

SPEED POST

Ref : HZL/Kayad/ENV/MOEF/2021-22/115

Nov 12, 2021

To,

The Director,
Ministry of Environment, Forest and Climate Change
Regional Office, Kendriya Bhawan,
5th floor, Sector- H, Aliganj
LUCKNOW (UP) - 226024

Sub: Six monthly environmental compliance report from April 2021 to Sept 2021.

Ref: Env clearance vide No. : J-110115/47/2012-IA.II (M) dated 5th Feb, 2018.

Dear Sir / Madam,

Please find enclosed herewith the compliance status report of above referred Environmental Clearance granted by the Ministry of Environment, Forest and Climate Change for the period of April 2021 to September 2021 is for your kind perusal. Soft copy of compliance is also mailed and uploaded in the website.

Hope you find this in order.

Thanking you,

Yours faithfully


(K.C. Meena)

Director- SBU Kayad Mine

Cc to:

1. In-Charge (Zonal office)
Central Pollution Control Board
Zonal Office (Central)
Vithal Market, Paryavaran Parisar , E-5, Arera Colony
Bhopal, - 462 016 (MP)
2. Member Secretary
Rajasthan Pollution Control Board
4 Institutional Area, Jhalana doogri
Jaipur (Raj)

K.C. MEENA
Director (SBU)
Hindustan Zinc Ltd.
Kayad Mine-305023
Dist.-Ajmer (Raj.)

3. The Deputy Director (S) /Scientist -C
Ministry of Environment, Forest & Climate Changes,
Integrated Regional Office, A-209 & 218, Aranya Bhawan,
Jhalana Institutional area Jaipur-302004
4. The Regional Officer,
Rajasthan State Pollution Control Board,
SPL-II, RIICO Industrial Area, Phase-V, Kishangarh,
Dist. Ajmer

Hindustan Zinc Limited
Kayad Mine, Ajmer

Environment Clearance Compliance Report: -

Name of the project: Kayad Lead- Zinc Underground Mine, M/S Hindustan Zinc Limited, Village kayad, Distt. Ajmer, Rajasthan.

Environmental Clearance letter no: J-11015/47/2012-IA.II (M) dated 5th Feb, 2018.

Period of Compliance report: April 2021 – September 2021

S.no	A. Specific Conditions	Compliance Status
1.	Environmental Clearance is Granted Subject to Under Hon'ble Supreme Court Judgment Date 02.08.2017	Noted
2.	Environmental Clearance is Granted Subject to Final Outcome of Hon'ble Supreme Court of India, Hon'ble High Court of Rajasthan and other Court of Law, if any, as May be Applicable to this project.	Noted
3.	This Environmental Clearance is subject to obtaining Requisite NBWL Clearance from the Standing Committee of National Board for Wildlife, if any, Applicable for this Mining Project	Not Applicable
4.	No Mining Activities Will be Allowed in Forest area, if any, for which the Forest Clearance is not Available.	No forest involved in mine lease area
5.	This Project Shall obtain Consent to Operate from the State Pollution Control Board, Rajasthan and effectively implement all the Conditions Stipulated therein.	Consent to Operate was granted by Rajasthan State Pollution Control Board Vide Ir no. F(Mines)/Ajmer(Ajmer)/303(1)/2017-2018 / 9550 - 9554 dated 17.02.2018 All the conditions are being implemented effectively.
6.	The Proponent should install online Ambient Air Quality Monitoring System and there should be system for display of digital AAQ data within 03 months at least at three locations as per wind direction. Online provisions of pH and Turbidity meters at discharge points of STP and ETP and also at water storage pond in the mining area may be made; Project Proponent should display the result digitally in front of the main Gate of the mine site.	Online Ambient Air Quality Monitoring system installed and AAQ data digital displayed outside gate. pH and Turbidity meters at discharge point of STP is installed and result digitally displayed at outside gate of mine site.
7.	The Project Proponent has to take care of gullies formed on slopes. Dump mass should be consolidated with proper filling/leveling with the help of dozer/compactors. The report on slope and stability	Waste generated from Mining operations is being reused for back filling. No waste is accumulated at site.

	monitoring should be sent to MoEF & CC and its Regional office every six-month.	
8.	The reclamation at waste dump sites shall be ecologically sustainable. Scientific reclamation has been followed. The local species may be encouraged and species are so chosen that the slope, bottom of the dumps and top of the dumps are able to sustain these species. The aspect of the dump is also a factor which regulates some climatic parameters and allows only species adapted to that micro climate. This may be recommended to be studied by hiring Expert Ecology Group.	Waste generated from Mining operations is being reused for back filling. No waste is accumulated at site.
9.	There is need for regular monitoring of invertebrates and aquatic life of water bodies including the reservoir located close to the mining lease to establish that fish and other animals including the water is not 'contaminated' with heavy metal. There could be a research on "bio accumulation of heavy metals in invertebrates" to completely establish that there is no impact of mining.	Report already submitted.
10.	A specialized Institution may be hired to carry out ecological survey on the plant species to evaluate their growth in terms of stunted, deformed and seed viability. The sensitive species and Indicator species to heavy metal pollution may be screened out and plantation accordingly designed. Similarly, uptake of Zinc, Cadmium and lead etc. by crops and vegetables grown in the crop lands around the mining lease may be studied. Bottom sediment analysis of ponds, wells and Rivers to ascertain the level of accumulation of heavy metal may be done.	Report already submitted.
11.	The Proponent shall conduct an Occupational health study with respect to the pressure impact on ear drums as person goes underground and implement the recommendations.	Occupational health study with respect to the pressure impact on ear drums as person goes underground conducted inhouse as well as from M/s Sure Safety. Report submitted as annexure -1
12.	Project Proponent shall carry out vibration studies well before approaching any such habitats or other buildings to evaluate the zone of influence and impact of blasting on the neighborhood. Within 500 meters of such sites vulnerable to blasting vibrations, avoidance of use of explosives and adoption of alternative means of mineral extraction. A provision for monitoring of each blast	Blasting being carried out during day time only and the vibration study is being done regularly by M/s CIMFR, Dhanbad. Peak Particle Velocity within 500 meters is ranging between 1.0 - 5.0 mm/second (Limit is

	should be made so that the impact of blasting on nearby habitation and dwelling units could be ascertained. The covenant of lease deed under Rule 31 of MCR 1960 provides that no mining operations shall be carried out within 50 meters of public works such as public roads and buildings or inhabited sites except with the prior permission from the Competent Authority.	15mm/second) and due care is taken in blast design, explosives use, selection of detonators and delay to ensure safe vibration limit and effective implementation of CIMFR Dhanbad recommendation. No secondary blasting being carried out at site.
13.	Main haulage road in the mine should be provided with permanent water sprinklers and other roads should be regularly wetted with water tankers fitted with sprinklers. The material transfer points should invariably be provided with Bag filters and or dry fogging system. Belt-conveyors should be fully covered to avoid air borne dust; Use of effective sprinkler system to suppress fugitive dust on haul roads and other transport roads shall be ensured.	Mine haul road is being wetted through water tankers fitted with sprinklers. No Permanent water sprinkler. Effective sprinkling system is in place to suppress fugitive dust on haul road. Belt-conveyor at CRF is fully covered to avoid air borne dust.
14.	The monitoring of PM2.5 in the vehicle emission shall be conducted to improve the mine environment and report submitted to the Regional Office of the MoEFCC.	The monitoring of PM2.5 in ambient air near vehicular movement is conducted but not able to monitor PM 2.5 in vehicular emission due unavailability of technology/ instruments.
15.	The Project Proponent reported that there are seven Schedule-1 species viz. Peafowl (<i>Pavo cristatus</i>), Osprey (<i>Pandion haliaetus</i>), Tawny eagle (<i>Aquila rapax</i>), Crested honey buzzard (<i>Pernis ptilorhynchus</i>), Shikra (<i>Accipiter badius</i>), Leopard (<i>Panthera pardus</i>), Indian pangolin (<i>Manis crassicaudata</i>) in the study area. The PP shall implement the Conservation Plan and enhance the budget for implementation of Conservation Plan for Schedule I Species and also increase the budget for plantation/green development. The Proponent shall implement the Wildlife Conservation Plan along with the funds so allocated with consultation of Chief Wild Life Warden of the State Govt. A copy of action plan shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office, Lucknow and the Chief Wild Life Warden of the State Govt.	Conservation plan has been developed for Schedule-1 namely Peafowl (<i>Pavo cristatus</i>) and has been approved by the additional Principal Chief Conservation of Forest and Chief wildlife warden Jaipur, Rajasthan and implemented the same. Action plan along with its implementation status report being submitted to RO MOEF & CC & Chief wild life warden of State Government.
16.	Proponent shall carry out monitoring of lead in the blood samples of the employees and the villagers in the areas surrounding the mine in their schedule of health check-up. The nearby water bodies shall be monitored every six months and report submitted to Regional office of the MoEFCC to ascertain impact due to lead contamination.	The Health checkups of villagers will conduct after normalizing the Covid situation. Water samples analysis of nearby water bodies carried out regularly.
17.	Implementation of Action Plan on the issues raised during the Public Hearing shall be ensured. The Project Proponent shall	Being implemented

	complete all the tasks as per the Action Plan submitted with budgetary provisions during the Public Hearing.	
18.	Implementation of the outcome of study with regard to "optimization of blast design parameter for the safety and stability of surface structures and subsequent monitoring of vibration on the surface structures for their long term stability" which was carried out by Central Institute of Mining and Fuel Research should be ensured.	<p>The Implementation of CIMFR study report is being ensured.</p> <ul style="list-style-type: none"> • Regular vibration studies conducted through CIMFR • Peak Particle Velocity within 500 m ranging between 1.0 to 5.00 mm/sec (limit 15mm/sec) • Due care is taken in blast design, explosives use, selection of detonators and delay to ensure safe vibration limit.
19.	Continuous monitoring of radioactive elements, if any, shall be undertaken till entire mine is dewatered and report has to be submitted to MoEFCC Regional Office. Periodic monitoring of any adverse impact of Radon and its daughter products on any worker should be included in the Occupational Health Monitoring Programmed.	The monitoring of radioactive element done. The report already submitted.
	B. Standard conditions	
1.	A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment, Forest and Climate Change 5 years in advance of final mine closure for approval.	A Final Mine Closure Plan along with details of Corpus Fund shall be submitted 5 years in advance.
2.	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment, Forest and Climate Change.	Assured to comply
3.	No change in the calendar plan including excavation, quantum of mineral and waste should be made.	Being ensured as per Mine Plan.
4.	The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water (surface water and ground water) for the project.	Renewal application submitted for permission. Recommendation by CGWB to CGWA done. NOC approval due
5.	Mining shall be carried out as per the provisions outlined in mining plan approved by Indian Bureau of Mines (IBM) as well as by abiding to the guidelines of Directorate General Mines Safety (DGMS).	Ensuring the Mining as per the Mine Plan approved by IBM and as per the guideline of DGMS
6.	The lands which are not owned by Proponent, mining will be carried out only after obtaining the consents from all the concerned land owners as per the provisions of the Mineral Concession Rules, 1960 and MMDR Act, 1957.	Ensured to comply
7.	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, Forest and Climate Change its Regional Office.	Digital processing of the entire lease area using remote sensing technique carried out M/s SRSAC Jodhpur and Report already submitted.
8.	The critical parameters as per the Notification 2009 such as Pm ₁₀ , PM 2.5 NOx and Sox etc. in the ambient air within	The critical parameters such as PM ₁₀ , PM 2.5, NOx and Sox etc. in

	<p>the impact zone, peak particle velocity at 300m distance or within the nearest habitation, whichever is closer shall be monitored periodically. Further, quality of discharged water shall also be monitored [(TDS, DO, PH and Total Suspended Solids (TSS)). The monitored data shall be uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in public domain. The circular No. 3-20012/1/2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for its compliance.</p>	<p>the ambient air are being monitored within the impact zone, peak particle velocity at Kayad Village being monitored regularly. Zero discharge is being maintained. PM 10, PM 2.5, NOx monitoring data and peak particle velocity data are being uploaded on website of the company as well as display board on main gate of the company.</p>
9.	<p>Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of Phyllo and PM2.5 such as haul road, loading and unloading point and transfer points. Fugitive dust emissions from all the sources shall be controlled regularly. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed under National Ambient Air Quality Standards (NAAQS) or by the Central Pollution Control Board in this regard. Monitoring of Ambient Air Quality to be carried out based on the Notification 2009, as amended from time to time by the Central Pollution Control Board.</p>	<p>An effective safeguard measure has been taken and regular water spraying on the haul road, loading and unloading area are being carried out. Ambient Air Quality parameters maintained and monitored as per National Ambient Air Quality Standards (NAAQS) or by the Central Pollution Control Board. Monitoring data enclosed as Annexure-II</p>
10.	<p>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 project proponent shall ensure that no natural water course and/or water resources shall be obstructed due to any mining operations. 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 Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board.</p>	<p>Regular monitoring of ground water level and quality is being carried out in and around the mine lease by establishing a network of existing wells and piezometers. No natural water course / water resources obstructed due to mining operations. The Water level as Annexure -III and water quality data attached as Annexure – IV & V</p>
11.	<p>Regular monitoring of the flow rate of the springs and perennial allays flowing in and around the mine lease shall be carried out and records maintain. The natural water bodies and or streams which are flowing in an around the village, should not be disturbed, The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug wall located in village should be incorporated to ascertain the impact of mining over ground water table.</p>	<p>No springs and perennial allay flowing in and around the mine lease.</p>

	should be made so that the impact of blasting on nearby habitation and dwelling units could be ascertained. The covenant of lease deed under Rule 31 of MCR 1960 provides that no mining operations shall be carried out within 50 meters of public works such as public roads and buildings or inhabited sites except with the prior permission from the Competent Authority.	15mm/second) and due care is taken in blast design, explosives use, selection of detonators and delay to ensure safe vibration limit and effective implementation of CIMFR Dhanbad recommendation. No secondary blasting being carried out at site.
13.	Main haulage road in the mine should be provided with permanent water sprinklers and other roads should be regularly wetted with water tankers fitted with sprinklers. The material transfer points should invariably be provided with Bag filters and or dry fogging system. Belt-conveyors should be fully covered to avoid air borne dust; Use of effective sprinkler system to suppress fugitive dust on haul roads and other transport roads shall be ensured,	Mine haul road is being wetted through water tankers fitted with sprinklers. No Permanent water sprinkler. Effective sprinkling system is in place to suppress fugitive dust on haul road. Belt-conveyor at CRF is fully covered to avoid air borne dust.
14.	The monitoring of PM2.5 in the vehicle emission shall be conducted to improve the mine environment and report submitted to the Regional Office of the MoEFCC.	The monitoring of PM2.5 in ambient air near vehicular movement is conducted but not able to monitor PM 2.5 in vehicular emission due unavailability of technology/ instruments.
15.	The Project Proponent reported that there are seven Schedule-1 species viz. Peafowl (<i>Pavo cristatus</i>), Osprey (<i>Pandion haliaetus</i>), Tawny eagle (<i>Aquila rapax</i>), Crested honey buzzard (<i>Pernis ptilorhynchus</i>), Shikra (<i>Accipiter badius</i>), Leopard (<i>Panthera pardus</i>), Indian pangolin (<i>Manis crassicaudata</i>) in the study area. The PP shall implement the Conservation Plan and enhance the budget for implementation of Conservation Plan for Schedule I Species and also increase the budget for plantation/green development. The Proponent shall implement the Wildlife Conservation Plan along with the funds so allocated with consultation of Chief Wild Life Warden of the State Govt. A copy of action plan shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office, Lucknow and the Chief Wild Life Warden of the State Govt.	Conservation plan has been developed for Schedule-1 namely Peafowl (<i>Pavo cristatus</i>) and has been approved by the additional Principal Chief Conservation of Forest and Chief wildlife warden Jaipur, Rajasthan and implemented the same. Action plan along with its implementation status report being submitted to RO MOEF & CC & Chief wild life warden of State Government.
16.	Proponent shall carry out monitoring of lead in the blood samples of the employees and the villagers in the areas surrounding the mine in their schedule of health check-up. The nearby water bodies shall be monitored every six months and report submitted to Regional office of the MoEFCC to ascertain impact due to lead contamination.	Lead in the blood samples of the employees carried out during their PME and villagers are monitored & result enclosed as annexure -VII . Water samples analysis of nearby water bodies carried out regularly.
17.	Implementation of Action Plan on the issues raised during the Public Hearing shall be ensured. The Project Proponent shall	Being implemented

18.	The Project Proponent has to take care of gullies formed on slopes. Dump mass should be consolidated with proper filling/leveling with the help of Dozer/compactors.	No dump mass, all the waste used in backfilling purpose.
19.	The reclamation at waste dump sites shall be ecologically sustainable. Scientific reclamation shall be followed. The local species may be encouraged and species are so chosen that the slope, bottom of the dumps and top of the dumps are able to sustain these species. The aspect of the dump is also a factor which regulates some climatic parameters and allows only species adapted to that micro climate.	No waste dumps. All the mine waste reused for backfilling in underground.
20.	The top soil, if any, 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. The over burden (OB) generated during the mining operations shall be stacked at earmarked dump site(s) only and it should not be kept active for a long period of time. The maximum height of the dumps shall not exceed 8m and width 20 m and overall slope of the dumps shall be maintained to 45°. The OB dumps should be scientifically vegetated with suitable native species to prevent erosion and surface runoff. In critical areas, use of geo textiles shall be undertaken for stabilization of the dump. The entire excavated area shall be backfilled and afforested. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office on six monthly basis.	The top soil stored at earmark location of 9000 CuM soil in 645 Sq M and developed a beautiful garden on it. All the waste utilized in the mine void refilling. No such OB Dump.
21.	Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, mineral and OB dumps to prevent run off of water and flow of sediments directly into the river and other water bodies. The water so collected should be utilized for watering the mine area, roads, Green belt development etc. The drains shall be regularly desilted Particularly after monsoon and maintained properly. The drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed both around the mine pit and over burden dumps to prevent run off of water and flow of sediments directly into the river and other Water bodies and sump capacity should 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 should 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.	Catch drains and siltation ponds constructed to collect and prevent run off water and flow of sediments directly into the river and other water bodies. Water so collected used for dust suppression in mine area haul roads, green belt development, recharge etc. The drain and settling pond are being regularly de-silted and maintained properly.
22.	Plantation shall be raised in a 7.5m wide green belt in the safety zone around the mining lease, backfilled and reclaimed area, around water body, along the roads etc. by planting the	Plantation has been raised around boundary of acquired area along the road etc. and included the

	native species in consultation with the local DFO/Agriculture Department and as per CPCB Guidelines. The density of the trees should be around 2500 plants per ha. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within first five years.	native species. More than 33% Greenbelt has been developed in the mine acquired area. Till date 44600 no's saplings planted in 16.8 Ha within lease area and 58000 saplings planted outside lease area.
23.	Project Proponent shall follow the mitigation measures provided in Office Memorandum No. Z-11013/57/2014-IA.II (M), dated 29th October, 2014, titled "Impact of mining activities on Habitations-Issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area", if any, applicable to the project.	Being ensured
24.	The Project Proponent shall make necessary alternative arrangements, where required, in consultation with the State Government to provide alternate areas for livestock grazing, if any. In this context, Project Proponent should implement the directions of the Hon'ble Supreme Court with regard to acquiring grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded against felling and plantation of such trees should be promoted.	Ensured
25.	The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna, if any, 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. A copy of action plan shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office.	A nursery has been developed within mine area for rare plant's species and other medicinal plants. Same being included in yearly plantation program to improve their existence.
26.	As per the Company Act, the CSR cost should be 2 % of average net profit of last three years. Hence CSR expenses should be as per the Company Act/Rule for the Socio Economic Development of the neighborhood Habitats which could be planned and executed by the Project Proponent more systematically based on the 'Need based door to door survey' by established Social Institutes/Workers. The report shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office on six monthly bases.	The baseline needs assessment Survey done.
27.	Provision shall be made for the housing of construction labor within the site with all necessary infrastructure and facilities such as Mel 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.	The facilities are provided like Canteen, Toilets, STP, and safe drinking water and a permanent Doctor for their health care and crèche etc.
28.	Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in	Regular monitoring of the noise in work environment is being carried out and workers engaged in

	operations of HEMM, etc. should be provided with ear plugs / muffs.	operations of HEMM are being ensured with ear muffs.
29.	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.	Oil and grease trap have been installed at vehicle washing area and clean water reuse for vehicle washing. Mine water reused for drilling and dust suppression, CRF Plant. Zero discharge Maintained.
30.	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.	Job specific PPE are mandatory for all workers and regular training being given on safety and health aspect.
31.	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 department is in place under control of SBU Director.
32.	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 and its Regional Office.	The funds earmarked for environmental protection measures and kept in separate account. The expenditure from April 2021 to September 2021 has been incurred Rs 43.42 Lacs to implement the Environmental Management Plan.
33.	The project authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	No additional land is required for proposed expansion.
34.	The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment, Forest and Climate Change, its Regional Office, Central Pollution Control Board and State Pollution Control Board.	Being Complied
35.	The Regional Office of this Ministry 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.	The project will extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.
36.	A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing them proposal.	Being Complied
37.	State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and Collector's office/Tehsildar's Office for 30 days.	Complied
38.	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 7 days	Complied

	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, Forest and Climate Change at www.environmentclearance.nic.in and a copy of the same should be forwarded to the Regional Office.	
14.	The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.	Assured to comply
15.	Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the Provisions of the Environment (Protection) Act, 1986.	Assured to Comply
16.	The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/ High Court of Rajasthan and any other Court of Law relating to the subject matter.	Assured to Comply
17.	Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.	Assured to Comply

Occupational Health Study: Pressure Impact on Ear Drum in Underground Working

Hindustan Zinc Ltd.

Date of Draft Report: October 25, 2021

Date of Final Report: November 10, 2021

Location of Site: Kayad Mines



Complete Safety Solutions

42, A/B, Yoginagar Township, B/s. Zenith Tin, N.H. No. 8, Chhani, Vadodara, Gujarat

October 25, 2021

Mr. Mansingh Gehlot

Hindustan Zinc Ltd

Kayad Mines

Subject: Industrial Hygiene Exposure Assessment Report-Environmental Pressure

Dear Mr. Gehlot,

Sure Safety (I) Ltd is pleased to provide you **Industrial Hygiene Exposure Assessment Report (Occupational Health Study with respect to the pressure impact on ear drums as person goes underground in Kayad Mine)**. The monitoring was conducted at Hindustan Zinc Ltd., Kayad Mines from October 23, 2021.

We have taken all due considerations to follow standard procedures and used defined instruments for monitoring. Based on information, observations and result, we have given our conclusion and suggestions for sustenance and further improvement.

Wish Sure Safety (I) Ltd. will be involved in same or other IH&S related services for your organization!

Regards,

Team

Sure Safety India Limited

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Sure Safety (I) Ltd. was approached by Hindustan Zinc Ltd, Kayad Mines to conduct Industrial Hygiene Exposure Assessment at Hindustan Zinc Ltd., Kayad Mines. Sure Safety (I) Ltd undertook and executed the project from October 23, 2021.

Team Members

Sure Safety (I) Ltd (SSIL)	Mr. Rahul Kumar, IH
Hindustan Zinc Ltd.	Mr. Mansingh Gehlot and team

Objective

The objective of the project was to:

- Carry out Occupational Health Study with respect to the pressure impact on ear drums as person goes underground in Kayad Mine at selected areas/ locations/provided by Hindustan Zinc Ltd., Kayad Mines, from now on to be read as "site".

Assumptions

Following assumptions/ limitations have been taken into account while conducting the exposure assessment:

- The information provided by the site is accurate, complete, authentic and up to date. The same has been referred for preparing the report.
- All equipment are operational at the best of their capabilities and same as on any other common working day.
- Uncertainty towards variation of job size, job duration and job work are not considered.
- All the people working at the respective areas are as on any other common working day.
- All the processes are same as on any other common working day.

Declaration

- This report provides insight towards existing exposure of Environmental Pressure as on the day, date and time when the monitoring was conducted.
- The quantitative exposure assessment is made based on the area/ locations made available / considered by site.
- The information gathered during quantitative exposure assessment will be restricted to site, premises and will not be shared with anyone else/ any other industry.

Use of Report

The report is based upon the application of scientific principles and professional judgment and experience. Nothing contained in this report regarding the exposure levels, shall be used as the confirmative statements, data for either onset or existing occupational diseases within the work area. Professional judgment from the qualified occupational health physician should be acquired for the interpretation of the onset or existing occupational diseases, if any. This report does not provide any confirmatory base-data / base-line towards the health of the employees on which the exposure assessment was conducted.

Standards and Guidelines

Following standards and guidelines were followed to conduct the monitoring of Environmental Pressure, and for comparing with suggested National/ International Standards / Guidelines.


- Occupational Health and Safety Administration [OSHA]
- American Conference of Governmental Industrial Hygienists [ACGIH]
- National Institute of Occupational Safety & Health [NIOSH]

Sampling/ Measurement Procedure

Environmental Pressure Measurement Procedure

- Samples were collected by battery operated Differential Pressure Manometer.
- For each measurement, a specific distance of 25-30 mtrs was followed, to get a better understanding of the change in environmental pressure.
- Sampling points and sampling areas were selected and provided by site.

We assure you with best of our services, and we strive to provide highest work quality to our clients. The results, observations and suggestions for the Environmental Pressure assessment are based on the activities being performed at plant site on the day of monitoring. However, in case of any clarification or further discussion, we would be happy to assist.

Name	Prepared by Kairav Trivedi
Signature	
Designation	Technical Head
Date	November 10, 2021

Quality Assurance

Results

All readings are against 1atm pressure.

Sr. No	Location	Reading (atm)	Reading (psi)
1	Tunnel Entrance	-0.000136	-0.002
2	Man Hole 01	-0.000204	-0.003
3	Man Hole 03	-0.000136	-0.002
4	Man Hole 04	-0.000204	-0.003
5	Man Hole 05	-0.000136	-0.002
6	Man Hole 07	-0.000204	-0.003
7	South 425 mRL	-0.000204	-0.003
8	Man Hole 09	-0.000204	-0.003
9	Man Hole 11	-0.000204	-0.003
10	Man Hole 13	-0.000204	-0.003
11	Passing Bay 01	-0.000204	-0.003
12	Man Hole 17	-0.000204	-0.003
13	Man Hole 18	-0.000204	-0.003
14	South 375 mRL	-0.000204	-0.003
15	South 350 mRL	-0.000204	-0.003
16	Man Hole 21	-0.000204	-0.003
17	Man Hole 23	-0.000204	-0.003
18	Passing Bay 02	-0.000204	-0.003
19	South 325 mRL	-0.000204	-0.003
20	Man Hole 24	-0.000204	-0.003
21	Man Hole 26	-0.000204	-0.003
22	Passing Bay 03	-0.000204	-0.003
23	South 300 mRL	-0.000204	-0.003
24	Man Hole 28	-0.000204	-0.003
25	300 mRL 3X3	-0.000204	-0.003
26	Man Hole 29	-0.000204	-0.003
27	Passing Bay 04	-0.000204	-0.003
28	Pump Chamber 275 mRL	-0.000204	-0.003
29	Man Hole 30	-0.000204	-0.003
30	Man Hole 31	-0.000204	-0.003
31	Passing Bay 05	-0.000204	-0.003
32	South 250 mRL	-0.000204	-0.003
33	Man Hole 32	-0.000204	-0.003
34	man Hole 33	-0.000204	-0.003
35	250 mRL 3X3	-0.000204	-0.003
36	Passing Bay 06	-0.000204	-0.003
37	South 225 mRL	-0.000204	-0.003
38	Man Hole 34	-0.000204	-0.003
39	Man Hole 35	-0.000204	-0.003
40	225 mRL 3X3	-0.000204	-0.003

Sr. No	Location	Reading (atm)	Reading (psi)
41	Man Hole 36	-0.000204	-0.003
42	Passing Bay 07	-0.000204	-0.003
43	South 200 mRL	-0.000204	-0.003
44	Man Hole 37	-0.000204	-0.003
45	Man Hole 38	-0.000204	-0.003
46	Man Hole 39	-0.000204	-0.003
47	Man Hole 41	-0.000204	-0.003
48	Passing Bay 08	-0.000204	-0.003
49	South 175 mRL	-0.000204	-0.003
50	Man Hole 43	-0.000204	-0.003

1. Environmental pressure is an indicator of weather.
2. Due to change in altitude, the environmental pressure changes. Usually if the air containing oxygen is provided (either naturally or artificially) the recovery from effect of environmental pressure can be adjusted.
3. At mines, a lot of people move for the purpose of mining activity. It also includes movement of vehicles. However, since the movement is not very fast as well as not very rapid, the effect of environmental pressure is not felt much.
4. In majority of cases human body needs time to recover from the change in environmental pressure. Imbalance in pressure between the middle ear and outer ear leads the person to feel severe change in environmental pressure effect. At times it is also known as Barotrauma.
5. When air pressure changes are responsible for ear barotrauma, it often goes away as soon as the air pressure outside has normalized, and should not cause any further symptoms. However, people may experience additional symptoms when ear barotrauma results from illness or a blockage in the middle ear.
6. In mild cases, or when ear barotrauma first starts, a person may experience:
 - Difficulty hearing or mild hearing loss
 - Dizziness
 - A feeling of fullness in the ear
 - Overall discomfort in the ear

However, in most of the cases this is associated with sudden change in environmental pressure. In case of mines this certainly is not the scenario.

Some of the ways to counter act the effect of change in environmental pressure are:

- Chewing gum
- Opening jaws wide open frequently
- Swallowing
- Yawning
- Inhale, and then gently exhale while holding the nostrils closed and the mouth shut (this helps open the eustachian tube).
- Suck on candy.
- People should avoid putting drops in the ear.
- Keep the ear clean.
- Exhaling through the nose while ascending.

As per the received results, having underground mines the environmental pressure is recorded as lower than 1 atm, however, none of the measurements are of concern. Additionally, to have pressure impact on ear drum, there should be a sudden/ rapid/ continuous pressure drop which in case of mines is not observed considering the slow and not-a-continuous movement of people and vehicles (considering geography of mines). Hence, it eliminates any possibility of impact of environmental pressure on ear drum.

For being safe in working at mines the suggested measures may be ensured.

Conclusion

Appendix 1: Equipment Summary

Specification of Differential Pressure Manometer

Manometer
PM-6202 / PM-6205

Features:


- Large Dual LCD with backlight
- Data hold
- Max / Min / Avg value with relative time stamp
- Zero adjust, offset and DIF function
- Auto Power off
- Low battery indication
- USB Computer Interface
(Advanced Software program for all windows)

Technical Data:

Model	6202	6205
Accuracy	±0.3% FSD	
Repeatability	±0.2% (Max. ±0.5% FSD)	
Linearity/Hysteresis	±0.25% FSD	
Pressure Range	±2psi (±138.40 in H ₂ O)	±5psi (±138.3 in H ₂ O)
Units & Resolution	In H ₂ O	0.01
	Psi	0.003
	mbar	0.1
	kPa	0.01
	mmHg	0.003
	mmHg	0.1
	mmHg	0.01
Units & Resolution	mmHg	0.003
	cmH ₂ O	0.1
	Kg/cm	0.003
	Bar	0.001
	Bar	0.001

• **Standard Accessories** : Soft Carrying case, Gift Box, Tubes, Manual, Battery, USB Cable, CD Software.

• **Dimension** : 110(H) x 75(W) x 50 (D)mm



Appendix 2: Abbreviations

1. ACGIH: American Conference of Governmental Industrial Hygienists
2. NIOSH: National Institute of Occupational Safety & Health
3. OSHA: Occupational Safety and Health Administration
4. SSIL: Sure Safety (I) Ltd.
5. TLV: Threshold Limit Value

**HINDUSTAN ZINC LIMITED
KAYAD MINE**

AMBIENT AIR MONITORING

Annexure-II

Location->		Mine Area						Kayad					
month-year	Forthnight	SPM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO	SPM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO
Apr-21	Ist	191.69	77.84	41.02	2.17	16.27	360.00	220.08	71.14	41.67	18.94	10.91	280.00
	IIInd	216.67	74.81	32.22	5.29	13.32	320.00	236.61	76.84	41.88	5.66	11.42	280.00
May-21	Ist	245.53	75.75	35.27	5.61	14.07	330.00	178.35	73.45	29.31	4.52	12.07	270.00
	IIInd	238.75	73.87	31.58	4.36	13.07	310.00	236.54	78.31	35.47	3.87	13.20	250.00
Jun-21	Ist	234.69	77.51	34.01	4.24	14.60	340.00	244.75	79.71	40.90	4.50	13.23	280.00
	IIInd	232.09	81.91	31.01	3.48	15.30	360.00	211.30	82.87	27.30	2.72	15.96	280.00
Jul-21	Ist	156.88	68.12	22.15	2.57	12.33	280.00	170.73	64.21	25.23	4.08	9.55	240.00
	IIInd	123.56	55.61	20.00	4.24	11.03	130.00	105.81	53.33	24.45	3.23	9.48	150.00
Aug-21	Ist	212.31	70.09	32.33	6.10	13.31	290.00	176.92	68.85	28.34	4.54	10.17	250.00
	IIInd	130.54	53.97	20.37	4.43	12.98	250.00	158.84	56.68	23.45	3.96	11.26	180.00
Sep-21	Ist	170.27	55.46	24.87	2.06	12.65	340.00	132.45	54.63	24.47	2.47	17.89	230.00
	IIInd	155.59	66.87	27.85	3.67	9.26	270.00	137.36	52.23	19.04	2.59	12.55	190.00

Location->		Lohagal						Gagwana					
month-year	Forthnight	SPM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO	SPM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO
Apr-21	Ist	182.73	67.78	43.02	3.56	15.33	340.00	282.90	81.94	35.08	5.92	13.21	290.00
	IIInd	285.07	69.62	28.24	4.94	10.67	260.00	234.38	69.60	29.55	5.11	13.40	350.00
May-21	Ist	230.81	70.36	27.43	4.23	11.75	250.00	197.55	73.06	28.70	4.33	12.38	240.00
	IIInd	197.52	67.32	28.74	3.91	10.93	210.00	203.52	68.45	30.97	3.45	11.74	210.00
Jun-21	Ist	286.42	80.74	26.82	3.21	17.02	240.00	271.57	76.22	40.11	8.28	17.06	280.00
	IIInd	205.67	76.68	33.97	3.14	16.57	280.00	276.11	73.73	26.82	2.57	14.25	290.00
Jul-21	Ist	128.00	51.72	26.13	4.19	12.93	260.00	98.24	56.70	24.69	3.87	11.06	180.00
	IIInd	102.99	46.16	16.49	3.26	10.50	150.00	105.26	40.17	18.66	4.91	9.10	170.00
Aug-21	Ist	181.85	70.01	28.77	2.40	12.92	200.00	173.87	52.86	28.65	6.92	12.28	180.00
	IIInd	139.41	62.98	28.33	3.40	15.47	210.00	112.72	71.70	22.79	6.01	11.36	160.00
Sep-21	Ist	187.92	53.51	27.66	3.14	11.74	300.00	140.78	66.28	18.84	3.33	10.77	210.00
	IIInd	132.14	59.00	26.81	3.52	12.29	210.00	134.71	54.71	22.85	2.02	12.48	230.00

Location->		Chatri					
month-year	Forthnight	SPM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO
Apr-21	Ist	220.90	71.74	36.25	3.74	9.65	230.00
	IIInd	198.65	74.50	38.20	5.76	15.11	260.00
May-21	Ist	213.50	65.71	26.58	3.78	11.36	190.00
	IIInd	216.38	70.26	29.87	3.52	10.97	240.00
Jun-21	Ist	170.50	67.44	31.06	5.43	13.20	260.00
	IIInd	245.11	70.66	34.14	3.89	13.86	290.00
Jul-21	Ist	148.48	56.59	22.76	3.10	11.50	140.00
	IIInd	122.75	54.71	24.94	4.65	7.32	140.00
Aug-21	Ist	144.79	64.32	24.71	4.32	10.28	260.00
	IIInd	152.24	58.59	26.21	3.74	10.77	180.00
Sep-21	Ist	167.49	50.48	24.90	3.06	12.11	250.00
	IIInd	135.77	50.12	24.90	2.42	13.68	180.00

ms

**Water level of Piezometers & open wells
Surrounding Kayar mines, District Ajmer (Raj.)**

Annexure III

S.No.	Source Code	Location with land mark	Latitude	Longitude	WL (BGL) (in mt) 15/05/2021	WL (BGL) (in mt) 12/08/2021
1	P-1	Piezometer-1, near VTC- HZL	N26°31'44.1"	E74°41'19.2"	24.80	19.10
2	P-2	Near mine dumped area, HZL fuel pump	N26°31'56.9"	E74°41'41.1"	15.40	14.20
3	P-3	Plantation area, nursery, near other collapsed bore well	N26°32'10.0"	E74°41'44.4"	15.80	14.70
4	P-4	New drilled bore well, near ANFO Mixing plant, HZL boundary wall corner	26°32'02.0"	74°41'45.2"	8.00	3.60
5	P-5	New drilled bore well, DG Set area	26°31'40.3"	74°41'29.1"	15.30	14.60
6	W-1	Man Singh Raghuveer singh Chandawal, Kayar/ Naeem Bhutta	N26°33'25.7"	E74°41'45.9"	18.00	13.00
7	W-2	Gurjar Well Near Abkar Minar and ARG opp SK associates	N26°32'48.6"	E74°42'24.8"	18.40	17.80
8	W-3	Near Talab area, land planning by propoerty dealers/ poltary farm	N26°32'08.3"	E74°42'27.7"	20.40	20.80
9	W-4	Mohan Gurjar Well Kayad	N26°31'11.7"	E74°41'02.7"	16.2	12.2
10	W-5	Near outside HZL boundary wall, near outside HZL road area	N26°31'52.7"	E74°41'36.0"	26.6	19.6
11	W-6	Near Govt. School/Mr. Sultan Master, Kamurdin Nizam ji Kayar	N26°31'38.7"	E74°41'11.3"	14.40	13.80

me

Piezometer water quality monitoring data

Annexure-IV

	P-1		P-2		P-3		P-4		P-5	
Parameters	Jun-21	Aug-21	Jun-21	Aug-21	Jun-21	Aug-21	Jun-21	Aug-21	Jun-21	Aug-21
pH	6.82	7.15	6.9	6.94	7.69	8.24	7.28	7.02	7.2	7.95
Hardness	808.08	1788.5	656.57	1673.1	525.25	769.23	450	769.23	550	634.61
Iron	BDL	0.06	BDL	0.08	0.02	BDL	0.04	0.01	0.03	BDL
Chloride	482.9	1330.7	492.76	848.53	468.12	636.4	320.29	597.83	482.9	559.26
TDS	2745	3806	1814	3225	2487	2709	2165	2605	3267	2819
Copper	BDL	0.04	BDL	0.04	BDL	BDL	BDL	BDL	0.01	BDL
Sulphate	358.8	471.87	188.8	512.5	355.5	380	322.2	354	353	224
Cadmium	0.002	0.004	0.002	BDL	0.001	BDL	BDL	BDL	0.004	BDL
Lead	0.03	0.02	0.05	0.02	0.01	BDL	0.06	BDL	0.03	BDL
Zinc	0.15	BDL	0.08	BDL	0.13	BDL	0.16	0.02	0.4	0.03
Alkalinity	393.6	403.2	393.6	460.8	556.8	476	86.4	260	480	480
Nickel	BDL	BDL	BDL	BDL	0.02	BDL	BDL	BDL	0.02	BDL
Cyanide	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Cobalt	0.01	BDL	0.02	BDL	0.02	BDL	0.02	BDL	0.02	BDL
TSS	7	7	11	6	7	20	5	8	9	11
Total solid	2752	3813	1825	3231	2494	2729	2170	2613	3276	2830

All figureas are in mg/l except pH

m

Ground water Quality Monitoring around mine lease area

Annexure-V

Parameters	Kayad Village U/S (Handpump water) GW1		Gagwana Village D/S (Borewell Water) GW2			Chatri Village D/S (Handpump Water) GW3			Lohagal Village U/S (Borewell Water) GW5		
	Jun-21	Aug-21	Baseline	Jun-21	Aug-21	Baseline	Jun-21	Aug-21	Baseline	Jun-21	Aug-21
pH	7.81	7.8	7.1	8.15	8.06	7.5	7.81	7.07	6.9	7.6	7.69
Hardness	702.97	111.54	306	217.82	109.62	1366	653.47	769.23	1233	663.37	730.77
Iron	0.03	BDL	0.19	BDL	BDL	0.2	BDL	BDL	0.18	BDL	BDL
Chloride	665.04	58.82	536	128.26	59.78	1842	655.54	559.26	1060	874.06	607.47
TDS	3140	305	812	716	299	4746	3253	1801	4512	3018	2248
Copper	BDL	0.02	<0.01	BDL	0.02	<0.01	BDL	0.03	<0.01	BDL	0.03
Sulphate	430.56	28.5	302	116.66	29.25	512.6	433.33	167.5	666.8	561.11	356.25
Cadmium	0.001	BDL	<0.01	BDL	BDL	<0.01	BDL	BDL	<0.01	BDL	BDL
Arsenic	BDL	BDL	<0.01	BDL	BDL	<0.01	BDL	BDL	<0.01	BDL	BDL
Lead	0.01	BDL	0.01	BDL	BDL	0.01	BDL	BDL	0.01	0.01	BDL
Zinc	BDL	BDL	0.1	BDL	BDL	0.06	BDL	BDL	0.32	0.69	BDL
Alkalinity	514.8	120.96	456	316.8	111.36	524	554.4	384	486	455.4	422.4
TSS	4	2	-	5	5	7	12	8		5	6
Cobalt	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Mercury	BDL	BDL	<0.001	BDL	BDL	BDL	BDL	BDL	<0.001	BDL	BDL
Cyanide	BDL	BDL	<0.02	BDL	BDL	BDL	BDL	BDL	<0.02	BDL	BDL
Nickel	BDL	BDL	BDL	BDL	BDL	0.02	BDL	BDL	BDL	0.02	BDL
Total solid	3144	307		721	304	3260	1826	1809		3023	2254

All figures are in mg/l except pH

mm

pH meter Reading of Mine Water

Annexure-VI

Apr-21		May-21		Jun-21	
Date	pH	Date	pH	Date	pH
01/04/2021	7.0	01/05/2021	7.0	01/06/2021	7.0
02/04/2021	6.9	02/05/2021	6.9	02/06/2021	7.1
03/04/2021	6.9	03/05/2021	6.9	03/06/2021	7.0
04/04/2021	7.0	04/05/2021	7.0	04/06/2021	7.0
05/04/2021	7.0	05/05/2021	7.0	05/06/2021	7.1
06/04/2021	6.9	06/05/2021	6.9	06/06/2021	7.0
07/04/2021	6.8	07/05/2021	6.8	07/06/2021	7.0
08/04/2021	6.7	08/05/2021	6.7	08/06/2021	6.9
09/04/2021	6.7	09/05/2021	6.7	09/06/2021	7.0
10/04/2021	6.6	10/05/2021	6.8	10/06/2021	7.0
11/04/2021	6.7	11/05/2021	6.9	11/06/2021	7.1
12/04/2021	6.8	12/05/2021	7.0	12/06/2021	6.9
13/04/2021	6.9	13/05/2021	7.1	13/06/2021	6.9
14/04/2021	7.0	14/05/2021	7.0	14/06/2021	6.9
15/04/2021	7.0	15/05/2021	6.9	15/06/2021	6.7
16/04/2021	6.9	16/05/2021	7.0	16/06/2021	6.6
17/04/2021	6.8	17/05/2021	7.1	17/06/2021	6.7
18/04/2021	6.8	18/05/2021	7.0	18/06/2021	6.8
19/04/2021	6.9	19/05/2021	7.0	19/06/2021	7.0
20/04/2021	6.9	20/05/2021	7.0	20/06/2021	7.0
21/04/2021	7.0	21/05/2021	7.1	21/06/2021	7.0
22/04/2021	7.1	22/05/2021	7.0	22/06/2021	7.1
23/04/2021	7.0	23/05/2021	7.1	23/06/2021	7.0
24/04/2021	6.9	24/05/2021	7.0	24/06/2021	6.9
25/04/2021	7.0	25/05/2021	7.1	25/06/2021	7.0
26/04/2021	7.1	26/05/2021	7.0	26/06/2021	6.9
27/04/2021	7.2	27/05/2021	6.9	27/06/2021	7.0
28/04/2021	7.2	28/05/2021	7.0	28/06/2021	7.1
29/04/2021	7.1	29/05/2021	6.9	29/06/2021	7.0
30/04/2021	7.1	30/05/2021	7.0	30/06/2021	7.1
		31/05/2021			

my

pH meter Reading of Mine Water

Jul-21		Aug-21		Sep-21	
Date	pH	Date	pH	Date	pH
01/07/2021	7.2	01/08/2021	7.0	01/09/2021	7.0
02/07/2021	7.1	02/08/2021	6.9	02/09/2021	6.9
03/07/2021	7.2	03/08/2021	7.0	03/09/2021	7.0
04/07/2021	7.0	04/08/2021	6.9	04/09/2021	7.1
05/07/2021	7.0	05/08/2021	6.9	05/09/2021	7.0
06/07/2021	6.9	06/08/2021	6.9	06/09/2021	7.1
07/07/2021	6.8	07/08/2021	7.0	07/09/2021	7.0
08/07/2021	6.8	08/08/2021	6.9	08/09/2021	7.1
09/07/2021	6.9	09/08/2021	7.0	09/09/2021	6.9
10/07/2021	6.9	10/08/2021	7.1	10/09/2021	7.0
11/07/2021	7.0	11/08/2021	7.0	11/09/2021	6.9
12/07/2021	7.1	12/08/2021	7.0	12/09/2021	7.0
13/07/2021	7.0	13/08/2021	7.1	13/09/2021	6.9
14/07/2021	7.0	14/08/2021	7.2	14/09/2021	7.0
15/07/2021	6.9	15/08/2021	7.1	15/09/2021	7.1
16/07/2021	6.9	16/08/2021	7.2	16/09/2021	7.0
17/07/2021	6.8	17/08/2021	7.3	17/09/2021	7.0
18/07/2021	7.0	18/08/2021	7.2	18/09/2021	7.1
19/07/2021	7.0	19/08/2021	7.3	19/09/2021	7.1
20/07/2021	7.1	20/08/2021	7.4	20/09/2021	7.0
21/07/2021	7.2	21/08/2021	7.3	21/09/2021	7.0
22/07/2021	7.1	22/08/2021	7.3	22/09/2021	7.0
23/07/2021	7.2	23/08/2021	7.2	23/09/2021	7.1
24/07/2021	7.0	24/08/2021	7.3	24/09/2021	7.0
25/07/2021	7.0	25/08/2021	7.2	25/09/2021	7.1
26/07/2021	7.0	26/08/2021	7.3	26/09/2021	7.0
27/07/2021	6.9	27/08/2021	7.2	27/09/2021	6.9
28/07/2021	7.0	28/08/2021	7.1	28/09/2021	6.8
29/07/2021	6.8	29/08/2021	6.9	29/09/2021	6.9
30/07/2021	6.9	30/08/2021	7.0	30/09/2021	7.0
31/07/2021	7.0	31/08/2021	7.0		

me

HINDUSTAN ZINC LTD- KAYAD MINE

Annexure-VII

Blood Lead Test

08-Jul-21

S.No.	Name	Gender	Age	Village	LEAD (<10 mcg/dl)
1	Saddam Hussain	M	26	Kayad	6.3
2	Ram Swaroop	M	36	Kayad	5
3	Ikramuddin	M	47	Gagwana	4.4
4	Gulmohammad	M	29	Kayad	5.6
5	Jai Singh	M	26	Kayad	4.7
6	Atul Kumar	M	21	Kayad	4.9
7	Aarif	M	20	Kayad	5.4
8	Ramjaan	M	20	Kayad	4.7
9	Mansingh Gehlot	M	56	Kayad	4.8
10	Sultan	M	29	Kayad	4
11	Nasiruddin	M	50	Ghughra	5.4
12	Lukman	M	25	Kayad	6.8
13	Rajkumar	M	38	Kayad Colony	4.7
14	Asgar Ali	M	46	Gagwana	5.5
15	Bhanwar Lal	M	45	Kayad	5.1
16	Rajesh Kumar	M	37	Gagwana	5.8
17	Jitendra Singh	M	32	Picholia	4.3
18	Vishnu	M	26	Kayad	5.3
19	Salma	F	35	Kayad	4.9
20	Mehroon	F	35	Kayad	4
21	Samina	F	35	Kayad	3.9
22	Jebun	F	45	Kayad	5.2
23	Rafik	M	45	Kayad	4.5
24	Imraan Khan	M	25	Gagwana	5
25	Kalu Singh	M	23	Kayad Colony	5.3
26	Hanuman Singh	M	49	Kayad	4.9
27	Sawar Singh	M	24	Kayad	5.9
28	Vinod Kumar	M	36	Kayad	4.2
29	Sunil Kumar	M	34	Kayad	4.2
30	Satya Narayan	M	23	Kayad	4.2
31	Rafiq Mohammad	M	29	Kayad	4.3
32	Alfam	M	21	Kayad	4.8
33	Parvat Singh	M	30	Kayad	3.9
34	Afdar	M	25	Kayad	4.9
35	Ram Singh	M	40	Kayad	4.6
36	Noratmal	M	51	Kayad	5.1
37	Mohammad Rustam Khan	M	47	Kayad	6
38	Santosh	F	52	Kayad Colony	4.1
39	Anisha Banu	F	36	Kayad	4.8
40	Gudiya Kumari	F	32	Kayad	4.3
41	Rasro Singh	F	37	Kayad	5.2
42	Pooja	F	22	Kayad	4.3
43	Manju	F	21	Kayad	4.2