2	04.03.2022	66.6	36.3	12.1	21.4	0.64	5.6	BDL	BDL	BDL	BDL	BDL	BDL
3	09.03.2022	69.2	37.8	10.7	19.4	0.58	6.3	BDL	BDL	BDL	BDL	BDL	BDL
4	11.03.2022	62.7	33.6	11.3	20.3	0.61	6.7	BDL	BDL	BDL	BDL	BDL	BDL
5	15.03.2022	57.5	31.2	9.6	17.8	0.66	5.9	BDL	BDL	BDL	BDL	BDL	BDL
6	17.03.2022	64.2	35.7	11.5	21.2	0.57	6.2	BDL	BDL	BDL	BDL	BDL	BDL
7	23.03.2022	71.6	39.3	13.4	22.7	0.54	7.1	BDL	BDL	BDL	BDL	BDL	BDL
8	25.03.2022	68.8	37.2	10.2	19.3	0.62	5.8	BDL	BDL	BDL	BDL	BDL	BDL
9	28.03.2022	65.3	36.0	10.6	18.7	0.67	6.3	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average		66.4	36.3	11.4	20.1	0.60	6.2	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard		100	60	80	80	4	100	400	05	0t	20	1.0	06
Testing Method		IS 5182: Part 23	CPCB Manual	IS 5182 (Part-2) RA2017	IS 5182 (Part-6) RA2017	IS 5182 (Part-10):1999	Chemical Method	Indo Phenol Blue Method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling on EPM 2000 or Equivalent filter Paper		

BDL Values: SO_2< 4 $\mu g/m^3$, NO_X< 9 $\mu g/m^3$, O_3<4 $\mu g/m^3$, NH_3<20 $\mu g/m^3$, Ni<2.5 ng/m^3, As < 1 ng/m^3, C_6H_6<4 $\mu g/m^3$, BaP<0.5 ng/m^3, Pb<0.02 $\mu g/m^3$, CO-<0.1 mg/m^3

Remarks: (All the values of PM-10, PM-2.5, SO_2, NOx & CO, O_3 etc presented in row no 1-9 are **Time Weighted Average.**

Visiontek Consultancy Services (P) Ltd. BBSR

Reviewed by

Visiontek Consultancy Services (P) Ltd. BBSR

Approved by

Test Report No Envlab/22/R-0801 Date: 05.04.2022

TEST REPORT

Customer Name & Address : Baphlimali Miues, M/s Utkal Alumiua Iuternatioual Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sampie Location & Code	S4: Near Office	Sampled by	VCSPL'S Representative
Sampie Description	Ambient Air	Sampling Procednre	IS 5182
Sampie Sonrce	Baphiimali Mines, UAIL	Sampie Received on	03.03.2022, 05.03.2022, 10.03.2022, 12.03.2022, 16.03.2022, 18.03.2022, 24.03.2022, 26.03.2022, 29.03.2022
Sample Condition	Gaseons Sampie Solution Refrigerated	Latitnde : N19°20.366′ Longitnde : E82°58.874′ Aititude : 955.24 m.	
Sampling Date	02.03.2022, 04.03.2022, 09.03.2022, 11.03.2022, 15.03.2022, 17.03.2022, 23.03.2022, 25.03.2022, 28.03.2022	Test Completed on	07.03.2022 to 02.04.2022

Sl. No.	Sampling Date	Parameters											
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)	O_3 ($\mu g/m^3$)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ug/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)
1	02.03.2022	53.8	28.1	6.1	14.4	0.41	5.6	BDL	BDL	BDL	BDL	BDL	BDL
2	04.03.2022	50.4	25.7	7.2	17.2	0.38	4.8	BDL	BDL	BDL	BDL	BDL	BDL
3	09.03.2022	54.3	28.6	6.6	15.6	0.45	5.1	BDL	BDL	BDL	BDL	BDL	BDL
4	11.03.2022	57.1	29.6	6.9	13.8	0.51	4.4	BDL	BDL	BDL	BDL	BDL	BDL
5	15.03.2022	60.3	31.3	7.4	16.2	0.44	4.7	BDL	BDL	BDL	BDL	BDL	BDL
6	17.03.2022	64.2	33.5	8.7	16.7	0.39	5.2	BDL	BDL	BDL	BDL	BDL	BDL
7	23.03.2022	58.2	30.0	7.5	15.1	0.42	5.6	BDL	BDL	BDL	BDL	BDL	BDL
8	25.03.2022	55.6	29.7	6.9	14.6	0.51	6.1	BDL	BDL	BDL	BDL	BDL	BDL
9	28.03.2022	51.7	27.5	7.2	15.5	0.46	5.3	BDL	BDL	BDL	BDL	BDL	BDL
Mouthly Average		56.2	29.3	7.2	15.5	0.44	5.2	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Staudard		100	60	80	80	4	100	400	05	01	20	1.0	06
Testing Method		IS 5182: Part 23	CPCB Manual	IS 5182 (Part-2) RA2017	IS 5182 (Part-6) RA2017	IS 5182 (Part-10):1999	Chemical Method	Indo Phenol Blue Metbod	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling on EPM 2000 or Equivalent filter Paper		

BDL Values: SO_2< 4 µg/m³, NO_X< 9 µg/m³, O_3<4 µg/m³, NH_3<20 µg/m³, Ni<2.5 ug/m³, As < 1 ng/m³, C_6H_6<4 µg/m³, BaP<0.5 ng/m³, Pb<0.02 µg/m³, CO-<0.1 mg/m³

Remarks: (All the values of PM-10, PM-2.5, SO_2, NOx & CO, O_3 etc presented in row no 1-9 are **Time Weighted Average.**

Visiontek Consultancy Services Pvt. Ltd. BBSR

Reviewed by

Visiontek Consultancy Services Pvt. Ltd. BBSR

Approved by

ANNEXURE: 5

Ambient Air Quality Monitoring Report (Buffer Zone)

Test Report No: Enviab/21/R-6665 Date: 02.11.2021

TEST REPORT

Customer Name & Address : Baphiimali Miues, M/s Utkal Alumiua Interuationai Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sampie Location & Code	S5: Adri	Sampled by	VCSPL'S Represeutative
Sampie Description	Ambient Air	Sampling Procedure	IS 5182.
Sample Sonrce	Baphiimali Mines, UAIL	Sample Received on	07.10.2021, 09.10.2021, 14.10.2021, 16.10.2021, 21.10.2021, 23.10.2021, 27.10.2021, 29.10.2021
Sample Condition	Gaseous Sampie Solution Refrigerated	Latitude : N 19°21.928' Longitnde : E 82°56.705' Altitnde : 691.90 m	
Sampling Date	06.10.2021, 08.10.2021, 13.10.2021, 15.10.2021, 20.10.2021, 22.10.2021, 26.10.2021, 28.10.2021	Test Completed on	11.10.2021 to 01.11.2021

Sl. No.	Sampling Date	Parameters				
		Particuiate Matter as PM_{10} ($\mu g/m^3$)	Partieuiate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sniphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)
1	06.10.2021	42.0	23.3	6.0	13.6	0.21
2	08.10.2021	39.0	21.6	4.8	12.5	0.18
3	13.10.2021	45.0	24.8	6.4	15.3	0.23
4	15.10.2021	41.0	22.3	5.6	14.0	0.20
5	20.10.2021	37.0	20.6	4.7	12.2	0.17
6	22.10.2021	46.0	25.7	5.5	10.8	0.23
7	26.10.2021	49.0	27.0	5.2	11.6	0.25
8	28.10.2021	51.0	26.2	6.3	13.7	0.16
Monthly Average		43.8	23.9	5.6	13.0	0.20
CPCB, New Delhi AAQ Standard		100	60	80	80	4
Testing Method		Gravimetrie IS 5182: Part 23	CPCB Manual	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hoehheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Iufrared Method IS 5182 (Part-10):1999
Remarks: Detectiou limit for SO_2: 4.0 $\mu g/m^3$, NO_X : 9.0 $\mu g/m^3$						
Any unusual feature during determination: Nil						

Remarks: (All the values of PM_{-10}, $PM_{-2.5}$, SO_2, NOx & CO presented in row no 1-8 are **Time Weighted Average.**)

Visiontek Consultancy Services Pvt. Ltd.

Reviewed by

Visiontek Consultancy Services Pvt. Ltd.

Approved by

Test Report No: Envlab/21/R-6666

Date: 02.11.2021

TEST REPORT

Customer Name & Address : Baphlimali Miues, M/s Utkal Alumina Internationai Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S6: Chandragiri	Sampled by	VCSPL'S Representative
Sampie Description	Ambient Air	Sampiing Procedure	IS 5182.
Sample Source	Baphlimali Mines, UAIL	Sampie Received on	07.10.2021, 09.10.2021, 14.10.2021, 16.10.2021, 21.10.2021, 23.10.2021, 27.10.2021, 29.10.2021
Sample Conditiou	Gaseous Sample Solution Refrigerated	Latitude : N 19°23.107' Longitude : E 82°59.221' Altitnde : 656.54 m	
Sampling Date	06.10.2021, 08.10.2021, 13.10.2021, 15.10.2021, 20.10.2021, 22.10.2021, 26.10.2021, 28.10.2021	Test Completed on	11.10.2021 to 01.11.2021

Si. No.	Sampling Date	Parameters				
		Particniate Matter as PM_{10} ($\mu g/m^3$)	Particnlate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sniphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)
1	06.10.2021	44.0	24.6	6.1	15.5	0.25
2	08.10.2021	49.0	26.0	5.4	14.1	0.31
3	13.10.2021	52.0	28.8	6.7	16.2	0.27
4	15.10.2021	47.0	25.7	5.0	13.4	0.22
5	20.10.2021	44.0	25.1	5.4	11.8	0.26
6	22.10.2021	51.0	28.4	7.1	I5.4	0.34
7	26.10.2021	45.0	24.3	6.3	14.7	0.28
8	28.10.2021	49.0	27.3	6.0	13.8	0.35
Monthly Average		47.6	26.3	6.0	14.4	0.29
CPCB, New Delhi AAQ Standard		100	60	80	80	4
Testing Method		Gravimetric IS 5182: Part 23	CPCB Manual	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jaeoh & Hochheiser Method 1S 5182 (Part-6) RA2006	Nou Dispersive Infrared Method IS 5182 (Part-10):1999
Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X : 9.0 $\mu g/m^3$						
Any unusuai feature during determiuation: Nil						

Remarks: (All the values of PM_{-10}, $PM_{-2.5}$, SO_2, NOx & CO presented in row no 1-8 are **Time Weighted Average.**)

Visiontek Consultancy Services Pvt. Ltd. BBSR Reviewed by

Visiontek Consultancy Services Pvt. Ltd. Approved by

Test Report No: Envlab/21/R-6667

Date: 02.11.2021

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alumina Internatioual Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S7: Paikupakhal	Sampled by	VCSPL'S Representative
Sampie Description	Ambient Air	Sampling Procedure	IS 5182.
Sampie Source	Baphlimali Mines, UA1L	Sample Received ou	07.10.2021, 09.10.2021, 14.10.2021, 16.10.2021, 21.10.2021, 23.10.2021, 27.10.2021, 29.10.2021
Sample Condition	Gascous Sample Sointion Refrigerated	Latitnde :N 19°20.197' Longitude :E 82°59.589' Altitude : 874.17 m	
Sampling Date	06.10.2021, 08.10.2021, 13.10.2021, 15.10.2021, 20.10.2021, 22.10.2021, 26.10.2021, 28.10.2021	Tcst Completed on	11.10.2021 to 01.11.2021

Si. No.	Sampling Date	Parameters				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particuiate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Suiphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NQx ($\mu g/m^3$)	CO (mg/m^3)
1	06.10.2021	40.0	21.7	6.2	14.6	0.22
2	08.10.2021	46.0	24.8	5.5	13.8	0.26
3	13.10.2021	38.0	20.3	4.6	12.5	0.21
4	15.10.2021	42.0	22.6	4.4	11.7	0.18
5	20.10.2021	47.0	25.2	5.6	I5.2	0.23
6	22.10.2021	50.0	27.1	6.2	14.7	0.25
7	26.10.2021	44.0	24.0	7.3	15.5	0.27
8	28.10.2021	48.0	26.0	5.4	12.6	0.28
Monthly Average		44.4	24.0	5.7	13.8	0.24
CPCB, New Delhi AAQ Standard		I00	60	80	80	4
Testing Method		Gravimetric IS 5182: Part 23	CPCB Mauual	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-10):1999
Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X : 9.0 $\mu g/m^3$						
Any unusnal featnre dnring determination: Nil						

Remarks: (All the values of PM_{-10}, $PM_{-2.5}$, SO_2, NOx & CO presented in row no I-8 are Time Weighted Average.)

Visiontek Consultancy Services Pvt. Ltd. BBSR. Reviewed by

Visiontek Consultancy Services Pvt. Ltd. BBSR. Approved by

Test Report No: Envlab/21/R-6668

Date: 02.11.2021

TEST REPORT

Cnstomer Name & Address : Baphlimali Mines, M/s Utkai Alumina Internationai Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S8: Andirakanch	Sampied by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procednre	IS 5182.
Sample Source	Baphlimali Miues, UAIL	Sample Received on	07.10.2021, 09.10.2021, 14.10.2021, 16.10.2021, 21.10.2021, 23.10.2021, 27.10.2021, 29.10.2021
Sampie Condition	Gaseous Sample Soiution Refrigerated	Latitnde : N 19°19.079' Longitnde : E 83°0.738' Altitude : 739.14 m.	
Sampling Date	06.10.2021, 08.10.2021, 13.10.2021, 15.10.2021, 20.10.2021, 22.10.2021, 26.10.2021, 28.10.2021	Test Completed on	11.10.2021 to 01.11.2021

Sl. No.	Sampling Date	Parameters				
		Partieulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Snlphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NQx ($\mu g/m^3$)	CO (mg/m^3)
1	06.10.2021	38.0	20.6	5.4	13.6	0.19
2	08.10.2021	35.0	18.8	6.2	14.3	0.23
3	13.10.2021	41.0	22.3	4.8	10.3	0.21
4	15.10.2021	36.0	19.4	4.5	11.4	0.25
5	20.10.2021	40.0	21.7	5.1	14.4	0.20
6	22.10.2021	47.0	25.5	6.6	15.7	0.24
7	26.10.2021	42.0	22.8	5.0	11.6	0.22
8	28.10.2021	49.0	26.6	6.2	13.5	0.26
Monthly Average		41.0	22.2	5.5	13.1	0.23
CPCB, New Delhi AAQ Standard		100	60	80	80	4
Testing Method		Gravimetric IS 5182: Part 23	CPCB Manual	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hoebheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Metho IS 5182 (Part-10):1999
Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X : 9.0 $\mu g/m^3$						
Any unnsual feature during determination: Nil						

Remarks: (All the values of PM_{-10}, $PM_{-2.5}$, SO_2, NOx & CO presented in row no 1-8 are **Time Weighted Average.**)

Visiontek Consultancy Services Pvt. Ltd. Reviewed by BBSR

Visiontek Consultancy Services Pvt. Ltd. Approved by

Test Report No: Envlab/21/R-8136 Date: 04.12.2021

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alumiua Iuteruatioual Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S5: Adri	Sampled by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182.
Sampie Source	Baphlimali Mines, UA1L	Sample Received on	03.11.2021, 06.11.2021, 10.11.2021, 12.11.2021, 19.11.2021, 22.11.2021, 24.11.2021, 26.11.2021
Sample Coudition	Gaseous Sample Solution Refrigerated	Latitude : N 19°21.928' Longitude : E 82°56.705' Altitude : 691.90 m	
Sampling Date	02.11.2021, 05.11.2021, 09.11.2021, 11.11.2021, 18.11.2021, 21.11.2021, 23.11.2021, 25.11.2021	Test Completed on	06.11.2021 to 30.11.2021

Si. No.	Sampling Date	Parameters				
		Particuiate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)
1	02.11.2021	49.0	27.2	7.4	14.7	0.27
2	05.11.2021	45.0	24.8	6.5	13.2	0.23
3	09.11.2021	52.0	28.3	7.1	16.6	0.31
4	11.11.2021	47.0	26.0	5.8	14.8	0.28
5	18.11.2021	54.0	29.4	6.3	14.2	0.22
6	21.11.2021	51.0	28.2	5.8	13.2	0.26
7	23.11.2021	48.0	26.5	8.2	15.7	0.29
8	25.11.2021	56.0	30.6	7.6	13.1	0.25
Mouthly Average		50.3	27.6	6.8	14.4	0.26
CPCB, New Delhi AAQ Standard		100	60	80	80	4
Testing Method		Gravimetric IS 5182: Part 23	CPCB Manual	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hoehheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Iufrared Method IS 5182 (Part-10):1999
Remarks: Detectiou limit for SO_2: 4.0 $\mu g/m^3$, NO_X: 9.0 $\mu g/m^3$						
Any unusual featnre dnring determination: Nil						

Remarks: (All the values of PM_{-10}, $PM_{-2.5}$, SO_2, NOx & CO presented in row no 1-8 are **Time Weigbted Average.**)

Visiontek Consultancy Services BBSR Reviewed by

Visiontek Consultancy Services BBSR Approved by

Test Report No: Enviab/21/R-8137 Date: 04.12.2021

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alumina luteruatioual Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S6: Cbandragiri	Sampied by	VCSPL'S Representative
Sampie Description	Ambieut Air	Sampiing Procedure	IS 5182.
Sample Source	Baphlimali Miues, UA1L	Sample Reeeived on	03.11.2021, 06.11.2021, 10.11.2021, 12.11.2021, 19.11.2021, 22.11.2021, 24.11.2021, 26.11.2021
Sample Condition	Gaseous Sample Solution Refrigerated	Latitude : N 19°23.107' Longitude : E 82°59.221' Altitude : 656.54 m	
Sampling Date	02.11.2021, 05.11.2021, 09.11.2021, 11.11.2021, 18.11.2021, 21.11.2021, 23.11.2021, 25.11.2021	Test Completed on	06.11.2021 to 30.11.2021

Sl. No.	Sampling Date	Parameters				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Partieulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)
1	02.11.2021	48.0	26.2	7.4	13.7	0.33
2	05.11.2021	51.0	28.3	8.2	16.1	0.29
3	09.11.2021	56.0	30.8	5.8	14.4	0.31
4	11.11.2021	53.0	29.5	7.1	15.6	0.25
5	18.11.2021	49.0	27.4	6.4	15.2	0.28
6	21.11.2021	54.0	29.7	6.7	14.5	0.36
7	23.11.2021	50.0	27.3	5.9	13.6	0.39
8	25.11.2021	47.0	25.6	5.2	14.2	0.34
Mouthly Average		51.0	28.1	6.6	14.7	0.32
CPCB, New Delhi AAQ Standard		100	60	80	80	4
Testiug Method		Gravimetric IS 5182: Part 23	CPCB Manual	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-10):1999
Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X: 9.0 $\mu g/m^3$						
Any unusual featnre during determinatiou: Nil						

Remarks: (All the values of PM_{-10}, $PM_{-2.5}$, SO_2, NOx & CO presented in row no 1-8 are **Time Weighted Average.**)

Visiontek Consultancy Services Pvt. Ltd. BBSR
Reviewed by

Visiontek Consultancy Services Pvt. Ltd. BBSR
Approved by

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Sob-Surface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Envlab/21/R-9138 Date: 04.12.2021

TEST REPORT

Cnstomer Name & Address : Baphlimali Mines, M/s Utkal Alumiua Iuteruatioual Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sampie Location & Code	S7: Paikupakhal	Sampied by	VCSPL'S Representative
Sample Descriptiou	Ambient Air	Sampiiug Procedure	IS 5182.
Sample Source	Baphlimali Miues, UA1L	Sample Received on	03.11.2021, 06.11.2021, 10.11.2021, 12.11.2021, 19.11.2021, 22.11.2021, 24.11.2021, 26.11.2021
Sampie Condition	Gaseous Sample Solution Refrigerated	Latitude :N 19°20.197' Longitude :E 82°59.589' Altitude : 874.17 m	
Sampliug Date	02.11.2021, 05.11.2021, 09.11.2021, 11.11.2021, 18.11.202I, 21.11.2021, 23.11.2021, 25.11.2021	Test Completed on	06.11.2021 to 30.11.2021

Sl. No.	Sampling Date	Parameters				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Partieulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)
1	02.11.2021	44.0	24.6	5.8	13.7	0.28
2	05.11.2021	49.0	27.3	7.3	15.4	0.24
3	09.11.2021	45.0	25.5	6.2	13.5	0.27
4	11.11.2021	51.0	28.6	6.8	14.6	0.22
5	18.11.2021	55.0	30.8	4.3	12.8	0.25
6	21.I1.2021	47.0	26.3	4.7	13.6	0.23
7	23.11.2021	43.0	24.4	6.3	15.1	0.31
8	25.11.2021	50.0	28.2	6.7	14.4	0.27
Monthly Average		48.0	27.0	6.0	14.1	0.26
CPCB, New Delhi AAQ Standard		100	60	80	80	4
Testing Method		Gravimetrie IS 5182: Part 23	CPCB Manual	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-10):1999
Remarks: Detectiou limit for SO_2: 4.0 $\mu g/m^3$, NO_X: 9.0 $\mu g/m^3$						
Any unusnal feature duriug determination: Nil						

Remarks: (All the values of PM_{-10}, $PM_{-2.5}$, SO_2, NOx & CO presented in row no 1-8 are **Time Weighted Average.**)

Visiontek Consultancy Services Pvt. Ltd. BBSR Reviewed by

Visiontek Consultancy Services Pvt. Ltd. BBSR Approved by

Test Report No: Envlab/21/R-9139 Date: 04.12.2021

TEST REPORT

Customer Name & Address : Baphlimali Miues, M/s Utkal Alumiua Iuternational Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S8: Andirakauch	Sampied by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182.
Sample Sonrce	Baphlimali Mines, UAIL	Sample Received on	03.11.2021, 06.11.2021, 10.11.2021, 12.11.2021, 19.11.2021, 22.11.2021, 24.11.2021, 26.11.2021
Sample Condition	Gaseons Sample Solution Refrigerated	Latitude : N 19°19.079' Longitude : E 83°0.738' Aititude : 739.14 m.	
Sampliug Date	02.11.2021, 05.11.2021, 09.11.2021, 11.11.2021, 18.11.2021, 21.11.2021, 23.11.2021, 25.11.2021	Test Compieted on	06.11.2021 to 30.11.2021

Sl. No.	Sampling Date	Parameters				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Parlieulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogeu as NOx ($\mu g/m^3$)	CO (mg/m^3)
1	02.11.2021	41.0	22.5	5.7	12.3	0.22
2	05.11.2021	45.0	24.8	6.5	15.1	0.25
3	09.11.2021	52.0	28.3	5.2	14.8	0.27
4	11.11.2021	48.0	26.7	4.7	13.4	0.23
5	18.11.2021	46.0	25.5	5.6	15.3	0.25
6	21.11.2021	50.0	27.1	6.2	16.8	0.28
7	23.11.2021	47.0	26.0	7.1	16.2	0.24
8	25.11.2021	44.0	24.6	6.7	15.6	0.29
Monthly Average		46.6	25.7	6.0	14.9	0.25
CPCB, New Delhi AAQ Standard		100	60	80	80	4
Testing Method		Gravimetrie IS 5182: Part 23	CPCB Manual	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacoh & Hoehheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-10):1999
Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X : 9.0 $\mu g/m^3$						
Any nausual feature dnring determination: Nil						

Remarks: (All the values of PM_{-10}, $PM_{-2.5}$, SO_2, NOx & CO presented in row no 1-8 are **Time Weigbted Average.**)

Visiontek Consultancy Services Pvt. Ltd. BBSR

Reviewed by

Visiontek Consultancy Services Pvt. Ltd. BBSR

Approved by

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Euvlab/21/R-9986 Date: 04.01.2022

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alnmina Iuternatioual Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S5: Adri	Sampled hy	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182.
Sample Source	Baphlimali Mines, UAIL	Sample Received ou	03.12.2021, 06.12.2021, 08.12.2021, 11.12.2021, 15.12.2021, 18.12.2021, 21.12.2021, 24.12.2021, 28.12.2021
Sample Condition	Gaseous Sample Solution Refrigerated	Latitude : N 19°21.928' Longitude : E 82°56.705' Altitude : 691.90 m	
Sampling Date	02.12.2021, 04.12.2021, 07.12.2021, 10.12.2021, 14.12.2021, 17.12.2021, 20.12.2021, 23.12.2021, 27.12.2021	Test Completed on	07.12.2021 to 31.12.2021

Sl. No.	Sampling Date	Parameters				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Suiphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)
I	02.12.2021	52.6	29.0	7.8	15.3	0.28
2	04.12.2021	47.7	26.6	6.3	14.1	0.25
3	07.12.2021	51.3	28.3	6.7	14.7	0.29
4	10.12.2021	55.6	30.2	7.1	15.6	0.33
5	14.12.2021	50.5	27.1	5.9	13.2	0.27
6	17.12.2021	53.8	29.5	6.4	12.5	0.22
7	20.12.2021	49.6	27.3	6.8	13.8	0.26
8	23.12.2021	54.0	29.4	7.5	15.3	0.31
9	27.12.2021	51.5	28.6	8.2	15.7	0.34
Mouthly Average		51.8	28.4	7.0	14.5	0.28
CPCB, New Delhi AAQ Standard		100	60	80	80	4
Testing Method		Gravimetric IS 5182: Part 23	CPCB Mauual	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacoh & Hochheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-10):1999
Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X: 9.0 $\mu g/m^3$						
Any uuusuai featnre dnring determination: Nil						

Remarks: (All the values of PM_{-10}, $PM_{-2.5}$, SO_2, NOx & CO presented in row no 1-9 are Time Weighted Average.)

Visiontek Consultancy Services Pvt. Ltd. BBSR

Reviewed by

Visiontek Consultancy Services Pvt. Ltd. BBSR

Approved by

Plot No.- M-22 & 23, Chandaka Iudustrial Estate, Patia, Bhubaneswar, Khurda, Odisha-751024, India Tel.: 0674-3511721
E-mail: visiontek@vcspl.org, visiontekin@gmail.com
Visit us at: www.vcspl.org

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Snb-Snrface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricnltnral Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Envlab/21/R-9987 Date: 04.01.2022

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alnmina International Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S6: Chandragiri	Sampled by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182.
Sample Sonrce	Baphlimali Mines, UAIL	Sample Received on	03.12.2021, 06.12.2021, 08.12.2021, 11.12.2021, 15.12.2021, 18.12.2021, 21.12.2021, 24.12.2021, 28.12.2021
Sample Condition	Gaseous Sample Solntion Refrigerated	Latitude : N 19°23.107' Longitude : E 82°59.221' Altitude : 656.54 m	
Sampling Date	02.12.2021, 04.12.2021, 07.12.2021, 10.12.2021, 14.12.2021, 17.12.2021, 20.12.2021, 23.12.2021, 27.12.2021	Test Completed on	07.12.2021 to 31.12.2021

Sl. No.	Sampling Date	Parameters				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Partieulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Snlphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)
1	02.12.2021	54.3	29.7	8.6	17.5	0.38
2	04.12.2021	49.6	26.5	6.5	15.4	0.35
3	07.12.2021	55.8	30.8	7.2	13.8	0.41
4	10.12.2021	59.0	33.1	7.6	14.7	0.32
5	14.12.2021	53.5	29.3	6.3	14.2	0.29
6	17.12.2021	48.6	26.6	7.1	16.3	0.33
7	20.12.2021	50.4	27.8	8.1	15.7	0.27
8	23.12.2021	56.3	31.2	7.7	16.6	0.31
9	27.12.2021	52.5	29.2	7.3	15.0	0.33
Monthly Average		53.3	29.4	7.4	15.5	0.33
CPCB, New Delhi AAQ Standard		100	60	80	80	4
Testing Method		Gravimetric IS 5182: Part 23	CPCB Manual	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-10):1999
Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X: 9.0 $\mu g/m^3$						
Any unusual feature during determiuation: Nil						

Remarks: (All the values of PM_{-10}, $PM_{-2.5}$, SO_2, NOx & CO presented in row no 1-9 are **Time Weighted Average.**)

Visiontek Consultancy Services Pvt. Ltd. BBSR *Reviewed by*

Visiontek Consultancy Services Pvt. Ltd. BBSR *Approved by*

Plot No.- M-22 & 23, Chandaka Iudustrial Estate, Patia, Bhubaneswar, Khnrda, Odisha-751024, India Tel.: 0674-3511721
E-mail: visiontek@vcspl.org, visiontekin@gmail.com
Visit us at: www.vcspl.org

Test Report No: Envlab/21/R-9988 **Date: 04.01.2022**

TEST REPORT

Cnstomer Name & Address : **Baphlimali Mines, M/s Utkal Alumina International Ltd, Tikiri, Rayagada, Odisha**

SAMPLE DETAILS

Sample Locatiou & Code	S7: Paikupakhal	Sampled by	VCSPL'S Representative
Sample Description	Ambient Air	Sampliug Procedure	IS 5182.
Sample Source	Baphlimali Mines, UAIL	Sample Received on	03.12.2021, 06.12.2021, 08.12.2021, 11.12.2021, 15.12.2021, 18.12.2021, 21.12.2021, 24.12.2021, 28.12.2021
Sample Condition	Gaseons Sample Solution Refrigerated	Latitude :N 19°20.197' Longitude :E 82°59.589' Altitude : 874.17 m	
Sampling Date	02.12.2021, 04.12.2021, 07.12.2021, 10.12.2021, 14.12.2021, 17.12.2021, 20.12.2021, 23.12.2021, 27.12.2021	Test Completed ou	07.12.2021 to 31.12.2021

Sl. No.	Sampling Date	Parameters				
		Partieulate Matter as PM_{10} ($\mu g/m^3$)	Partieulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogeu as NOx ($\mu g/m^3$)	CO (mg/m^3)
1	02.12.2021	49.7	27.5	6.4	14.8	0.31
2	04.12.2021	46.2	25.7	5.3	13.6	0.25
3	07.12.2021	50.5	28.6	5.7	14.2	0.29
4	10.12.2021	54.3	30.8	6.1	13.8	0.32
5	14.12.2021	51.6	29.2	7.2	15.4	0.27
6	17.12.2021	58.2	32.7	6.2	14.7	0.28
7	20.12.2021	53.3	29.7	6.6	14.3	0.24
8	23.12.2021	48.8	26.6	5.6	13.8	0.26
9	27.12.2021	52.6	29.5	6.8	15.5	0.30
Monthly Average		51.7	28.9	6.2	14.5	0.28
CPCB, New Delhi AAQ Standard		100	60	80	80	4
Testing Method		Gravimetrie IS 5182: Part 23	CPCB Manual	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jaeoh & Hochheiser Metbod IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-10):1999
Remarks: Detcctiou limit for SO_2: 4.0 $\mu g/m^3$, NO_X : 9.0 $\mu g/m^3$						
Auy unusual featnre duriug determination: Nil						

Remarks: (All the values of PM_{-10}, $PM_{-2.5}$, SO_2, NOx & CO presented in row no 1-9 are **Time Weighted Average.**)

Visiontek Consultancy Services Pvt.Ltd. BBSR *Reviewed by*

Visiontek Consultancy Services Pvt.Ltd. BBSR *Approved by*

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
- Water Resonrce Management
- Environmental & Social Study
- Surface & Sub-Surface Investigatiou
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Technology
- Public Health Engineering
- Mine Pianning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Euvlab/21/R-9989

Date: 04.01.2022

TEST REPORT

Cnstomer Name & Address : Baphlimali Mines, M/s Utkal Alumina International Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S8: Andirakanch	Sampled by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procednre	IS 5182.
Sample Source	Bapblimali Mines, UAIL	Sample Received ou	03.12.2021, 06.12.2021, 08.12.2021, 11.12.2021, 15.12.2021, 18.12.2021, 21.12.2021, 24.12.2021, 28.12.2021
Sample Condition	Gaseous Sample Solutiou Refrigerated	Latitude : N 19°19.079' Longitnde : E 83°0.738' Altitude : 739.14 m.	
Sampling Date	02.12.2021, 04.12.2021, 07.12.2021, 10.12.2021, 14.12.2021, 17.12.2021, 20.12.2021, 23.12.2021, 27.12.2021	Test Completed on	07.12.2021 to 31.12.2021

Sl. No.	Sampling Date	Parameters				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogeu as NOx ($\mu g/m^3$)	CO (mg/m^3)
1	02.12.2021	44.7	24.7	6.6	11.8	0.24
2	04.12.2021	49.3	27.3	5.9	12.2	0.29
3	07.12.2021	45.6	25.6	6.7	12.7	0.31
4	10.12.2021	51.7	28.2	6.2	13.5	0.25
5	14.12.2021	54.2	29.8	7.3	14.8	0.23
6	17.12.2021	48.8	27.0	4.7	11.3	0.27
7	20.12.2021	52.7	29.3	6.6	15.1	0.25
8	23.12.2021	50.3	27.5	6.2	14.6	0.29
9	27.12.2021	53.6	29.4	7.5	15.8	0.26
Monthly Average		50.1	27.6	6.4	13.5	0.27
CPCB, New Delhi AAQ Standard		100	60	80	80	4
Testing Method		Gravimetric IS 5182: Part 23	CPCD Manual	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hoehheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Iufrared Metbod IS 5182 (Part-10):1999
Remarks: Deteetion limit for SO_2: 4.0 $\mu g/m^3$, NO_X : 9.0 $\mu g/m^3$						
Auy uunsual feature during determinatioo: Nil						

Rcmarks: (All the values of PM_{-10}, $PM_{-2.5}$, SO_2, NOx & CO presented in row no 1-9 are Time Weighted Average.)

Visiontek Consultancy Services Pvt. Ltd. BBSR Reviewed by

Visiontek Consultancy Services Pvt. Ltd. BBSR Approved by

Plot No.- M-22 & 23, Cbandaka Industrial Estate, Patia, Bhubaneswar, Khurda, Odisha-751024, India Tel.: 0674-3511721
E-mail: visiontek@vcspl.org, visiontekin@gmail.com
Visit us at: www.vcspl.org

Test Report No: Envlah/21/R-1576

Date: 05.02.2022

TEST REPORT

Cnstomer Name & Address : Baphlimali Mines, M/s Utkal Alumina Internationai Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S5: Adri	Sampled by	VCSPL'S Represeutative
Sample Descrlption	Amhient Alr	Sampliug Procedure	IS 5182.
Sample Sonrce	Baphlimali Mines, UAIL	Sample Received on	05.01.2022, 07.01.2022, 13.01.2022, 15.01.2022, 19.01.2022, 22.01.2022, 27.01.2022, 29.01.2022
Sample Condition	Gaseons Sample Solution Refrigerated	Latitude : N 19°21.928' Longitude : E 82°56.705' Altitude : 691.90 m	
Sampiing Date	04.01.2022, 06.01.2022, 12.01.2022, 14.01.2022, 18.01.2022, 21.01.2022, 25.01.2022, 28.01.2022	Tcst Compieted on	08.01.2022 to 01.02.2022

Sl. No.	Sampliug Date	Parameters				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Partieulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphnr Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)
1	04.01.2022	49.8	26.8	6.1	14.1	0.31
2	06.01.2022	53.5	29.5	7.3	15.5	0.35
3	12.01.2022	50.4	27.3	6.8	14.6	0.26
4	14.01.2022	47.7	25.7	5.8	13.4	0.29
5	18.01.2022	44.8	24.5	6.5	13.7	0.25
6	21.01.2022	48.3	26.8	7.4	16.2	0.31
7	25.01.2022	51.4	27.3	6.9	15.5	0.27
8	28.01.2022	46.8	25.2	7.2	15.2	0.24
Monthly Average		49.1	26.6	6.8	14.8	0.29
CPCB, New Delhi AAQ Standard		100	60	80	80	4
Testing Method		Gravimetric IS 5182: Part 23	CPCB Mauual	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hoebbeiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-10):1999
Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X : 9.0 $\mu g/m^3$						
Any uuusual feature during determinatiou: Nil						

Remarks: (All the values of PM_{-10}, $PM_{-2.5}$, SO_2, NOx & CO presented in row no 1-8 are **Tlme Weighted Average.**)

Visiontek Consultancy Services Pvt. Ltd. BBSR

Reviewed by

Visiontek Consultancy Services Pvt. Ltd. BBSR

Approved by

Test Report No: Euvlab/21/R-1577

Date: 05.02.2022

TEST REPORT

Cnstomer Name & Address : Baphlimali Mines, M/s Utkal Alnmina Internationai Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Locatiou & Code	S6: Chandragiri	Sampled by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procednre	IS 5182.
Sample Sonrce	Baphlimali Miues, UAIL	Sampie Received on	05.01.2022, 07.01.2022, 13.01.2022, 15.01.2022, 19.01.2022, 22.01.2022, 27.01.2022, 29.01.2022
Sample Conditlon	Gaseous Sample Solution Refrlgerated	Latitude : N 19°23.107' Longltude : E 82°59.221' Altitude : 656.54 m	
Sampling Date	04.01.2022, 06.01.2022, 12.01.2022, 14.01.2022, 18.01.2022, 21.01.2022, 25.01.2022, 28.01.2022	Test Completed on	08.01.2022 to 01.02.2022

Sl. No.	Sampling Date	Parameters				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)
1	04.01.2022	51.5	28.7	7.8	15.6	0.43
2	06.01.2022	48.4	25.5	6.4	13.2	0.39
3	12.01.2022	50.2	27.6	7.3	15.3	0.37
4	14.01.2022	53.7	29.3	8.4	17.1	0.34
5	18.01.2022	49.2	27.4	7.3	15.5	0.32
6	21.01.2022	52.5	29.2	6.9	12.7	0.28
7	25.01.2022	55.3	30.7	7.5	14.8	0.31
8	28.01.2022	53.1	28.8	7.1	15.7	0.35
Monthly Average		51.7	28.4	7.3	15.0	0.35
CPCB, New Delhi AAQ Standard		100	60	80	80	4
Testlug Method		Gravimetric IS 5182: Part 23	CPCB Manual	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Metbod IS 5182 (Part-10):1999
Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X : 9.0 $\mu g/m^3$						
Any uuusual feature during determination: Nil						

Remarks: (All the values of PM_{-10}, $PM_{-2.5}$, SO_2, NOx & CO presented in row no 1-8 are **Time Weighted Average.**)

Visiontek Consultancy Services BBSR Pvt. Ltd.

Reviewed by

Visiontek Consultancy Services BBSR Pvt. Ltd.

Approved by

Test Report No: Envlab/21/R-1578

Date: 05.02.2022

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkai Alumiua 1nteruational Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Loeation & Code	S7: Paikupakbal	Sampied by	VCSPL'S Representative
Sampie Description	Ambient Air	Sampling Proeedure	IS 5182.
Sample Sonrce	Baphlimali Mines, UAIL	Sample Received on	05.01.2022, 07.01.2022, 13.01.2022, 15.01.2022, 19.01.2022, 22.01.2022, 27.01.2022, 29.01.2022
Sample Condition	Gaseons Sample Solution Refrigerated	Latitude :N 19°20.I97' Longitude :E 82°59.589' Altitnde : 874.17 m	
Sampling Date	04.01.2022, 06.01.2022, 12.01.2022, 14.01.2022, 18.01.2022, 21.01.2022, 25.01.2022, 28.01.2022	Test Completed on	08.01.2022 to 01.02.2022

Sl. No.	Sampling Date	Parameters				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particuiate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)
1	04.01.2022	47.6	24.3	5.5	12.7	0.34
2	06.01.2022	52.3	28.7	6.8	14.6	0.28
3	12.01.2022	48.4	26.3	5.1	13.5	0.33
4	14.01.2022	50.7	28.0	5.6	13.1	0.26
5	18.01.2022	54.4	29.7	5.2	12.6	0.28
6	21.01.2022	51.3	28.1	4.7	12.3	0.31
7	25.01.2022	55.7	31.4	6.3	14.1	0.24
8	28.01.2022	48.6	26.2	5.3	13.5	0.36
Monthly Average		51.1	27.8	5.6	13.3	0.30
CPCB, New Delhi AAQ Standard		100	60	80	80	4
Testiug Method		Gravimetric IS 5182: Part 23	CPCB Manual	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Iufrared Method IS 5182 (Part-I0):1999
Remarks: Detectiou limit for SO_2: 4.0 $\mu g/m^3$, NO_X : 9.0 $\mu g/m^3$						
Any unusnal featnre during determinatiou: Nil						

Remarks: (All the values of PM_{-10}, $PM_{-2.5}$, SO_2, NOx & CO presented in row no 1-8 are Time Weighted Average.)

Visiontek Consultancy Services Pvt. Ltd. BBSR

Reviewed by

Visiontek Consultancy Services Pvt. Ltd. BBSR

Approved by

Test Report No: Envlab/21/R-1579

Date: 05.02.2022

TEST REPORT

Customer Name & Address : Baphiimall Miues, M/s Utkal Alumiua International Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S8: Andirakanch	Sampled by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182.
Sample Source	Baphlimali Mines, UAIL	Sample Reeeived on	05.01.2022, 07.01.2022, 13.01.2022, 15.01.2022, 19.01.2022, 22.01.2022, 27.01.2022, 29.01.2022
Sample Condition	Gaseous Sample Solntion Refrigerated	Latitude : N 19°19.079' Longitude : E 83°0.738' Altitnde : 739.14 m.	
Sampling Date	04.01.2022, 06.01.2022, 12.01.2022, 14.01.2022, 18.01.2022, 21.01.2022, 25.01.2022, 28.01.2022	Test Completed on	08.01.2022 to 01.02.2022

Sl. No.	Sampling Date	Parameters				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Snlphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)
1	04.01.2022	46.8	25.1	5.4	12.4	0.26
2	06.01.2022	50.5	27.7	6.3	13.2	0.33
3	12.01.2022	43.6	22.8	5.7	11.8	0.27
4	14.01.2022	47.7	24.6	5.1	11.5	0.23
5	18.01.2022	52.6	28.5	6.7	12.6	0.29
6	21.01.2022	48.8	26.3	4.7	10.2	0.25
7	25.01.2022	53.4	29.7	5.1	11.8	0.31
8	28.01.2022	45.8	25.4	5.6	12.2	0.24
Mouthly Average		48.7	26.3	5.6	12.0	0.27
CPCB, New Delhi AAQ Standard		100	60	80	80	4
Testing Method		Gravimetric IS 5182: Part 23	CPCB Manual	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hochhelser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-10):1999
Remurks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X : 9.0 $\mu g/m^3$						
Any nnusual feature during determination: Nil						

Remarks: (All the values of PM_{-10}, $PM_{-2.5}$, SO_2, NOx & CO presented in row no 1-8 are **Time Weighted Average.**)

Reviewed by

Approved by

Test Report No: Envlab/21/R-3094 Date: 09.03.2022

TEST REPORT

Customer Name & Address : Baphlimali Miues, M/s Utkal Alumiua International Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S5: Adri	Sampled by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182.
Sample Source	Baphliinali Mines, UAIL	Sample Received on	05.02.2022, 10.02.2022, 14.02.2022, 16.02.2022, 21.02.2022, 23.02.2022, 28.02.2022, 01.03.2022
Sample Condition	Gaseons Sample Solution Refrigerated	Latitude : N 19°21.928' Longitude : E 82°56.705' Altitude : 691.90 m	
Sampling Date	04.02.2022, 09.02.2022, 12.02.2022, 15.02.2022, 19.02.2022, 22.02.2022, 26.02.2022, 28.02.2022	Test Completed on	10.02.2022 to 05.03.2022

Sl. No.	Sampling Date	Parameters				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)
1	04.02.2022	54.2	29.5	5.8	13.7	0.27
2	09.02.2022	47.6	25.3	6.2	16.2	0.34
3	12.02.2022	45.2	24.4	5.5	14.6	0.24
4	15.02.2022	49.6	25.3	5.3	15.8	0.32
5	19.02.2022	52.5	28.3	6.4	14.5	0.36
6	22.02.2022	50.4	27.5	6.7	15.6	0.33
7	26.02.2022	46.7	25.3	7.3	16.4	0.28
8	28.02.2022	44.5	22.7	5.7	14.3	0.25
Monthly Average		48.8	26.0	6.1	15.1	0.30
CPCB, New Delhi AAQ Standard		100	60	80	80	4
Testing Method		Gravimetric IS 5182: Part 23	CPCB Manual	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hochlheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Iufrared Method IS 5182 (Part-10):1999
Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X : 9.0 $\mu g/m^3$						
Any unusual feature during determination: Nil						

Remarks: (All the values of PM_{-10}, $PM_{-2.5}$, SO_2, NOx & CO presented in row no 1-8 are **Time Weighted Average.**)

Visiontek Consultancy Services Pvt. Ltd. BBSR Reviewed by

Visiontek Consultancy Services Pvt. Ltd. BBSR Approved by

Test Report No: Envlab/21/R-3095 Date: 09.03.2022

TEST REPORT

Cnstomer Name & Address : Baphlimali Mines, M/s Utkal Alumina International Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S6: Chandragiri	Sampled by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procednre	IS 5182.
Sample Source	Baphlimali Mines, UAIL	Sample Received on	05.02.2022, 10.02.2022, 14.02.2022, 16.02.2022, 21.02.2022, 23.02.2022, 28.02.2022, 01.03.2022
Sample Condition	Gaseous Sample Solution Refrigerated	Latitude : N 19°23.107' Longitude : E 82°59.221' Altitude : 656.54 m	
Sampling Date	04.02.2022, 09.02.2022, 12.02.2022, 15.02.2022, 19.02.2022, 22.02.2022, 26.02.2022, 28.02.2022	Test Completed on	10.02.2022 to 05.03.2022

Sl. No.	Sampling Date	Parameters				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NO_x ($\mu g/m^3$)	CO (mg/m^3)
1	04.02.2022	46.6	25.1	6.7	14.8	0.44
2	09.02.2022	43.8	23.7	5.5	15.1	0.51
3	12.02.2022	49.5	26.4	6.1	13.7	0.46
4	15.02.2022	51.4	27.6	6.7	15.4	0.38
5	19.02.2022	54.3	29.2	7.8	16.3	0.42
6	22.02.2022	48.6	26.6	6.2	11.6	0.35
7	26.02.2022	50.7	27.4	6.6	17.5	0.37
8	28.02.2022	47.2	24.8	5.8	14.2	0.32
Monthly Average		49.0	26.4	6.4	14.8	0.41
CPCB, New Delhi AAQ Standard		100	60	80	80	4
Testing Method		Gravimetric IS 5182: Part 23	CPCB Manual	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-10):1999
Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X : 9.0 $\mu g/m^3$						
Any unusual feature during deterniination: Nil						

Remarks: (All the values of PM_{-10}, $PM_{-2.5}$, SO_2, NOx & CO presented in row no 1-8 are **Time Weighted Average.**)

Visiontek Consultancy Services Pvt. Ltd. BBSR Reviewed by

Visiontek Consultancy Services Pvt. Ltd. BBSR Approved by

Test Report No: Envlab/21/R-3096 Date: 09.03.2022

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alumina International Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S7: Paikupakhal	Sampled by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182.
Sample Source	Baphlimali Mines, UAIL	Sample Received on	05.02.2022, 10.02.2022, 14.02.2022, 16.02.2022, 21.02.2022, 23.02.2022, 28.02.2022, 01.03.2022
Sample Condition	Gaseous Sample Solution Refrigerated	Latitude :N 19°20.197' Longitude :E 82°59.589' Altitude : 874.17 m	
Sampling Date	04.02.2022, 09.02.2022, 12.02.2022, 15.02.2022, 19.02.2022, 22.02.2022, 26.02.2022, 28.02.2022	Test Completed on	10.02.2022 to 05.03.2022

Sl. No.	Sampling Date	Parameters				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)
1	04.02.2022	45.3	24.8	6.4	13.6	0.37
2	09.02.2022	49.7	27.3	5.7	12.8	0.32
3	12.02.2022	52.4	28.5	4.8	11.5	0.29
4	15.02.2022	46.8	25.2	5.3	14.2	0.34
5	19.02.2022	53.3	29.6	5.6	10.8	0.27
6	22.02.2022	50.7	28.0	6.1	13.5	0.33
7	26.02.2022	47.6	26.4	4.7	11.7	0.29
8	28.02.2022	51.2	28.3	5.5	14.6	0.31
Mouthly Average		49.6	27.3	5.5	12.8	0.32
CPCB, New Delhi AAQ Standard		100	60	80	80	4
Testing Method		Gravimetric IS 5182: Part 23	CPCB Manual	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-10):1999
Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X : 9.0 $\mu g/m^3$						
Any unusual feature during determination: Nil						

Remarks: (All the values of PM_{10}, $PM_{2.5}$, SO_2, NOx & CO presented in row no 1-8 are Time Weighted Average.)

Visiontek Consultancy Services Pvt. Ltd. Reviewed By BBSR

Visiontek Consultancy Services Pvt. Ltd. Approved By BBSR

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Invcstigation
- Quality Control & Project Management
- Renewahie Energy
- Agricultural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Envlab/21/R-3097 Date: 09.03.2022

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alumina International Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S8: Andirakanch	Sampled by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182.
Sample Source	Bapblimali Mines, UAIL	Sample Received on	05.02.2022, 10.02.2022, 14.02.2022, 16.02.2022, 21.02.2022, 23.02.2022, 28.02.2022, 01.03.2022
Sample Coudition	Gaseous Sample Solntion Refrigerated	Latitude : N 19°19.079' Longitude : E 83°0.738' Altitude : 739.14 m.	
Sampling Date	04.02.2022, 09.02.2022, 12.02.2022, 15.02.2022, 19.02.2022, 22.02.2022, 26.02.2022, 28.02.2022	Test Completed on	10.02.2022 to 05.03.2022

Sl. No.	Sampling Date	Parameters				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)
1	04.02.2022	49.2	25.8	5.8	11.7	0.32
2	09.02.2022	45.7	24.7	5.2	12.4	0.25
3	12.02.2022	42.8	22.6	6.5	15.3	0.31
4	15.02.2022	44.6	23.8	5.4	10.8	0.34
5	19.02.2022	51.3	27.2	5.9	13.2	0.26
6	22.02.2022	46.6	24.4	4.6	11.5	0.22
7	26.02.2022	50.7	26.8	5.3	14.6	0.33
8	28.02.2022	43.5	23.3	6.7	15.2	0.28
Monthly Average		46.8	24.8	5.7	13.1	0.29
CPCB, New Delhi AAQ Standard		100	60	80	80	4
Testing Method		Gravimetric IS 5182: Part 23	CPCB Maunal	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-10):1999
Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X : 9.0 $\mu g/m^3$						
Any unusual featnre dnring determination: Nil						

Remarks: (All the values of PM_{-10}, $PM_{-2.5}$, SO_2, NOx & CO presented in row no 1-8 are **Time Weighted Average.**)

Visiontek Consultancy Services Pvt. Ltd. — Reviewed

Visiontek Consultancy Services Pvt. Ltd. — Approved by

Piot No.- M-22 & 23, Chandaka Industriai Estate, Patia, Bhuhaneswar, Khurda, Odisha-751024, India Tei.: 0674-3511721
E-mail: visiontek@vcspl.org, visiontekin@gmail.com
Visit us at: www.vcspl.org

Test Report No: Envlab/22/R-0802 Date: 05.04.2022

TEST REPORT

Customer Name & Address : Baphlimaii Mines, M/s Utkal Alumiua Interuatioual Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S5: Adri	Sampled by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182.
Sample Source	Baphlimali Mines, UAIL	Sample Reccived on	04.03.2022, 07.03.2022, 11.03.2022, 13.03.2022, 17.03.2022, 21.03.2022, 25.03.2022, 28.03.2022, 30.03.2022
Sample Condition	Gaseons Sample Solntion Refrigerated	Latitude : N 19°21.928' Longitude : E 82°56.705' Altitnde : 691.90 m	
Sampliug Date	03.03.2022, 05.03.2022, 10.03.2022, 12.03.2022, 16.03.2022, 18.03.2022, 24.03.2022, 26.03.2022, 29.03.2022	Tcst Completed on	08.03.2022 to 02.04.2022

Si. No.	Sampling Date	Parameters				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)
1	03.03.2022	49.7	25.8	5.5	13.8	0.33
2	05.03.2022	52.2	27.2	6.7	14.2	0.29
3	10.03.2022	55.1	28.0	6.3	13.5	0.31
4	12.03.2022	48.6	25.3	7.1	15.1	0.27
5	16.03.2022	43.7	23.7	6.5	14.6	0.35
6	18.03.2022	47.4	25.6	5.9	13.2	0.38
7	24.03.2022	51.5	27.8	6.6	15.3	0.41
8	26.03.2022	46.6	24.2	5.2	12.7	0.28
9	29.03.2022	50.4	26.4	7.3	14.5	0.31
Mouthly Average		49.5	26.0	6.3	14.1	0.33
CPCB, New Delhi AAQ Standard		100	60	80	80	4
Testing Method		Gravimetrie IS 5182: Part 23	CPCB Manual	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-10):1999
Remarks: Deteetion limit for SO_2: 4.0 $\mu g/m^3$, NO_X: 9.0 $\mu g/m^3$						
Any unusual feature during determination: Nil						

Remarks: (All the values of PM_{-10}, $PM_{-2.5}$, SO_2, NOx & CO presented in row no 1-9 are **Time Weighted Average.**)

Reviewed by

Approved by

Test Report No: Envlab/22/R-0803 Date: 05.04.2022

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alumiua Interuatioual Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Codc	S6: Chaudragiri	Sampled by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procednre	IS 5182.
Sample Source	Baphlimali Miues, UAIL	Sample Receivcd on	04.03.2022, 07.03.2022, 11.03.2022, 13.03.2022, 17.03.2022, 21.03.2022, 25.03.2022, 28.03.2022, 30.03.2022
Sample Condition	Gaseons Sample Solution Refrigerated	Latitude : N 19°23.107' Longitude : E 82°59.221' Altitnde : 656.54 m	
Sampliug Date	03.03.2022, 05.03.2022, 10.03.2022, 12.03.2022, 16.03.2022, 18.03.2022, 24.03.2022, 26.03.2022, 29.03.2022	Test Complcted on	08.03.2022 to 02.04.2022

Sl. No.	Sampling Date	Parameters				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)
1	03.03.2022	48.4	25.5	7.4	14.8	0.39
2	05.03.2022	50.7	26.3	6.3	15.1	0.43
3	10.03.2022	53.2	27.6	6.6	13.7	0.48
4	12.03.2022	46.8	24.1	5.8	15.4	0.35
5	16.03.2022	51.5	26.8	7.1	16.3	0.47
6	18.03.2022	47.3	23.7	6.3	11.6	0.42
7	24.03.2022	56.2	29.3	8.0	17.5	0.36
8	26.03.2022	52.7	27.4	6.7	14.2	0.48
9	29.03.2022	49.2	25.1	7.6	16.0	0.41
Mouthly Average		50.7	26.2	6.9	15.0	0.42
CPCB, New Delhi AAQ Standard		100	60	80	80	4
Testing Method		Gravimetric IS 5182: Part 23	CPCB Manual	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hochbeiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-10):1999
Remarks: Detectiou limit for SO_2: 4.0 $\mu g/m^3$, NO_X : 9.0 $\mu g/m^3$						
Any unusual feature during determination: Nil						

Remarks: (All the values of PM_{-10}, $PM_{-2.5}$, SO_2, NOx & CO presented in row no 1-9 are **Time Weighted Average.**)

Reviewed by

Approved by

Test Report No: Envlab/22/R-0804 Date: 05.04.2022

TEST REPORT

Customer Name & Address : Baphlimali Miues, M/s Utkal Alumiua Interuational Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S7: Paikupakhal	Sampled by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procednre	IS 5182.
Sample Source	Baphlimali Mines, UAIL	Sample Received on	04.03.2022, 07.03.2022, 11.03.2022, 13.03.2022, 17.03.2022, 21.03.2022, 25.03.2022, 28.03.2022, 30.03.2022
Sample Coudition	Gaseons Sample Solution Refrigerated	Latitude :N 19°20.197' Longitudc :E 82°59.589' Altitnde : 874.17 m	
Sampling Date	03.03.2022, 05.03.2022, 10.03.2022, 12.03.2022, 16.03.2022, 18.03.2022, 24.03.2022, 26.03.2022, 29.03.2022	Test Completed on	08.03.2022 to 02.04.2022

Sl. No.	Sampling Date	Parameters				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)
1	03.03.2022	46.8	24.7	6.2	14.2	0.34
2	05.03.2022	44.3	23.3	7.1	13.6	0.27
3	10.03.2022	49.7	25.8	5.9	13.1	0.31
4	12.03.2022	52.1	27.1	6.4	12.7	0.35
5	16.03.2022	47.8	25.0	4.6	11.2	0.32
6	18.03.2022	53.2	27.3	5.8	13.3	0.26
7	24.03.2022	50.5	26.6	5.2	10.8	0.28
8	26.03.2022	45.4	23.8	4.7	12.6	0.33
9	29.03.2022	48.2	25.2	5.5	13.1	0.29
Mouthly Average		48.7	25.4	5.7	12.7	0.31
CPCB, New Delhi AAQ Standard		100	60	80	80	4
Testing Method		Gravimetric IS 5182: Part 23	CPCB Manual	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-I0):1999
Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X: 9.0 $\mu g/m^3$						
Any unusual featnre during determination: Nil						

Remarks: (All the values of PM_{-10}, $PM_{-2.5}$, SO_2, NOx & CO presented in row no 1-9 are **Time Weighted Average.**)

Reviewed by

Approved by

Test Report No: Envlab/22/R-0805 Date: 05.04.2022

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alumiua International Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	S8: Andirakancb	Sampled by	VCSPL'S Representative
Sample Descriptiou	Ambient Air	Sampling Procedure	IS 5182.
Sample Source	Baphlimali Mines, UAIL	Sample Received ou	04.03.2022, 07.03.2022, 11.03.2022, 13.03.2022, 17.03.2022, 21.03.2022, 25.03.2022, 28.03.2022, 30.03.2022
Sample Condition	Gaseous Sample Solution Refrigerated	Latitude : N 19°19.079' Longitnde : E 83°0.738' Altitude : 739.14 m.	
Sampling Date	03.03.2022, 05.03.2022, 10.03.2022, 12.03.2022, 16.03.2022, 18.03.2022, 24.03.2022, 26.03.2022, 29.03.2022	Test Completed on	08.03.2022 to 02.04.2022

Sl. No.	Sampling Date	Parameters				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NOx ($\mu g/m^3$)	CO (mg/m^3)
1	03.03.2022	44.7	23.5	6.3	13.2	0.35
2	05.03.2022	48.0	25.1	5.6	12.7	0.29
3	10.03.2022	45.6	23.7	7.1	14.8	0.33
4	12.03.2022	50.4	26.0	6.2	14.3	0.37
5	16.03.2022	54.2	27.8	7.6	15.1	0.28
6	18.03.2022	49.3	24.6	5.8	11.7	0.31
7	24.03.2022	42.3	22.3	6.1	12.2	0.27
8	26.03.2022	47.5	24.7	6.6	13.4	0.32
9	29.03.2022	43.6	22.8	5.9	11.8	0.26
Mouthly Average		47.3	24.5	6.4	13.2	0.31
CPCB, New Delhi AAQ Standard		100	60	80	80	4
Testiug Method		Gravimetric IS 5182: Part 23	CPCB Mauual	Improved West & Geake Metbod IS 5182 (Part-2) RA2006	Modified Jacob & Hochbeiser Metbod IS 5182 (Part-6) RA2006	Non Dispersive Infrared Metbod IS 5182 (Part-10):1999
Remarks: Detcction limit for SO_2: 4.0 $\mu g/m^3$, NO_X: 9.0 $\mu g/m^3$						
Any unusual feature during determination: Nil						

Remarks: (All the values of PM_{-10}, $PM_{-2.5}$, SO_2, NOx & CO presented in row no 1-9 are **Time Weighted Average.**)

Reviewed by

Approved by

ANNEXURE: 6

Stream Flow rate monitoring report

Test Report No: Envlab/21/R-6675

Date: 05.10.2021

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alumina Interuatioual Ltd, Tikiri, Rayagada

SAMPLE DETAILS

Sample Location & Code	**Stream flow**	Sampled by	VCSPL'S Representative
Sample Name	Surface Water	Sampling Procedure	NA
Sample Souree	Baphlimali Mines, UAIL	Sample Received on	NA

SL. No	Date of Sampling	Stream Location	GPS Co-ordinate	Stream Flow (m^3/hr)	Stream flow (Cusec)
1	13.10.2021	Paikupakhala Nala	Latitude: N19°20.056' Longitude: E82°59.776' Altitude: 823.26 m.	396.0	3.9
2	13.10.2021	Near Dandabada Nala	Latitude: N19°22.940' Longitude: E82°57.515' Altitude: 698.30 m.	2997.0	29.4
3	13.10.2021	Chandragiri Nala	Latitude: N19°23.078' Longitude: E83°0.248' Altitude: 660.50 m.	10764.0	105.6
4	13.10.2021	Mishripada Nala	Latitude: N19°22.829' Longitude: E82°59.268' Altitude: 637.95 m.	734.3	7.2

Visiontek Consultancy Services Pvt. Ltd. BBSR

Reviewed by

Visiontek Consultancy Services Pvt. Ltd.

Approved by

Test Report No: Envlab/21/R-9146 Date: 04.12.2021

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alnmina International Ltd, Tikiri, Rayagada

SAMPLE DETAILS

Sample Location & Code	Stream flow	Sampled by	VCSPL'S Representative
Sample Name	Surface Water	Sampling Procedure	NA
Sample Source	Baphlimali Mines, UAIL	Sample Received on	NA

SL. No	Date of Sampling	Stream Location	GPS Co-ordiuate	Stream Flow (m^3/hr)	Stream flow (Cusec)
1	10.11.2021	Paikupakhala Nala	Latitnde: N19°20.056' Longitude: E82°59.776' Altitude: 823.26 m.	331.2	3.2
2	10.11.2021	Near Dandabada Nala	Latitnde: N19°22.940' Longitude: E82°57.515' Altitude: 698.30 m.	2457.0	24.1
3	10.11.2021	Chandragiri Nala	Latitnde: N19°23.078' Longitnde: E83°0.248' Altitude: 660.50 m.	8880.0	87.1
4	10.11.2021	Mishripada Nala	Latitude: N19°22.829' Lougitude: E82°59.268' Altitude: 637.95 m.	630.0	6.2

Visiontek Consultancy Services Pvt. Ltd. BBSR

Reviewed by

Visiontek Consultancy Services Pvt. Ltd. BBSR

Approved by

Test Report No: Envlab/21/R-9996

Date: 04.01.2022

TEST REPORT

Customer Name & Address : Baphiimali Mines, M/s Utkal Alnmina International Ltd, Tikiri, Rayagada

SAMPLE DETAILS

Sample Location & Code	Stream flow	Sampled by	VCSPL'S Representative
Sample Name	Surface Water	Sampling Proeedure	NA
Sample Source	Baphlimali Mines, UAIL	Sample Received on	NA

SL. No	Date of Sampling	Stream Location	GPS Co-ordiuate	Stream Flow (m^3/hr)	Stream flow (Cusee)
1	07.12.2021	Paikupakhaia Nala	Latitude: N19°20.056' Longitude: E82°59.776' Altitude: 823.26 m.	187.2	1.8
2	07.12.2021	Near Dandabada Nala	Latitude: N19°22.940' Longitude: E82°57.515' Altitude: 698.30 m.	1512.0	14.8
3	07.12.2021	Chaudragiri Nala	Latitude: N19°23.078' Longitude: E83°0.248' Altitude: 660.50 m.	8967.0	88.0
4	07.12.2021	Mishripada Naia	Latitude: N19°22.829' Longitude: E82°59.268' Altitude: 637.95 m.	288.0	2.8

Visiontek Consultancy Services Pvt. Ltd. — Reviewed by

Visiontek Consultancy Services Pvt. Ltd. — Approved by

Test Report No: Envlab/21/R-1587

Date: 05.02.2022

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alumina 1nternationai Ltd, Tikiri, Rayagada

SAMPLE DETAILS

Sample Locatiou & Code	Stream flow	Sampled by	VCSPL'S Representative
Sample Name	Surface Water	Sampiing Procedure	NA
Sample Source	Baphlimali Mines, UA1L	Sample Reeeived on	NA

SL. No	Date of Sampling	Stream Locatiou	GPS Co-ordinate	Stream Flow (m^3/hr)	Stream flow (Cusec)
1	05.01.2022	Paikupakhala Nala	Latitude: N19°20.056' Lougitude: E82°59.776' Altitude: 823.26 m.	108.0	1.1
2	05.01.2022	Near Dandabada Nala	Latitude: N19°22.940' Lougitude: E82°57.515' Altitude: 698.30 m.	945.0	9.3
3	05.01.2022	Chandragiri Nala	Latitude: N19°23.078' Longitude: E83°0.248' Altitude: 660.50 m.	2952.0	29.0
4	05.01.2022	Mishripada Nala	Latitude: N19°22.829' Longitude: E82°59.268' Altitude: 637.95 m.	129.6	1.3

Visiontek Consultancy Services Pvt. Ltd. BBSR

Reviewed by

Visiontek Consultancy Services Pvt. Ltd. BBSR

Approved by

Test Report No: Envlab/21/R-4001 Date: 09.03.2022

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alumina International Ltd, Tikiri, Rayagada

SAMPLE DETAILS

Sample Location & Code	**Stream flow**	Sampled by	VCSPL'S Representative
Sample Name	Surface Water	Sampling Procedure	NA
Sample Source	Baphlimali Mines, UAIL	Sample Received on	NA

SL. No	Date of Sampling	Stream Location	GPS Co-ordinate	Stream Flow (m^3/hr)	Stream flow (Cusec)
1	28.02.2022	Paikupakhala Nala	Latitude: N19°20.056' Longitude: E82°59.776' Altitude: 823.26 m.	129.6	1.3
2	28.02.2022	Near Dandabada Nala	Latitude: N19°22.940' Longitude: E82°57.515' Altitude: 698.30 m.	648.0	6.4
3	28.02.2022	Chandragiri Nala	Latitude: N19°23.078' Longitude: E83°0.248' Altitude: 660.50 m.	1864.8	18.3
4	28.02.2022	Mishripada Nala	Latitude: N19°22.829' Longitude: E82°59.268' Altitude: 637.95 m.	79.2	0.8

Visiontek Consultancy Services BBSR Pvt. Ltd.
Reviewed by

Visiontek Consultancy Services BBSR Pvt. Ltd.
Approved by

Test Report No: Envlab/22/R-0812

Date: 05.04.2022

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alumina Internatioual Ltd, Tikiri, Rayagada

SAMPLE DETAILS

Sample Location & Code	Stream flow	Sampled by	VCSPL'S Representative
Sample Name	Surface Water	Sampling Procedure	NA
Sample Source	Baphlimali Mines, UAIL	Sample Received ou	NA

SL. No	Date of Sampling	Stream Location	GPS Co-ordinate	Stream Flow (m^3/hr)	Stream flow (Cusec)
1	18.03.2022	Palkupakhala Nala	Latitude: N19°20.056' Lougitude: E82°59.776' Altitude: 823.26 m.	1008.0	9.9
2	18.03.2022	Near Daudabada Nala	Latitude: N19°22.940' Longitude: E82°57.515' Altitude: 698.30 m.	3780.0	37.1
3	18.03.2022	Chandragiri Nala	Latitude: N19°23.078' Lougitude: E83°0.248' Altitude: 660.50 m.	11160.0	109.5
4	18.03.2022	Mishripada Nala	Latitude: N19°22.829' Longitude: E82°59.268' Aititude: 637.95 m.	6600.0	64.7

Reviewed by

Approved by

ANNEXURE: 7

Surface Water Quality Analysis Result

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Engineering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Euvlab/21/R-6673

Date: 02.11.2021

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alumiua Interuational Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	SW1: Saua River (Up Stream) SW2: Sana River (Down Stream)	Sampled by	VCSPL'S Representative
Sample Description	Surface Water	Sampliug Procedure	APHA 1060
Sample Source	Baphlimali Mines, UAIL	Sample Received on	14.10.2021
Sample Condition	Sealed Plastic & Sterilized Glass Bottle	Latitude : N 19°17.015' Longitude : E 83°0.879'' Altitude : 707.14 m.	Latitude : N 19°16.602' Lougitude : E 82°59.812' Altitude : 725.73 m.
Sampliug Date	13.10.2021	Test Completed on	20.10.2021

Sl. No	Parameters	Units	Standards as per IS 2296-Class C	Test methods	SW-1	SW-2
1	Color	Hazen, max	300	APHA 2120 B	10	20
2	Odonr	--	Agreeable	APHA 2150 B	Agreeable	Agreeable
3	pH value	--	6.5-8.5	APHA 4500 H^+B	7.23	7.44
4	Suspeoded Solids	mg/l, max	--	APHA 2540 D	74.0	91.0
5	Total dissoived solids	mg/l, max	1500	APHA 2540 C	195.0	292.0
6	Temperature	^{0}c	--	--	23.2	24.6
7	Conductivity	µs/cm	--	APHA 2510 C	308.6	457.3
8	Ammonical Nitrogen (as NH_4-N)	mg/l, max	--	APHA4500 NH_3B	0.86	2.3
9	Total Kjeldabl Nitrogen (as N)	mg/l, max	--	APHA4500N_{ORG}B	1.8	3.4
I0	Oil & Grease	mg/l, max	0.1	APHA 5220 B	ND	ND
II	Dissolved Oxygeu (as DO)	mg/l, min	4	APHA 4500 O C	5.5	5.1
I2	Biochemical Oxygen Demaud (as BOD at 27^{0}C For 3 days)	mg/l, max	3.0	APHA 4500 P D	2.0	2.2
13	Chemical Oxygen Demand (as COD)	mg/l, max	--	APHA 3111 B	10.0	16.0
14	Free Ammonia (as NH_3)	mg/l, max	--	--	ND	ND
15	Total Residual Cblorine (as RFC)	mg/l, min	--	APHA 4500 Cl B	ND	ND
I6	Iron (as Fe)	mg/l, max	50	APHA 3500 Fe B	0.83	2.54
17	Fluoride (as F)	mg/l, max	1.5	APHA 4500 F^-D	0.62	0.81
I8	Hexavalent Chromium (as Cr^{+6})	mg/l, max	0.05	APHA 3500 Cr B	<0.01	<0.01
I9	Cyanidc (as CN)	mg/l, max	0.05	APHA 4500 CN E	<0.01	<0.01
20	Snlphide (as S)	mg/l, max	--	APHA 4500 S^{2-} F	<0.05	<0.05
2I	Nitrate (as NO_3)	mg/l, max	50	APHA4500NO_3^-B	1.9	2.5
22	Dissolved Phosphate (as PO_4)	mg/l, max	--	APHA 3111 B	0.48	0.76
23	Phenolic Compound (as C_6H_5OH)	mg/l, max	--	APHA 5530 C	<0.05	<0.05
24	Bio-assay Test	mg/l, max	90% snrvival of fish after 96 hrs in 100% effluent	IS 6582	94%	91%
25	Selenium (as S)	mg/l, max	0.05	APHA 3500 Se C	<0.001	<0.001
26	Manganese (as Mu)	mg/l, max	--	APHA 3111 B	<0.05	<0.05
27	Copper (as Cu)	mg/l, max	1.5	APHA 3111Cu B	<0.02	<0.02
28	Zinc (as Zn)	mg/l, max	15	APHA 3111 B	0.31	0.42
29	Cadmium	mg/l, max	0.01	APHA 3111 B	<0.01	<0.01
30	Lead (as Pb)	mg/l, max	0.1	APHA 3112 B	<0.01	<0.01
31	Mercury (as Hg)	mg/l, max	--	APHA 3111 B	<0.002	<0.002
32	Nickel (as Ni)	mg/l, max	--	APHA 3500As B	<0.1	<0.1
33	Arsenic (as As)	mg/l, max	0.2	APHA 3111 B	<0.004	<0.004
34	Total Chromium (as TCr)	mg/l, max	--	IS3025(P44)1993	<0.05	<0.05
Any unusual feature observed during determination						

Reviewed by

Approved by

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Euergy
- Agricultural Devclopment
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Envlab/21/R-6674

Date: 02.11.2021

TEST REPORT

Customer Name & Address : Baphlimali Miues, M/s Utkal Alumiua Iuternational Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	SW3: Khandabindha (Up Stream) SW4: Khandabindha (Down Stream	Sampled by	VCSPL'S Represeutative
Sample Description	Surface Water	Sampling Procedure	APHA 1060
Sample Sonrce	Baphlimali Mines, UAIL	Sample Rceeived on	14.10.2021
Sample Condition	Sealed Plastic & Sterilized Glass Bottie	Latitude : N 19°22.014' Longitude :E 83°04.658' Altitude : 769.01 m	Latitude : N 19°23.078' Lougitude : E 83°0.248' Altitude : 660.50 m
Sampling Datc	13.10.2021	Test Completed on	20.10.2021

Sl. No	Parameters	Units	Standards as per IS 2296-Class C	Test methods	SW-3	SW-4
I	Coior	Hazen, max	300	APHA 2120 B	10	25
2	Odour	--	Agreeable	APHA 2150 B	Agreeable	Agreeable
3	pH value	--	6.5-8.5	APHA 4500 H^+B	7.13	7.38
4	Suspcnded Solids	mg/l, max	--	APHA 2540 D	68.0	87.0
5	Total dissolved solids	mg/l, max	1500	APHA 2540 C	262.0	339.0
6	Temperature	^{0}c	--	--	24.1	24.7
7	Couductivity	µs/cm	--	APHA 2510 C	410.4	531.3
8	Ammonlcal Nitrogen (as NH_4-N)	mg/l, max	--	APHA4500 NH_3B	1.5	3.2
9	Total Kjeldahl Nitrogeu (as N)	mg/l, max	--	APHA4500N_{ORG}B	2.7	4.5
I0	Oil & Grease	mg/l, max	0.1	APHA 5220 B	ND	ND
I1	Dissolved Oxygen (as DO)	mg/l, min	4	APHA 4500 O C	5.8	5.0
12	Biochemical Oxygeu Dcmand (as BOD at 27^{0}C For 3 days)	mg/l, max	3.0	APHA 4500 P D	2.1	2.4
I3	Cbemical Oxygen Demand (as COD)	mg/l, max	--	APHA 3111 B	18.0	24.0
I4	Free Ammonia (as NH_3)	mg/l, max	--	--	ND	ND
15	Total Residual Chlorine (as RFC)	mg/l, min	--	APHA 4500 Cl B	ND	ND
I6	Iron (as Fe)	mg/l, max	50	APHA 3500 Fe B	0.93	2.38
I7	Fluoride (as F)	mg/l, max	1.5	APHA 4500 F D	0.47	0.76
I8	Hexavalent Chromium (as Cr^{+6})	mg/l, max	0.05	APHA 3500 Cr B	<0.01	<0.01
I9	Cyanide (as CN)	mg/l, max	0.05	APHA 4500 CN E	<0.01	<0.01
20	Sulphide (as S)	mg/l, max	--	APHA 4500 S^{2-} F	<0.05	<0.05
21	Nitrate (as NO_3)	mg/l, max	50	APHA4500NO_3^-B	1.76	2.25
22	Dissolved Phosphate (as PO_4)	mg/l, max	--	APHA 3111 B	0.62	0.93
23	Phenolic Compound (as C_6H_5OH)	mg/l, max	--	APHA 5530 C	<0.05	<0.05
24	Bio-assay Test	mg/l, max	90% survival of fish after 96 hrs in 100% effluent	IS 6582	94%	92%
25	Selenium (as S)	mg/l, max	0.05	APHA 3500 Se C	<0.001	<0.001
26	Mangauese (as Mn)	mg/l, max	--	APHA 3111 B	<0.05	<0.05
27	Copper (as Cu)	mg/l, max	1.5	APHA 3111Cu B	<0.02	<0.02
28	Zinc (as Zn)	mg/l, max	15	APHA 3111 B	0.47	0.68
29	Cadmium	mg/l, max	0.01	APHA 3111 B	<0.01	<0.01
30	Lead (as Pb)	mg/l, max	0.1	APHA 3112 B	<0.01	<0.01
31	Mercury (as Hg)	mg/l, max	--	APHA 3111 B	<0.002	<0.002
32	Nickel (as Ni)	mg/l, max	--	APHA 3500As B	<0.1	<0.1
33	Arseuic (as As)	mg/l, max	0.2	APHA 3111 B	<0.004	<0.004
34	Total Chromium (as TCr)	mg/l, max	--	IS3025(P44)1993	<0.05	<0.05
Any unusual/abnormalities observed during determination					Nil	

Reviewed by

Approved by

Plot No.- M-22 & 23, Chandaka Industrial Estate, Patia, Bhubaneswar, Khurda, Odisha-751024, India, Tel.:.0674-3511721

E-mail: visiontek@vcspl.org, visiontekin@gmail.com

Visit ns at: www.vcspl.org

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricuitural Development
- Information Technology
- Public Health Engineering
- Miue Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Euvlab/21/R-9144 Date: 04.12.2021

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alumina Iuteruational Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	SW1: Saua River (Up Stream) SW2: Sana River (Down Stream)	Sampled by	VCSPL'S Repreentative
Sample Description	Surface Water	Sampling Procedure	APHA 1060
Sample Source	Baphlimali Mines, UAIL	Sample Received on	11.11.2021
Sample Coudition	Sealed Plastic & Sterilized Glass Bottle	Latitude : N 19°17.015' Longitude : E 83°0.879'' Altitude : 707.14 m.	Latitude : N 19°I6.602' Longitude : E 82°59.812' Altitude : 725.73 m.
Sampling Date	10.11.2021	Test Completed on	I7.11.2021

Sl. No	Parameters	Units	Staudards as per IS 2296-Class C	Test methods	SW-1	SW-2
1	Color	Hazen, max	300	APHA 2120 B	15	20
2	Odour	--	Agreeablc	APHA 2150 B	Agrecable	Agreeablc
3	pH value	--	6.5-8.5	APHA 4500 H^+B	7.16	7.53
4	Suspeuded Solids	mg/l, max	--	APHA 2540 D	67.0	83.0
5	Total dissolved solids	mg/l, max	1500	APHA 2540 C	179.0	273.0
6	Temperature	^{0}c	--	--	24.5	24.3
7	Conductivity	µs/cm	--	APHA 2510 C	278.4	426.3
8	Ammouical Nitrogen (as NH_4-N)	mg/l, max	--	APHA4500 NH_3B	0.6	I.8
9	Total Kjeldabl Nitrogen (as N)	mg/l, max	--	APHA4500N_{ORG}B	1.5	3.0
I0	Oil & Grease	mg/l, max	0.1	APHA 5220 B	ND	ND
11	Dissolved Oxygen (as DO)	mg/l, min	4	APHA 4500 O C	5.8	5.6
I2	Biochemical Oxygen Dcmaud (as BOD at 27^{0}C For 3 days)	mg/l, max	3.0	APHA 4500 P D	1.9	2.1
13	Cbemical Oxygen Demand (as COD)	mg/l, max	--	APHA 3111 B	8.0	12.0
14	Free Ammouia (as NH_3)	mg/l, max	--	--	ND	ND
I5	Total Residual Chlorine (as RFC)	mg/l, min	--	APHA 4500 Cl B	ND	ND
16	Iron (as Fe)	mg/l, max	50	APHA 3500 Fe B	0.71	2.23
17	Flnoride (as F)	mg/l, max	1.5	APHA 4500 F^-D	0.53	0.68
18	Hexavalent Cbromium (as Cr^{+6})	mg/l, max	0.05	APHA 3500 Cr B	<0.01	<0.01
19	Cyanide (as CN)	mg/l, max	0.05	APHA 4500 CN E	<0.01	<0.01
20	Sulphidc (as S)	mg/l, max	--	APHA 4500 S^{2-} F	<0.05	<0.05
21	Nitrate (as NO_3)	mg/l, max	50	APHA4500NO_3^-B	1.64	2.3
22	Dissolved Phosphate (as PO_4)	mg/l, max	--	APHA 3111 B	0.4	0.53
23	Pbenolic Compound (as C_6H_5OH)	mg/l, max	--	APHA 5530 C	<0.05	<0.05
24	Bio-assay Tcst	mg/l, max	90% survival of fish after 96 hrs in 100% effluent	IS 6582	92%	90%
25	Selenium (as S)	mg/l, max	0.05	APHA 3500 Se C	<0.001	<0.001
26	Mangancse (as Mn)	mg/l, max	--	APHA 3111 B	<0.05	<0.05
27	Copper (as Cu)	mg/l, max	1.5	APHA 3111Cu B	<0.02	<0.02
28	Zinc (as Zn)	mg/l, max	15	APHA 3111 B	0.26	0.37
29	Cadmium	mg/l, max	0.01	APHA 3111 B	<0.01	<0.01
30	Lead (as Pb)	mg/l, max	0.1	APHA 3112 B	<0.01	<0.01
31	Mercury (as Hg)	mg/l, max	--	APHA 3111 B	<0.002	<0.002
32	Nickel (as Ni)	mg/l, max	--	APHA 3500As B	<0.1	<0.1
33	Arsenic (as As)	mg/l, max	0.2	APHA 3111 B	<0.004	<0.004
34	Total Chromium (as TCr)	mg/l, max	--	IS3025(P44)1993	<0.05	<0.05
Any unusual feature observed during determination						

Reviewed by

Approved by

Plot No.- M-22 & 23, Chandaka Industrial Estate, Patia, Bhubaneswar, Khnrda, Odisha-751024, India, Tel.: 0674-3511721
E-mail: visiontek@vcspl.org, visiontekin@gmail.com
Visit us at: www.vcspl.org

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, iSO 14001:2015, iSO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Snrface Investigation
- Quality Control & Project Management
- Renewahle Energy
- Agricultural Developmeut
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Envlab/21/R-9145

Date: 04.12.2021

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alumina Iuteruatioual Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sampie Location & Codc	SW3: Kandabindha (Up Stream) SW4: Kandabindha (Down Stream	Sampled by	VCSPL'S Representative
Sample Description	Surface Water	Sampling Procedure	APHA 1060
Sample Sonrce	Baphlimali Mines, UAIL	Sample Rcceived on	11.11.2021
Sample Conditiou	Sealed Plastic & Sterilized Glass Bottle	Latitude : N 19°22.014' Longitude :E 83°04.658' Altitude : 769.01 m	Latitude : N 19°23.078' Longitude : E 83°0.248' Altitude : 660.50 m
Sampling Date	10.11.2021	Test Completed on	17.11.2021

Sl. No	Parameters	Units	Staudards as per IS 2296-Class C	Tcst methods	SW-3	SW-4
1	Color	Hazen, max	300	APHA 2120 B	10	30
2	Odour	--	Agreeable	APHA 2150 B	Agreeable	Agreeable
3	pH valuc	--	6.5-8.5	APHA 4500 H^+B	7.27	7.44
4	Suspended Solids	mg/l, max	--	APHA 2540 D	62.0	80.0
5	Total dissolved solids	mg/l, max	1500	APHA 2540 C	238.0	31I.0
6	Temperature	^{0}c	--	--	23.8	24.4
7	Conductivity	µs/cm	--	APHA 2510 C	374.5	482.7
8	Ammonical Nitrogcn (as NH_4-N)	mg/l, max	--	APHA4500 NH_3B	1.2	2.8
9	Total Kjeldahl Nitrogen (as N)	mg/l, max	--	APHA4500N_{ORG}B	2.3	3.8
I0	Oil & Grease	mg/l, max	0.1	APHA 5220 B	ND	ND
11	Dissolved Oxygen (as DO)	mg/l, min	4	APHA 4500 O C	6.1	5.5
I2	Biochemical Oxygen Demand (as BOD at 27^{0}C For 3 days)	mg/l, max	3.0	APHA 4500 P D	1.9	2.2
I3	Chemical Oxygeu Demaud (as COD)	mg/l, max	--	APHA 3111 B	14.0	18.0
I4	Frec Ammouia (as NH_3)	mg/l, max	--	--	ND	ND
15	Total Residual Chlorine (as RFC)	mg/l, min	--	APHA 4500 Cl B	ND	ND
16	Iron (as Fe)	mg/l, max	50	APHA 3500 Fe B	0.84	1.96
17	Fluoride (as F)	mg/l, max	1.5	APHA 4500 F^-D	0.42	0.71
I8	Hexavalent Chromium (as Cr^{+6})	mg/l, max	0.05	APHA 3500 Cr B	<0.01	<0.01
19	Cyauide (as CN)	mg/l, max	0.05	APHA 4500 CN E	<0.01	<0.01
20	Sulphide (as S)	mg/l, max	--	APHA 4500 S^{2-} F	<0.05	<0.05
21	Nitrate (as NO_3)	mg/l, max	50	APHA4500NO_3^-B	I.46	1.92
22	Dissolved Phosphate (as PO_4)	mg/l, max	--	APHA 3111 B	0.56	0.62
23	Phenolic Compouud (as C_6H_5OH)	mg/l, max	--	APHA 5530 C	<0.05	<0.05
24	Bio-assay Test	mg/l, max	90% survival of fish after 96 hrs in 100% effluent	IS 6582	93%	91%
25	Selenium (as S)	mg/l, max	0.05	APHA 3500 Se C	<0.001	<0.001
26	Mangaucse (as Mu)	mg/l, max	--	APHA 3111 B	<0.05	<0.05
27	Copper (as Cu)	mg/l, max	1.5	APHA 3111Cu B	<0.02	<0.02
28	Zinc (as Zn)	mg/l, max	15	APHA 3111 B	0.41	0.52
29	Cadmium	mg/l, max	0.0I	APHA 3111 B	<0.01	<0.01
30	Lead (as Pb)	mg/l, max	0.1	APHA 3112 B	<0.01	<0.01
31	Mercury (as Hg)	mg/l, max	--	APHA 3111 B	<0.002	<0.002
32	Nickel (as Ni)	mg/l, max	--	APHA 3500As B	<0.1	<0.1
33	Arsenic (as As)	mg/l, max	0.2	APHA 3111 B	<0.004	<0.004
34	Total Chromium (as TCr)	mg/l, max	--	IS3025(P44)1993	<0.05	<0.05
Any unusual feature observed during determination					Nil	

Reviewed by

Approved by

Plot No.- M-22 & 23, Chandaka Industrial Estate, Patia, Bhubaneswar, Khurda, Odisha-751024, India Tel.: 0674-3511721

E-mail: visiontek@vcspl.org, visiontekin@gmail.com

Visit us at: www.vcspl.org

Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigation
- Qnality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Technology
- Public Health Engineering
- Miue Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Envlab/21/R-9994

Date: 04.01.2022

TEST REPORT

Customer Name & Address : Bapblimali Mines, M/s Utkal Alumina Internationai Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	SW1: Sana River (Up Stream) SW2: Sana River (Down Stream)	Sampled by	VCSPL'S Representative
Sample Description	Surface Water	Sampliug Procedure	APHA 1060
Sample Source	Baphlimali Mines, UAIL	Sample Received ou	08.12.2021
Sample Condition	Sealed Plastic & Sterilized Glass Bottle	Latitude : N 19°17.015' Longitnde : E 83°0.879'' Altitude : 707.14 m.	Latitude : N 19°16.602' Longitnde : E 82°59.812' Altitude : 725.73 m.
Sampling Date	07.12.2021	Test Completed on	15.12.2021

Sl. No	Parameters	Uuits	Standards as per iS 2296-Class C	Test metbods	SW-1	SW-2
i	Color	Hazen, max	300	APHA 2120 B	5	10
2	Odour	--	Agreeable	APHA 2150 B	Agreeable	Agreeable
3	pH value	--	6.5-8.5	APHA 4500 H^+B	7.28	7.46
4	Suspended Solids	mg/l, max	--	APHA 2540 D	70.0	87.0
5	Total dissolved solids	mg/l, max	1500	APHA 2540 C	194.0	288.0
6	Temperatnre	^{0}c	--	--	23.4	22.7
7	Conductivity	µs/cm	--	APHA 2510 C	296.4	448.5
8	Ammonical Nitrogen (as NH_4-N)	mg/l, max	--	APHA4500 NH_3B	1.0	1.5
9	Total Kjeldabl Nitrogeu (as N)	mg/l, max	--	APHA4500N_{ORG}B	1.8	3.3
10	Oil & Grease	mg/l, max	0.1	APHA 5220 B	ND	ND
i1	Dissolved Oxygen (as DO)	mg/l, min	4	APHA 4500 O C	5.7	5.2
I2	Biochemical Oxygen Demand (as BOD at 27^{0}C For 3 days)	mg/l, max	3.0	APHA 4500 P D	2.0	2.3
13	Chemical Oxygen Demand (as COD)	mg/l, max	--	APHA 3111 B	12.0	16.0
14	Free Ammonia (as NH_3)	mg/l, max	--	--	ND	ND
15	Total Residual Cblorine (as RFC)	mg/l, min	--	APHA 4500 Cl B	ND	ND
16	Iron (as Fe)	mg/l, max	50	APHA 3500 Fe B	0.77	2.04
17	Flnoride (as F)	mg/l, max	1.5	APHA 4500 F D	0.48	0.60
18	Hexavalent Chrominm (as Cr^{+6})	mg/l, max	0.05	APHA 3500 Cr B	<0.02	<0.02
19	Cyauide (as CN)	mg/l, max	0.05	APHA 4500 CN E	<0.01	<0.01
20	Sulphide (as S)	mg/l, max	--	APHA 4500 S^{2-} F	<0.05	<0.05
21	Nitrate (as NO_3)	mg/l, max	50	APHA4500NO_3^-B	1.48	1.92
22	Dissolved Phosphate (as PO_4)	mg/l, max	--	APHA 3111 B	0.28	0.43
23	Phenolic Compound (as C_6H_5OH)	mg/l, max	--	APHA 5530 C	<0.05	<0.05
24	Bio-assay Test	mg/l, max	90% survival of fish after 96 hrs in 100% effluent	IS 6582	93%	91%
25	Seleuium (as S)	mg/l, max	0.05	APHA 3500 Se C	<0.001	<0.001
26	Manganese (as Mn)	mg/l, max	--	APHA 3111 B	<0.05	<0.05
27	Copper (as Cu)	mg/l, max	1.5	APHA 3111Cu B	<0.02	<0.02
28	Zinc (as Zn)	mg/l, max	15	APHA 3111 B	0.22	0.29
29	Cadminm	mg/l, max	0.01	APHA 3111 B	<0.01	<0.01
30	Lead (as Pb)	mg/l, max	0.1	APHA 3112 B	<0.01	<0.01
31	Mercnry (as Hg)	mg/l, max	--	APHA 3111 B	<0.004	<0.004
32	Nickel (as Ni)	mg/l, max	--	APHA 3500As B	<0.05	<0.05
33	Arseuic (as As)	mg/l, max	0.2	APHA 3111 B	<0.004	<0.004
34	Total Chromium (as TCr)	mg/l, max	--	IS3025(P44)1993	<0.05	<0.05
Any unusual feature observed during determination						

Reviewed by

Approved by

Plot No.- M-22 & 23, Chandaka Iudustrial Estate, Patia, Bhubaneswar, Khurda, Odisha-751024, India, Tel.: 0674-3511721

E-mail: visiontek@vcspl.org, visiontekin@gmail.com

Visit us at: www.vcspl.org

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Iufrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigatiou
- Quality Control & Project Management
- Renewable Energy
- Agricultural Developmeot
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Enviab/21/R-9995

Date: 04.01.2022

TEST REPORT

Customer Name & Address : Baphlimaii Mines, M/s Utkal Alumioa Interuatioual Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	SW3: Kandabindha (Up Stream) SW4: Kandabindha (Down Stream	Sampled by	VCSPL'S Representative
Sample Description	Surface Water	Sampling Procednre	APHA 1060
Sample Source	Baphlimali Miues, UA1L	Sample Received ou	08.12.2021
Sample Condition	Sealed Plastic & Sterilized Glass Bottle	Latitude : N 19°22.014' Longitnde : E 83°04.658' Altitude : 769.01 m	Latitude : N 19°23.078' Lougitude : E 83°0.248' Altitude : 660.50 m
Sampling Date	07.12.2021	Test Completed on	15.12.2021

Sl. No	Parameters	Units	Staudards as per IS 2296-Class C	Test methods	SW-3	SW-4
1	Color	Hazen, max	300	APHA 2120 B	10	20
2	Odonr	--	Agreeable	APHA 2150 B	Agreeable	Agreeable
3	pH value	--	6.5-8.5	APHA 4500 H^+B	7.11	7.32
4	Suspended Solids	mg/l, max	--	APHA 2540 D	58.0	75.0
5	Total dissolved solids	mg/l, max	1500	APHA 2540 C	225.0	327.0
6	Temperature	^{0}c	--	--	22.5	22.3
7	Conductivity	µs/cm	--	APHA 2510 C	356.3	507.6
8	Ammonical Nitrogen (as NH_4-N)	mg/l, max	--	APHA4500 NH_3B	1.7	2.6
9	Total Kjeldahl Nitrogen (as N)	mg/l, max	--	APHA4500N_{ORG}B	2.9	3.5
10	Oil & Grease	mg/l, max	0.1	APHA 5220 B	ND	ND
11	Dissolved Oxygen (as DO)	mg/l, min	4	APHA 4500 O C	5.8	5.4
12	Biochemical Oxygen Demand (as BOD at 27^{0}C For 3 days)	mg/l, max	3.0	APHA 4500 P D	2.0	2.1
13	Chemical Oxygeu Demand (as COD)	mg/l, max	--	APHA 3111 B	10.0	14.0
14	Free Ammonia (as NH_3)	mg/l, max	--	--	ND	ND
15	Total Residnal Chlorine (as RFC)	mg/l, min	--	APHA 4500 Cl B	ND	ND
16	Iron (as Fe)	mg/l, max	50	APHA 3500 Fe B	0.76	1.72
17	Flnoride (as F)	mg/l, max	1.5	APHA 4500 F^-D	0.45	0.64
18	Hexavalent Chrominm (as Cr^{+6})	mg/l, max	0.05	APHA 3500 Cr B	<0.02	<0.02
19	Cyanide (as CN)	mg/l, max	0.05	APHA 4500 CN E	<0.01	<0.01
20	Snlphide (as S)	mg/l, max	--	APHA 4500 S^{2-} F	<0.05	<0.05
21	Nitrate (as NO_3)	mg/l, max	50	APHA4500NO_3^-B	1.52	1.86
22	Dissolved Phosphate (as PO_4)	mg/l, max	--	APHA 3111 B	0.36	0.48
23	Phenolic Componnd (as C_6H_5OH)	mg/l, max	--	APHA 5530 C	<0.05	<0.05
24	Bio-assay Test	mg/l, max	90% survival of fish after 96 hrs in 100% effluent	IS 6582	94%	92%
25	Selenium (as S)	mg/l, max	0.05	APHA 3500 Se C	<0.001	<0.001
26	Manganese (as Mn)	mg/l, max	--	APHA 3111 B	<0.05	<0.05
27	Copper (as Cn)	mg/l, max	1.5	APHA 3111Cu B	<0.02	<0.02
28	Zinc (as Zn)	mg/l, max	15	APHA 3111 B	0.32	0.37
29	Cadmium	mg/l, max	0.01	APHA 3111 B	<0.01	<0.01
30	Lead (as Pb)	mg/l, max	0.i	APHA 3112 B	<0.01	<0.01
3i	Mercury (as Hg)	mg/l, max	--	APHA 3111 B	<0.004	<0.004
32	Nickel (as Ni)	mg/l, max	--	APHA 3500As B	<0.05	<0.05
33	Arsenic (as As)	mg/l, max	0.2	APHA 3111 B	<0.004	<0.004
34	Total Chromium (as TCr)	mg/l, max	--	IS3025(P44)1993	<0.05	<0.05
Any unusual feature observed during determination					Nil	

Reviewed by

Approved by

Plot No.- M-22 & 23, Chandaka Iudustrial Estate, Patia, Bhubaneswar, Khurda, Odisha-751024, India Tel.: 0674-3511721

E-mail: visiontek@vcspi.org, visiontekin@gmail.com

Visit ns at: www.vcspi.org

Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Envlab/21/R-1584 Date: 05.02.2022

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alnmina Internatiooal Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	SW1: Sana River (Up Stream) SW2: Sana River (Down Stream)	Sampled by	VCSPL'S Representative
Sample Description	Surface Water	Sampling Procedure	APHA 1060
Sample Source	Bapblimali Mines, UAIL	Sample Received on	06.01.2022
Sample Condition	Sealed Plastic & Sterilized Glass Bottle	Latitnde : N 19°17.015' Longitude : E 83°0.879'' Altitude : 707.14 m.	Latitude : N 19°16.602' Longitude : E 82°59.812' Altitude : 725.73 m.
Sampling Date	05.01.2022	Test Completed on	12.01.2022

Sl. No	Parameters	Uuits	Standards as per IS 2296-Class C	Test metbods	SW-1	SW-7
1	Color	Hazen, max	300	APHA 2120 B	10	15
2	Odour	--	Agreeable	APHA 2150 B	Agrceable	Agreeable
3	pH value	--	6.5-8.5	APHA 4500 H^+B	7.15	7.33
4	Suspended Solids	mg/l, max	--	APHA 2540 D	64.0	81.0
5	Total dissolved solids	mg/l, max	1500	APHA 2540 C	173.0	267.0
6	Temperature	^{0}c	--	--	24.5	24.1
7	Condnctivity	µs/cm	--	APHA 2510 C	271.2	417.6
8	Ammouical Nitrogen (as NH_4-N)	mg/l, max	--	APHA4500 $N_{H_3}B$	1.3	1.6
9	Total Kjeldahl Nitrogen (as N)	mg/l, max	--	APHA4500$N_{ORG}B$	2.1	2.7
10	Oil & Grease	mg/l, max	0.1	APHA 5220 B	ND	ND
11	Bissolved Oxygen (as DO)	mg/l, min	4	APHA 4500 O C	5.9	5.5
12	Biocbemical Oxygeu Demand (as BOD at 27^{0}C For 3 days)	mg/l, max	3.0	APHA 4500 P D	2.1	2.5
13	Chemical Oxygeu Demand (as COD)	mg/l, max	--	APHA 3111 B	10.0	20.0
14	Free Ammonia (as NH_3)	mg/l, max	--	--	ND	ND
15	Total Resldual Cblorine (as RFC)	mg/l, min	--	APHA 4500 Cl B	ND	ND
16	Iron (as Fe)	mg/l, max	50	APHA 3500 Fe B	0.63	1.87
17	Fluoride (as F)	mg/l, max	1.5	APHA 4500 F^-D	0.39	0.56
18	Hexavalent Chromium (as Cr^{+6})	mg/l, max	0.05	APHA 3500 Cr B	<0.02	<0.02
19	Cyanide (as CN)	mg/l, max	0.05	APHA 4500 CN E	<0.01	<0.01
20	Sulphide (as S)	mg/l, max	--	APHA 4500 S^{2-} F	<0.05	<0.05
21	Nitrate (as NO_3)	mg/l, max	50	APHA4500NO_3^-B	1.37	1.65
22	Dissolved Phosphate (as PO_4)	mg/l, max	--	APHA 3111 B	0.32	0.41
23	Phenolic Compound (as C_6H_5OH)	mg/l, max	--	APHA 5530 C	<0.05	<0.05
24	Bio-assay Test	mg/l, max	90% survival of fish after 96 hrs in 100% effluent	1S 6582	94%	92%
25	Selenium (as S)	mg/l, max	0.05	APHA 3500 Se C	<0.001	<0.001
26	Mangauese (as Mu)	mg/l, max	--	APHA 3111 B	<0.05	<0.05
27	Copper (as Cn)	mg/l, max	1.5	APHA 3111Cu B	<0.02	<0.02
28	Zinc (as Zn)	mg/l, max	15	APHA 3111 B	0.19	0.24
29	Cadmium	mg/l, max	0.01	APHA 3111 B	<0.01	<0.01
30	Lead (as Pb)	mg/l, max	0.1	APHA 3112 B	<0.01	<0.01
31	Mercury (as Hg)	mg/l, max	--	APHA 3111 B	<0.004	<0.004
32	Nickel (as Ni)	mg/l, max	--	APHA 3500As B	<0.05	<0.05
33	Arsenic (as As)	mg/l, max	0.2	APHA 3111 B	<0.004	<0.004
34	Total Chrominm (as TCr)	mg/l, max	--	1S3025(P44)1993	<0.05	<0.05
Any unusual feature observed during determination					Nil	

Reviewed by

Approved by

Plot No.- M-22 & 23, Chandaka Industrial Estate, Patia, Bhubaneswar, Khurda, Odisha-751024, India Tel: 0674-3511721
E-mail: visiontek@vcspl.org, visiontekin@gmail.com
Visit us at: www.vcspl.org

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Envlab/21/R-3099 Date: 09.03.2022

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alumina International Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	SW1: Sana River (Up Stream) SW2: Sana River (Down Stream)	Sampled by	VCSPL'S Representative
Sample Description	Surface Water	Sampling Procedure	APHA 1060
Sample Source	Baphlimali Mines, UAIL	Sample Received on	01.03.2022
Sample Condition	Sealed Plastic & Sterilized Glass Bottle	Latitude : N 19°17.015' Longitude : E 83°0.879'' Altitude : 707.14 m.	Latitude : N 19°16.602' Longitude : E 82°59.812' Altitude : 725.73 m.
Sampling Date	28.02.2022	Test Completed on	07.03.2022

Sl. No	Parameters	Units	Standards as per IS 2296-Class C	Test methods	SW-1	SW-2
1	Color	Hazen, max	300	APHA 2120 B	15	20
2	Odour	--	Agreeable	APHA 2150 B	Agreeable	Agreeable
3	pH value	--	6.5-8.5	APHA 4500 H^+B	7.26	7.42
4	Suspended Solids	mg/l, max	--	APHA 2540 D	61.0	86.0
5	Total dissolved solids	mg/l, max	1500	APHA 2540 C	156.0	249.0
6	Temperature	^{0}c	--	--	26.3	25.2
7	Conductivity	µs/cm	--	APHA 2510 C	246.0	389.7
8	Ammonical Nitrogen (as NH_4-N)	mg/l, max	--	APHA4500 NH_3B	1.6	1.9
9	Total Kjeldahl Nitrogen (as N)	mg/l, max	--	APHA4500N_{ORG}B	2.5	3.2
10	Oil & Grease	mg/l, max	0.1	APHA 5220 B	ND	ND
11	Dissolved Oxygen (as DO)	mg/l, min	4	APHA 4500 O C	5.6	5.4
12	Biochemical Oxygen Demand (as BOD at 27^{0}C For 3 days)	mg/l, max	3.0	APHA 4500 P D	2.2	2.4
13	Chemical Oxygen Demand (as COD)	mg/l, max	--	APHA 3111 B	14.0	18.0
14	Free Ammonia (as NH_3)	mg/l, max	--	--	ND	ND
15	Total Residnal Chlorine (as RFC)	mg/l, min	--	APHA 4500 Cl B	ND	ND
16	Iron (as Fe)	mg/l, max	50	APHA 3500 Fe B	0.57	1.52
17	Fluoride (as F)	mg/l, max	1.5	APHA 4500 F^-D	0.35	0.49
18	Hexavalent Chromium (as Cr^{+6})	mg/l, max	0.05	APHA 3500 Cr B	<0.02	<0.02
19	Cyanide (as CN)	mg/l, max	0.05	APHA 4500 CN E	<0.01	<0.01
20	Sulphide (as S)	mg/l, max	--	APHA 4500 S^{2-} F	<0.05	<0.05
21	Nitrate (as NO_3)	mg/l, max	50	APHA4500NO_3^-B	1.42	1.56
22	Dissolved Phosphate (as PO_4)	mg/l, max	--	APHA 3111 B	0.45	0.54
23	Phenolic Compound (as C_6H_5OH)	mg/l, max	--	APHA 5530 C	<0.05	<0.05
24	Bio-assay Test	mg/l, max	90% survival of fish after 96 hrs in 100% effluent	IS 6582	93%	91%
25	Selenium (as S)	mg/l, max	0.05	APHA 3500 Se C	<0.001	<0.001
26	Manganese (as Mn)	mg/l, max	--	APHA 3111 B	<0.05	<0.05
27	Copper (as Cu)	mg/l, max	1.5	APHA 3111Cu B	<0.02	<0.02
28	Zinc (as Zn)	mg/l, max	15	APHA 3111 B	0.19	0.24
29	Cadmium	mg/l, max	0.01	APHA 3111 B	<0.01	<0.01
30	Lead (as Pb)	mg/l, max	0.1	APHA 3112 B	<0.01	<0.01
31	Mercury (as Hg)	mg/l, max	--	APHA 3111 B	<0.004	<0.004
32	Nickel (as Ni)	mg/l, max	--	APHA 3500As B	<0.05	<0.05
33	Arsenic (as As)	mg/l, max	0.2	APHA 3111 B	<0.004	<0.004
34	Total Chromium (as TCr)	mg/l, max	--	IS3025(P44)1993	<0.05	<0.05
Any unusual feature observed during determination						

Reviewed by

Approved by

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Techoology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Envlab/21/R-4000 Date: 09.03.2022

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alumiua International Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	SW3: Kandahindha (Up Stream) SW4: Kandabindha (Down Stream	Sampled by	VCSPL'S Representative
Sample Description	Surface Water	Sampling Procedure	APHA 1060
Sample Source	Baphlimali Mines, UA1L	Sample Received on	01.03.2022
Sample Condition	Sealed Plastic & Sterilized Glass Bottle	Latitude : N 19°22.014' Longitnde : E 83°04.658' Altitude : 769.01 m	Latitnde : N 19°23.078' Longitude : E 83°0.248' Altitude : 660.50 m
Sampling Date	28.02.2022	Test Completed on	07.03.2022

Sl. No	Parameters	Units	Standards as per IS 2296-Class C	Test methods	SW-3	SW-4
1	Color	Hazen. max	300	APHA 2120 B	10	20
2	Odour	--	Agreeable	APHA 2150 B	Agreeable	Agreeable
3	pH value	--	6.5-8.5	APHA 4500 H^+B	7.18	7.38
4	Suspended Solids	mg/l. max	--	APHA 2540 D	48.0	62.0
5	Total dissolved solids	mg/l. max	1500	APHA 2540 C	189.0	274.0
6	Temperature	^{0}c	--	--	24.8	25.3
7	Conductivity	µs/cm	--	APHA 2510 C	297.5	430.6
8	Ammonical Nitrogen (as NH_4-N)	mg/l, max	--	APHA4500 NH_3B	1.5	2.4
9	Total Kjeldahl Nitrogen (as N)	mg/l. max	--	APHA4500N_{ORG}B	3.7	4.1
10	Oil & Grease	mg/l. max	0.1	APHA 5220 B	ND	ND
11	Dissolved Oxygen (as DO)	mg/l. min	4	APHA 4500 O C	5.9	5.5
12	Biochemical Oxygeu Demand (as BOD at 27^{0}C For 3 days)	mg/l. max	3.0	APHA 4500 P D	2.1	2.5
13	Chemical Oxygen Demaud (as COD)	mg/l. max	--	APHA 3111 B	16.0	20.0
14	Free Ammonia (as NH_3)	mg/l. max	--	--	ND	ND
15	Total Residual Chlorine (as RFC)	mg/l. min	--	APHA 4500 Cl B	ND	ND
16	Iron (as Fe)	mg/l. max	50	APHA 3500 Fe B	0.64	1.7
17	Fluoride (as F)	mg/l. max	1.5	APHA 4500 F^-D	0.36	0.52
18	Hexavalent Chromium (as Cr^{+6})	mg/l. max	0.05	APHA 3500 Cr B	<0.02	<0.02
19	Cyanide (as CN)	mg/l. max	0.05	APHA 4500 CN E	<0.01	<0.01
20	Sulphide (as S)	mg/l. max	--	APHA 4500 S^{2-} F	<0.05	<0.05
21	Nitrate (as NO_3)	mg/l. max	50	APHA4500NO_3^-B	1.35	1.64
22	Dissolved Phosphate (as PO_4)	mg/l. max	--	APHA 3111 B	0.38	0.57
23	Phenolic Compound (as C_6H_5OH)	mg/l. max	--	APHA 5530 C	<0.05	<0.05
24	Bio-assay Test	mg/l. max	90% survival of fish after 96 hrs in 100% effluent	IS 6582	94%	96%
25	Selenium (as S)	mg/l. max	0.05	APHA 3500 Se C	<0.001	<0.001
26	Manganese (as Mn)	mg/l. max	--	APHA 3111 B	<0.05	<0.05
27	Copper (as Cu)	mg/l. max	1.5	APHA 3111Cu B	<0.02	<0.02
28	Zinc (as Zn)	mg/l. max	15	APHA 3111 B	0.27	0.31
29	Cadmium	mg/l. max	0.01	APHA 3111 B	<0.01	<0.01
30	Lead (as Pb)	mg/l. max	0.1	APHA 3112 B	<0.01	<0.01
31	Mercury (as Hg)	mg/l. max	--	APHA 3111 B	<0.004	<0.004
32	Nickel (as Ni)	mg/l. max	--	APHA 3500As B	<0.05	<0.05
33	Arsenic (as As)	mg/l. max	0.2	APHA 3111 B	<0.004	<0.004
34	Total Chromium (as TCr)	mg/l. max	--	IS3025(P44)1993	<0.05	<0.05
Any unusual feature observed during determination				Nil		

Reviewed

Approved

Plot No.- M-22 & 23, Chandaka Industrial Estate, Patia, Bhubaneswar, Khurda, Odisha-751024, India Tel.: 0674-3511721

E-mail: visiontek@vcspl.org, visiontekin@gmail.com

Visit us at: www.vcspl.org

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Iuvestigation
- Quality Control & Project Management
- Renewable Energy
- Agricnltural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Envlab/22/R-0810 Date: 05.04.2022

TEST REPORT

Customer Name & Address : **Baphlimali Miues, M/s Utkal Alumiua Interuatioual Ltd, Tikiri, Rayagada, Odisha**

SAMPLE DETAILS

Sample Location & Code	SW1: Sana River (Up Stream) SW2: Sana River (Down Stream)	Sampled by	VCSPL'S Representative
Sample Description	Snrface Water	Sampling Procedure	APHA 1060
Sample Source	Baphlimali Mines, UAIL	Sample Received on	21.03.2022
Sample Couditiou	Sealed Plastic & Sterilized Glass Bottle	Latitude : N 19°17.015' Longitude : E 83°0.879'' Altitude : 707.14 m.	Latitude : N 19°16.602' Longitude : E 82°59.812' Altitude : 725.73 m.
Sampling Date	18.03.2022	Test Completed on	26.03.2022

Sl. No	Parameters	Units	Standards as per IS 2296-Class C	Test methods	SW-1	SW-2
1	Color	Hazen, max	300	APHA 2120 B	10	25
2	Odour	--	Agreeable	APHA 2150 B	Agreeable	Agreeable
3	pH value	--	6.5-8.5	APHA 4500 H^+B	7.03	7.36
4	Suspeuded Solids	mg/l, max	--	APHA 2540 D	57.0	89.0
5	Total dissolved solids	mg/l, max	1500	APHA 2540 C	183.0	267.0
6	Temperatnre	^{0}c	--	--	26.8	26.4
7	Couductivity	µs/cm	--	APHA 2510 C	293.8	416.2
8	Ammonical Nitrogen (as NH_4-N)	mg/l, max	--	APHA4500 NH_3B	1.2	2.4
9	Total Kjeldahl Nitrogeu (as N)	mg/l, max	--	APHA4500N_{ORG}B	2.9	4.6
10	Oii & Grease	mg/l, max	0.1	APHA 5220 B	ND	ND
11	Dissolved Oxygeu (as DO)	mg/l, min	4	APHA 4500 O C	5.8	5.3
12	Biochemical Oxygeu Demaud (as BOD at 27^{0}C For 3 days)	mg/l, max	3.0	APHA 4500 P D	2.3	2.7
13	Chemical Oxygen Demand (as COD)	mg/l, max	--	APHA 3111 B	16.0	28.0
14	Frec Ammonia (as NH_3)	mg/l, max	--	--	ND	ND
15	Total Residual Chlorine (as RFC)	mg/l, min	--	APHA 4500 Cl B	ND	ND
16	Irou (as Fe)	mg/l, max	50	APHA 3500 Fe B	0.63	1.6
17	Fluoride (as F)	mg/l, max	1.5	APHA 4500 F^-D	0.29	0.44
18	Hexavaleut Chromium (as Cr^{+6})	mg/l, max	0.05	APHA 3500 Cr B	<0.02	<0.02
19	Cyanide (as CN)	mg/l, max	0.05	APHA 4500 CN E	<0.01	<0.01
20	Snlphide (as S)	mg/l, max	--	APHA 4500 S^{2-} F	<0.05	<0.05
21	Nitrate (as NO_3)	mg/l, max	50	APHA4500NO_3^-B	1.53	2.7
22	Dissolved Phosphate (as PO_4)	mg/l, max	--	APHA 3111 B	0.48	0.61
23	Pheuolic Compound (as C_6H_5OH)	mg/l, max	--	APHA 5530 C	<0.05	<0.05
24	Bio-assay Tcst	mg/l, max	90% survival of fish after 96 hrs in 100% effluent	IS 6582	92%	90%
25	Selenium (as S)	mg/l, max	0.05	APHA 3500 Se C	<0.001	<0.001
26	Mauganese (as Mn)	mg/l, max	--	APHA 3111 B	<0.05	<0.05
27	Copper (as Cu)	mg/l, max	1.5	APHA 3111Cu B	<0.02	<0.02
28	Zinc (as Zn)	mg/l, max	15	APHA 3111 B	0.21	0.26
29	Cadmium	mg/l, max	0.01	APHA 3111 B	<0.01	<0.01
30	Lead (as Pb)	mg/l, max	0.1	APHA 3112 B	<0.01	<0.01
31	Mercury (as Hg)	mg/l, max	--	APHA 3111 B	<0.004	<0.004
32	Nickel (as Ni)	mg/l, max	--	APHA 3500As B	<0.05	<0.05
33	Arseuic (as As)	mg/l, max	0.2	APHA 3111 B	<0.004	<0.004
34	Total Chromium (as TCr)	mg/l, max	--	IS3025(P44)1993	<0.05	<0.05
Any unusual feature observed during determination					Nil	

Reviewed by

Approved by

Plot No.- M-23 & 23, Chandaka Indnstrial Estate, Patia, Bhubaneswar, Khurda, Odisha-751024, India Tel.: 0674-3511721
E-mail: visiontek@vcspl.org, visiontekin@gmail.com
Visit ns at: www.vcspl.org

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigatioo
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Tecbnology
- Pubiic Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Envlab/22/R-0811

Date: 05.04.2022

TEST REPORT

Customer Name & Address : **Baphlimali Miues, M/s Utkal Alumiua Iuternational Ltd, Tikiri, Rayagada, Odisha**

SAMPLE DETAILS

Sample Locatiou & Code	SW3: Kandabindha (Up Stream) SW4: Kandabindha (Down Stream	Sampled by	VCSPL'S Rcpresentative
Sample Descriptiou	Surface Water	Sampling Procedure	APHA 1060
Sampie Source	Baphlimali Miues, UAIL	Sample Reeeived on	21.03.2022
Sample Conditiou	Sealed Plastic & Sterilized Glass Bottle	Latitude : N 19°22.014' Longitnde :E 83°04.658' Altitude : 769.01 m	Latitnde : N 19°23.078' Longitude : E 83°0.248' Altitude : 660.50 m
Sampling Date	18.03.2022	Test Completed on	26.03.2022

Sl. No	Parameters	Units	Standards as per IS 2296-Class C	Test methods	SW-3	SW-4
1	Color	Hazen, max	300	APHA 2120 B	10	20
2	Odonr	--	Agreeable	APHA 2150 B	Agreeable	Agreeable
3	pH value	--	6.5-8.5	APHA 4500 H^+B	7.14	7.27
4	Snspended Solids	mg/l, max	--	APHA 2540 D	54.0	73.0
5	Total dissolved solids	mg/l, max	1500	APHA 2540 C	204.0	296.0
6	Temperatnre	^{0}c	--	--	26.2	25.7
7	Conductivity	µs/cm	--	APHA 2510 C	321.7	467.3
8	Ammonicai Nitrogen (as NH_4-N)	mg/l, max	--	APHA4500 NH_3B	1.8	3.3
9	Total Kjeldahl Nitrogen (as N)	mg/l, max	--	APHA4500N_{ORG}B	3.2	5.6
10	Oil & Grease	mg/l, max	0.1	APHA 5220 B	ND	ND
11	Dissolved Oxygeu (as DO)	mg/l, min	4	APHA 4500 O C	6.0	5.4
12	Biochemical Oxygeu Demaud (as BOD at 27^{0}C For 3 days)	mg/i, max	3.0	APHA 4500 P D	2.2	2.4
13	Chemical Oxygeu Demaud (as COD)	mg/l, max	--	APHA 3111 B	18.0	22.0
14	Free Ammonia (as NH_3)	mg/l, max	--	--	ND	ND
15	Total Residual Chlorine (as RFC)	mg/l, min	--	APHA 4500 Cl B	ND	ND
16	Irou (as Fe)	mg/l, max	50	APHA 3500 Fe B	0.76	1.83
17	Fluoride (as F)	mg/l, max	1.5	APHA 4500 F^-D	0.31	0.48
18	Hexavalent Chrominm (as Cr^{+6})	mg/l, max	0.05	APHA 3500 Cr B	<0.02	<0.02
19	Cyanide (as CN)	mg/l, max	0.05	APHA 4500 CN E	<0.01	<0.01
20	Snlphide (as S)	mg/l, max	--	APHA 4500 S^{2-} F	<0.05	<0.05
21	Nitrate (as NO_3)	mg/l, max	50	APHA4500NO_3^-B	1.46	1.82
22	Dissolved Phosphate (as PO_4)	mg/l, max	--	APHA 3111 B	0.43	0.66
23	Pheuolic Componnd (as C_6H_5OH)	mg/l, max	--	APHA 5530 C	<0.05	<0.05
24	Bio-assay Test	mg/l, max	90% snrvival of fish after 96 brs in 100% effluent	IS 6582	93%	94%
25	Selenium (as S)	mg/l, max	0.05	APHA 3500 Se C	<0.001	<0.001
26	Mauganese (as Mn)	mg/l, max	--	APHA 3111 B	<0.05	<0.05
27	Copper (as Cu)	mg/l, max	1.5	APHA 3111Cu B	<0.02	<0.02
28	Ziuc (as Zn)	mg/l, max	15	APHA 3111 B	0.25	0.33
29	Cadminm	mg/l, max	0.01	APHA 3111 B	<0.01	<0.01
30	Lead (as Pb)	mg/l, max	0.1	APHA 3112 B	<0.01	<0.01
31	Mercury (as Hg)	mg/l, max	--	APHA 3111 B	<0.004	<0.004
32	Nickel (as Ni)	mg/l, max	--	APHA 3500As B	<0.05	<0.05
33	Arsenic (as As)	mg/l, max	0.2	APHA 3111 B	<0.004	<0.004
34	Total Chromium (as TCr)	mg/l, max	--	IS3025(P44)1993	<0.05	<0.05
Any unusual feature observed during determination					Nil	

Reviewed by

Approved by

ANNEXURE: 8

Ground Water Quality Analysis Report

Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Euvlab/21/R-9153

Date: 04.12.2021

TEST REPORT

Cnstomer Name & Address : Baphlimali Mines, M/s Utkal Alumina International Ltd, Tikiri, Rayagada

SAMPLE DETAILS

Sample Locatiou & Code	GW1: Paikupakhal GW2: Andirakanch	Sampled by	VCSPL'S Representative
Sample Description	Ground Water	Sampling Procedure	APHA 1060
Sample Sonrce	Baphlimali Miues, UAIL	Sample Received ou	12.11.2021
Sample Condition	Sealed Plastic & Sterilized Glass Bottle	Latitude: N19°20.197′ Longitude: E82°59.589′ Altitude: 874.17 m.	Lutitude: N19°19.079′ Lougitnde: E83°00.738′ Altitude: 739.45 m.
Sampliug Date	11.11.2021	Test Completed ou	19.11.2021

Sl. No	Parameters	Unit	Standard as per IS 10500:2012, Amud. 2015 & 2018	Test methods	GW-1	GW-2
Organoleptic & Physical Parameters						
1	Color	Hazeu	5	APHA 2120 B,C	<1.0	<1.0
2	Odour	--	Agreeable	APHA 2120 B	Agreeable	Agreeable
3	pH value	--	6.5-8.5	APHA 4500 H^+B	7.28	6.96
4	Tnrbidity	NTU, max	1.0	APHA 2130 B	1.0	1.2
5	Total Dissolved Solids	mg/l	500	APHA 2540 C	319.0	305.0
6	Tcmperature	^{0}C	-	--	25.1	25.6
7	Conduetivity	µS/cm	-	APHA 2510 C	504.0	479.0
General Parameters Concerning Substances Undesirable in Excessive Amounts						
8	Caleinm (as Ca)	mg/l, max	75	APHA 3500Ca B	42.0	34.4
9	Chloride (as Cl)	mg/l, max	250	APHA 4500Cl^-B	33.5	31.5
10	Copper (as Cu)	mg/l, max	0.05	APHA 3I11B,C	<0.02	<0.02
11	Flnoride (as F)	mg/l, max	1.0	APHA 4500F^-C	0.39	0.37
12	Free residual Chlorine	mg/l , miu	0.2	APHA 4500Cl B	0.3	0.3
13	Irou (as Fe)	mg/l, max	1.0	APHA 3500Fe B	0.25	0.21
14	Magnesium (as Mg)	mg/l, max	30	APHA 3500Mg,B	4.6	4.4
15	Manganese (as Mu)	mg/l, max	0.1	APHA 3500Mn B	<0.05	<0.05
16	Miueral oil	mg/l, max	0.5	APHA 5220 B	<0.02	<0.02
17	Acidity	mg/l, max	-	APHA 2310 B	<1.0	<1.0
18	Phenolic Compounds	mg/l, max	0.001	APHA 5530 B,C	<0.05	<0.05
19	Seleuium(as Se)	mg/l, max	0.01	APHA 3114B	<0.001	<0.001
20	Sulphate (as SO_4)	mg/l, max	200	APHA 4500SO_4^{2-}B	15.8	14.2
21	Total Alkaliuity	mg/l, max	200	APHA 2320 B	102.0	92.0
22	Total Hardness	mg/l, max	200	APHA 2340 C	124.0	104.0
23	Ziuc(as Zn)	mg/l, max	5.0	APHA 3111B,C	0.29	0.24
Parameters Concerning Toxic Substances						
24	Cadmium (as Cd)	mg/l, max	0.003	APHA 3111B,C	<0.01	<0.01
25	Cyanide (as CN)	mg/l, max	0.05	APHA 4500CN^-C,D	<0.01	<0.01
26	Lead (as Pb)	mg/l, max	0.01	APHA 3111B,C	<0.01	<0.01
27	Mercury (as Hg)	mg/l, max	0.001	APHA 3500 Hg	<0.002	<0.002
28	Total arseuie	mg/l, max	0.01	APHA 3114B	<0.004	<0.004
29	Pcsticide	mg/l, max	0.0005	APHA 6630 B	<0.0001	<0.0001
BACTERIOLOGICAL QUALITY						
30	Total Coli forms	MPN/100ml	Shall not be detected in any 100 ml sample	APHA 9221 B	<1.1	<1.1
Any unusual feature observed during determiuation					NIL	

Reviewed by

Approved by

Plot No.- M/22 & 23, Chandaka Indnstrial Estatc, Patia, Bbnbaueswar, Khurda, Odisba-751024, Indi Tel.: 0674-3511721

E-mail: visiontek@vcspl.org, visiontekin@gmail.com

Visit ns at: www.vcspl.org

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Engineering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Envlab/21/R-9154

Date: 04.12.2021

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alumina International Ltd, Tikirl, Rayagada

SAMPLE DETAILS

Sample Location & Code	GW3: Malligaon GW4: Kendumundi	Sampled by	VCSPL'S Represeutative
Sample Descriptiou	Ground Water	Sampling Proeedure	APHA 1060
Sample Source	Baphliimaii Mines, UAIL	Sample Received ou	12.11.2021
Sample Condition	Sealed Plastic & Sterilized Glass Bottle	Latitude: N19°21.359′ Lougitude: E82°59.889′ Altitude: 699.82 m.	–
Sampling Date	11.11.2021	Test Completed on	19.11.2021

Sl. No	Parameters	Unit	Standard as per IS 10500:2012, Amnd. 2015 & 2018	Test methods	GW-3	GW-4
Organoleptic & Physical Parameters						
1	Color	Hazen	5	APHA 2120 B,C	<1.0	<1.0
2	Odour	--	Agreeable	APHA 2120 B	Agreeable	Agreeable
3	pH value	--	6.5-8.5	APHA 4500 H^+B	7.17	7.42
4	Tnrbidity	NTU, max	1.0	APHA 2130 B	1.2	1.1
5	Total Dissoived Solids	mg/l	500	APHA 2540 C	176.0	227.0
6	Temperature	^{0}C	-	--	26.4	25.7
7	Conduetivity	µS/cm	-	APHA 2510 C	281.0	363.0
General Parameters Concerning Substances Undesirable in Excessive Amounts						
8	Caleium (as Ca)	mg/l, max	75	APHA 3500Ca B	31.8	28.6
9	Chloride (as Cl)	mg/l, max	250	APHA 4500Cl^-B	22.5	27.5
10	Copper (as Cu)	mg/l, max	0.05	APHA 3111B,C	<0.02	<0.02
11	Fluoride (as F)	mg/l, max	1.0	APHA 4500F^-C	0.25	0.31
12	Frce residual Chlorine	mg/l , min	0.2	APHA 4500Cl B	0.3	0.3
13	Iron (as Fe)	mg/l, max	1.0	APHA 3500Fe B	0.19	0.23
14	Magnesinm (as Mg)	mg/l, max	30	APHA 3500Mg,B	7.9	6.5
15	Manganese (as Mu)	mg/l, max	0.1	APHA 3500Mn B	<0.05	<0.05
16	Mineral oil	mg/l, max	0.5	APHA 5220 B	<0.02	<0.02
17	Acidity	mg/l, max	-	APHA 2310 B	<1.0	<1.0
18	Phenolic Compounds	mg/l, max	0.001	APHA 5530 B,C	<0.05	<0.05
19	Selenium(as Se)	mg/l, max	0.01	APHA 3114B	<0.001	<0.001
20	Sulphate (as SO_4)	mg/l, max	200	APHA 4500SO_4^{2-}B	11.2	11.7
21	Total Alkaliuity	mg/l, max	200	APHA 2320 B	104.0	108.0
22	Total Hardness	mg/l, max	200	APHA 2340 C	112.0	98.0
23	Ziuc(as Zn)	mg/l, max	5.0	APHA 3111B,C	0.18	0.25
Parameters Concerning Toxic Substances						
24	Cadmium (as Cd)	mg/l, max	0.003	APHA 3111B,C	<0.01	<0.01
25	Cyauide (as CN)	mg/l, max	0.05	APHA 4500CN^-C,D	<0.01	<0.01
26	Lead (as Pb)	mg/l, max	0.01	APHA 3111B,C	<0.01	<0.01
27	Mercnry (as Hg)	mg/l, max	0.001	APHA 3500 Hg	<0.002	<0.002
28	Total arseuic	mg/l, max	0.01	APHA 3114B	<0.004	<0.004
29	Pesticide	mg/l, max	0.0005	APHA 6630 B	<0.0001	<0.0001
BACTERIOLOGICAL QUALITY						
30	Total Coli forms	MPN/100ml	Shall not be detected in any 100 ml sample	APHA 9221 B	<1.1	<1.1
Auy unusual feature observed during determiuation					NIL	

Reviewed by

Approved by

Plot No.- M-22 & 23, Chandaka Industrial Estate, Patia, Bhnbaueswar, Khnrda, Odisba-751024, India Tel.: 0674-3511721

E-mail: visiontek@vcspl.org, visiontekin@gmail.com

Visit us at: www.vcspl.org

Visiontek Consultaucy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Envlab/21/R-4011 Date: 09.03.2022

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alumina International Ltd, Tikiri, Rayagada

SAMPLE DETAILS

Sample Location & Code	GW1: Paikupakhal GW2: Andirakanch	Sampled by	VCSPL'S Representative
Sample Description	Ground Water	Sampling Procedure	APHA 1060
Sample Source	Baphlimali Mines, UAIL	Sample Received on	01.03.2022
Sample Condition	Sealed Plastie & Sterilized Glass Bottle	Latitude: N19°20.197′ Longitude: E82°59.589′ Altitude: 874.17 m.	Latitude: N19°19.079′ Longitude: E83°00.738′ Altitude: 739.45 m.
Sampling Date	28.02.2022	Test Completed on	07.03.2022

Sl. No	Parameters	Unit	Standard as per IS 10500:2012, Amnd. 2015 & 2018	Test methods	GW-1	GW-2
Organoleptic & Physical Parameters						
1	Color	Hazen	5	APHA 2120 B,C	<1.0	<1.0
2	Odour	--	Agreeable	APHA 2120 B	Agreeable	Agreeable
3	pH value	--	6.5-8.5	APHA 4500 H^+B	6.93	7.14
4	Turbidity	NTU, max	1.0	APHA 2130 B	1.4	1.5
5	Total Dissolved Solids	mg/l	500	APHA 2540 C	279.0	326.0
6	Temperature	^{0}C	-	--	25.8	26.3
7	Conductivity	µS/cm	-	APHA 2510 C	452.0	513.0
General Parameters Concerning Substances Undesirable in Excessive Amounts						
8	Calcium (as Ca)	mg/l, max	75	APHA 3500Ca B	35.4	37.2
9	Chloride (as Cl)	mg/l, max	250	APHA 4500Cl$^-$B	30.5	28.5
10	Copper (as Cu)	mg/l, max	0.05	APHA 3111B,C	<0.02	<0.02
11	Fluoride (as F)	mg/l, max	1.0	APHA 4500F$^-$C	0.32	0.34
12	Free residual Chlorine	mg/l , min	0.2	APHA 4500Cl B	0.3	0.3
13	Irou (as Fe)	mg/l, max	1.0	APHA 3500Fe B	0.27	0.30
14	Magnesium (as Mg)	mg/l, max	30	APHA 3500Mg.B	2.3	4.6
15	Manganese (as Mn)	mg/l, max	0.1	APHA 3500Mn B	<0.05	<0.05
16	Mineral oil	mg/l, max	0.5	APHA 5220 B	<0.02	<0.02
17	Acidity	mg/l, max	-	APHA 2310 B	<1.0	<1.0
18	Phenolic Componnds	mg/l, max	0.001	APHA 5530 B,C	<0.05	<0.05
19	Selenium(as Se)	mg/l, max	0.01	APHA 3114B	<0.001	<0.001
20	Sulphate (as SO_4)	mg/l, max	200	APHA 4500SO_4^{2-}B	16.2	13.6
21	Total Alkalinity	mg/l, max	200	APHA 2320 B	80.0	88.0
22	Total Hardness	mg/l, max	200	APHA 2340 C	98.0	112.0
23	Zinc(as Zn)	mg/l, max	5.0	APHA 3111B,C	0.23	0.19
Parameters Concerning Toxic Substances						
24	Cadmium (as Cd)	mg/l, max	0.003	APHA 3111B,C	<0.01	<0.01
25	Cyauide (as CN)	mg/l, max	0.05	APHA 4500CN$^-$C,D	<0.01	<0.01
26	Lead (as Pb)	mg/l, max	0.01	APHA 3111B,C	<0.01	<0.01
27	Mercury (as Hg)	mg/l, max	0.001	APHA 3500 Hg	<0.004	<0.004
28	Total arsenic	mg/l, max	0.01	APHA 3114B	<0.004	<0.004
29	Pesticide	mg/l, max	0.0005	APHA 6630 B	<0.0001	<0.0001
BACTERIOLOGICAL QUALITY						
30	Total Coli forms	MPN/100ml	Shall not be detected in any 100 ml sample	APHA 9221 B	<1.1	<1.1
Any unusual feature observed during determination					NIL	

Reviewed by

Approved by

Plot No.- M-23 & 24, Chandaka Industrial Estate, Patia, Bhubaneswar, Khurda, Odisha-751024, India, Tel.: 0674-3511721
E-mail: visiontek@vcspl.org, visiontekin@gmail.com
Vlslt us at: www.vcspl.org

Visiontek Consnltancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
- Water Resource Management
- Environmeutal & Social Study
- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Technology
- Public Health Engincering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Test Report No: Envlab/21/R-4012 Date: 09.03.2022

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alumina International Ltd, Tikiri, Rayagada

SAMPLE DETAILS

Sample Location & Code	GW3: Malligaon GW4: Kendnmundi	Sampled by	VCSPL'S Representative
Sample Description	Gronnd Water	Sampling Procedure	APHA 1060
Sample Source	Baphlimali Mines, UAIL	Sample Received on	01.03.2022
Sample Condition	Sealed Plastic & Sterilized Glass Bottle	Latitude: N19°21.359′ Longitude: E82°59.889′ Altitude: 699.82 m.	--
Sampling Date	28.02.2022	Test Completed on	07.03.2022

Sl. No	Parameters	Unit	Standard as per IS 10500:2012, Amnd. 2015 & 2018	Test methods	GW-3	GW-4
Organoleptic & Physical Parameters						
1	Color	Hazen	5	APHA 2120 B.C	<1.0	<1.0
2	Odour	--	Agreeable	APHA 2120 B	Agreeable	Agreeable
3	pH value	--	6.5-8.5	APHA 4500 H⁺B	7.35	7.22
4	Turbidity	NTU, max	1.0	APHA 2130 B	1.1	1.3
5	Total Dissolved Solids	mg/l	500	APHA 2540 C	192.0	248.0
6	Temperature	^{0}C	-	--	27.1	26.6
7	Conductivity	µS/cm	-	APHA 2510 C	304.0	392.0
General Parameters Concerning Substances Undesirable in Excessive Amounts						
8	Calcinm (as Ca)	mg/l, max	75	APHA 3500Ca B	33.6	31.4
9	Chloride (as Cl)	mg/l, max	250	APHA 4500Cl⁻B	24.0	29.0
10	Copper (as Cu)	mg/l, max	0.05	APHA 3111B.C	<0.02	<0.02
11	Fluoride (as F)	mg/l, max	1.0	APHA 4500F⁻C	0.28	0.33
12	Free residual Chlorine	mg/l , min	0.2	APHA 4500Cl B	0.3	0.3
13	Iron (as Fe)	mg/l, max	1.0	APHA 3500Fe B	0.23	0.27
14	Magnesium (as Mg)	mg/l, max	30	APHA 3500Mg.B	4.4	3.8
15	Mauganese (as Mn)	mg/l, max	0.1	APHA 3500Mn B	<0.05	<0.05
16	Mineral oil	mg/l, max	0.5	APHA 5220 B	<0.02	<0.02
17	Acidity	mg/l, max	-	APHA 2310 B	<1.0	<1.0
18	Phenolic Compounds	mg/l, max	0.001	APHA 5530 B.C	<0.05	<0.05
19	Selenium(as Se)	mg/l, max	0.01	APHA 3114B	<0.001	<0.001
20	Sulphate (as SO_4)	mg/l, max	200	APHA 4500SO_4^{2-}B	12.4	13.2
21	Total Alkalinity	mg/l, max	200	APHA 2320 B	96.0	98.0
22	Total Hardness	mg/l, max	200	APHA 2340 C	102.0	94.0
23	Zinc(as Zn)	mg/l, max	5.0	APHA 3111B.C	0.16	0.21
Parameters Concerning Toxic Substances						
24	Cadmium (as Cd)	mg/l, max	0.003	APHA 3111B.C	<0.01	<0.01
25	Cyanide (as CN)	mg/l, max	0.05	APHA 4500CN⁻C,D	<0.01	<0.01
26	Lead (as Pb)	mg/l, max	0.01	APHA 3111B.C	<0.01	<0.01
27	Mercury (as Hg)	mg/l, max	0.001	APHA 3500 Hg	<0.004	<0.004
28	Total arsenic	mg/l, max	0.01	APHA 3114B	<0.004	<0.004
29	Pesticide	mg/l, max	0.0005	APHA 6630 B	<0.0001	<0.0001
BACTERIOLOGICAL QUALITY						
30	Total Coli forms	MPN/100ml	Shall not be detected in any 100 ml sample	APHA 9221 B	<1.1	<1.1
Any nnusual feature observed during determiuatiou					NIL	

Visiontek Consultancy Services

Reviewed by

Visiontek Consultancy Services

Approved by

Plot No.- M-22 & 23, Chandaka Indnstriai Estate, Patia, Bhnbaneswar, Khurda, Odisha-751024, India .Tel.: 0674-3511721
E-mail: visioutek@vcspl.org, visiontekin@gmail.com
Visit us at: www.vcspl.org

Test Report No: Euvlab/21/R-4013 Date: 09.03.2022

TEST REPORT

Customer Name & Address : Baphlimali Miues, M/s Utkal Alumina Iuternational Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	--	Sampled by	VCSPL'S Representative
Sample Name	Ground Water Level	Sampling Procedure	NA
Sample Source	Baphlimali Mines, UAIL	Sample Received on	NA

SL. No	Date of Sampling	Name of the Location	Water Level (meter)	GPS Coordinate
1	28.02.2022	Paikupakhal (Buffer Zone)	2.59	Latitude: N19°20.197′ Longitnde: E82°59.589′ Altitude: 874.17 m.
2	28.02.2022	Andirakanch (Buffer Zone)	2.44	Latitude: N19°19.079′ Longitude: E83°00.738′ Altitude: 739.45 m.
3	28.02.2022	Malligaon (Buffer Zone)	2.65	Latitude: N19°21.359′ Longitude: E82°59.889′ Altitude: 699.82 m.
4	28.02.2022	Kendumundi (Buffer Zone)	3.42	NA
5	28.02.2022	Near Dnmp Yard (Core Zone)	>104	Latitnde: N 19°20'55" Longitude: E 82°58'24"
6	28.02.2022	Near Check Post (Core Zone)	>104	Latitude: N 19°20'26" Longitude: E 82°58'40"

Note: Monitoring of ground water level and quality not done in the mining lease area due to non availibility of ground water.

Reviewed by

Approved by

ANNEXURE: 9

Ground Water Level Monitoring Report

Test Report No: Envlab/21/R-9155 Date: 04.12.2021

TEST REPORT

Cnstomer Name & Address : Baphlimali Mines, M/s Utkal Ainmina International Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	--	Sampled by	VCSPL'S Representative
Sample Name	Ground Water Level	Sampliug Procedure	NA
Sample Source	Baphlimali Mines, UAIL	Sample Received on	NA

SL. No	Date of Sampling	Name of the Location	Water Level (meter)	GPS Coordiuate
1	11.11.2021	Paikupakhal (Buffer Zoue)	2.90	Latitude: N19°20.197′ Longitude: E82°59.589′ Altitude: 874.17 m.
2	11.11.2021	Andirakanch (Buffer Zone)	2.71	Latitude: N19°19.079′ Longitude: E83°00.738′ Altitude: 739.45 m.
3	11.11.2021	Malligaon (Buffer Zone)	2.81	Latitude: N19°21.359′ Longitude: E82°59.889′ Altitude: 699.82 m.
4	11.11.2021	Kendumundi (Bnffer Zone)	3.81	NA
5	11.11.2021	Near Dump Yard (Core Zoue)	>104	Latitnde: N 19°20'55" Lougitude: E 82°58'24"
6	11.11.2021	Near Check Post (Core Zoue)	>104	Latitude: N 19°20'26" Longitude: E 82°58'40"

Note: Monitoring of ground water level and quality not done in the mining lease area due to non availibility of ground water.

Visiontek Consultancy Services Pvt. Ltd. BBSR

Reviewed by

Visiontek Consultancy Services Pvt. Ltd. BBSR

Approved by

Test Report No: Euvlab/21/R-4013 Date: 09.03.2022

TEST REPORT

Customer Name & Address : Baphliunali Mines, M/s Utkal Alumina Iuternational Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Location & Code	--	Sampled by	VCSPL'S Representative
Sample Name	Ground Water Level	Sampling Procedure	NA
Sample Source	Baphlimali Mines, UAIL	Sample Received on	NA

SL. No	Date of Sampling	Name of the Location	Water Level (meter)	GPS Coordinate
1	28.02.2022	Paikupakhal (Buffer Zone)	2.59	Latitude: N19°20.197′ Longitnde: E82°59.589′ Altitude: 874.17 m.
2	28.02.2022	Andirakanch (Buffer Zone)	2.44	Latitude: N19°19.079′ Longitude: E83°00.738′ Altitude: 739.45 m.
3	28.02.2022	Malligaon (Buffer Zone)	2.65	Latitude: N19°21.359′ Longitude: E82°59.889′ Altitude: 699.82 m.
4	28.02.2022	Kendumundi (Buffer Zone)	3.42	NA
5	28.02.2022	Near Dnmp Yard (Core Zone)	>104	Latitnde: N 19°20'55" Longitude: E 82°58'24"
6	28.02.2022	Near Check Post (Core Zone)	>104	Latitude: N 19°20'26" Longitude: E 82°58'40"

Note: Monitoring of ground water level and quality not done in the mining lease area due to non availibility of ground water.

Reviewed by

Approved by

ANNEXURE: 10

Surface Water Withdrawal Agreement

Email Id:-eeharabhangi@gamil.com

Office of the Superintending Engineer
Harabbangi Irrigation Divislen,
Adava,Gajapati.

Letter No._____/ Date._____/

To,

The Chief Engineer, Water Service,
O/o the Engineer-In-Chief, Water Resources,
Odisha, Bhubaneswar.

Sub:- Submission of renewal of Agreement as per Clause 18 of the Agreemant of M/s Utakal Alumina International Ltd, Doragude , Rayagada.

Sir,

In invlting a kind reference to the letter on the above cited subject, I am to submit berewith the Xerox copy of renewal of the agreement as per clause 18 of the Agreement drown with M/s Utakal Alumina International Ltu. Doraguda, Rayagada en dated 21.12.2021 for drawl of 9.00 cusecs of Surface Water from San River upstream of Indravati River along with Xerox copy of Bank Guarantee and F.D.R. for favour of kind information and necessary action.

Encl:- 1. Xerox copy of Agreement:- 11 pages.
2. Xerex copy of B.G. bearing No. 0665721BG0000131 dated.18.11.2021:-1No.
3. Xerox copy of FDR beering Account No.40586201112 dated. 18.11.2021:-1No.

Superintending Engineer
Harabbangi Irrigation Division, Adava
Gajapati

Memo No. Date .
Copy Submitted to the Engineer-In-Chief-cum-Spl. Secretary to government, Department of Water Resources, Odisha, Rajiv Bhawan, Bhubaneswar for favour of kind information and necessary action.
Encl :-As above.

Superintending Engineer
Harabhangi Irrigation Division, Adava
Gajapati

Memo No. Date .
Copy Submitted to the Engineer-In-Chief, Water Reseurces, Odisha, BBSR for favour of kind information and necessary action.
Encl :-As above.

Superintending Engineer
Harabhangi Irrigation Division, Adava
Gajapati

Memo No. Date .
Copy Submitted to the Chief Enginaer and Basin Manager, B.B.V.N. Basin, Berhampur/ Additional Chief Engineer Vansadhara, Naguvali Basin, Paralakhemundi for favonr of kind information and necessary action.
Encl :-As above.

Superintending Engineer
Harabhangi Irrigation Division, Adava
Gajapati

Memo No. 4243 Date . 22.12.21
Copy Forwarded to M/s Utakal Alumina International Ltd, Doraguda, Rayagada for information.

Encl :-As above.

Superintending Engineer
Harabhangi Irrigation Division, Adava
Gajapati

ଓଡ଼ିଶା ओडिशा ODISHA 11AA 304983

FORM 'K'
(See Rule 23-A (2) (e) & rule 26)

AGREEMENT FOR SUPPLY OF WATER FOR THE PURPOSE OF INDUSTRIAL COMMERCIAL USE.

INDUSTRIAL/COMMERCIAL USE

THIS AGREEMENT is made on the 21st day of December Two Thousand Twenty-One (2021) **BETWEEN Shri. Mazharullah Beig** S/o Late Mohammed Masihullah Beig by profession Chief Executive Officer (CEO), psrmanent resident of 570, Ambamata OTC Scheme, Opp: Central Academy Sr. School, Udaipur, Rajasthan, PIN- 31300, presently residing at "A" type building, Oshapada Residential Campus, M/s. Utkal Alumina international Ltd, Pe. Doraguda, Dist- Rayegada, Pin-765015, the authorized representative of **M/s Utkal Alumina Internatlonal Limited,** having its plant at Doraguda (Hereinafter called the 'Applicant') of the First part.

AND

Sri S.K.Gupta, Son of Late Chandravanu Gupta, resident of village Polosara, P.S, Polosara, Dist. Ganjam, Odisha by profession **Superintendfng Engineer, Harabhangi irrigation Divisfon, Adava, Dist:-Gajapati,** Odisha (hereinafter referred to as the **'Sureties')** of the second part; **AND** the Governor of Odisha which expression uniess repugnant to the context, shall include his suocessors and assigns **(hereinafter called 'the Government')** of the third part:

UTKAL ALUMINA INTERNATIONAL LTD. DORAGUDA

21/12/21
Superintending Engineer
Harabhangi Irrigation Division
Adava, Gajapati

DISTRICT TREASURY
10 NOV 2021
NABARANGPUR

Addl. Treasury Officer
Dist. Treasury Nabarangpur

5317 ... 3.12.2021

ଶ୍ରୀ. 2015 UAPL
ସ୍ଥା...... D.P. Nayak
ଜିଲ୍ଲା........ Tikiri
ରହଣି....

ଜିଲ୍ଲା ଅପରାଧ ଦମନ
ଶାଖା ପୋଲିସ, ନବରଙ୍ଗପୁର

Bhagaban Patra
Asst. Environment
Utkal Alumina, Doraguda
Rayagada

ओडिशा ODISHA AAA 304984

WHEREAS the applicant has made an application for supply of water from Government water source/from San River upstream of Indravati River for the period as mentioned in the schedule here to annexed:

AND WHEREAS, the sureties have agreed to stand surety for payment of rates charged for such supply in the manner hereinafter appearing and the Government has agreed to suppiy water for the purpose specified in the schedule annexed hereto:

SCHEDULE

Purpose for which water will be supplied	Volume of water, if any	Period of supply	The place at which it will be supplied
(1)	(2)	(3)	(4)
Industrial purpose for Refinery & Mines of M/s Utkal Alumina International Ltd.	9.0 cusec or 777600 cft/day	Continuous as per availability from the source	To Plant site at Doraguda & Mines at Baphalimali

UTKAL ALUMINA INTERNATIONAL LTD. DORAGUDA

Superintending Engineer
Hirakud Irrigation Division
Burla (Sambalpur)

DISTRICT TREASURY
10 NOV 2021
NABARANGPUR

Addl. Treasury Officer
Dist. Treasury Nabarangpur

5318 ତା. 3-12-2021

ଟଙ୍କା 2077/- ପାଇଲୁ.....

ନାମ.... D. P. Nayak DAIL

ଟିକାସ.... Tikina.....

ତାରିଖ.....

ଜିଲ୍ଲା ଟ୍ରେଜରି ଅଫିସର
ନବରଙ୍ଗପୁର, ନବରଙ୍ଗପୁର

Bhuban Patra
Asst - Environment
Utkal Alumina, Rayagada

ଓଡ଼ିଶା ओडिशा ODISHA 11AA 304994

Now This AGREEMENT witnessth as follows: -

1. In pursuance of the said agreement and in consideration of supply of water to be made to the applicant, the applicant and the sureties hereby jointly and severally covenant with the Government as fnllows: -
    a) The applieant shall pay **Rs. 4,06,87,316/-(Rupees four crore six lakh eighty seven thousand three hundred sixteen)** nnly for **Bank Guarantee** and **Rs.1,35,62,439/-(Rupees one crore thirty five lakh sixty two thousand four hundred thirty nine)** only for **FDR** for the allotment period of one year @ Rs.6.75/cum on nr before the day of the Agreement to the Superintending Engineer, Harabhangi Irrigation Division, Adava, Dist:-Gajapati, Odisha.
    b) The applicant shall make suitabie arrangement to take the water from the Government water source from San river Upstream of Indravati River at which it will be supplied.
    c) The applicant shall not use the water supplied to him fnr any purposa other than that which is specified in the said schedule.
2. If the sum aforesaid or any part thereof, is not paid on or before the date specified in this agreement, it shall become payable at once (unless the Government sanctions for special reason an extension of tima) and the applicant and the sureties shall be liable jointly and severally to pay the same with eompound interest at the rate of two

DORAGUDA

Superintending Engineer
Harabhangi Irrigation Division
Adava, Gajapati

5328 ତା. 3-12-2021

ଷ୍ଟା.ନଂ/ଟ ପରିମାଣ

ନାମ D.P. Nayak, UAL

ଠିକଣା TPKSR

ଉଦ୍ଦେଶ୍ୟ

ଅଭିଜିତ [illegible] ଷ୍ଟାମ୍ପ ଭେଣ୍ଡର, ନବରଙ୍ଗପୁର

Bhaskar Patra
AGM - Environment
Utkal Alumina, Rayagada

ଓଡ଼ିଶା ଓଡିଶା ODISHA 11AA 304986

percent per mensem from the date of default. All amount due to the Government under the terms of these presents shall if not paid in time, be recoverable as a public demand under the Odisha Public Demands Recovery Act, 1962.

3.

I. The applicant shall be liable for criminal and civil action if by drawal of water the rights of any third party are affected and shall indemnify the Government against all claims for damage preferred by person or persons affected by the permission granted.

II. The applicant shall not without prior permission in writing from the Government lay pipe line on Government or communal lands. If the pipe lines have to pass through Government lands, permission of the Government for tbis shall be taken separately which may be granted subject to the protection of rights of Government or community, as the case may be.

III. The applicant shall not draw or lift water more than the quantity mentioned in the requisition or order and not exceeding the volume mentioned in the Schedule except with the prior approval of the Government. The Superintending Engineer shall assess the fees to be charged as per Unit/Quantity of water drawn or allocated whichever is higher. If drawal is more than the allocation, a penal rate at six times the rate specified in Schedule II and III shall be charged on the quantity in excess drawal, in addition to the normal bill on

Superintending Engineer
Harabhangi Irrigation Division

DISTRICT TREASURY
1 0 NOV 2021
NABARANGPUR

Addl. Treasury Officer
Dist. Treasury Nabarangpur

5320 .... ତା. 3 / 12-2021

ଟଙ୍କା 20/- ଅକ୍ଷରରେ ....

ନାମ D. P. Nayak, UAIL

ଠିକଣା Tikiri

[illegible] ....

ଅତିରିକ୍ତ ଟ୍ରେଜେରୀ ଅଫିସର
ଜିଲ୍ଲା ଟ୍ରେଜେରୀ, ନବରଙ୍ଗପୁର

Bhuban Pradhan - Environment
Utkal Alumina, Doraguda [?]
Rayagada

ଓଡ଼ିଶା ओडिशा ODISHA 114A 304987

allocated quantity. The excess drawal is permissible for a maximum period of six months, within which, the licensee shall have to apply for a higher allocation of water with reasons and where the licensee fails to so apply for such higher allocation or where the licensee is refused for such higher allocation and the water supplied thereafter.

IV. The permission granted shall not be deemed to exempt the applicant from liability to payment of water charges lawfully assessable at the rate as may be prescribed by Government from time to time.

V. Government reserves the right to suspend or cancel the permission in case of violation of any of the covenants.

4. The applicant at his own cost shall install a Flow meter or a suitable measuring device for measurement of water drawn or lifted by him from the Government water source/Irrigation works as per the procedure laid down in rule 23-A (b). The Suoerintending Engineer shall visit the location of drawal or lifting of water, verify the qunntities of water drawn or lifted by the applicant and ensure such control as may be necessary for administering the drawal or lifting of water. Assessment of watar rate shall be made as per the quantity of water drawn or allocated whichever is higher. In case of any defect or noo functioning of the Flow Meter, the licence shall bring the fact to the notice of the concerned Superintending Engineer forthwith and take appropriate steps to remove the defects in the meter or for replacement thereof within a period of two months and in such cases the fees shall be charged on the quantity of water allocated

Superintending Engineer
Kalahandi Irrigation Division

DISTRICT TREASURY
1 0 NOV 2021
NABARANGPUR

Addl. Treasury Officer
Dist. Treasury Nabarangpur

5321 .... ଗ. 3-12-21
ରେଜି. [illegible] ପାର୍ସେଲ..............
ନାମ... D. P. Nayak, UAIL
ଠିକଣା..... TPKHP ....
ଓଜନ.......................

[illegible]
[illegible], ନବରଙ୍ଗପୁର

Bhasan Patra, AGM - Environment
Utkal Alumina, Doraguda
Rayagada

ଓଡ଼ିଶା ओडिशा ODISHA 11AA 304992

22. **M/s Utkal Alumina International Limited** will have to show clearly in water management plan as to what storage facility the **Company** will create for the lean season and to what extent and how the water is going to be recycled which shall be a part of the Project report of the unit.

23. **M/s Utkal Alumina International Limited** may engage at their own cost consultant (s) experienced in the field to take up field investigations, prepare design land drawing to set up the water supply scheme for drawing water from Government water source/irrigation works for their proposed plant. The actual work will start after approval of the scheme by the competent authority or Water Resources Department who can inspect the work during the construction

24. The exact place for lifting will be decided in consultation with the authority of Water Resources Department.

25. Department of Water Resources shall not be held responsible for non-availability of water due to dry seasons, disruption, repair and maintenance of canal/reservoir.

26. The agreement to be executad by the industry/commercial establishment with Local Authority/Superintending Engineer must

UTKAL ALUMINA INTERNATIONAL LTD. DORAGUDA

21/12/14
Superintending Engineer
Harabang Irrigation Division
Adava, Gajapati

DISTRICT TREASURY
1 0 NOV 2021
[illegible]

Addl. Treasury Officer
Dist. Treasury Nabarangpur

5326 .... ତା. 3-12-2021

ଟଙ୍କା 20/- ଅକ୍ଷରରେ..............

ନାମ D. P. Nayak, UHL

ଠିକଣା Tikiri

ଉଦ୍ଦେଶ୍ୟ..............................

ଅତିରିକ୍ତ ଟ୍ରେଜେରୀ ଅଧିକାରୀ
ଜିଲ୍ଲା ଟ୍ରେଜେରୀ, ନବରଙ୍ଗପୁର

Bhabani Patro
AHM - Environment
Utkal Alumina, Doraguda
Rayagada

entity to be notified by the State Government under mutually acceptable terms and conditions.

ଓଡ଼ିଶା ଓଡିଶା ODISHA 11AA 304991

17. The allocation of water will automatically lapse if the **Company** does not use the water for the purpose applied for within three years of allotment.

18. This agreement shall be valid for a period of **3 years** w.e.f. 18th day of January 2022 subject to renewal of the same by the Superintanding Engineer. For renewal of the agreement, tha concerned drawee has to apply minimum three months before the expiry of the agreement.

19. If the industry is found to be drawing water unauthorisedly before signing the agreement/Installation of flow-meter, the concerned Superintending Engineer, will charge a penal rata at six times the normal rate as provided in Schedule II & III.

20. Government shali be at liberty to revlew the watar allocation unilaterally in case of exigencies.

21. Tbe Superintanding Engineer or his authorized representative reserves the right to inspect all installations of drawal and disposal mechanism during and after construction incluading intake structure, flow meter and treatment plant.

Superintending Engineer
Harebhang Irrigation Division
Adava, Gujarat

DISTRICT TREASURY
10 NOV 2021
NABARANGPUR

Addl. Treasury Officer
District Treasury, Nabarangpur

5325 Dt. 2-12-2021

Bhagaban Pattnaik - Environment
Utkal Alumina Damguda
Rayagada

ଓଡ଼ିଶା ଓଡିଶା ODISHA AA 304990

11. The drawal mechanism for raw water and disposal system of effluent to be established by the industry without disturbing existing eco system and environmental set up.

12. The Rehabilitation and Resettlement Action Plan/ Welfare Action Plan, if so required will be prepared in conformity with the current Odisha Rehabilitation and Resettlement Policy and executed by the **Company** at its own cost under the supervision of the Water Resources Department and the Collector of the District.

13. **M/s Utkal Alumina International Limited** shall not claim as a matter of right to get the desired quantity of water during non-monsoon and lean period to meat their full industrial use and the **Company** has to make adequate storage facility in their own land for supply of water to their plant during such period.

14. The safety design of all the structures lies fully on the **Company.**

15. In case of any dispute /arising out of this agreement, the same shall be referred to Government and the decision of the Government in Water Resources Department shall be final.

16. Any surplus power from the Captive Power Plant shall be sold by **M/s Utkal Alumina International Limited to GRIDCO** or any other

Superintending Engineer
Harabhanga Irrigation Division
Aska, Ganjam

DISTRICT TREASURY
0 NOV 2021
NABARANGPUR
Addl. Treasury Officer
Dist. Treasury, Nabarangpur

5324 ... 3-12-2021

Dharam Patham - Environment
Utkal Alumina, Doraguda
Rayagada

ଓଡ଼ିଶା ओडिशा ODISHA AAA 204989

Engineer concerned in shape of Bank Draft or FDR duly discharged by the company as non-interest bearing security deposit and for nine months a Bank Guarantee duly pledged in favour of the concerned Superintending Engineer. Onus of maintaining the Bank Guarantee lies with the company.

8. In case of water supply for the M/s **Utkal Alumina International Limited** is to be met from a common source through a sharing mechanism, such common infrastructure for drawal of water will be constructed, maintained, and operated either by **IDCO** or Special Purpose Vehicle (SPV) after taking due clearance from **IDCO.** Water will be supplied to **M/s Utkal Alumina International Limited** by **IDCO/SPV** and they would also be liable for payment of water rate to the Government and will in turn have arrangements as similar therein as clauses (6) and (7) of this agreement.

9. **M/s Utkal Alumina International Limited** would compensate the loss of power generation if any due to drawal of water from **SAN RIVER (Upstream of Indmvati River) (Source)** at Kodipari village.

10. They will not disturb the normal flow of water so that riparian rights in the downstream will be affected and the **Company** shall have no claim on the account.

ODRAGUDA

Superintending Engineer
Harabhangi Irrigation Division
Adava, Gajapati

DISTRICT TREASURY
10 NOV 2021
NABARANGPUR

Addl. Treasury Officer
Dist. Treasury Nabarangpur

5323 ... ତା. 3-12-2021

[illegible] 20/... [illegible] ...

[illegible] ... D. P. Nayak, UAIL

[illegible] ... SSKI[illegible]

[illegible] ...

[illegible]

Bhoom Patro AGM - Environment
Utkal Alumina, Doraguda
Rayagada

ଓଡ଼ିଶା ଓଡିଶା ODISHA 11AA 304988

for the said period of three months or till the defect in the meter is removed or the meter is replaced, as the case may be whichever is earlier and where the licencee fails to bring the defect or non-functioning of the meter to the notice of the Superintending Engineer or fails to remove the defects in the meter or to replece the same as the case may be, within the stipulated period the agreement shall be liable to cancellation and thereafter the water supply shall be stopped.

5. The applicant shall construct fuli proof effluent discharge plant before commissioning of the Project. For proper test of such effluent there shall be computerised testing system and the applicant shall give details of effluent discharged in the natural source (In river and naila).

6. For construction of head works and control mechanism i.e., Intake well, pump house and other related facilities, **M/s Utkal Alumina International Limited** will get the land leased in their favour through **IDCO** as is done in respect of any other Government land required by the Industry. **IDCO** will make available lend on long term lease to **M/s Utkal Alumina International Limited** . The continuance of the lease agreement will be subject to the condition that the industry shall pay water charges as per prevailing water rate and all other dues of Government and IDCO from time to time.

7. **M/s Utkal Alumina International Limited,** would he required to pay three months advance water charges in favour of Superintending

Superintending Engineer
Harabhangi Irrigation Division

DISTRICT TREASURY
10 NOV 2021
NABARANGPUR

Addl. Treasury Officer
Dist. Treasury Nabarangpur

53 ନଂ........ତା. 3-12-2021

ଟଙ୍କା ୨୦/- ଅକ୍ଷରରେ.........

ନାମ...A. P. Nayak...UAIL

ଠିକଣା...T.Rampur...........

ଉଦ୍ଦେଶ୍ୟ...........

ଷ୍ଟାମ୍ପ ଭେଣ୍ଡର

Bhawani Patnaik - Environment
Utkal Alumina, Doraguda
Rayagada

be approved by the Department of Water Resources before drawal of water.

ଓଡ଼ିଶା ଓଡ଼ିଶା ODISHA 11AA 304993

27. License fees sball be charged and collected at the rate as specified in the SCHEDULE-Iii per Unit or quantity of water actually drawn or allocated wbichever is higher and shall be enhanced at the rate of ten percent (10%) per annum with effect from 1st day of April.

28. The Government in department of water resources reserves the right to totally cancel/ suitable modify / or to substitute further any additional clauses In the agreement in the best interest of the Government or public and the **Company M/s Utkal Alumina international Limited** has to bear with this strictly.

In witness whereof the parties hereto have put their hands and seals the day and year first above written.

In the presence of Witnesses:

1. Bhabani Patra
AGM - Environment
Utkal Alumina, Rayagada

2. Alekh Rout
AEE, Estimator
H.I. Div. Adava

UTKAL ALUMINA INTERNATIONAL LTD. * BORAGUDA

Signature of applicant

Superintending Engineer
Hirakud Irrigation Division
Adava, Gajapati

SIGNATURE OF THE SUPERINTENDING ENGINEER

DISTRICT TREASURY
1 8 NOV 2021
NABARANGPUR

Addl. Treasury Officer
Dist. Treasury Nabarangpur

5327 ତା. 3-12-2021

ଟଙ୍କା.20/- ଆଦାୟ ହୋଇଛି

ନାମ.....P. Nayak, UHL

ଦିଆଯାଇଛି.....TPKNP

ଅନ୍ୟାନ୍ୟ.....

ଦସ୍ତଖତ କରିବା ଅଧିକାରୀ
ଆଦାୟ ଦେଖିବା ଅଧିକାରୀଙ୍କ

Bhagaban Patra
Asst- Environmental
Utkal Alumina Internationa
Rayagada

ANNEXURE: 11

Consent to Operate

BY REGD. POST WITH AD

STATE POLLUTION CONTROL BOARD, ODISHA

A/118, Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012
Phone-2551909, Fax: 2562822, 2560955

CONSENT ORDER

No. 19935 / IND-I-CON- 5450 Dt. 14.12.2021

CONSENT ORDER NO. 2765

Sub: **Consent for discharge of sewage and trade effluent under section 25/26 of Water (PCP) Act, 1974 and for existing / new operation of the piant under scction 21 of Air (PCP) Act, 1981.**

Ref: Your online application No. **2354845 Dated 20.12.2018 and 3754528 dated 14.10.2021, Letter No. UAIL-Mines/BBM/117/2021 dated 25.11.2021 & Online reply dated 24.11.2021**

Consent to operate is hereby granted under section 25/26 of Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of Air (Prevention & Control of Poilution) Act, 1981 and rules framed thereunder to

Name of the Industry: **BAPHLIMALI BAUXITE MINES OF M/S. UTKAL ALUMINA INTERNATIONAL LTD.**

Name of the Occupier & Designation: **SRI SURYAKANTA MISHRA, DIRECTOR.**

Address: **VILL: PAIKKUPAKHAL, PO: MAIKANCH, DIST: RAYAGADA**

This consent order is valid for the period **up to 31.03.2023 from the date of issue of this order.**

This consent order supersedes the earlier consent orders issued vide letter No. 3489 dated 19.03.2020.

Details of Products Manufactured

Sl. No	Product	Quantity
01.	***Bauxite***	*i. 6.03 MTPA [For 2021-22]* *ii. 7.0 MTPA [For 2022-23]*

This consent order is valid for the specified outlets, discharge quantity and quality, specified chimney/stack, emission quantity and quality of emissions as specified beiow. This consent is granted subject to the general and speciai conditions stipulated therein.

A. Discharge permitted through the following outlet subject to the standard

Outlet No.	Description of outlet	Point of discharge	Quantity of discharge	Pre-scribed Standard				
				pH	TSS (mg/l)	BOD (mg/l)	Fecal Coliform (MPN/100ml)	Oil & Grease (mg/l)
01	Outlet of STP (Domestic effluent)	Used for plantation	75 KLD	6.5-9.0	<100	30	<1000	---
02	Mine drainage water/ surface runoff/ other wastewater	On land/ inland surface water body	1027 KL/Hr	5.5-9.0	100	--	--	10

B. Emission permitted through the following stack subject to the prescribed standard

Chimney Stack No.	Description of Stack	Stack height (m)	Quantity of emission	Prescribed Standard			
				PM (mg/Nm^3)	SO_2	NO_x	

C. Disposal of solid waste permitted in the following manner

Sl. No.	Type of Solid waste	Quantity generated (TPD)	Quantity to be reused on site(TPD)	Quantity to be reused off site(TPD)	Quantity disposed off (TPD)	Description of disposal site.
01	Top soil & over burden	As per approved mining plan	--	--	--	As per approved mining plan

D. GENERAL CONDITIONS FOR ALL UNITS

1. The consent is given by the Board in consideration of the particulars given in the application. Any change or alternation or deviation made in actual practice from the particulars furnished in the application will also be the ground liable for review/varietion/revocation of the consent order under section 27 of the Act of Water (Prevention & Control of Pollution) Act, 1974 and section 21 of Air (Prevontion & Control of Pollution) Act, 1981 and to make such variations as deemed fit for the purpose of the Acts.

2. The industry would immediately submit revised application for consent to operate to this Board in the event of any change in the quantity and quality of raw material / and products / manufacturing process or quantity /quality of the effluent rato of emission / air pollution control equipment / system etc.

3. The applicant shall not change or alter either the quality or quantity or the rate of discharge or temperature or the route of discharge without the previous written permission of the Board.

4. The application shall comply with and carry out the directives/orders issued by the Board in this consent order and at all subsequent times without any negligence on his part. . in case of non-compliance of any order/directives issued at any time and/or violation of the terms and conditions of this consent order, the applicant shall be liable for legal action as per the provisions of the Law/Act.

5. The applicant shall make an application for grant of fresh consent at least 90 days before the date of expiry of this consent order.

6. The issuance of this consent does not convey any property right in either real or personal property or any exclusive privileges nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Central, State laws or regulation.

7. This consent does not authorize or approve the construction of any physical structure or facilities or the undertaking of any work in any natural water course.

6. The applicant shall display this consent granted to him in a prominent place for perusal of the public and inspecting officers of this Board.

9. An inspection book shall be opened and made available to Board's Officers during the visit to the factory.

10. The applicant shall furnish to the visiting officer of the Board any information regarding the construction, installation or operation of the plant or of effluent treatment system / air pollution control system / stack monitoring system any other particulars as may be pertinent to preventing and controlling pollution of Water / Air.

11. Meters must be affixed at the entrance of the water supply connection so that such meters are easily accessible for inspection and maintenance and for other purposes of the Act provided that the place where it is affixed shall in no case be at a point before which water has been taped by the consumer for utilization for any purposes whatsoever.

12. Separate meters with necessary pipe-line for assessing the quantity of water used for each of the purposes mentioned below:

    a) industrial cooling, spraying in mine pits or boiler feed,

    b) Domestic purpose

    c) Process

13. The applicant shall display suitable caution board at the iace where the effluent is entering into any water-body or any other place to be indicated by the Board, indicating therein that the area into which the effluents are being discharged is not fit for the domestic use/bathing.

14. Storm water shall not be allowed to mix with the trade and/or domestic effluent on the upstream of the terminal manholes where the flow measuring devices will be installed.

15. The applicant shall maintain good house-keeping both within the factory and the premises. All pipes, valves, sewers and drains shall be leak-proof. Floor washing shall be admitted into the effluent collection system only and shall not be allowed to find their way in storm drains or open areas.

16. The applicant shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems install or used by him to achieve with the term(s) and conditions of the consent.

17. Care should be taken to keep the anaerobic lagoons, if any, biologically active and not utilized as mere stagnation ponds. The anaerobic lagoons should be fed with the required nutrients for effective digestion. Lagoons should be constructed with sides and bottom made impervious.

18. The utilization of treated effluent on factory's own land, if any, should be completed and there should be no possibility of the effluent gaining access into any drainage channel or other water courses either directly or by overflow.

19. The effluent disposal on land, if any, should be done without creating any nuisance to the surroundings or inundation of the lands at any time.

20. If at any time the disposal of treated effluent on land becomes incomplete or unsatisfactory or create any problem or becomes a matter of dispute, the industry must adopt alternate satisfactory treatment and disposal measures.

21. The sludge from treatment units shall be dried in sludge drying beds and the drained liquid shall be taken to equalization tank.

22. The effluent treatment units and disposal measures shall become operative at the time of commencement of production.

23. The applicant shall provide port holes for sampling the emissions and access platform for carrying out stack sampling and provide electrical outlet points and other arrangements for chimneys/stacks and other sources of emissions so as to collect samples of emission by the Board or the applicant at any time in accordance with the provision of the Act or Rules made therein.

24. The applicant shall provide all facilities and render required assistance to the Board staff for collection of samples / stack monitoring / inspection.

25. The applicant shall not change or alter either the quality or quantity or rate of emission or install, replace or alter the air pollution control equipment or change the raw material or manufacturing process resulting in any change in quality and/or quantity of emissions, without the previous written permission of the Board.

26. No control equipments or chimney shall be altered or replaced or as the case may be erected or re-erected except with the previous approval of the Board.

27. The liquid effluent arising out of the operation of the air pollutlcn control equipment shall be treated in the manner and to icn of standards prescribed by the Board in accordance with the provisions of Water (Prevention and Controi of Poiiution) Act, 1974 (as amended).

28. Tho stack monitoring system emploved by the appiicent shall be opened to inspectlcn to this Board at any time.

29. There shall not be any fugitive er episcdai discharge from the pramises.

30. In case of such episedal discharge/emissions the industry shall take immediate action to bring down the emissicn within the limits presoribed by the Bcard in conditions/stop the cperaticn of the plant. Repcrt of such accidental discharge /emission shaii be brought to the notice of the Board within 24 hcurs of occurrence.

31. The applicant shall keep the prernises of the industrial piant and air pcliution control equipments clean and make all hoods, pipes, vaives, stacks/chimneys leak proof. The air poilutlcn ccntroi equipments, locatlcn, inspection chambers, sampiing port hoies shall be made easiiy accessibie at all times.

32. Any upset condition in any cf the piant/piants of the factory which is likeiy to result in increased effluent discharge/emission of air pcliutants and / cr resuit in violation of the standards mentioned abcve shali be raported to the Headquarters and Regionai Office cf the Board by fax / speed post within 24 hours of its occurenco.

33. The industry has to ensure that minimum three variaties of trees are pianted at the density of not less than 1000 trees per acre. The trees may be planted along boundaries of the industries or industriai premises. This piantation is stipuiated cver and above the bulk plantation of trees in that area.

34. The soiid waste such as sweeping, wastage packages, empty containers residues, sludge inctuding that frcm air poiiution control equipments coiiected within the premises of the industrial plants shaii be dispcsed off soientificaily to the satisfaction cf the Board, sc as no to cause fugitive emission, dust problems through leaching etc., of any kind.

35. All sciid wastes arising in the prernises shall be properly ciassified and dispcsed off to the satisfaction of the Board by :
   i) Land till in case of inert material, care being taken to ensure that the materiai does not give rise to leachate which may percoiate into ground water or carried away with storm run-cff.
   ii) Controiied incineration, wheraver possible in case of combustible organic material.
   iii) Cornposting, in case cf bio-degradabie material.

36. Any toxic material shall be detoxicated if possibie, otherwise be seaied in steel drums and buried in protected areas after obtaining approvai of this Board in writing. The datoxication or sealing and burying shaii be cerried out in the presence of Bcard's authorized perscns oniy. Letter of authcrization shall be obtained for handiing and disposal of hazardcus wastes.

37. if due tc any technoiogicai improvement or otherwise this Board is cf opinicn that aii or any of the conditions referred to above requires variation (including the change of any control equipment either in whcie cr in part) this Board shaii after giving the appiicant an opportunity of being heard, vary aii or any of such condition and thereupon the applicant shali be bound to comply with the conditicns so varied.

38. The appiicant, his/heirs/legai representatives or essignees shall have nc claim whatsoever to the condition or renewal of this consent after the expiry period of this consent.

39. The Bcard reserves the right tc review, irnpese additionai conditicns cr cendition, revoke change or alter the terms and ccnditions of this consent.

40 Nctwithstanding anything contained in this ccnditionai letter of censent, the Board hereby reserves to it the right and pcwer under section 27(2) of the Water (Prevention & Ccntrel of Pollution) Act, 1974 to review any and/or all the conditions imposed herein above and to rnake such variations as deemed fit fcr the purpose cf the Act by the Board.

41. The conditions imposed as abcve shaii continue to be in force until revoked under section 27(2) cf the Water (Prevention & Contrcl of Pciiution) Act, 1974 and section 21 A of Air (Prevention & Control of Pollution) Act, 1981.

42. in case the consent fee is revised upward during this period, the industry shali pay the differential fees to the Bcard (fcr the remaining years) to keep the consent order in force. if they fail tc pay the amount within the period stipuiated by the Bcard the consent order will be revoked without prior notice.

43. The Bcard reserves the right to revoke/refuse censent to operate at any time during period fcr which consent is granted in case any violation is observed and to modify/ stipulate additicnal conditions as deemed appropriate.

GENERAL CONDITIONS FOR UNITS WITH INVESTMENT OF MORE THAN Rs 50 CRORES, AND 17 CATEGORIES OF HIGHLY POLLUTING INDUSTRIES (RED A).

1. The applicant shaii anaiyse the emissions every month for the parameters indicated in TABLE .B & C as mentioned in this order and shali furnish the report thereof to the Board by the 10th of the succeeding rnonth.

2. The appiicant shall provide and maintain at his own cost three ambient air quality rnonitcring stations for monitoring Suspended Particulate Matter, Suiphor Dioxide, Oxides of Nitrogen, Hydro-Carbon, Carbon-Monixide and rnonitcr the same once in a day/week/fortnight/month. The data coiiected shall be maintained in a register and a rncnthly extract be furnished to the Board.

3. The appiicant shall provide and maintain at his own cost a rneteorologicei station to ceilect the data on wind velocity, direction, temperature, humidity, rainfall, etc. and tho daily reading shall be recerded and the extract sent tc tho Board cnce in a month.

4. The applicant shaii forward the foiiowing infcrmation to the Mernber Secretary, State Poiiution Controi Board, Odisha, Bhubaneswar regularly.
   a. Report of anaiysis of stack rnonitoring, ambient air quality monitoring meteorological data as required every month.
   b. Progress on planting of trees querterly.

5. The applicant shall instaii rnechanical cemposite sampling equipment and continucus flow measuring / recording devices on the effluent drains of trade as weli as dcmestic effiuent. A record of daily discharge shall be maintained.

8. The following information shall be forwarded to the Member Secretary on or before 10th of every month.

   a. Performance / progress of the treatment plant.
   b. Monthly statement of daily discharge of domestic and/or trade effluent.

7. **Non-compliance with effluent limitations**

a) if for any reason the applicant does not comply with or is unable to comply with any effluent limitations specified in this consent, the applicant shall immediately notify the consent issuing authority by telephone and provide the consent issuing authority with the following information in writing within 5 days of such notification.

   i) Causes of non-compliance

   i) A description of the non-compliance discharge including its impact on the receiving waters.

   ii) Anticipated time of continuance of non-compliance if expected to continue or if such condition has been corrected the duration or period of non-compliance.

   iii) Steps taken by the applicant to reduce and eliminate the non-complying discharge and

   iv) Steps to be taken by the applicant too prevent the condition of non-compliance.

b) The applicant shall take all reasonable steps to minimize any adverse impact to natural waters resulting from non-compliance with any effluent limitation specified in this consent including such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge.

c) Nothing in this consent shall be construed to relieve the applicant from civil or criminal penalties for non-compliance whether or not such non-compliance is due to factors beyond his control, such as break-down, electric failure, accident or natural disaster.

8. The applicant shall at his own cost get the effluent samples collected both before and after treatment and get them analysed at an approval laboratory every month for the parameters indicated in Part-D and shall submit in duplicate the report thereof to the Board.

9. The addition of various treatment chemicals should be done only with mechanical dosers and proper equipment for regulation of correct dosages determined daily and for proper uniform feeding. Crude practices such as dumping of chemicals in drains or sumps or trickling of acids or alkalies arbitrarily and utilizing poles for stirring etc. should not be resorted to.

10. In the disposal of treated effluent on land for irrigation, the industry shall keep in view of the need for;

    Rotation of crops

    Change of point of application of effluent on land

    A portion of land kept fallow.

11. The adoption of these would avoid soil becoming sick or state, the industry may ensure this in consultation with the Agriculture Department.

12. It is the sole responsibility of the industry to ensure that there are no complaints at any time from the royats in the surrounding areas as a result of discharge of sewage or trade effluent if any.

13. Proper housekeeping shall be maintained by a dedicated team.

14. The industry must constitute a team of responsible and technically qualified personnel who will ensure continuous operation of all pollution control devices round the clock (including night hours) and should be in a position to explain the status of operation of the pollution control measures to the inspecting officers of the Board at any point of time. The name of these persons with their contact telephone numbers shall be intimated to the concerned. Regional Officer and Head Office of the Board and in case of any change in the team it shall be intimated to the Board immediately.

E. SPECIAL CONDITIONS:

1. Mining operation is subject to avaiiability of ali other statutory clearances.
2. The quantity of production shaii be determined on monthiy pro-rata basis from the date of issue of this order. if the date of issue is before 15th of the month, then the entire month will be considered for caicuiation, otherwise the quantity shall be determined from the next month on pro-rata basis.
3. Drills shall either be operated with dust extractors or equipped with water injection system to minimize dust generation in the work environment.
4. Controlled blasting shaii be practiced to minimize generation of dust and fly rocks. No biasting shaii be carried out after the sunset.
5. Reguiar water sprinkiing shali be carried out at different sources of generation of fugitive dust. Water sprinkling shall be carried out on haui roads at desired interval and should always be in wet conditlon. Haulage roads shall be devoid of ruts and potholes and shaii be maintained to avoid generation of dust during movement of vehicles.
6. The mine shall submit an action plan for concreting and provision of fixed water sprinkiers alongside entire iength of permanent haul road, by 31.12.2021.
7. Minerai handiing piant (orusher & screening piant) shall be provided with adequate number of high efficiency dust extraction system or dust suppression system preferably dry fog system. Loading the unloading areas including all the transfer points shaii also have efficient dust suppression arrangements. These shaii be maintained and operated.
8. More fog canons shall be depioyed at ioad & unloading areas, If required, to suppress fugitive dust.
9. Fixed type water sprinkiers shaii be provided at ore stockpiie areas and aiongside entire haui roads.
10. Transportation of the ore from the mine pit to the Refinery unit shall be done through ciosed conveyer system instead of transportation through roads.
11. Three continuous reai time Ambient Air Quaiity Monitoring Stations shall be estabiished in core zone & buffer zone with data transfer facility to SPCB server and

location of these stations shall be decided based on the metrological data, topographical features and environmentally and ecologically sensitive targets in consultation with the Regional Officer, State Pollution Control Board.

12. The CAAQMS shall be properly maintained and calibrated from time to time to ensure that spurious data are not transmitted to the SPCB server. A compliance to this effect shall be submitted by 15.12.2021.

13. Ambient air quality of the mine shall meet the standards prescribed for industrial area.

14. The Mine drainage water if any, shall be adequately treated before disposal to outside environment. The discharge quality shall meet the prescribed standard as stated in Part-A of the consent order. No untreated wastewater generated from the mine shall be discharged to outside under any circumstances.

15. Check dams and check weirs shall be constructed at appropriate places of the mine lease area to prevent direct flow of runoff to nearby water bodies. The surface run off water from the existing runoff management system shall meet the prescribed standards as stated in of Part A of the consent order.

16. Retention wall shall be constructed at the toe of temporary topsoil dump and OB dump. Garland drain shall be constructed around topsoil dumps & over burden dumps terminating at settling pit to prevent runoff of water and flow of sediments directly into nearby water bodies. No untreated surface runoff shall be released to nearby water body. Garland drain and sedimentation pit shall be desilted as and when required and after monsoon.

17. Domestic effluents shall be treated in a sewage treatment plant (STP) and or shall be discharged to soak pit via septic tank constructed as BIS specification. The treated wastewater quality of STP shall remain within the following standards and shall be used for plantation:

i.	pH	-	6.5 -9.0
ii.	TSS	-	<100 mg/l
iii.	BOD	-	30 mg/l
iv.	Fecal Coliform	-	<1000 MPN/100 ml.

18. ETP shall be operated at all time for workshop and wastewater generated during mining operation. The quality of the treated wastewater shall conform to the following standard and shall be completely reused for vehicle and floor washing:

pH	-	6.5 -8.5
TSS	-	50 mg/l
Oil & grease	-	10 mg/l

19. Appropriate mitigative measures shall be taken to prevent pollution of the nearby water bodies.

20. Regular monitoring of water quality of upstream and downstream of surface water bodies existed if any within 5 Km shall be carried out once in every month and record shall be maintained and submitted to the State Pollution Control Board once in every year. Monitoring shall be carried out through MoEF & CC accredited laboratory.

21. Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells. The monitoring should be done four times a year in pre-monsoon (April/May), monsoon (August), post-monsoon (November) and winter (January) seasons. Data thus collected should be submitted to the Board quarterly.

22. Top soil and OB shall be stacked properly with adequate measures at earmarked sites. The top soil and OB should be used for reclamation and rehabilitation of the mined out areas.

23. The reclamation programme for the mined out area through concurrent backfilling shall be done followed by plantation. Monitoring and management or rehabilitated areas shall continue until the vegetation becomes self-sustaining.

24. The mine shall take necessary action for compliance with the air and water quality standards as stipulated In this order.

25. Adequate measures shall be taken for control of noise levels in the work environment of mine area so that noise levels at the boundary line of mining lease area shall not exceed 75 dB(A) during day time (6.00 AM to 9.00 PM) and 70 dB(A) during night time (9.00 PM to 6 AM).

26. Adequate noise barriers shall be provided surrounding the crushing and screening plants to control noise pollution and avoid impact on wildlife due to operation of crushing and screening plants during night hours.
27. Online noise monitoring system shall be installed to monitor noise level during night hours.
28. Protective barriers shall be provided for the lights to prevent illumination towards the forest area during night hours.
29. IP cameras shall be installed at major dust prone areas of the mine such as mine quarry, mineral stockyards, haul roads, transportation roads, mineral handling plants etc. and they shall be connected SPCB server. The IP camera shall be for better visualization in consultation with the Regional Officer.
30. Plantation of trees shall be undertaken in the colony/ township, over top soil dumps, OB dumps, backfilling area, along the side of haul road and in other areas of the mines not being utilized for mining activities. The mine shall take up avenue plantation and plantation in nearby village areas in consultation with DFO/Horticulture Department. The annual plantation details shall be submitted to the Board by 30th April every year.
31. A copy of the annual return (annual return submitted to IBM, Govt. of India/ Directorate of Mines, Govt. of Odisha) shall be submitted to this Board every year.
32. The environmental statement report for the financial year ending 31st March shall be submitted to the Board in form -V on or before 30th September every year.

MEMBER SECRETARY
STATE POLLUTION CONTROL BOARD, ODISHA

To,

SRI SURYAKANTA MISHRA, DIRECTOR
BAPHLIMALI BAUXITE MINES OF
M/S. UTKAL ALUMINA INTERNATIONAL LIMITED,
AT: DORAGUDA, PO: KUCHEIPADAR,
DIST: RAYAGADA, PIN-765 015

Memo No._____/Dated _____/.

Copy forwarded to :

i) Regional Officer, State Pollution Control Board, **Rayagada,**
ii) District Collector, **Rayagada,**
iii) Director of Mines, Govt. of Odisha, Bhubaneswar,
iv) Director, Environment -cum-Special Secretary, F & E. Deptt. Govt. of Odisha, Bhubaneswar.
v) D.F.O **Rayagada,**
vi) Deputy Director of Mines, **Koraput**
vii) Chief Env. Engineer(C) (Hazardous waste management cell)
viii) Sr. Env. Scientist, Central Lab. SPCB, Bhubaneswar
ix) Consent Register

CHIEF ENV. ENGINEER (M)
STATE POLLUTION CONTROL BOARD, ODISHA

GENERAL STANDARDS FOR DISCHARGE OF ENVIRONMENTAL POLLUTANTS

GENERAL STANDARDS FOR DISCHARGE OF ENVIRONMENTAL POLLUTANTS PART –A : EFFLUENTS

Sl.No.	Parameters	Standards			
		Inland surface	Public sewers	Land for irrigation	Marine Costal Areas
		(a)	(b)	(c)	(d)
1.	Colour & odour	Colourless/Odourless as far as practibie	------	See 6 of Annex-1	See 6 of Annex-1
2.	Suspended Soiids (mg/l)	100	600	200	For prccess wastewater – 100 b. For cooling water effluent 10% above total suspended matter of influent.
3.	Particular size of SS	Shall pass 850	-----	------	
5.	pH value	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0
6.	Temperature	Shali not exceed 5^0C above the receiving water temperature	-------	--------	Shall not exceed 5^0C above the receiving water temperature
7.	Oil & Grease mg/l max.	10	20	10	20
8.	Totai residual chlorine	1.0	----	------	1.0
9.	Ammonical nitrogen (as N) mg/i max.	50	50	------	50
10.	Total Kajeldahl nitrogen (as NH_3) mg/1 max.	100	----	------	100
11.	Free ammonia (as NH_3) mg/1 max.	5.0	----	------	5.0
12.	Biochemical Oxygen Demand (5 days at (20^0C) mg/1 max.	30	350	100	100
13.	Chemical Oxygen Demand, mg/1 max.	250	----	------	250
14.	Arsenio (as As) mg/1 max.	0.2	0.2	0.2	0.2
15.	Mercury (as Hg) mg/1 max.	0.01	0.01	------	0.001
16.	Lead (as pb) mg/1 max.	01.	1.0	------	2.0

17.	Cardmium (as Cd) mg/1 max.	2.0	1.0	------	2.0
18.	Hexavalent Chromium (as Cr + 6) mg/l max.	0.1	2.0	--------	1.0
19.	Tctal Chromium (as Cr) mg/l max.	2.0	2.0	---------	2.0
20.	Copper (as Cu) mg/i max.	3.0	3.0	---------	3.0
21.	Zinc (as Zn) mg/i max.	5.0	15	---------	15
22.	Selenium (as Sc) mg/l max.	0.05	0.05	---------	0.05
23.	Nickel (as Nii) mg/l max.	3.0	3.0	---------	5.0
24.	Cyanide (as CN) mg/l max.	0.2	2.0	0.2	0.02
25.	Fluoride (as F) mg/l max.	2.0	15	---------	15
26.	Dissolved Phosphates (as P) mg/l max.	5.0	-------	---------	--------
27.	Sulphide (as S) mg/i max.	2.0	--------	---------	5.0
28.	Phennolic compounds as (C_6H_5OH) mg/l max.	1.0	5.0	---------	5.0
29.	Radioactive materials a. Aipha emitter micro curle/ml. b. Beta emitter micro curle/mi.	10^7 10^6	10^7 10^6	10^8 10^7	10^7 10^6
30.	Bio-assay test	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hcurs in 100% effluent	90% survival of fish after 96 hours in 100% effiuent
31	Manganese (as Mn)	2 mg/l	2 mg/l	---------	2 mg/l
32.	Iron (Fe)	3 mg/l	3 mg/l	---------	3 mg/l
33.	Vanadium (as V)	0.2 mg/l	0.2 mg/l	---------	0.2 mg/i
34.	Nitrate Nitrogen	10 mg/i	--------	---------	20 mg/l

NATIONAL AMBIENT AIR QUALITY STANDARDS

Sl. No.	Pollutants	Time Weighed Average	Concentrate of Ambient Air		
			Industrial Residential, Rurai and other Area	Ecologically Sensitive Area (notified by Central Government)	Methods of Measurement
(1)	(2)	(3)	(4)	(5)	(6)
1.	Sulphur Dioxide (SO_2), $\mu g/m^3$	Annual *	50	20	-Improved west and Gaeke
		24 Hours **	80	80	- Ultraviolet fluorescence
2.	Nitrogen Dioxide (NO_2), $\mu g/m^3$	Annual *	40	30	- Modified Jacob & Hochheiser (Na-Arsenite)
		24 Hours **	80	80	- Chemiluminescence
3.	Particulate Matter (size less than 10μm) or $PM_{10}\mu g/m^3$	Annual *	60	60	-Gravimetric - TOEM
		24 Hours **	100	100	- Beta Attenuation
4.	Particulate Matter (size less than 2.5μm) or $PM_{2.5}$ $\mu g/m^3$	Annual *	40	40	-Gravimetric - TOEM
		24 Hours **	60	60	- Beta Attenuation
5.	Ozone (O_3) $\mu g/m^3$	8 Hours **	100	100	- UV Photometric - Chemiluminescence
		1 Hours **	180	180	- Chemical Method
6.	Lead (Pb) $\mu g/m^3$	Annual *	0.50	0.50	-AAS/ICP method after sampiing on EMP 2000 or equivalent fiiter paper. - ED-XRF using Teflon filter
		24 Hours **	1.0	1.0	
7.	Carbon Monoxide (CO) mg/m^3	8 Hours **	02	02	- Non Dlspersive Infra Red (NDIR) Spectroscopy
		1 Hours **	04	04	
8.	Ammonia (NH_3) $\mu g/m^3$	Annual*	100	100	-Chemiluminescence - indophenol Biue Method
		24 Hours**	400	400	
9.	Benzene (C_6H_6) $\mu g/m^3$	Annul *	05	05	-Gas Chromatography based continuous analyzer - Adsorption and Desorption followed by GC analysis
10.	Benzo (a) Pyrene (BaP)-Particulate phase only, ng/m^3	Annuai*	01	01	-Solvent extraction foilowed by HPLC/GC analysis
11.	Arsenic (As), ng/m^3	Annuai*	06	06	-AAS/ICP method after sampiing on EPM 2000 or equivalent filter paper
12.	Nickel (Ni),ng/m^3	Annuai*	20	20	-AAS/ICP methed after sampling on EPM 2000 or equivalent filter paper

** Annual arithmetic mean of minimum I04 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.

** 24 hourly or 08 hourly or 0I hourly monitored values, as applicable, shall be complied with 98% of the time in a year, 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

Annexure-12

ACTION PLAN TAKEN FOR IMPLEMENTATION OF SITE SPECIFIC WILDLIFE MANAGEMENT PLAN					
Sl. No.	Item	Unit	Total	Rate (Rs)	Total (Rs)
1	**Soil & Moisture Conservation Measures**				
	a) Construction of loose boulder Check dam across the seasonal nala, drainage line and semi perennial nalla occurring along the [illegible] area of the mine				
	1 mtr span	Nos	[illegible]	[illegible]	[illegible]
	2 mtr span	Nos	40	7113	[illegible]
	3 mtr span	Nos	25	14512	[illegible]
				(A) Total	[illegible]
	b) Contour Bunding	LS			[illegible]
				(B) Total	[illegible]
2	**Fire Protection Measures**				
	Provision for a fire watch tower on North-west side of the lease near the boundary	LS	1		500000
				(C) Total	500000
	Deployment of a fire fighting squad consisting of 5 members with provision of vehicle etc. as per approved cost norm of CWLW, during the five fire months @ 1.50 lakh per annum: 1.50 lakh x 10 years	Year	10	150000	1500000
				(D) Total	1500000
3	**Prevention of fall & entry to mining pits by wild animals.**				
	Construction of [illegible] [illegible] @ 4.00 lacs per km where necessary along the boundary for 10km	Km	10	400000	4000000
				(E) Total	4000000
4	**Development of Green Belt.** Green Belt through following method in safety zone of 7.5 mtr width over a length of [illegible] inside the non-forest land				
	ANR practices with Gap Plantation @ 400 plants per ha	Ha	8.25	[illegible]	120150
	Block Plantation @ 1600 plants per ha	Ha	8.25	[illegible]	2362973
				(F) Total	2483123
5	Cost of one [illegible] Model [illegible] vehicle to be handed over to the DFO, Keonjhar	No	1	1500000	[illegible]
				(G) Total	[illegible]
6	**Interventions for regulating impact of mining activities.** Interventions for regulating light, water, air, noise pollution, dump stabilization & waste management will be carried out at the project cost as per the approved environmental management plan.	Implementation at the project cost according to the approved EMP.			
				Grand Total (A+B+C+D+E+F+G)	13471563

OFFICE OF THE PRINCIPAL CHIEF CONSERVATOR OF FORESTS
(WILDLIFE) & CHIEF WILDLIFE WARDEN, ODISHA

BDA APARTMENT, 5th FLOOR, PRAKRUTI BHAWAN, NILAKANTHA NAGAR, BBSR-12
Ph. No. 0674-2564587, FAX No. 0674-2565062
[illegible]

No. 5648 /1WL-SSP-60/2016
Dated, Bhubaneswar, the 27 Jun, 2017

To

The Asst. Vice President, Mines,
M/s Utkal Alumina International Ltd.,
J-6, Jayadev Vihar,
Bhubaneswar - 751013

Sub: ***Proposal for diversion of 233.343 ha. of DLC forest land including safety zone of 10.283 ha in village Paik-Kupakhal, Dhuturapas and Karanj-Kupakhal under Kasipur Tahsil of Rayagada District within total mining lease area of 1388.74 ha for bauxite mining in their Baphilimali Bauxite Mines in Kalahandi and Rayagada Districts of Odisha by M/s Utkal Alumina International Ltd. - Approval of Site Specific Wildlife Conservation Plan***

Sir,

It is to inform you that you have to implement a Site Specific Wildlife Conservation Plan for your Baphilimali Bauxite Mines in Kalahandi and Rayagada Districts to address the impact on wildlife within the surrounding area and the recommendation of State Govt. for implementation of such a plan while forwarding the above diversion proposal to Govt. of India, MoEF&CC vide their letter No.12569/F&E dt 11.07.2016.

2. The Site Specific Wildlife Conservation Plan in respect of the above project has been approved by the undersigned with financial forecast of **₹670.451 lakh** (Rupees six crore seventy lakh forty-five thousand one hundred) only for the following activities.

a.	For activities to be implemented by the user agency in project area	₹134.736 lakh
b.	For activities to be implemented by DFO, Rayagada Division in project impact area	₹226.622 lakh
c.	For activities to be implemented by DFO, Kalahandi South Division in project impact area	₹309.093 lakh
	Grand Total:	**₹670.451 lakh**

ANNEXURE: 14

Submission of Digital processing of Mine lease area

Report

ADITYA BIRLA

UTKAL ALUMINA

UAIL-MINES/ENV/150/2020

15th September 2020

To

The Addl. Principal Chief Conservator of Forest
Ministry of Environment Forests & Climate Changes
Govt. of India
Eastern Regional office, A/3, Chandrasekharpur
Bhubaneswar – 751023

Sub: Digital processing of the entire lease area using remote sensing technique for monitoring land use pattern with respect to our Baphlimali Bauxite Mine of M/s Utkal Alumina International Limited, Rayagada, Odisha with production capacity of 8.5 MTPA.

Ref: Environment Clearance No. J-11015/650/2007-IA.II (M) dated 19.02.2009.

Dear Sir,

As a part of the compliance to the condition no. XXXII of the EC granted with respect to our 8.5 MTPA Baphlimali Bauxite Mine of M/s Utkal Alumina International Ltd. vide Ministry's letter no. J-11015/650/2007-IA.II (M) dated 19.02.2009, we are enclosing herewith the land use report and the land use map of lease area for your kind perusal.

Thanking you,

Yours faithfully,
For Utkal Alumina International Limited

MKJ JMS
15/09/2020

Mukesh Kumar Jha
Head- Mines
Baphlimali Bauxite Mine

Encl: As above

Copy to:

1. The Member Secretary, State Pollution Control Board, Paribesh Bhawan A/118 Nilakantha Nagar Unit-VIII, Bhubaneswar -751012.
2. Regional Office, OSPCB, Rayagada.
3. roez.bsr-mef@nic.in. mef.or@nic.in. paribesh1@ospcboard.org,rospcb.rayagada@ospcboard.org

ANNEXURE: 15

Trade wise Noise Monitoring Report

Test Report No.: Envlab/21/R-6679

Date: 02.11.2021

TEST REPORT

Customer Name & Address : Baphlimali Miues, M/s Utkal Alumina International Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Code	N1 – N7	Sampled By	VCSPL'S Representative
Sample Name	Noise	Sampling Procedure	1S 9989:2020
Sample Souree	Noise Level (Core Zone)	Sample Received On	NA
Sample Coudition	NA	Test Completed On	NA

SL. No	Sampling Loeation	Date of Monitoring	Noise level dB (A) Leq, day time (6.00am to 10.00pm)	Noise level dB (A) Leq, uight time (10.00pm to 06.00am)
01	Drilling Operation	12.10.2021	74.7	59.2
02	Loader Operatiou	05.10.2021	70.4	57.7
03	Shovel Operation	14.10.2021	71.7	57.1
04	Dnmper Operation	19.10.2021	73.5	55.4
05	Crnsher Operation	07.10.2021	72.6	50.8
06	Workshop Area	21.10.2021	67.8	51.6
07	Middle of Qnarry	25.10.2021	71.3	52.3
Standard as per Noise Rule 2000				
Industrial Area			75	70
Any feature observed duriug determination			Nil	

Visiontek Consultancy Services Pvt. Ltd. BBSR
Reviewed by

Visiontek Consultancy Services Pvt. Ltd. BBSR
Approved by

Test Report No.: Envlab/21/R-6680

Date : 02.11.2021

TEST REPORT

Customer Name & Address : Baphlimali Miues, M/s Utkal Alumina International Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Code	N1 – N4	Sampled By	VCSPL'S Representative
Sampie Name	Noise	Sampling Procedure	IS 9989:2020
Sample Source	Noise Level (Bnffer Zone)	Sample Received On	NA
Sample Condition	NA	Test Completed On	NA

SL. No	Sampling Loeation	Date of Monitoriug	Noise level dB (A) Leq, day time (6.00am to 10.00pm)	Noise level dB (A) Leq, night time (10.00pm to 06.00am)
01	Village Paikupakbal	20.10.2021	50.3	37.8
02	Village Andirakanch	06.10.2021	45.7	34.4
03	Village ADR1	08.10.2021	49.2	39.5
04	Village Chandragiri	25.10.2021	51.4	42.6
Standard as per Noise Rule 2000				
Residential Area			55	45
Auy feature observed duriug determination			Nil	

Visiontek Consultancy Services Pvt. Ltd.
Reviewed by

Visiontek Consultancy Services Pvt. Ltd.
Approved by

Test Report No.: Envlab/21/R-9157 Date: 04.12.2021

TEST REPORT

Cnstomer Name & Address : Baphlimali Mines, M/s Utkal Alumina International Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Code	N1 – N7	Sampled By	VCSPL'S Representative
Sample Name	Noise	Sampling Procedure	IS 9989:2020
Sample Sonrce	Noise Level (Core Zone)	Sample Received On	NA
Sample Condition	NA	Test Completed On	NA

SL. No	Sampling Location	Date of Monitoring	Noise levei dB (A) Leq, day time (6.00am to 10.00pm)	Noise levei dB (A) Leq, night time (10.00pm to 06.00am)
01	Drilling Operation	08.11.2021	72.8	58.6
02	Loader Operation	03.11.2021	71.7	54.8
03	Shovel Operation	15.11.2021	72.2	59.3
04	Dumper Operation	01.11.2021	71.4	56.5
05	Crusher Operation	10.11.2021	73.5	52.7
06	Workshop Area	19.11.2021	69.7	50.8
07	Middle of Quarry	22.11.2021	70.6	54.3
Standard as per Noise Rule 2000				
Indnstrial Area			75	70
Any featnre observed during determination			Nil	

Visiontek Consultancy Services Pvt. Ltd. — Reviewed by

Visiontek Consultancy Services Pvt. Ltd. — Approved by

Test Report No.: Envlab/21/R-9158 Date : 04.12.2021

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkai Alnmina International Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Code	N1 – N4	Sampled By	VCSPL'S Representative
Sample Name	Noise	Sampling Procedure	IS 9989:2020
Sample Source	Noise Level (Buffer Zone)	Sample Received On	NA
Sample Condition	NA	Test Completed On	NA

SL. No	Sampiing Location	Date of Monitoring	Noise level dB (A) Leq, day time (6.00am to 10.00pm)	Noise level dB (A) Leq, night time (10.00pm to 06.00am)
01	Village Paikupakhal	18.11.2021	51.6	35.7
02	Village Andirakanch	09.11.2021	47.3	36.2
03	Village ADRI	11.11.2021	52.2	40.8
04	Village Chandragiri	21.11.2021	53.5	41.6
Standard as per Noise Rnle 2000				
Residentiai Area			55	45
Any feature observed duriug determination			Nil	

Reviewed by

Approved by

Test Report No.: Envlab/21/R-0001

Date: 04.01.2022

TEST REPORT

Cnstomer Name & Address : Baphlimali Mines, M/s Utkal Alumina Internatioual Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Code	N1 – N7	Sampled By	VCSPL'S Representative
Sample Name	Noise	Sampling Procedure	IS 9989:2020
Sample Source	Noise Level (Core Zone)	Sample Received On	NA
Sample Condition	NA	Test Completed On	NA

SL. No	Sampling Location	Date of Monitoring	Noise level dB (A) Leq, day time (6.00am to 10.00pm)	Noise ievel dB (A) Leq, night time (10.00pm to 06.00am)
01	Drilling Operation	13.12.2021	74.1	56.3
02	Loader Operation	03.12.2021	70.8	55.2
03	Shovel Operation	09.12.2021	71.5	57.6
04	Dnmper Operation	06.12.2021	73.3	59.3
05	Crusher Operation	01.12.2021	72.7	56.2
06	Workshop Area	15.12.2021	68.5	52.5
07	Middle of Qnarry	21.12.2021	72.3	57.4
Standard as per Noise Rule 2000				
Industrial Area			75	70
Auy feature observed during determination			Nii	

Visiontek Consultancy Services Pvt. Ltd.

Reviewed by

Visiontek Consultancy Services Pvt. Ltd. BBSR

Approved by

Test Report No.: Envlab/21/R-0002

Date : 04.01.2022

TEST REPORT

Cnstomer Name & Address : Baphlimaii Miues, M/s Utkai Alumina Iuternational Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Code	N1 – N4	Sampled By	VCSPL'S Representative
Sampie Name	Noise	Sampiing Procednre	IS 9989:2020
Sample Sonrce	Noise Level (Buffer Zone)	Sample Received On	NA
Sample Condition	NA	Test Completed On	NA

SL. No	Sampling Location	Date of Monitoring	Noise ievel dB (A) Leq, day time (6.00am to 10.00pm)	Noise level dB (A) Leq, night time (10.00pm to 06.00am)
01	Viliage Paikupakhai	02.12.2021	54.3	37.8
02	Viliage Andirakanch	27.12.2021	49.6	35.7
03	Viliage ADRI	07.12.2021	5I.8	42.3
04	Village Chandragiri	20.12.2021	55.2	39.6
Standard as per Noise Rule 2000				
Residentiai Area			55	45
Any feature observed during determinatiou			Nil	

Visiontek Consultancy Services Pvt. Ltd. BBSR

Reviewed by

Visiontek Consultancy Services Pvt. Ltd. BBSR

Approved by

Test Report No.: Envlab/21/R-1591

Date: 05.02.2022

TEST REPORT

Customer Name & Address : Baphiimali Mines, M/s Utkai Alnmina International Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Code	NI – N7	Sampled By	VCSPL'S Representative
Sample Name	Noise	Sampling Procedure	IS 9989:2020
Sample Sonrce	Noise Level (Core Zone)	Sample Received On	NA
Sample Condition	NA	Test Completed On	NA

SL. No	Sampling Location	Date of Mouitoriug	Noise level dB (A) Leq, day time (6.00am to 10.00pm)	Noise level dB (A) Leq, night time (10.00pm to 06.00am)
01	Drilling Operatiou	06.01.2022	72.7	55.8
02	Loader Operation	03.01.2022	69.8	53.7
03	Shovel Operation	05.01.2022	73.4	61.4
04	Dnmper Operation	13.01.2022	71.6	57.5
05	Crnsher Operation	11.01.2022	70.5	55.2
06	Workshop Area	12.01.2022	69.7	51.4
07	Middle of Qnarry	04.01.2022	71.5	54.6
Standard as per Noise Rnle 2000				
Industrial Area			75	70
Any featnre observed during determination			Nil	

Visiontek Consultancy Services BBSR

Reviewed by

Approved by

Test Report No.: Envlab/21/R-1592

Date : 05.02.2022

TEST REPORT

Customer Name & Address : Baphlimaii Mines, M/s Utkal Alumina Iuternatiouai Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Code	N1 – N4	Sampled By	VCSPL'S Representative
Sample Name	Noise	Sampling Procedure	IS 9989:2020
Sample Source	Noise Level (Buffer Zone)	Sample Reeeived On	NA
Sample Conditiou	NA	Test Completed Ou	NA

SL. No	Sampling Locatiou	Date of Monitoring	Noise level dB (A) Leq, day time (6.00am to 10.00pm)	Noise levei dB (A) Leq, night time (10.00pm to 06.00am)
01	Village Paikupakhai	07.01.2022	53.2	39.6
02	Village Andirakanch	14.01.2022	50.8	41.2
03	Village ADRI	08.01.2022	53.2	40.8
04	Village Chandragiri	10.01.2022	52.5	38.7
Standard as per Noise Rule 2000				
Residential Area			55	45
Any feature observed during determination			Nil	

Visiontek Consultancy Services BBSR Reviewed by

Visiontek Consultancy Services BBSR Approved by

Test Report No.: Envlab/21/R-4006 Date: 09.03.2022

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alumina International Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Code	N1 – N7	Sampled By	VCSPL'S Representative
Sample Name	Noise	Sampling Procedure	IS 9989:2020
Sample Source	Noise Level (Core Zone)	Sample Received On	NA
Sample Condition	NA	Test Completed On	NA

SL. No	Sampling Location	Date of Monitoring	Noise level dB (A) Leq, day time (6.00am to 10.00pm)	Noise level dB (A) Leq, night time (10.00pm to 06.00am)
01	Drilling Operation	25.02.2022	73.8	54.7
02	Crusher Operation	27.02.2022	72.6	59.2
Standard as per Noise Rule 2000				
Industrial Area			75	70
Any feature observed during determination			Nil	

Visiontek Consultancy Services Pvt. Ltd. Reviewed by

Visiontek Consultancy Services Pvt. Ltd. Approved by

Test Report No.: Envlab/21/R-4007 Date : 09.03.2022

TEST REPORT

Cnstomer Name & Address : Baphlimali Mines, M/s Utkal Alumina International Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Code	N1 – N4	Sampled By	VCSPL'S Representative
Sample Name	Noise	Sampling Procedure	IS 9989:2020
Sample Source	Noise Level (Buffer Zone)	Sample Received On	NA
Sample Condition	NA	Test Completed On	NA

SL. No	Sampling Location	Date of Monitoring	Noise level dB (A) Leq, day time (6.00am to 10.00pm)	Noise level dB (A) Leq, night time (10.00pm to 06.00am)
01	Village Paikupakhal	28.02.2022	51.6	40.4
02	Village Andirakanch	26.02.2022	52.5	43.1
03	Village ADRI	22.02.2022	50.7	37.8
04	Village Chandragiri	23.02.2022	52.1	39.3
Standard as per Noise Rule 2000				
Residential Area			55	45
Any feature observed during determination			Nil	

Visiontek Consultancy Services Pvt. Ltd. BBSR

Reviewed by

Visiontek Consultancy Services Pvt. Ltd.

Approved by

Test Report No.: Envlab/22/R-0816 Date: 05.04.2022

TEST REPORT

Customer Name & Address : Baphlimali Miues, M/s Utkal Alumina Internatioual Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Code	N1 – N7	Sampled By	VCSPL'S Representative
Sample Name	Noise	Sampling Procedure	IS 9989:2020
Sample Source	Noise Level (Core Zone)	Sample Received On	NA
Sample Couditiou	NA	Test Completed On	NA

SL. No	Sampling Location	Date of Monitoriug	Noisc level dB (A) Leq, day time (6.00am to 10.00pm)	Noise levcl dB (A) Leq, uight time (10.00pm to 06.00am)
01	Drilling Operation	15.03.2022	71.6	62.8
02	Loader Operatiou	04.03.2022	72.2	60.6
03	Shovel Operatiou	09.03.2022	70.8	59.7
04	Dumper Operatiou	11.03.2022	73.3	56.6
05	Crusher Operatiou	02.03.2022	73.7	61.5
06	Workshop Area	17.03.2022	72.0	57.2
07	Middle of Quarry	23.03.2022	74.3	58.3
Staudard as per Noise Rule 2000				
Iudustrial Area			75	70
Aoy feature observed duriug determination			Nil	

Reviewed by

Approved by

Test Report No.: Euvlab/22/R-0817 Date : 05.04.2022

TEST REPORT

Customer Name & Address : Baphlimali Mines, M/s Utkal Alumina Iutcrnationai Ltd, Tikiri, Rayagada, Odisha

SAMPLE DETAILS

Sample Code	N1 – N4	Sampled By	VCSPL'S Representative
Sample Name	Noise	Sampling Procedure	IS 9989:2020
Sample Source	Noise Level (Buffer Zone)	Sample Received On	NA
Sample Couditiou	NA	Test Completed On	NA

SL. No	Sampling Location	Date of Monitoring	Noise level dB (A) Leq, day time (6.00am to 10.00pm)	Noise level dB (A) Leq, night time (10.00pm to 06.00am)
01	Village Paikupakhal	26.03.2022	53.2	42.6
02	Village Andirakanch	10.03.2022	50.8	41.8
03	Village ADR1	18.03.2022	53.4	40.4
04	Village Chandragiri	03.03.2022	51.7	40.3
Standard as per Noise Rnle 2000				
Residential Area			55	45
Any feature observed during determiuation			Nil	

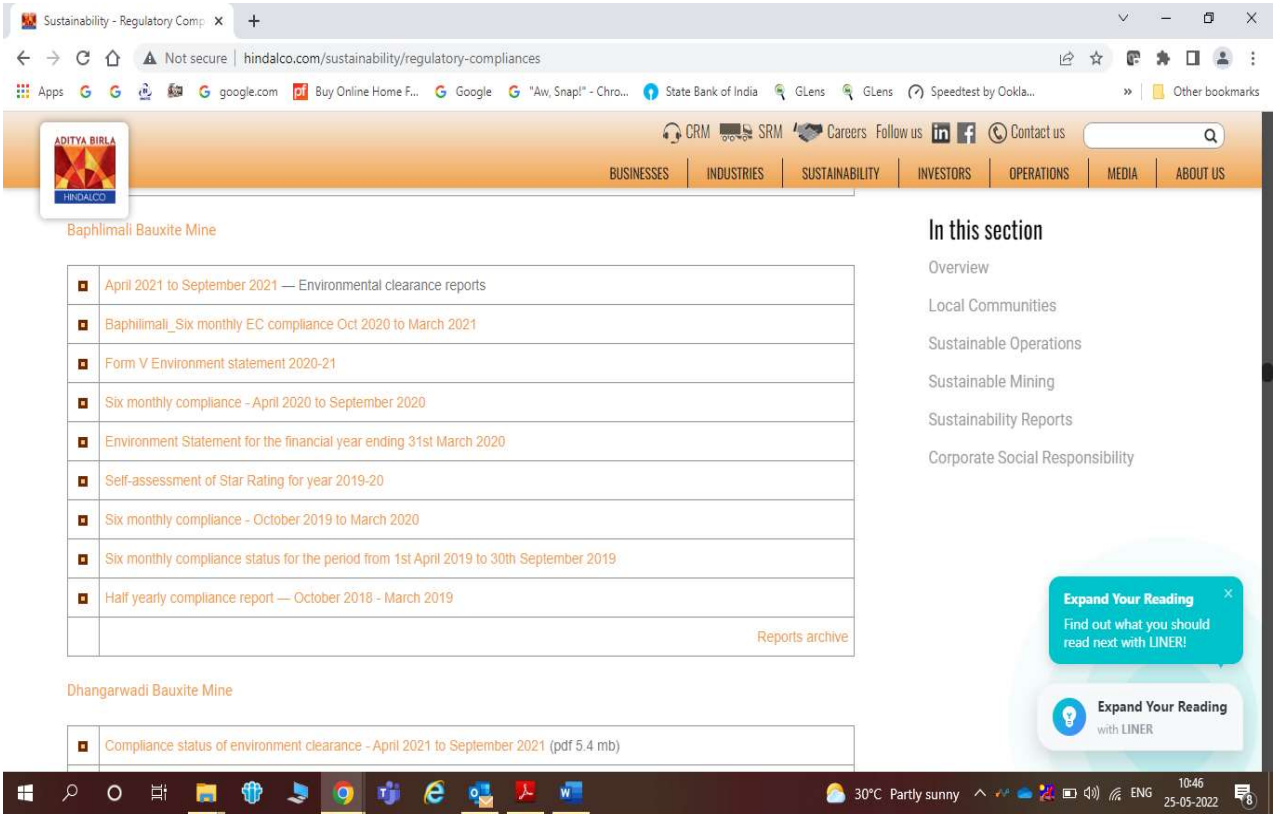
Visioutek Consultancy Services Pvt. Ltd. BBSR

Reviewed by

Visioutek Consultancy Services Pvt. Ltd. BBSR

Approved by

ANNEXURE 16: UPLOADED COMPLIANCE REPORT ON WEBSITE



ADITYA BIRLA

UTKAL ALUMINA

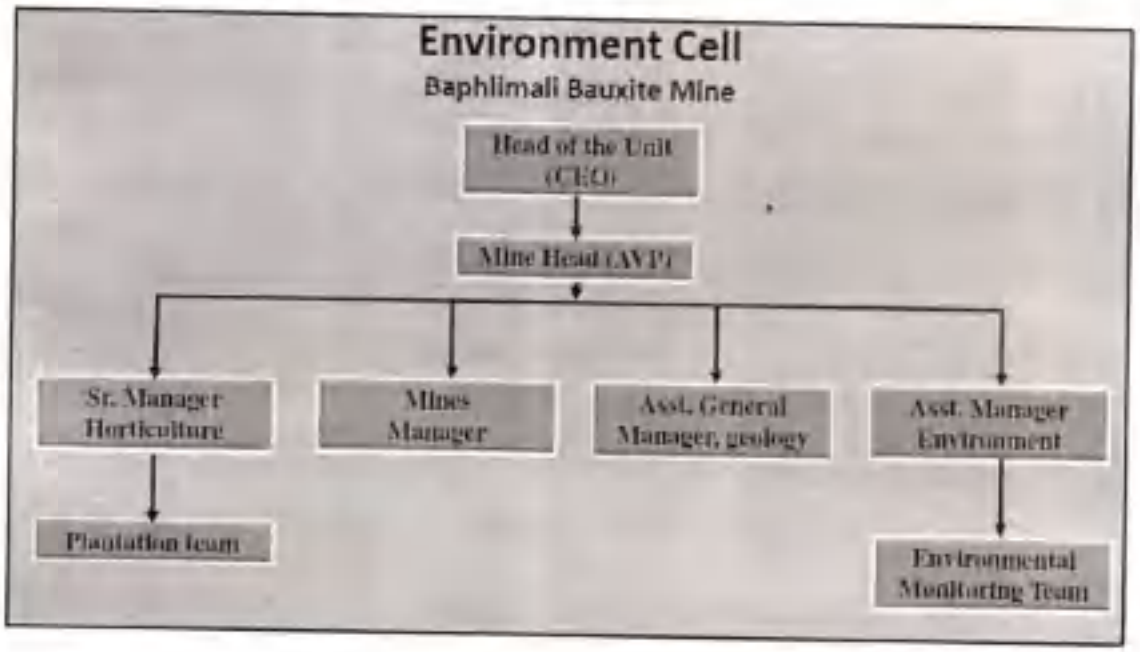
Annexure - 18

OFFICE ORDER

Date: 29.05.2021

According to the Environment clearance condition & to look after the compliances with respect to environment, an environmental cell at Baphlimali Bauxite Mine of M/s Utkal Alumina International Limited has been constituted.

The name & designations of the Environment Cell members with organization structure is enlisted below.



Thanking You

For Utkal Alumina International Limited

MK Jha

Mukesh Kumar Jha

Head- Baphlimali Bauxite Mine

ANNEXURE 18: ENVIRONMENT EXPENSES

ENVIRONMENT EXPENSES		
Period 2021-22		
Sl. No.	**Particulars of Environment Expenditure**	**Amount (Rs.)**
1	Air Pollution Control Measure	4,77,10,739.00
2	Plantation & Horticulture	1,74,91,950.00
3	Envt Monitoring	18,70,430.44
4	Statutory Expenses & Study report Preparation	3,42,000.00
5	Others	6,15,675.18
	Total	**6,80,30,794.62**